BIJLAGE A

AUA-FCL

FLIGHT CREW
LICENSING REGULATIONS

FOREWORD

(a) The Minister is known in this regulation as the "Authority"

(b) AUA-FCL addresses the licensing of pilots of aeroplanes, helicopters, as well as the licensing of flight engineers.

(c) AUA-FCL replaces AUA-FCL 1, AUA-FCL 2 and AUA-FCL 4. AUA-FCL 3 has been replaced by AUA-MED.

(d) The Authority does not issue Flight Dispatcher Licences, but the minimum training requirements are specified in AUA-FOO.

(e) The Authority has adopted associated Acceptable Means of Compliance or Guidance material wherever possible and, unless specifically stated otherwise, clarification will be based on this material or other internationally acceptable documentation.

(f) The editing practices used in this document are as follows:

(1) 'Shall' is used to indicate a mandatory requirement.

(2) 'Should' is used to indicate a recommendation.

(3) 'May' is used to indicate discretion by the Authority, the industry or the applicant, as appropriate.

(4) 'Will' indicates a mandatory requirement.

Note. *—The use of the male gender implies the female gender and vice versa.*

REVISION RECORD

REVISION NO.	EFFECTIVE DATE	SUBJECT/REASON AMENDED OR REVISED
Initial Issue (Rev 00)	2019	N/A
Rev 01	2022	• Update ICAO definitions; • reference UK licences issued after 01 Jan 2021; • subjects for theoretical knowledge test for conversion to AUA-FCL licence; • Expand SMS requirements; • Expand ATO requirements.

TABLE OF CONTENTS:

SUBPART A – GENERAL REQUIREMENTS

FCL.005 Scope

(a) This regulation establishes the rules and requirements for:

(1) issuing, maintaining, amending, limiting, suspending or revoking flight crew licenses and ratings, the privileges and responsibilities of the holders of flight crew licences, the conditions for the conversion or validations of existing foreign flight crew licences and as well as their validity and use

(2) the certification of persons who are responsible for providing flight training or flight simulation training and for assessing pilots' skills;

(3) the conditions for issuing, maintaining, amending, limiting, suspending or revoking certificates of pilot training organisations

(b) Whenever licences, ratings, authorisations, approvals or certificates are mentioned in this regulation, these are meant to be licences, ratings, authorisations, approvals or certificates issued in accordance with AUA-FCL. In all other cases these documents are specified as documents issued by ICAO contracting states.

(c) Whenever a reference is made to an EASA Member State for the purpose of recognition of licences, ratings, authorisations, approvals or certificates, this means a full EASA Member State.

(d) All synthetic training devices mentioned in AUA-FCL substituting an aircraft for training purposes are to be approved by the Authority in accordance with 'Regeling Synthethische traininginstrumenten'.

(e) A licence or rating will not be issued on the basis of training performed outside of Aruba or an EASA Member State except if training performed according to FCL.093.

(f) Licences are established for the following flight crew;

(1) private pilot — aeroplane, helicopter or powered-lift;

(2) commercial pilot — aeroplane, helicopter or powered-lift;

(3) multi-crew pilot — aeroplane;

(4) airline transport pilot — aeroplane, helicopter or powered-lift

(5) flight engineer;

(g) The category of aircraft shall be included in the title of the licence itself.

Note. *– Balloon, Sailplane and Airship, powered lift, remote pilot licences, as well as Flight navigator licences, are not issued.*

GM1 FCL.005 Scope

INTERPRETATIVE MATERIAL

(a) Whenever licences, ratings, approvals or certificates are mentioned in AUA-FCL, these are meant to be valid licences, ratings, approvals or certificates issued in accordance with AUA-FCL. In all other cases, these documents are specified;

(b) Whenever 'or' is used as an inclusive 'or', it should be understood in the sense of 'and/or'.

FCL.008 Requirements to hold a flight crew licence

(a) A person shall not act as a flight crew member of an aircraft unless a valid licence is held showing compliance with this regulations and appropriate to the duties to be performed by that person.

(b) The licence shall have been issued by the Authority, as the State of Registry of that aircraft, or by any other ICAO Contracting State and rendered valid by the Authority, as State of Registry of that aircraft.

(c) A person shall not act either as pilot-in-command or as co-pilot of an aircraft in any of the following categories unless that person is the holder of a pilot licence issued in accordance with the provisions of this Chapter:

- aeroplane,
- helicopter
- powered-lift.

(d) When the holder of a pilot licence seeks a licence for an additional category of aircraft, the Authority shall issue the licence holder with an additional pilot licence for that category of aircraft.

(e) An applicant shall, before being issued with any pilot licence or rating, meet such requirements in respect of age, knowledge, experience, flight instruction, skill and medical fitness, as are specified for that licence or rating.

(f) An applicant for any pilot licence or rating shall demonstrate, in a manner determined by the Authority, such requirements for knowledge and skill as are specified for that licence or rating.

(g) *Transitional measures related to the powered-lift category.* Until 05 March 2025, the Authority may endorse a type rating for aircraft of the powered-lift category on an aeroplane or helicopter pilot licence. The endorsement of the rating on the licence shall indicate that the aircraft is part of the powered-lift category. The training for the type rating in the powered-lift category shall be completed during a course of approved training, shall take into account the previous experience of the applicant in an aeroplane or a helicopter as appropriate and incorporate all relevant aspects of operating an aircraft of the powered-lift category.

FCL.010 Definitions and Abbreviations

Definitions

For the purposes of this regulation, the following definitions apply:

— '***Aerobatic flight***' means an intentional manoeuvre involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight or for instruction for licences or ratings other than the aerobatic rating.

— ***'Aeroplane'*** means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

— '***Aeroplane required to be operated with a co-pilot'*** means a type of aeroplane that is required to be operated with a co-pilot as specified in the flight manual or by the air operator certificate.

— '**Aeroplane upset prevention and recovery training'** (UPRT) means training consisting of:

- aeroplane upset prevention training: a combination of theoretical knowledge and flying training with the aim of providing flight crew with the required competencies to prevent aeroplane upsets; and
- aeroplane upset recovery training: a combination of theoretical knowledge and flying training with the aim of providing flight crew with the required competencies to recover from aeroplane upsets.

— ***'Aircraft'*** — any machine which can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

— **'Assessment of competence'** means the demonstration of skills, knowledge and attitude for the initial issue, revalidation or renewal of an instructor or examiner certificate.

— ***'Aircraft — category'*** means a categorisation of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, powered-lifted, glider, free balloon.

— ***'Aircraft certificated for single-pilot operation'*** means a type of aircraft which the State of Registry has determined, during the certification process, can be operated safely with a minimum crew of one pilot.

— ***'Aircraft avionics'*** is a term designating any electronic device — including its electrical part — for use in an aircraft, including radio, automatic flight control and instrument systems.

— ***'Airmanship'*** means the consistent use of good judgement and well-developed knowledge, skills and attitudes to accomplish flight objectives.

— ***'Airship'*** *A* power-driven lighter-than-air aircraft.

— ***'Approved'*** means accepted by the Authority as complying with AUA-FCL.

— ***'Approved training'*** means training conducted under special curricula and supervision approved by a Authority.

— ***'Approved training organisation'*** means an organisation approved by and operating under the supervision of the Authority to perform approved training.

— ***'Authority'*** means the Minister, through the Department of Civil Aviation of Aruba, and is the competent body responsible for the safety regulation of civil aviation.

Note. — *This definition should not be confused with the term "authority" as in authorisation.*

— *'**Balloon'*** A non-power-driven lighter-than-air aircraft.

— ***'Basic Instrument Training Device'*** (BITD) means a ground-based training device which represents the student pilot's station of a class of aeroplanes. It may use screen-based instrument panels and spring-loaded flight controls, providing a training platform for at least the procedural aspects of instrument flight.

— ***'Class of aeroplane'*** means a categorisation of single-pilot aeroplanes not requiring a type rating.

— ***'Commercial air transport'*** means an aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

— ***'Competency'*** means a dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

— *'**Competency-based training and assessment'*** means training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

— ***'Competency standard'*** means a level of performance that is defined as acceptable when assessing whether or not competency has been achieved.

— ***'Competency element'*** means an action which constitutes a task that has a triggering event and a terminating event that clearly defines its limits, and an observable outcome.

— ***'Competency unit'*** means a discrete function consisting of a number of competency elements.

— ***'Conditions'*** means anything that may qualify a specific environment in which performance will be demonstrated.

— ***'Conversion (of a licence)'*** means the issue of an AUA-FCL licence on the basis of a licence issued by the authority accepted ICAO Contracting State.

— ***'Co-pilot'*** means a licensed pilot serving in any piloting capacity other than as pilot-in-command, , but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction.

— ***'Credit'*.** Recognition of alternative means or prior qualifications.

— ***'Cross-country'*** means a flight between a point of departure and a point of arrival following a pre-planned route, using standard navigation procedures.

— ***'Cruise relief co-pilot'*** means a pilot who relieves the co-pilot of his/her duties at the controls during the cruise phase of a flight in multi-pilot operations above FL 200.

— ***'Dual instruction time'*** means flight time during which a person is receiving flight instruction from a properly authorised instructor on board the aircraft.

— ***'Error'*** means an action or inaction taken by the flight crew or any operational person which leads to deviations from organisational, flight or operational person's intentions or expectations.

— ***'Error management'*** means the process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors, and mitigate the probability of further errors or undesired aircraft states.

— ***'Flight crew member'*** means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

— ***'Flight Engineer'*** means a person who complies with the requirements in AUA-FCL Subpart L.

— ***'Full Flight Simulator'*** (FFS) means a full size replica of a specific type or make, model and series aircraft flight deck, including the assemblage of all equipment and computer programmes necessary to represent the aircraft in ground and flight operations, a visual system providing an out-of-the-flight deck view, and a force cueing motion system.

— **'Flight time'**:

- for aeroplanes and powered-lift, it means the total time from the moment an aircraft first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight;

  Note. —*Flight time as here defined is synonymous with the term "block to block" time or "chock to chock" time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.*

- for helicopters, it means the total time from the moment a helicopter's rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

— ***'Flight time under Instrument Flight Rules'*** (IFR) means all flight time during which the aircraft is being operated under the Instrument Flight Rules.

— ***'Flight simulation training device'*** *(FSTD)* means device for the training of pilots which is::

(a) in the case of aeroplanes, a full flight simulator (FFS), a flight training device (FTD), a flight and navigation procedures trainer (FNPT) or a basic instrument training device (BITD);

(b) the case of helicopters, a full flight simulator (FFS), a flight training device (FTD) or a flight and navigation procedures trainer (FNPT);

— ***Flight Training Device' (FTD)*** *means a full size replica of a specific aircraft type's instruments, equipment, panels and controls in an open flight deck area or an enclosed aircraft flight deck, including the assemblage of equipment and computer software programmes necessary to represent the aircraft in ground and flight conditions to the extent of the systems installed in the device. It does not require a force cueing motion or visual system, except in the case of helicopter FTD levels 2 and 3, where visual systems are required.*

— **'Flight and Navigation Procedures Trainer'** (FNPT) means a training device which represents the flight deck or cockpit environment, including the assemblage of equipment and computer programmes necessary to represent an aircraft type or class in flight operations to the extent that the systems appear to function as in an aircraft.

— '***Flight simulator'***. See Flight simulation training device.

— ***'Helicopter'*** means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

— ***'Human performance'*** means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

— ***'ICAO competency framework'*** means a competency framework, developed by ICAO, is a selected group of competencies for a given aviation discipline. Each competency has an associated description and observable behaviours.

— ***'Instrument flight time'*** means the time during which a pilot is piloting an aircraft solely by reference to instruments and without external reference points.

— ***'Instrument ground time'*** means the time during which a pilot is practicing, on the ground, simulated instrument flight, in flight simulation training devices (FSTD) approved by the Licencing Authority.

— ***'Instrument time'*** means instrument flight time or instrument ground time.

— ***'Monitoring'*** means a cognitive process to compare an actual to an expected state.

Note. — *Monitoring is embedded in the competencies for a given role within an aviation discipline, which serve as countermeasures in the threat and error management model. It requires knowledge, skills and attitudes to create a mental model and to take appropriate action when deviations are recognized.*

— ***'Multi-pilot operation'***:

(a) for aeroplanes, it means an operation requiring at least 2 pilots using multi-crew cooperation in either multi-pilot or single-pilot aeroplanes;

(b) for helicopters, it means an operation requiring at least 2 pilots using multi-crew cooperation on multi-pilot helicopters.

— ***'Multi-crew cooperation'*** (MCC) means the functioning of the flight crew as a team of cooperating members led by the pilot-in-command.

— ***'Multi-pilot aircraft'***:

(a) for aeroplanes, it means aeroplanes certificated for operation with a minimum crew of at least two pilots;

(b) for helicopters and powered-lift aircraft, it means the type of aircraft which is required to be operated with a co-pilot as specified in the flight manual or by the air operator certificate or equivalent document.

— ***'Night'*** means the period between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be prescribed by the appropriate Authority.

— ***'Observable behaviour (OB)'*** means a single role-related behaviour that can be observed and may or may not be measurable.

— ***'Other training devices'*** (OTD) means training aids other than flight simulators, flight training devices or flight and navigation procedures trainers which provide means for training where a complete flight deck environment is not necessary.

— ***'Performance criteria'*** means statements used to assess whether the required levels of performance have been achieved for a competency. A performance criterion consists of an observable behaviour, condition(s) and a competency standard.

— ***'Pilot (to)'.*** To manipulate the flight controls of an aircraft during flight time.

— ***'Pilot flying (PF)'*** means the pilot whose primary task is to control and manage the flight path. The secondary tasks of the PF are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crew members.

— ***'Pilot-in-command'*** (PIC) means the pilot designated by the operator or in the case of general aviation, the owner, as being in command and charged with the safe conduct of the flight.

Note. — *This definition is identical to commander.*

— ***'Pilot-in-command under supervision'*** (PICUS) means a co-pilot performing, under the supervision of the pilot-in- command, the duties and functions of a pilot-in-command, in accordance with a method of supervision acceptable to the Authority.

— ***'Pilot monitoring (PM)'*** means the pilot whose primary task is to monitor the flight path and its management by the PF. The secondary tasks of the PM are to perform non–flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crew members

— ***'Powered-lift'*** means a heavier-than-air aircraft capable of vertical take-off, vertical landing, and low-speed flight, which depends principally on engine-driven lift devices or engine thrust for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during horizontal flight.

— ***'Private pilot'*** means a pilot who holds a licence which prohibits the piloting of aircraft in operations for which remuneration is given, with the exclusion of instruction or examination activities, as established in this regulation.

— ***'Problematic use of substances'*** means the use of one or more psychoactive substances by aviation personnel in a way that;

(a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or

(b) causes or worsens an occupational, social, mental or physical problem or disorder.

— *‘Psychoactive substances’* means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

— *‘Professional pilot’* means a pilot who holds a licence which permits the piloting of aircraft in operations for which remuneration is given.

— *‘Proficiency check’* means the demonstration of skill to revalidate or renew ratings, and including such oral examination as may be required.

— *‘Rating’* means an authorization entered in or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to that licence.

— *‘Rendering (a licence) valid’* means the action taken by the authority, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence.

— *‘Renewal’* (of, e.g. a rating or certificate) means the administrative action taken after a rating or certificate has lapsed for the purpose of renewing the privileges of the rating or certificate for a further specified period consequent upon the fulfilment of specified requirements.

— *‘Revalidation’* (of, e.g. a rating or certificate) means the administrative action taken within the period of validity of a rating or certificate which allows the holder to continue to exercise the privileges of a rating or certificate for a further specified period consequent upon the fulfilment of specified requirements.

— *‘RNP APCH’* means a PBN specification used for instrument approach operations.

— *‘RNP APCH operation down to LNAV minima’* means a 2D instrument approach operation for which the lateral guidance is based on GNSS positioning.

— *‘RNP APCH operation down to LNAV/VNAV minima’* means a 3D instrument approach operation for which the lateral guidance is based on GNSS positioning and the vertical guidance is provided either by the Baro VNAV function or by the GNSS positioning including SBAS.

— *‘RNP APCH operation down to LPV minima’* means a 3D instrument approach operation for which both lateral and vertical guidance are based on GNSS positioning including SBAS.

— *‘RNP AR APCH’* means a navigation specification used for instrument approach operations requiring a specific approval.

— *‘Rotorcraft’* means a power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

— *‘Route sector’* means a flight comprising take-off, departure, cruise of not less than 15 minutes, arrival, approach and landing phases.

— *‘Single-pilot aircraft’* means an aircraft certificated for operation by one pilot.

— *‘Skill test’* means the demonstration of skill for a licence or rating issue, including such oral examination as may be required.

— ***'Solo flight time'*** means flight time during which a student pilot is the sole occupant of an aircraft.

— ***'Student pilot-in-command'*** (SPIC) means a student pilot acting as pilot-in-command on a flight with an instructor where the latter will only observe the student pilot and shall not influence or control the flight of the aircraft.

— ***'Threat'*** means events or errors which occur beyond the influence of the flight crew or operational person, increase operational complexity and which must be managed to maintain the margin of safety.

— ***'Threat management'*** means the process of detecting and responding to the threats with countermeasures which reduce or eliminate the consequences of threats, and mitigate the probability of errors or undesired aircraft states.

— ***'Three-dimensional (3D) instrument approach operation'*** means an instrument approach operation using both lateral and vertical navigation guidance.

— ***'Two-dimensional (2D) instrument approach operation'*** means an instrument approach operation using lateral navigation guidance only.

— ***'Type of aircraft'*** means a categorisation of aircraft requiring a type rating as determined by the Authority, and which include all aircraft of the same basic design including all modifications thereto except those which result in a change in handling or flight characteristics.

— ***'Validation'*** means the action taken by the Authority in accepting a licence issued by another ICAO Contracting State as an alternative to issuing a AUA-FCL licence.

— ***'VNAV'*** means Vertical Navigation.

Abbreviations

ATO	Approved training organisation
ATPL	Airline transport pilot licence
A	Aeroplane
BITD	Basic instrument training device
CPL	Commercial pilot licence
CRE	Class rating examiner
CRI	Class rating instructor
EASA	European Aviation Safety Agency
FE	Flight examiner
FFS	Full flight simulator
FI	Flight instructor
FIE	Flight instructor examiner
FNPT	Flight navigation procedures trainer
FSTD	Flight simulation training device
FTD	Flight training device
FTI	Flight test instructor
H	Helicopter
IFR	Instrument Flight Rules
IMC	Instrument meteorological conditions
IR	Instrument rating
IRE	Instrument rating examiner
IRI	Instructor rating instrument
MCCI	Multi-crew cooperation instructor
ME	Multi engine

MI	Mountain rating instructor	SFI	Synthetic flight instructor
MPL	Multi-crew pilot licence	SP	Single pilot
PIC	Pilot-in-command	SPL	Student Pilot Licence
PICUS	Pilot-in-command under supervision	SPIC	Student pilot-in-command
PL	Powered lift	STI	Synthetic training instructor
PPL	Private pilot licence	TRE	Type rating examiner
SE	Single engine	TRI	Type rating instructor
SFE	Synthetic flight examiner	ZFTT	Zero flight time rating

GM1 FCL.010 Definitions

ABBREVIATIONS

The following abbreviations apply to the Acceptable Means of Compliance and Guidance Material to AUA-FCL:

A	Aeroplane
AC	Alternating Current
ACAS	Airborne Collision Avoidance System
ADF	Automatic Direction Finding
ADS	Aeronautical Design Standard
AFCS	Automatic Flight Control System
AFM	Aircraft Flight Manual
AGL	Above Ground Level
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information regulation and control
AIS	Aeronautical Information Services
AMC	Acceptable Means of Compliance
AeMC	Aero-medical Centre
AME	Aero-medical Examiner
AoA	Angle of Attack
AOM	Aircraft Operating Manual
APU	Auxiliary Power Unit
ATC	Air Traffic Control

ATIS	Automatic Terminal Information Service
ATO	Approved Training Organisation
ATP	Airline Transport Pilot
ATPL	Airline Transport Pilot Licence
ATS	Air Traffic Service
AUM	All Up Mass
AUPRTA	Airplane Upset Prevention and Recovery Training Aid
BCAR	British Civil Airworthiness Requirement
BEM	Basic Empty Mass
BITD	Basic Instrument Training Device
CAS	Calibrated Air Speed
CAT	Clear Air Turbulence
CDI	Course Deviation Indicator
CFI	Chief Flying Instructor
CG	Centre of Gravity
CGI	Chief Ground Instructor
CP	Co-pilot
CPL	Commercial Pilot Licence
CRE	Class Rating Examiner
CRI	Class Rating Instructor
CRM	Crew Resource Management
CS	Certification Specification
CTKI	Chief Theoretical Knowledge Instructor
CQB	Central Question Bank
DC	Direct Current
DCA	Department of Civil Aviation (Aruba)
DF	Direction Finding
DME	Distance Measuring Equipment
DPATO	Defined Point After Take-off
DPBL	Defined Point Before Landing
DR	Dead Reckoning navigation
EFIS	Electronic Flight Instrument System
EOL	Engine Off Landings
ERPM	Engine Revolution Per Minute
ETA	Estimated Time of Arrival

ETOPS	Extended-range Twin-engine Operation Performance Standard
FAF	Final Approach Fix
FAR	Federal Aviation Regulations
FCL	Flight Crew Licensing
FE	Flight Examiner
F/E	Flight Engineer
FEM	Flight Examiner Manual
FFS	Full Flight Simulator
FI	Flight Instructor
FIE	Flight Instructor Examiner
FIS	Flight Information Service
FMC	Flight Management Computer
FMS	Flight Management System
FNPT	Flight and Navigation Procedures Trainer
FS	Flight Simulator
FSTD	Flight Simulation Training Device
ft	feet
FTD	Flight Training Device
G	Gravity forces
GLONASS	Global Orbiting Navigation Satellite System
GM	Guidance Material
GNSS	Global Navigation Satellite Systems
GPS	Global Positioning System
H	Helicopter
HF	High Frequency
HOFCS	High Order Flight Control System
HPA	High Performance Aeroplane
hrs	Hours
HUMS	Health and Usage Monitoring System
HT	Head of Training
IAS	Indicated Air Speed
ICAO	International Civil Aviation Organisation
IGE	In Ground Effect
IFR	Instrument Flight Rules
ILS	Instrument Landing System

IMC	Instrument Meteorological Conditions
IR	Instrument Rating
IRE	Instrument Rating Examiner
IRI	Instrument Rating Instructor
ISA	International Standard Atmosphere
kg	Kilogram
LDP	Landing Decision Point
LMT	Local Mean Time
LO	Learning Objectives
LOFT	Line Orientated Flight Training
m	Meter
MCC	Multi-Crew Cooperation
MCCI	Multi-Crew Cooperation Instructor
ME	Multi-engine
MEL	Minimum Equipment List
MEP	Multi-engine Piston
MET	Multi-engine Turboprop
METAR	Meteorological Aerodrome Report
MI	Mountain Rating Instructor
MP	Multi-pilot
MPA	Multi-pilot Aeroplane
MPL	Multi-crew Pilot Licence
MPH	Multi-pilot Helicopter
MTOM	Maximum Take-off Mass
NDB	Non-directional Beacon
NM	Nautical Miles
NOTAM	Notice To Airmen
NOTAR	No Tail Rotor
OAT	Outside Air Temperature
OBS	Omni Bearing Selector
OEI	One Engine Inoperative
OGE	Out of Ground Effect
OML	Operational Multi-pilot Limitation
OSL	Operational Safety Pilot Limitation
OTD	Other Training Devices

PAPI	Precision Approach Path Indicator
PBN	Performance-based Navigation
PF	Pilot Flying
PIC	Pilot-In-Command
PICUS	Pilot-In-Command Under Supervision
PL	Powered-lift
PNF	Pilot Not Flying
PPL	Private Pilot Licence
QDM	Magnetic heading
QFE	Atmospheric pressure at aerodrome elevation
QNH	Altimeter sub-scale setting to obtain elevation when on the ground
RNAV	Radio Navigation
RPM	Revolution Per Minute
RRPM	Rotor Revolution Per Minute
R/T	Radiotelephony
SATCOM	Satellite communication
SE	Single-engine
SEP	Single-engine Piston
SET	Single-engine Turbo-prop
SFE	Synthetic Flight Examiner
SFI	Synthetic Flight Instructor
SID	Standard Instrument Departure
SIGMET	Significant Meteorological Weather
SLPC	Single Lever Power Control
SOP	Standard Operating Procedure
SP	Single-pilot
SPA	Single-pilot Aeroplane
SPH	Single-pilot Helicopter
SPIC	Student PIC
SSR	Secondary Surveillance Radar
STI	Synthetic Training Instructor
TAF	(Terminal Area Forecasts) Aerodrome Forecast
TAS	True Air Speed
TAWS	Terrain Awareness Warning System
TDP	Take-off Decision Point

TEM	Threat and Error Management
TORA	Take-off Run Available
TODA	Take-off Distance Available
TR	Type Rating
TRE	Type Rating Examiner
TRI	Type Rating Instructor
UPRT	Upset Prevention and Recovery Training
UTC	Coordinated Universal Time
V	Velocity
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VOR	VHF Omni-directional Radio Range
ZFTT	Zero Flight Time Training
ZFM	Zero Fuel Mass

GM2 FCL.010 Definitions - – lateral and vertical navigation

Lateral and vertical navigation guidance refers to the guidance provided either by:

(a) a ground-based radio navigation aid; or

(b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

GM3 FCL.010 Definitions

UPSET PREVENTION AND RECOVERY TRAINING (UPRT) DEFINITIONS

In the context of UPRT, the following abbreviations apply to the Acceptable Means of Compliance and Guidance Material to Part-FCL:

— ***'Advanced UPRT'*** refers to the advanced UPRT course in accordance with point FCL.745.A.

— **'Aeroplane upset'** refers to an undesired aircraft state characterised by unintentional divergences from parameters normally experienced during operations. An aeroplane upset may involve pitch and/or bank angle divergences as well as inappropriate airspeeds for the conditions.

— ***'Angle of Attack (AoA)'*** refers to the angle between the oncoming air, or relative wind, and a defined reference line on the aeroplane or wing.

— ***'Approach-to-stall'*** refers to flight conditions bordered by the stall warning and stall.

— ***'Basic UPRT'*** refers to the UPRT elements and exercises integrated into training courses for the issue of a CPL, MPL or Phases 1 to 3 of the integrated ATP course.

— ***'Developed upset'*** refers to a condition meeting the definition of an aeroplane upset.

— ***'Developing upset'*** refers to any time the aeroplane begins to unintentionally diverge from the intended flight path or airspeed.

— ***'Energy state'*** refers to how much of each kind of energy (kinetic, potential or chemical) the aeroplane has available at any given time.

— ***'First indication of a stall'*** refers to the initial aural, tactile or visual sign of a stall event which can be either naturally or synthetically induced.

— ***'Flight crew resilience'*** refers to the ability of a flight crew member to recognise, absorb and adapt to disruptions.

— ***'Fidelity level'*** refers to the level of realism assigned to each of the defined FSTD features.

— ***'Flight path'*** refers to the trajectory or path of the aeroplane travelling through the air over a given space of time.

— ***'Flight path management'*** refers to active manipulation, using either the aeroplane's automation or manual handling, to command the aeroplane's flight controls in order to direct the aeroplane along a desired trajectory.

— ***'FSTD validation envelope'*** refers to the envelope consisting of the following three subdivisions:

Flight test validated region

This is the region of the flight envelope which has been validated with flight test data, typically by comparing the performance of the FSTD against the flight test data through tests incorporated in the qualification test guide (QTG) and other flight test data utilised to further extend the model beyond the minimum requirements. Within this region, there is high confidence that the simulator responds similarly to the aircraft. Note that this region is not strictly limited to what has been tested in the QTG; as long as the aerodynamics mathematical model has been conformed to the flight test results, that portion of the mathematical model can be considered to be within the flight test validated region.

Wind tunnel and/or analytical region

This is the region of the flight envelope for which the FSTD has not been compared to flight test data, but for which there has been wind tunnel testing or the use of other reliable predictive methods (typically by the aircraft manufacturer) to define the aerodynamic model. Any extensions to the aerodynamic model that have been evaluated in accordance with the definition of an exemplar stall model (as described in the stall manoeuvre evaluation section) must be clearly indicated. Within this region, there is moderate confidence that the simulator will respond similarly to the aircraft.

Extrapolated region

This is the region extrapolated beyond the flight test validated and wind tunnel/analytical regions. The extrapolation may be a linear extrapolation, a holding of the last value before the extrapolation began, or some other set of values. Whether this extrapolated data is provided by the aircraft or simulator manufacturer, it is a 'best guess' only. Within this region, there is low confidence that the simulator will respond similarly to the aircraft. Brief excursions into this region may still retain a moderate confidence level in FSTD fidelity; however, the instructor should be aware that the FSTD's response may deviate from that of the actual aircraft.

— ***'Load factor'*** refers to the ratio of a specified load to the weight of the aeroplane, the former being expressed in terms of aerodynamic forces, propulsive forces or ground reactions.

— '***Loss of Control In-flight (LOC-I)'*** refers to a categorisation of an accident or incident resulting from a deviation from the intended flight path.

— '***Manoeuvre-based training'*** refers to training that focuses on a single event or manoeuvre in isolation.

— '***Negative training'*** refers to training which unintentionally introduces incorrect information or invalid concepts, which could actually decrease rather than increase safety.

— ***'Negative transfer of training'*** refers to the application (and 'transfer') of what was learned in a training environment (i.e. a classroom, an FSTD) to normal practice, i.e. it describes the degree to which what was learned in training is applied to actual, normal practices. In this context, negative transfer of training refers to the inappropriate generalisation of knowledge and skills to a situation or setting in normal practice that does not equal the training situation or setting.

— '***Original Equipment Manufacturer (OEM)'*** refers to the original equipment manufacturer of an aircraft or associated parts or equipment or of parts or equipment installed on the basis of a supplemental type certificate (STC).

— '***Post-stall regime'*** refers to flight conditions at an AoA greater than the critical AoA.

— ***'Scenario-based training'*** refers to training that incorporates manoeuvres into real-world experiences to cultivate practical flying skills in an operational environment.

— ***'Stall'*** refers to loss of lift caused by exceeding the aeroplane's critical AoA.

Note.— *A stalled condition can exist at any attitude and airspeed, and may be recognised by continuous stall warning activation accompanied by at least one of the following:*

- buffeting, which could be heavy at times;
- lack of pitch authority and/or roll control; and
- inability to arrest the descent rate.

Note. — *It is possible that in certain conditions the stall warning may not be activated.*

— ***'Stall event'*** refers to an occurrence whereby the aeroplane experiences conditions associated with an approach-to-stall or a stall.

— ***'Stall (event) recovery procedure'*** refers to the manufacturer-approved aeroplane-specific stall recovery procedures, such as those contained in the flight crew operations manual (FCOM). If an OEM-approved recovery procedure does not exist, the aeroplane-specific stall recovery procedure developed by the ATO, based on the stall recovery template, may be used.

— ***'Stall warning'*** refers to a natural or synthetic indication provided when approaching a stall that may include one or more of the following indications:

- aerodynamic buffeting (some aeroplanes will buffet more than others);
- reduced roll stability and aileron effectiveness;
- visual or aural cues and warnings;
- reduced elevator (pitch) authority;
- inability to maintain altitude or arrest rate of descent; and
- stick shaker activation (if installed).

Note.— *A stall warning indicates an immediate need to reduce the AoA.*

— ***'Startle'*** refers to the initial, short-term, involuntary physiological and cognitive reactions to an unexpected event that commence the normal human stress response.

— ***'Stick pusher'*** refers to any device that automatically applies a nose-down movement and pitch force to an aeroplane's control columns to attempt to decrease the aeroplane's AoA. Device activation may occur before or after aerodynamic stall, depending on the aeroplane type.

Note. — *A stick pusher is not installed on all aeroplane types*.

— ***'Stick shaker'*** refers to a device that automatically vibrates the control column to warn the pilot of an approaching stall.

Note. — *A stick shaker is not installed on all aeroplane types.*

— ***'Stress (response)'*** refers to the response to a threatening event that includes physiological, psychological and cognitive effects. These effects may range from positive to negative and can either enhance or decrease performance.

— ***'Surprise'*** refers to the emotionally based recognition of a difference in what was expected and what is actual.

— ***'Train-to-proficiency'*** refers to approved training designed to achieve end-state performance objectives, providing sufficient assurances that the trained individual is capable of consistently carrying out specific tasks safely and effectively.

Note. — *In the context of this definition, 'train-to-proficiency' can be replaced by 'training-to-proficiency'.*

— '***Type-specific UPRT'*** refers to UPRT elements and exercises integrated into training courses for the issue of a class or type rating pursuant to Part-FCL or during recurrent or refresher training for a specific aeroplane class or type.

- ‘***Undesired aircraft state’*** refers to flight-crew-induced aircraft position or speed deviation, misapplication of controls, or incorrect systems configuration, associated with a reduction in margins of safety.

  Note 1. — *Undesired states can be managed effectively, restoring margins of safety, or flight crew response(s) can induce an additional error, incident or accident.*

  Note 2. — *All countermeasures are necessary flight crew actions. However, some countermeasures to threats, errors and undesired aircraft states that flight crew employ are built upon ‘hard’/systemic-based resources provided by the aviation system.*

- ‘***Unsafe situation’*** refers to a situation which has led to an unacceptable reduction in safety margin.
- ‘***Unusual attitude’*** refers to an aircraft in flight intentionally exceeding the parameters normally experienced in line operations or training, as applicable.
- ‘***Incipient spin’*** refers to a transient flight condition in the post-stall regime where an initial, uncommanded roll in excess of 45° has resulted from yaw asymmetry during a stall and which, if recovery action is not taken, will lead rapidly to a developing spin. Prompt recovery during this incipient spin stage will normally result in an overall heading change, from pre-stall conditions, of not more than 180°.
- ‘***Developing spin’*** refers to a flight condition in the post-stall regime where the aeroplane exhibits abnormal, but varying, rates of yaw and roll, together with changing pitch attitude, following an incipient spin but before the establishment of a developed spin. A developing spin follows an unrecovered incipient spin and will usually persist, in the absence of any recovery action, until a developed spin ensues.
- ‘***Developed spin’*** refers to a flight condition in the post-stall regime where the aeroplane has achieved approximately constant pitch attitude, yaw rate and roll rate on a descending flight path. In transition from a stall with significant, persistent yaw, with no recovery action, to attaining a developed spin, the aeroplane is likely to have rolled through at least 540°.
- ***‘FSTD training envelope’*** refers to the high and moderate confidence regions of the FSTD validation envelope.

GM4 FCL.010 Definitions

DEFINITIONS IN GM3 FCL.010 RELATED TO THE POST-STALL REGIME

The definitions for ‘incipient spin’, developing spin’ and ‘developed spin’ in GM3 FCL.010 relate to the post-stall regime in aeroplanes that might typically be used in the context of the advanced UPRT in accordance with point FCL.745.A. The definitions are not intended for application to commercial air transport operations.

FCL.015 Application and issue of licences, ratings and certificates

(a) An application for the issue, revalidation or renewal of licences/validation and associated ratings and certificates shall be submitted to the Authority in a form and manner established by the Authority. The application shall be accompanied by evidence that the applicant complies with the requirements for the issue, revalidation or renewal of the licence or certificate as well as associated ratings or endorsements, established in this regulation and AUA-MED, if applicable.

(b) Any limitation or extension of the privileges granted by a licence, rating or certificate shall be endorsed in the licence or certificate by the Authority.

(c) A person shall not hold at any time more than one pilot licence per category of aircraft issued in accordance with this regulation.

(d) An application for the issue of a pilot licence for another category of aircraft, or for the issue of further ratings or certificates, as well as an amendment, revalidation or renewal of those licences, ratings or certificates shall be submitted to the Authority.

(e) The Authority, having issued a licence shall ensure that other Contracting States are enabled to be satisfied as to the validity of the licence.

Note 1. — *The maintenance of competency of flight crew members, engaged in commercial air transport operations, may be satisfactorily established by demonstration of skill during proficiency flight checks completed in accordance with the applicable AUA-OPS.*

Note 2. — *The maintenance of competency may be satisfactorily recorded in the operator's records, or in the flight crew-member's personal log book or licence.*

Note 3. —*Flight crew members may, to the extent deemed feasible by the Authority, or Licensing Authority of the State of the operator, respectively, demonstrate their continuing competency in flight simulation training devices approved by that State.*

Any person holding a licence who does not satisfy in full the conditions laid down in the international standard relating to the class of licence or certificate which he holds shall have endorsed on or attached to his/her licence a complete enumeration of the particulars in which he/she does not satisfy such conditions.

AMC1 FCL.015 Application and issue of licences, ratings and certificates

APPLICATION AND REPORT FORMS

Common application and report forms can be found:

(a) For skill tests, proficiency checks for issue, revalidation or renewal of PPL, CPL and IR in AMC1 to Appendix 7.

(b) For training, skill tests or proficiency checks for ATPL, MPL and class and type ratings, in AMC1 to Appendix 9.

(c) For assessments of competence for instructors, in AMC5 FCL.935.

FCL.020 Use of psychoactive substances

(a) Holders of licences provided for in AUA-FCL shall not exercise the privileges of their licences and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.

(b) Holders of licences provided for in AUA-FCL shall not engage in any problematic use of substances.

Note. *— See Chapter 4 of 'Landsbesluit bewijzen van bevoegdheid voor het luchtvaartpersoneel (AB 2019 no. 34)' for additional information.*

FCL.025 Theoretical knowledge examinations for the issue of licences

(a) Responsibilities of the applicant

(1) Applicants shall take the entire set of theoretical knowledge examinations for a specific licence or rating under the responsibility of the Authority.

(2) Applicants shall only take the theoretical knowledge examination when recommended by the approved training organisation (ATO) responsible for their training, once they have completed the appropriate elements of the training course of theoretical knowledge instruction to a satisfactory standard.

(3) The recommendation by an ATO shall be valid for 12 months. If the applicant has failed to attempt at least one theoretical knowledge examination paper within this period, the need for further training shall be determined by the ATO, based on the needs of the applicant.

(b) Pass standards

(1) A pass in a theoretical knowledge examination paper will be awarded to an applicant achieving at least 75 % of the marks allocated to that paper. No penalty marking shall be applied.

(2) An applicant has successfully completed the required theoretical knowledge examination for the appropriate pilot licence or rating when he/she has passed all the required theoretical knowledge examination papers within a period of 18 months counted from the end of the calendar month when the applicant first attempted an examination.

(3) If an applicant has failed to pass one of the theoretical knowledge examination papers within four (4) attempts, or has failed to pass all papers within either six (6) sittings or the period mentioned in paragraph (2), he/she shall re-take the complete set of theoretical knowledge examination papers. Before re-taking the examinations, the applicant shall undertake further training at an ATO. The extent and scope of the training needed shall be determined by the training organisation, based on the needs of the applicant.

(c) Validity period

(1) The successful completion of the theoretical knowledge examinations will be valid:

(ii) for the issue of a private pilot licence, for a period of 24 months;

(iii) for the issue of a commercial pilot licence or instrument rating (IR), for a period of 36 months;

The periods in paragraph (i) and (ii) shall be counted from the day on which the pilot has successfully completed the theoretical knowledge examination, in accordance with (b)(2).

(2) The completion of the airline transport pilot licence (ATPL) theoretical knowledge examinations will remain valid for the issue of an ATPL for a period of seven (7) years from the last validity date of:

(ii) an IR entered in the licence; or

(iii) in the case of helicopters, a helicopter's type rating entered in that licence.

(d) Equivalent Standards

For an applicant of a licence under AUA-FCL, any successful theoretical knowledge examinations conducted, and valid, under:

- EASA regulation Part FCL;
- UK CAA legislation for the category of licence[†],

shall be recognised as meeting the applicable theoretical knowledge requirements of AUA-FCL.

AMC1 FCL.025 Theoretical knowledge examinations for the issue of licences

TERMINOLOGY

The meaning of the following terms used in FCL.025 should be as follows:

(a) 'Entire set of examinations': an examination in all subjects required by the licence level.

(b) 'Examination': the demonstration of knowledge in one or more examination papers.

(c) 'Examination paper': a set of questions to be answered by a candidate for examination.

(d) 'Attempt': a try to pass a specific paper.

(e) 'Sitting': a period of time established by the Authority within which a candidate can take an examination. This period should not exceed 10 consecutive days. Only one attempt at each examination paper is allowed in one sitting.

FCL.027 Validity of licences and ratings

(a) A licence holder shall not exercise the privileges granted by any licence or rating unless the holder maintains competency and meets the requirements for recent experience established in AUA-FCL and if applicable, AUA OPS 1.

(b) Validity of the licence and revalidation of a rating;

[†] Applicable as of 1 January 2021.

(1) The validity of the licence is determined by the validity of the ratings contained therein and the medical certificate (see AUA-MED) and, with reference to the use of radiotelephony in FCL.055, a valid language proficiency endorsement.

(2) When issuing, revalidating or renewing a rating, the Authority may extend the validity period of the rating until the end of the month in which the validity would otherwise expire, that date remains the expiry date of the rating.

(c) The licence document will be issued for a maximum period of 5 years. Within this period of 5 years the licence will be re-issued by the Authority:

(1) after initial issue or renewal of a rating;

(2) when paragraph XII in the licence is completed and no further spaces remain;

(3) for any administrative reason;

(4) at the discretion of the Authority when a rating is revalidated.

Note. — *Valid ratings will be transferred to the new licence document by the Authority*.

(d) The licence holder shall apply to the Authority for the re-issue of the licence. The application shall include the necessary documentation.

FCL.030 Practical skill test

(a) Before a skill test for the issue of a pilot licence, rating or certificate is taken, the applicant shall have passed the required theoretical knowledge examination, except in the case of applicants undergoing a course of integrated flying training. In any case, the theoretical knowledge instruction shall always have been completed before the skill tests are taken.

(b) Except for the issue of an airline transport pilot licence, the applicant for a skill test shall be recommended for the test by the organisation/person responsible for the training, once the training is completed. The training records shall be made available to the examiner.

(c) Equivalent Standards

For an applicant of an initial licence under AUA-FCL a successful skill test conducted, and valid, under

- EASA regulation Part FCL,
- UK CAA legislation and which was conducted by the Authority approved ATO[†],

shall be recognised as meeting the applicable skill test requirements of AUA-FCL, provided it was conducted at a ATO approved by the DCA.

[†] Applicable as of 1 January 2021.

FCL.035 Crediting of flight time and theoretical knowledge

(a) Crediting of flight time

(1) Unless otherwise specified in this regulation, flight time to be credited for a licence, rating or certificate shall have been flown in the same category of aircraft for which the licence or rating is sought.

(2) Pilot-in command (PIC) or under instruction.

(i) An applicant for a licence, rating or certificate shall be credited in full with all solo, dual instruction or PIC flight time towards the total flight time required for the licence, rating or certificate.

(ii) A graduate of an ATP integrated training course is entitled to be credited with up to 50 hours of student pilot-in-command instrument time towards the PIC time required for the issue of the airline transport pilot licence, commercial pilot licence and a multi-engine type or class rating.

(iii) A graduate of a CPL/IR integrated training course is entitled to be credited with up to 50 hours of the student pilot-in-command instrument time towards the PIC time required for the issue of the commercial pilot licence and a multi-engine type or class rating.

(iv) A student pilot or the holder of a pilot licence shall be entitled to be credited in full with all solo, dual instruction and pilot-in-command flight time towards the total flight time required for the initial issue of a pilot licence or the issue of a higher grade of pilot licence.

(v) The holder of a pilot licence, when acting as co-pilot at a pilot station of an aircraft certificated for operation by a single pilot but required by the Authority to be operated with a co-pilot, shall be entitled to be credited with not more than 50 per cent of the co-pilot flight time towards the total flight time required for a higher grade of pilot licence. The Authority may authorise that flight time be credited in full towards the total flight time required if the aircraft is equipped to be operated by a co-pilot and the aircraft is operated in a multi-crew operation.

(vi) The holder of a pilot licence, when acting as co-pilot at a pilot station of an aircraft certificated to be operated with a co-pilot, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot licence

(vii) The holder of a pilot licence, when acting as pilot-in-command under supervision, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot licence.

(viii) Flight time as co-pilot. Unless otherwise determined in this regulation, the holder of a pilot licence, when acting as co- pilot or PICUS, is entitled to be credited with all of the co-pilot time towards the total flight time required for a higher grade of pilot licence.

(b) Crediting of theoretical knowledge

(1) An applicant having passed the theoretical knowledge examination for an airline transport pilot licence shall be credited with the theoretical knowledge requirements for the private pilot licence, the commercial pilot licence and, except in the case of helicopters, the IR in the same category of aircraft.

(2) An applicant having passed the theoretical knowledge examination for a commercial pilot licence shall be credited with the theoretical knowledge requirement for a private pilot licence in the same category of aircraft.

(3) The holder of an IR or an applicant having passed the instrument theoretical knowledge examination for a category of aircraft shall be fully credited towards the requirements for the theoretical knowledge instruction and examination for an IR in another category of aircraft.

(4) The holder of a pilot licence shall be credited towards the requirements for theoretical knowledge instruction and examination for a licence in another category of aircraft in accordance with Appendix 1 to this regulation. This credit also applies to applicants for a pilot licence who have already successfully completed the theoretical knowledge examinations for the issue of that licence in another category of aircraft, as long as it is within the validity period specified in FCL.025(c).

(c) Credit for military service

Military flight crew members, having served or serving in The Netherlands and applying for licences and ratings specified in AUA-FCL shall apply to the Authority. The knowledge, experience and skill gained in military service may be credited towards the relevant requirements of AUA-FCL licences and ratings at the discretion of the Authority. The privileges of such licences shall be restricted to aircraft registered in Aruba until the applicable requirements set out in Appendix 10 are met.

FCL.040 Exercise of the privileges of licences

(a) The exercise of the privileges granted by a licence shall be dependent upon the validity of the licence and the ratings contained therein, if applicable.

(b) It is prohibited for the holder of a licence to exercise privileges other than those granted by that licence.

(c) Crew members shall not exercise the privileges of their licence unless they hold a current Medical Certificate appropriate to the licence.

(d) A flight crew member assessed as fit to exercise the privileges of a licence, subject to the use of suitable correcting lenses, shall have a spare set of the correcting lenses readily available when exercising those privileges.

FCL.045 Obligation to carry and present documents

(a) A valid licence and a valid medical certificate, if applicable, shall always be carried by the licence holder when exercising the privileges of the licence.

(b) The licence holder shall also carry a personal identification document containing his/her photo.

(c) A pilot or a student pilot shall without undue delay present his/her flight time record for inspection upon request by an authorised representative of a competent Authority.

(d) A student pilot shall carry on all solo cross-country flights evidence of the authorisation required by FCL.105.

FCL.050 Recording of flight time

The pilot shall keep a reliable record of the details of all flights flown in a form and manner established by the Authority.

AMC1 FCL.050 Recording of flight time

GENERAL

(a) The record of the flights flown should contain at least the following information:

(1) personal details: name(s) and address of the pilot;

(2) for each flight:

(i) name(s) of PIC;

(ii) date of flight;

(iii) place and time of departure and arrival;

(iv) type, including make, model and variant, and registration of the aircraft;

(v) indication if the aircraft is SE or ME, if applicable;

(vi) total time of flight;

(vii) accumulated total time of flight.

(3) for each FSTD session, if applicable:

(i) type and qualification number of the training device;

(ii) FSTD instruction;

(iii) date;

(iv) total time of session;

(v) accumulated total time.

(4) details on pilot function, namely PIC, including solo, SPIC and PICUS time, co-pilot, dual, FI or FE;

(5) Operational conditions, namely if the operation takes place at night, or is conducted under instrument flight rules.

(b) Logging of time:

(1) PIC flight time:

(i) the holder of a licence may log as PIC time all of the flight time during which he or she is the PIC;

(ii) the applicant for or the holder of a pilot licence may log as PIC time all solo flight time, flight time as SPIC and flight time under supervision provided that such SPIC time and flight time under supervision are countersigned by the instructor;

(iii) the holder of an instructor certificate may log as PIC all flight time during which he or she acts as an instructor in an aircraft;

(iv) the holder of an examiner's certificate may log as PIC all flight time during which he or she occupies a pilot's seat and acts as an examiner in an aircraft;

(v) a co-pilot acting as PICUS on an aircraft on which more than one pilot is required under the type certification of the aircraft or as required by operational requirements provided that such PICUS time is countersigned by the PIC;

(vi) if the holder of a licence carries out a number of flights upon the same day returning on each occasion to the same place of departure and the interval between successive flights does not exceed 30 minutes, such series of flights may be recorded as a single entry.

(2) co-pilot flight time: the holder of a pilot licence occupying a pilot seat as co-pilot may log all flight time as co-pilot flight time on an aircraft on which more than one pilot is required under the type certification of the aircraft, or the regulations under which the flight is conducted;

(3) cruise relief co-pilot flight time: a cruise relief co-pilot may log all flight time as co-pilot when occupying a pilot's seat;

(4) instruction time: a summary of all time logged by an applicant for a licence or rating as flight instruction, instrument flight instruction, instrument ground time, etc., may be logged if certified by the appropriately rated or authorised instructor from whom it was received;

(5) PICUS flight time: provided that the method of supervision is acceptable to the Authority, a co-pilot may log as PIC flight time flown as PICUS when all the duties and functions of PIC on that flight were carried out in such a way that the intervention of the PIC in the interest of safety was not required.

(c) Format of the record:

(1) details of flights flown under commercial air transport may be recorded in a computerised format maintained by the operator. In this case an operator should make the records of all flights operated by the pilot, including differences and familiarisation training, available upon request to the flight crew member concerned;

(2) for other types of flight, the pilot should record the details of the flights flown in the following logbook format.

PILOT LOGBOOK

Holder’s name(s)

Holder’s licence number

HOLDER'S ADDRESS:	
____________________ ____________________ ____________________	____________________ ____________________ ____________________ [space for address change]
____________________ ____________________ ____________________ [space for address change]	____________________ ____________________ ____________________ [space for address change]
____________________ ____________________ ____________________ [space for address change]	____________________ ____________________ ____________________ [space for address change]

1	2		3		4		5				6		7	8	
DATE (dd/mm/yy)	DEPARTURE		ARRIVAL		AIRCRAFT		SINGLE-PILOT TIME		MULTI-PILOT TIME		TOTAL TIME OF FLIGHT		NAME(S) PIC	LANDINGS	
	PLACE	TIME	PLACE	TIME	MAKE, MODEL, VARIANT	REGISTRATION	SE	ME						DAY	NIGHT
						TOTAL THIS PAGE									
						TOTAL FROM PREVIOUS PAGES									
						TOTAL TIME									

9				10								11				12
OPERATIONAL CONDITION TIME				PILOT FUNCTION TIME								FSTD SESSION				REMARKS AND ENDORSEMENTS
NIGHT		IFR		PIC		CO-PILOT		DUAL		INSTRUCTOR		DATE (dd/mm/yy)	TYPE	TOTAL TIME OF SESSION		
																I certify that the entries in this log are true.
																PILOT'S SIGNATURE

INSTRUCTIONS FOR USE

(a) FCL.050 requires holders of a pilot licence to record details of all flights flown. This logbook enables pilot licence holders to record flying experience in a manner which will facilitate this process while providing a permanent record of the licence holders flying. Pilots who fly regularly aeroplanes and helicopters or other aircraft categories are recommended to maintain separate logbooks for each aircraft category.

(b) Flight crew logbook entries should be made as soon as practicable after any flight undertaken. All entries in the logbook should be made in ink or indelible pencil.

(c) The particulars of every flight in the course of which the holder of a flight crew licence acts as a member of the operating crew of an aircraft are to be recorded in the appropriate columns using one line for each flight, provided that if an aircraft carries out a number of flights upon the same day returning on each occasion to the same place of departure and the interval between successive flights does not exceed 30 minutes, such series of flights may be recorded as a single entry.

(d) Flight time is recorded:

(1) for aeroplanes and powered-lift aircraft, from the moment an aircraft first moves to taking off until the moment it finally comes to rest at the end of the flight;

(2) for helicopters, from the moment a helicopter's rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped;

(e) When an aircraft carries two or more pilots as members of the operating crew, one of them shall, before the flight commences, be designated by the operator as the aircraft PIC, according to operational requirements, who may delegate the conduct of the flight to another suitably qualified pilot. All flying carried out as PIC is entered in the logbook as 'PIC'. A pilot flying as 'PICUS' or 'SPIC' enters flying time as 'PIC' but all such entries are to be certified by the PIC or FI in the 'Remarks' column of the logbook.

(f) Notes on recording of flight time:

(1) column 1: enter the date (dd/mm/yy) on which the flight commences;

(2) column 2 or 3: enter the place of departure and destination either in full or the internationally recognised three or four letter designator. All times should be in UTC;

(3) column 5: indicate whether the operation was SP or MP, and for SP operation whether SE or ME;

Example:

1	2		3		4		5				6		7	8	
DATE (dd/mm/yy)	DEPARTURE		ARRIVAL		AIRCRAFT		SINGLE PILOT TIME		MULTI-PILOT TIME		TOTAL TIME OF FLIGHT		NAME(S) PIC	LANDINGS	
	PLACE	*TIME*	*PLACE*	*TIME*	*MAKE, MODEL, VARIANT*	*REGISTRATION*	*SE*	*ME*						*DAY*	*NIGHT*
08/04/12	LFAC	1025	EGBJ	1240	PA34-250	G-SENE		✓			2	15	SELF	1	
09/04/12	EGBJ	1810	EGBJ	1930	C152	G-NONE	✓				1	20	SELF		2
11/04/12	LGW	1645	LAX	0225	B747-400	G-ABCD			9	40	9	40	NAME(S) PIC		1

(4) column 6: total time of flight may be entered in hours and minutes or decimal notation as desired;

(5) column 7: enter the name(s) of PIC or SELF as appropriate;

(6) column 8: indicate the number of landings as pilot flying by day or night;

(7) column 9: enter flight time undertaken at night or under instrument flight rules if applicable;

(8) column 10: pilot function time:

(i) enter flight time as PIC, SPIC and PICUS as PIC;

(ii) all time recorded as SPIC or PICUS is countersigned by the aircraft PIC/FI in the 'remarks' (column 12);

(iii) instructor time should be recorded as appropriate and also entered as PIC.

(9) column 11: FSTD:

(i) for any FSTD enter the type of aircraft and qualification number of the device. For other flight training devices enter either FNPT I or FNPT II as appropriate;

(ii) total time of session includes all exercises carried out in the device, including pre- and after-flight checks;

(iii) enter the type of exercise performed in the 'remarks' (column 12), for example operator proficiency check, revalidation.

(10) column 12: the 'remarks' column may be used to record details of the flight at the holder's discretion. The following entries, however, should always be made:

(i) instrument flight time undertaken as part of the training for a licence or rating;

(ii) details of all skill tests and proficiency checks;

(iii) signature of PIC if the pilot is recording flight time as SPIC or PICUS;

(iv) signature of instructor if flight is part of an SEP class rating revalidation.

(g) When each page is completed, accumulated flight time or hours should be entered in the appropriate columns and certified by the pilot in the 'remarks' column.

Example:

9				10								11				12
OPERATIONAL CONDITION TIME				PILOT FUNCTION TIME								FSTD SESSION				REMARKS AND ENDORSEMENTS
NIGHT		*IFR*		*PIC*		*CO-PILOT*		*DUAL*		*INSTRUCTOR*		*DATE (dd/mm/yy)*	*TYPE*	*TOTAL TIME OF SESSION*		
		2	15	2	15											
1	20			1	20					1	20					Night rating training
												10/04/12	B747-400 (Q1234)	4	10	Revalidation proficiency check
8	10	9	40	9	40											PIC(US): signature of NAME(S) PIC

FCL.055 Language proficiency

(a) General.

Aeroplane, helicopter and powered-lift pilots required to use the radio telephone shall not exercise the privileges of their licences and ratings unless they have a language proficiency endorsement on their licence in either English or the language used for radio communications involved in the flight. The endorsement shall indicate the language, the proficiency level and the validity date , and it shall be obtained in accordance with a procedure established by a authority. The minimum acceptable proficiency level is the operational level (Level 4) in accordance with Appendix 2 to this Regulation.

(b) The applicant for a language proficiency endorsement shall demonstrate, in accordance with Appendix 2 to this regulation, at least an operational level of language proficiency (Level 4) both in the use of phraseologies and plain language to an assessor certified by a authority or a language-testing body approved by a authority as applicable. To do so, the applicant shall demonstrate the ability to:

(1) communicate effectively in voice-only and in face-to-face situations;

(2) communicate on common and work-related topics with accuracy and clarity;

(3) use appropriate communicative strategies to exchange messages and to recognise and resolve misunderstandings in a general or work-related context;

(4) handle successfully the linguistic challenges presented by a complication or unexpected turn of events which occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and

(5) use a dialect or accent which is intelligible to the aeronautical community.

(c) Except for pilots who have demonstrated language proficiency at an expert level (level 6), in accordance with Appendix 2 to this regulation, the language proficiency endorsement shall be re-evaluated every:

(1) 3 years, if the level demonstrated is operational level (Level 4); or

(2) 6 years, if the level demonstrated is extended level (Level 5).

(d) Specific requirements for holders of an instrument rating (IR). Without prejudice to the paragraphs above, holders of an IR shall have demonstrated the ability to use the English language at a level that allows them to:

(1) understand all the information relevant to the accomplishment of all phases of a flight, including flight preparation;

(2) use radio telephony in all phases of flight, including emergency situations;

(3) communicate with other crew members during all phases of flight, including flight preparation.

(e) The demonstration of language proficiency and of the use of English for IR holders shall be done through a method of assessment established by the Authority.

AMC1 FCL.055 Language proficiency

GENERAL

The language proficiency assessment should be designed to reflect a range of tasks undertaken by pilots but with specific focus on language rather than operational procedures.

(a) The assessment should determine the applicant's ability to:

(1) communicate effectively using standard R/T phraseology;

(2) deliver and understand messages in plain language in both usual and unusual situations that necessitate departure from standard R/T phraseology.

ASSESSMENT

(a) The assessment may be subdivided into three elements, as follows:

(1) listening: assessment of comprehension;

(2) speaking: assessment of pronunciation, fluency, structure and vocabulary;

(3) interaction.

(b) The three elements mentioned above may be combined and they can be covered by using a wide variety of means or technologies.

(c) Where appropriate, some or all of these elements may be achieved through the use of the R/T testing arrangements.

(d) When the elements of the testing are assessed separately, the final assessment should be consolidated in the language proficiency endorsement issued by the Authority.

(e) The assessment may be conducted during one of the several existing checking or training activities, such as licence issue or rating issue and revalidation, line training, operator line checks or proficiency checks.

(f) The Authority may use its own resources in developing or conducting the language proficiency assessment, or may delegate this task to language assessment bodies.

(g) The Authority should establish an appeal procedure for applicants.

(h) The holder of a licence should receive a statement containing the level and validity of the language endorsements.

(i) Where the assessment method for the English language established by the Authority is equivalent to that established for the assessment of use of the English language in accordance with AMC2 FCL.055, the same assessment may be used for both purposes.

BASIC ASSESSMENT REQUIREMENTS

(a) The aim of the assessment is to determine the ability of an applicant for a pilot licence or a licence holder to speak and understand the language used for R/T communications.

(1) The assessment should determine the ability of the applicant to use both:

(i) standard R/T phraseology;

(ii) plain language, in situations when standardised phraseology cannot serve an intended transmission.

(2) The assessment should include:

(i) voice-only or face-to-face situations;

(ii) common, concrete and work-related topics for pilots.

(3) The applicants should demonstrate their linguistic ability in dealing with an unexpected turn of events, and in solving apparent misunderstandings.

(4) The assessment should determine the applicant's speaking and listening abilities. Indirect assessments, of grammatical knowledge, reading and writing, are not appropriate.

(5) The assessment should determine the language skills of the applicant in the following areas:

(i) pronunciation:

(A) the extent to which the pronunciation, stress, rhythm and intonation are influenced by the applicant's first language or national variations;

(B) how much they interfere with ease of understanding.

(ii) structure:

(A) the ability of the applicant to use both basic and complex grammatical structures;

(B) the extent to which the applicant's errors interfere with the meaning.

(iii) vocabulary:

(A) the range and accuracy of the vocabulary used;

(B) the ability of the applicant to paraphrase successfully when lacking vocabulary.

(iv) fluency:

(A) tempo;

(B) hesitancy;

(C) rehearsed versus spontaneous speech;

(D) use of discourse markers and connectors.

(v) comprehension:

(A) on common, concrete and work-related topics;

(B) when confronted with a linguistic or situational complication or an unexpected turn of events.

Note. *— The accent or variety of accents used in the test material should be sufficiently intelligible for an international community of users.*

(vi) interactions:

(A) quality of response (immediate, appropriate, and informative);

(B) the ability to initiate and maintain exchanges:

(a) on common, concrete and work-related topics;

(b) when dealing with an unexpected turn of events.

(C) the ability to deal with apparent misunderstandings by checking, confirming or clarifying.

Note. *— the assessment of the language skills in the areas mentioned above is conducted using the rating scale in AMC2 FCL.055.*

(6) When the assessment is not conducted in a face-to-face situation, it should use appropriate technologies for the assessment of the applicant's abilities in listening and speaking, and for enabling interactions (for example: simulated pilot or controller communication).

ASSESSORS

(a) It is essential that the persons responsible for language proficiency assessment ('assessors') are suitably trained and qualified. They should be either aviation specialists (for example current or former flight crew members or air traffic controllers), or language specialists with additional aviation-related training. An alternative approach would be to form an assessment team consisting of an operational expert and a language expert.

(1) The assessors should be trained on the specific requirements of the assessment.

(2) The assessors should not test applicants to whom they have given language training.

CRITERIA FOR THE ACCEPTABILITY OF LANGUAGE ASSESSMENT BODIES

(a) To ensure an impartial assessment process, the language assessment should be independent of the language training.

(1) To be accepted, the language assessment bodies should demonstrate:

(i) appropriate management and staffing;

(ii) quality system established and maintained to ensure compliance with, and adequacy of, assessment requirements, standards and procedures.

(2) The quality system established by a language assessment body should address the following:

(i) management;

(ii) policy and strategy;

(iii) processes;

(iv) the relevant provisions of ICAO or AUA-FCL, standards and assessment procedures;

(v) organisational structure;

(vi) responsibility for the development, establishment and management of the quality system;

(vii) documentation;

(viii) quality assurance programme;

(ix) human resources and training (initial and recurrent);

(x) assessment requirements;

(xi) customer satisfaction.

(3) The assessment documentation and records should be kept for a period of time determined by the Authority and made available to this Authority, on request.

(4) The assessment documentation should include at least the following:

(i) assessment objectives;

(ii) assessment layout, time scale, technologies used, assessment samples, voice samples;

(iii) assessment criteria and standards (at least for the levels 4, 5 and 6 of the rating scale mentioned in AMC2 FCL.055);

(iv) documentation demonstrating the assessment validity, relevance and reliability;

(v) assessment procedures and responsibilities:

(A) preparation of individual assessment;

(B) administration: location(s), identity check and invigilation, assessment discipline, confidentiality or security;

(C) reporting and documentation provided to the Authority or to the applicant, including sample certificate;

(D) retention of documents and records.

AMC2 FCL.055 Language proficiency

RATING SCALE

The following table describes the different levels of language proficiency:

LEVEL	PRONUNCIATION Assumes a dialect or accent intelligible to the aeronautical community	STRUCTURE Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert (Level 6)	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, for example to emphasise a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.

Extended (Level 5)	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker or listener relationship effectively.

Operational (Level 4)	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary particularly in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers and connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.

Pre-Operational (Level 3)	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding.	Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate effectively on common, concrete, and work-related topics but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication. Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fall to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events.
Elementary (Level 2)	Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually interfere with ease of understanding.	Shows only limited control of few simple memorised grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorised phrases.	Can produce very short, isolated, memorised utterances with frequent pausing and a distracting use of fillers to search for expressions and articulate less familiar words.	Comprehension is limited to isolated, memorised phrases when they are carefully and slowly articulated.	Response time is slow, and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-Elementary (level 1)	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.

Notes.— *Operational Level (Level 4) is the minimum required proficiency level for R/T communication.*

Levels 1 through 3 describe pre-elementary, elementary and pre-operational levels of language proficiency respectively, all of which describe a level below the language proficiency requirement.

Levels 5 and 6 describe extended and expert levels at levels of proficiency more advanced than the minimum required standard.

AMC3 FCL.055 Language proficiency

SPECIFIC REQUIREMENTS FOR HOLDERS OF AN IR USE OF ENGLISH LANGUAGE

(a) The requirement of FCL.055(d) includes the ability to use the English language for the following purposes:

(1) flight: R/T relevant to all phases of flight, including emergency situations.

(2) ground: all information relevant to the accomplishment of a flight:

(i) be able to read and demonstrate an understanding of technical manuals written in English, for example an operations manual, a helicopter flight manual, etc.;

(ii) pre-flight planning, weather information collection, NOTAMs, ATC flight plan, etc.;

(iii) use of all aeronautical en-route, departure and approach charts and associated documents written in English.

(3) communication: be able to communicate with other crew members in English during all phases of flight, including flight preparation.

(b) Alternatively, the items in (a) above may be demonstrated:

(1) by having passed a specific examination given by the Authority after having undertaken a course of training enabling the applicant to meet all the objectives listed in (a) above; or

(2) the item in (a)(1) above is considered to be fulfilled, if the applicant has passed an IR, MPL or ATPL skill test and proficiency check during which the two-way R/T communication is performed in English;

(3) the item in (a)(2) above is considered to be fulfilled if the applicant has graduated from an IR, MPL or ATP course given in English or if he or she has passed the theoretical IR or ATPL examination in English;

(4) the item in (a)(3) above is considered to be fulfilled, if the applicant for or the holder of an IR has graduated from an MCC course given in English and is holding a certificate of satisfactory completion of that course or if the applicant has passed a MP skill test and proficiency check for the issue of a class or type rating during which the two-way R/T communication and the communication with other crew members are performed in English.

(c) Where the examination methods referred to above are equivalent to those established for the language proficiency requirements in accordance with AMC1 FCL.055, the examination may be used to issue a language proficiency endorsement.

FCL.060 Recent pilot experience

The privileges granted by a licence, or by related ratings, shall not be exercised unless the holder maintains competency and meets the following recent experience requirements;

(a) Aeroplanes, helicopters, powered-lift. A pilot shall not operate an aircraft in commercial air transport or carrying passengers:

(1) as PIC or co-pilot unless he/she has carried out, in the preceding 90 days, at least 3 take-offs, approaches and landings in an aircraft of the same type or class or an FFS representing that type or class. The 3 take-offs and landings shall be performed in either multi-pilot or single-pilot operations, depending on the privileges held by the pilot; and

(2) as PIC at night unless he/she:

(i) has carried out in the preceding 90 days at least 1 take-off, approach and landing at night as a pilot flying in an aircraft of the same type or class or an FFS representing that type or class; or

(ii) holds an IR;

(3) as cruise relief co-pilot unless he/she:

(i) has complied with the requirements in (a)(1); or

(ii) has carried out in the preceding 90 days at least 3 sectors as a cruise relief pilot on the same type or class of aircraft; or

(iii) has carried out recency and refresher flying skill training in an FFS at intervals not exceeding 90 days. This refresher training may be combined with the operator's refresher training prescribed by the Authority.

(4) When a pilot has the privilege to operate more than one type of aeroplane with similar handling and operation characteristics, the 3 take-offs, approaches and landings required in (1) may be performed as defined in the operational suitability data established in accordance with EASA Part-21.

(5) When a pilot has the privilege to operate more than one type of non-complex helicopter with similar handling and operation characteristics, as defined by the Authority, the 3 take-offs, approaches and landings required in (1) may be performed in just one of the types, provided that the pilot has completed at least 2 hours of flight in each of the types of helicopter, during the preceding 6 months.

(b) Specific requirements for commercial air transport:

(1) In the case of commercial air transport, the 90-day period prescribed in subparagraphs (a)(1) and (2) above may be extended up to a maximum of 120 days, as long as the pilot undertakes line flying under the supervision of a type rating instructor or examiner.

(2) When the pilot does not comply with the requirement in point (1), he/she shall complete a training flight in the aircraft or an FFS of the aircraft type to be used, which shall include at least the requirements described in points (a)(1) and (2) before he/she can exercise his/her privileges.

AMC1 FCL.060(b) Recent experience

When a pilot needs to carry out one or more flights with an instructor or an examiner to comply with the requirement of FCL.060(b)(1) before the pilot can carry passengers, the instructor or examiner on board those flights will not be considered as a passenger.

GM1 FCL.060(b) Recent experience

AEROPLANES, HELICOPTERS AND POWERED-LIFT

If a pilot or a PIC is operating under the supervision of an instructor to comply with the required three take-offs, approaches and landings, no passengers may be on board.

AMC2 FCL.060(b) Recent experience

NON-COMPLEX HELICOPTERS

Grouping of non-complex helicopters with similar handling and operational characteristics:

(a) Group 1: Bell 206/206L, Bell 407;

(b) Group 2: Hughes 369, MD 500N, MD 520N, MD 600;

(c) Group 3: SA 341/342, EC 120;

(d) Group 4: SA 313/318, SA 315/316/319, AS 350, EC 130;

(e) Group 5: all types listed in AMC1 FCL.740.H (a)(3) and R 22 and R 44.

FCL.065 Curtailment of privileges of licence holders aged 60 years or more in commercial air transport

(a) Age 60-64. Aeroplanes and helicopters. The holder of a pilot licence who has attained the age of 60 years shall not act as a pilot of an aircraft engaged in commercial air transport except as a member of a multi-pilot crew.

(b) Age 65. The holder of a pilot licence who has attained the age of 65 years shall not act as a pilot of an aircraft engaged in commercial air transport.

FCL.070 Revocation, suspension and limitation of licences, ratings and certificates

(a) Licences, ratings and certificates issued in accordance with this regulation may be limited, suspended or revoked by the Authority when the licence holder does not comply with the requirements of this regulations, AUA-MED where applicable, or the applicable operational requirements, in accordance with the conditions and procedures laid down by the Authority.

(b) When the licence holder has his/her licence suspended or revoked, he/she shall immediately return the licence and certificates to the Authority.

FCL.073 Conversion of Existing National Licences and Ratings

A licence issued with ratings approved or certified by the competent authority of

- EASA Member State;
- UK CAA[†];
- FAA; or
- Canada,

may be accepted to be converted for the issuance of an Aruban Licence in accordance with Appendix 10.

FCL.075 Validation of a licence

(a) A person who holds a current and valid foreign licence issued by a contracting State to the Chicago Convention in compliance with the requirements of Annex 1 to the Chicago Convention and the requirements of appendix 13 may apply and be issued an Aruban Validation by the Authority for the use on aircraft registered in Aruba.

(b) The applicant for the validation certificate shall present to the Authority the foreign licence and record of evidence of required experience and currency for the issue or renewal of the validation.

(c) An Aruban Validation as stated in point (a), can only be exercised, when the holder has the current and valid foreign licence, upon which the issuance of the validation authorization was based, and the valid Aruban Validation Authorisation in its possession.

(d) The Authority may limit the validation authorisation to specific privileges. In this case , the authorisation shall specify the privileges of the licence which are to be accepted as its equivalent.

(e) The holders of a licence accepted by the Authority shall exercise their privileges in accordance with the requirements of the State of licence issue and any additional requirements specified by the Authority.

(f) The holders of a flight crew licence validated by the Authority shall hold a medical certificate issued in accordance with the requirements of the State of licence issue.

(g) A person may hold a maximum of two (2) Aruban validations at any time per category of aircraft issued in accordance with this regulation.

(h) Validity period

(i) The validation of licence shall have validity period which does not exceed one year and it shall not extend beyond the period of validity of the licence.

[†] Applicable as of 1 January 2021.

(ii) The validation shall not be renewed beyond the period established in point (i) for the use on aircraft operating for Aruban AOC holders. Exemptions will be possible for use on Aruban AOC holders Category F.

(iii) The period of Validations of a licence for use on aircraft registered in Aruba not operating for Aruban AOC holders may be issued for two consecutive “one year periods”, provided that the basic licence remains valid. This two consecutive one year periods may be extended if the applicant complies with the established conditions for validations and provided that the license remains valid..

(i) If a request for renewal of the validation is received within the final 60 days of the expiry date of the previous validation, the validity of the new validation shall extend from the new date of issue until one year from the expiry date of that previous validation.

(j) The authorisation ceases to be valid if the licence upon which it was issued is revoked or suspended.

(k) When an authorisation is issued for use in commercial air transport operations, the Authority shall confirm the validity of the other Contracting State’s licence before issuing the initial authorisation.

Note. *—See FCL.076 for validation of pilot license for specific tasks of finite duration.*

FCL.076 Validation of pilot licences for specific tasks of finite duration

(a) A pilot licence issued in accordance with ICAO Annex 1, including an instructor rating or examiner authorisation issued by another ICAO member State may be validated or otherwise authorised subject to conditions, for a maximum of 3 months, which may be renewable, in order to permit flights to demonstrate, operate, ferry or test an Aruban registered aircraft. To be eligible for validation of such a licence, the holder shall:

(1) Possess an appropriate licence, medical certificate, type ratings, and qualifications, including instructor or examiner qualifications if applicable, valid in the other State for the duties proposed, and

(2) Be employed by an aeroplane manufacturer, ATO or organisation performing training, and

(3) Be limited to performing flight instruction and testing for initial issue of type ratings, the supervision of initial line flying by the operators’ pilots, delivery or ferry flights, initial line flying, flight demonstrations or test flights.

(b) Whenever conducting or supervising line flying, the pilot shall also be required to meet the relevant requirements of AUA-OPS as determined by the Authority.

FCL.077 Automatic Rendering a Licence Valid

(a) Notwithstanding the provisions in FCL.075, the Authority may automatically render valid another State’s licence, provided that the States shall have:

(1) adopted common licensing regulations that are compliant with ICAO Annex 1; and

(2) entered into a formal agreement recognising the automatic validation process; and

(3) established a surveillance system to ensure the continuing implementation of the common licensing regulations; and

(4) registered the agreement with ICAO pursuant to Article 83 of the Convention on International Civil Aviation.

(b) An endorsement shall appear on licences rendered valid under the process of (a) above indicating that the licence is automatically validated under the agreement described in (a)(2) and referencing the ICAO registration number of the agreement. The endorsement shall further include a list of all States that are party to the agreement. Paragraph (c) provides a transition period for States that meet the requirements above and have issued licences prior to the applicability of this regulation.

(c) Until 31 December 2022, States that meet the requirements in (a) above and have issued licences prior to the publication of AUA-FCL may use other effective means, carried on board the aircraft or accessible, to indicate that the licences issued by the State are rendered valid in accordance with the agreement in paragraph (a)(2).

FCL.080 Use of a flight simulation training device

The use of a flight simulation training device for acquiring the experience or performing any manoeuvre required during the demonstration of skill for the issue of a licence or rating shall be approved by the Authority, which shall ensure that the flight simulation training device used is appropriate to the task.

Note. — *Requirements for the approval of flight simulation training devices are specified in "Regeling Synthetische trainingsinstrumenten".*

FCL.085 Circumstances in which an instrument rating is required

The holder of a pilot licence shall not act either as pilot-in-command or as co-pilot of an aircraft under instrument flight rules (IFR) unless such holder has an instrument rating appropriate to the aircraft category.

FCL.090 Circumstances in which authorisation to conduct instruction is required

(a) The holder of a pilot licence shall not carry out flight instruction required for the issue of a pilot licence or rating, unless such holder has;

(1) a flight instructor rating on the holder's licence; or

(2) the authority to act as an agent of an approved organisation authorised by the Authority to carry out flight instruction; or

(3) a specific authorisation granted by the Authority or a Contracting State which issued the licence.

(b) a person shall not carry out instruction on a flight simulation training device required for the issue of a pilot licence or rating unless such person holds or has held an appropriate licence or has appropriate flight training and flight experience and has received proper authorisation from either the Contracting State where the training device is located or the Authority.

FCL.093 Approved training and approved training organisation

(a) Approved training shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training.

(b) The approval of a training organisation shall be dependent upon the applicant demonstrating compliance with the requirements of Subpart M.

(c) Approved training for the issuance of a licence or rating for flight crew shall be conducted within an approved training organisation.

FCL.098 Licence specifications

(a) Personnel licences issued by the Authority shall ensure that other States are able to easily determine the licence privileges and validity of ratings and conform to the following specifications:

I) Name of State (in bold type);

II) Title of licence (in very bold type);

III) Serial number of the licence in Arabic numerals;

IV) Name of holder in full (in Roman alphabet);

IVa) Date of birth;

V) Address of holder if desired by the Authority;

VI) Nationality of holder;

VII) Signature of holder;

VIII) Authority and, where necessary, conditions under which the licence is issued;

IX) Certification concerning validity and authorisation for holder to exercise privileges appropriate to licence;

X) Signature of officer issuing the licence and the date of such issue;

XI) Seal or stamp of Authority;

XII) Ratings, e.g. category, class, type of aircraft, etc.

XIII) Remarks, i.e. special endorsements relating to limitations and endorsements for privileges, including an endorsement of language proficiency, and other information required in pursuance to Article 39 of the Chicago Convention;

XIV) Any other details desired by the Authority.

(b) Personnel licensing shall be of first quality paper or other suitable material, including plastic cards, and the items mentioned in (a) above shown clearly thereon.

(c) Licences shall be issued in the English language.

(d) Item headings on the licence shall be uniformly numbered in roman numerals as indicated in (a) above, so that on any licence the number will, under any arrangement, refer to the same item heading.

SUBPART B – STUDENT PILOT (SPL)

SECTION 1 – COMMON REQUIREMENTS

FCL.100 Minimum age

Before his/her first solo flight, a student pilot shall be at least 16 years of age.

FCL.104 Conditions

(a) A student pilot shall not fly solo unless he holds an SPL and is supervised by an authorised flight instructor.

(b) An applicant for an SPL shall:

(1) have received an authorisation in writing by the supervising flight instructor;

(2) hold a current Class 2 Medical Assessment as required by AUA- MED;

(3) have passed the Radio Telephony exam;

(4) also provide a certified written authorisation from his legal guardian if the applicant is less than 18.

(c) A student pilot shall meet the requirements prescribed in this regulation so they do not constitute a hazard to air navigation.

(d) A student pilot shall not fly solo in an aircraft on an international flight unless by special or general arrangement between the Contracting States concerned.

(e) A student pilot shall not carry any passengers on solo flights;

FCL.105 Training and knowledge requirements

(a) Prior to conducting a solo flight, a student pilot shall;

(1) have received and logged flight training for the manoeuvres and procedures applicable to the aircraft category, including flight training in those manoeuvres and procedures at night.

(2) have demonstrated satisfactory proficiency and safety, as judged by an authorised instructor, on the manoeuvres and procedures for the appropriate category and class, if applicable, of aircraft;

(b) The applicant for a student pilot authorisation shall receive and log ground training from an authorised instructor on the following subjects:

(c) Applicable sections of this Subpart for the category of aircraft to be flown;

(d) Airspace rules and procedures for the aerodrome where the student will perform solo flight; and

(e) Flight characteristics and operation limitations for the make and model of aircraft to be flown.

FCL.106 Restriction, validity

(a) An SPL will be valid for a period not exceeding 24 months from the date the candidate has been certified in compliance with FCL.104 and FCL.105;

(b) An SPL may be prolonged for no more than 24 months provided the student holds a current medical assessment;

(c) An SPL may be revoked at any time by the Authority if the holder has constituted a hazard to air navigation.

SECTION 2 – SPECIFIC SPL REQUIREMENTS FOR AEROPLANE

FCL.107(A) Training Requirements

(a) A student pilot who is receiving training for solo flight in an aeroplane shall receive and log flight training for the following manoeuvres and procedures:

(1) Proper flight preparation procedures, including pre-flight planning and preparation, powerplant operation, and aircraft systems;

(2) Taxiing, or surface operations, including run ups;

(3) Take-offs and landings, including normal and crosswind;

(4) Straight and level flight and turns in both directions;

(5) Climbs and climbing turns;

(6) Aerodrome traffic patterns, including entry and departure procedures;

(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;

(8) Descents, with and without turns, using high and low drag configurations;

(9) Flight at various airspeeds from cruise to slow flight;

(10) Stall entries from various flight attitudes and power combinations with recovery initiated at the first indication of a stall, and recovery from a full stall;

(11) Emergency procedures and equipment malfunctions;

(12) Ground reference manoeuvres;

(13) Approaches to a landing area with simulated engine malfunctions;

(14) Slips to a landing (SE only); and

(15) Go-arounds.

SECTION 3 – Specific SPL requirements for helicopters

FCL.107(H) Training Requirements for helicopters

(a) A student pilot who is receiving training for solo flight in a helicopter shall receive and log flight training for the following manoeuvres and procedures:

(1) Proper flight preparation procedures, including pre-flight planning and preparation, powerplant operation, and aircraft systems;

(2) Taxiing, or surface operations, including run ups;

(3) Take-offs and landings, including normal and crosswind;

(4) Straight and level flight and turns in both directions;

(5) Climbs and climbing turns;

(6) Aerodrome traffic patterns, including entry and departure procedures;

(7) Collision avoidance, windshear avoidance, and wake turbulence avoidance;

(8) Descents, with and without turns, using high and low drag configurations;

(9) Flight at various airspeeds;

(10) Emergency procedures and equipment malfunctions;

(11) Ground reference manoeuvres;

(12) Approaches to a landing area

(13) Hovering and hovering turns

(14) Go-arounds

(15) Simulated emergency procedures, including autorotational descents with a power recovery and power recovery to a hover;

(16) Rapid decelerations, and

(17) Simulated one-engine-inoperative approaches and landings (ME only).

SUBPART C – PRIVATE PILOT LICENCE (PPL)

SECTION 1 – COMMON REQUIREMENTS

FCL.200 Minimum age

An applicant for a PPL shall be at least 17 years of age.

FCL.205 Conditions

Applicants for the issue of a PPL shall have fulfilled the requirements for the class or type rating for the aircraft used in the skill test, as established in Subpart H.

FCL.210 Training course

Applicants for a PPL shall complete a training course at an ATO.

The course shall include theoretical knowledge and flight instruction appropriate to the privileges given.

AMC1 FCL.210; FCL.215 Syllabus

SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE PPL(A) AND PPL(H)

The following tables contain the syllabi for the courses of theoretical knowledge, as well as for the theoretical knowledge examinations for the PPL(A) and PPL(H). The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated to the licence and the activity.

An approved course shall comprise at least 100 hours of theoretical knowledge instruction. This theoretical knowledge instruction provided by the ATO should include a certain element of formal classroom work but may include also such facilities as interactive video, slide or tape presentation, computer-based training and other media distance learning courses.

The training organisation responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for the examination.

The applicable items for each licence are marked with ‘x’. An ‘x’ on the main title of a subject means that all the sub-divisions are applicable.

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
1.	**AIR LAW AND ATC PROCEDURES**				
	International law: conventions, agreements and organisations				
	The Convention on international civil aviation (Chicago) Doc. 7300/6				
	Part I Air Navigation: relevant parts of the following chapters: ▪ general principles and application of the convention; ▪ flight over territory of Contracting States; ▪ nationality of aircraft; ▪ measures to facilitate air navigation; ▪ conditions to be fulfilled on aircraft; ▪ international standards and recommended practices; ▪ validity of endorsed certificates and licences; ▪ notification of differences.				
	Part II The International Civil Aviation Organisation (ICAO): ▪ objectives and composition	x		x	
	Annex 8: Airworthiness of aircraft				
	Foreword and definitions	x		x	
	Certificate of airworthiness	x		x	
	Annex 7: Aircraft nationality and registration marks				
	Foreword and definitions	x		x	
	Common- and registration marks	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Certificate of registration and aircraft nationality	x		x	
	Annex 1: Personnel licensing				
	Definitions	x		x	
	Relevant parts of Annex 1 connected to AUA-FCL and AUA-MED	x		x	
	Annex 2: Rules of the air				
	Essential definitions, applicability of the rules of the air, general rules (except water operations), visual flight rules, signals and interception of civil aircraft	x		x	
	Procedures for air navigation: aircraft operations doc. 8168-ops/611, volume 1				
	Altimeter setting procedures (including IACO doc. 7030 – regional supplementary procedures)				
	Basic requirements (except tables), procedures applicable to operators and pilots (except tables)	x		x	
	Secondary surveillance radar transponder operating procedures (including ICAO Doc. 7030 – regional supplementary procedures)				
	Operation of transponders	x		x	
	Phraseology	x		x	
	Annex 11: Doc. 4444 air traffic management				
	Definitions	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	General provisions for air traffic services	x		x	
	Visual separation in the vicinity of aerodromes	x		x	
	Procedures for aerodrome control services	x		x	
	Radar services	x		x	
	Flight information service and alerting service	x		x	
	Phraseologies	x		x	
	Procedures related to emergencies, communication failure and contingencies	x		x	
	Annex 15: Aeronautical information service				
	Introduction, essential definitions	x		x	
	AIP, NOTAM, AIRAC and AIC	x		x	
	Annex 14, volume 1 and 2: Aerodromes				
	Definitions	x		x	
	Aerodrome data: conditions of the movement area and related facilities	x		x	
	Visual aids for navigation: (a) indicators and signalling devices; (b) markings; (c) lights; (d) signs; (e) markers.	x		x	
	Visual aids for denoting obstacles: (a) marking of objects; (b) lighting of objects.	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Visual aids for denoting restricted use of areas	x		x	
	Emergency and other services: (a) rescue and fire fighting; (b) apron management service.	x		x	
	Annex 12: Search and rescue				
	Essential definitions	x		x	
	Operating procedures: (a) procedures for PIC at the scene of an accident; (b) procedures for PIC intercepting a distress transmission; (c) search and rescue signals.	x		x	
	Search and rescue signals: (a) signals with surface craft; (b) ground or air visual signal code; (c) air or ground signals.	x		x	
	Annex 17: Security				
	General: aims and objectives	x		x	
	Annex 13: Aircraft accident investigation				
	Essential definitions Applicability	x x		x x	
	National law				
	National law and differences to relevant ICAO Annexes and relevant regulations.	x		x	
2.	HUMAN PERFORMANCE				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Human factors: basic concepts				
	Human factors in aviation				
	Becoming a competent pilot	x		x	
	Basic aviation physiology and health maintenance				
	The atmosphere: (a) composition; (b) gas laws.	x		x	
	Respiratory and circulatory systems: (a) oxygen requirement of tissues; (b) functional anatomy; (c) main forms of hypoxia (hypoxic and anaemic): (1) sources, effects and counter-measures of carbon monoxide; (2) counter measures and hypoxia; (3) symptoms of hypoxia. (d) hyperventilation; (e) the effects of accelerations on the circulatory system; (f) hypertension and coronary heart disease.	x		x	
	Man and environment				
	Central, peripheral and autonomic nervous systems	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Vision: (a) functional anatomy; (b) visual field, foveal and peripheral vision; (c) binocular and monocular vision; (d) monocular vision cues; (e) night vision; (f) visual scanning and detection techniques and importance of 'look-out'; (g) defective vision.	x		x	
	Hearing: (a) descriptive and functional anatomy; (b) flight related hazards to hearing; (c) hearing loss.	x		x	
	Equilibrium: (a) functional anatomy; (b) motion and acceleration; (c) motion sickness.	x		x	
	Integration of sensory inputs: (a) spatial disorientation: forms, recognition and avoidance; (b) illusions: forms, recognition and avoidance: (1) physical origin; (2) physiological origin; (3) psychological origin. (c) approach and landing problems.	x		x	
	Health and hygiene				
	Personal hygiene: personal fitness	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Body rhythm and sleep: (a) rhythm disturbances; (b) symptoms, effects and management.	x		x	
	Problem areas for pilots: (a) common minor ailments including cold, influenza and gastro-intestinal upset; (b) entrapped gases and barotrauma, (scuba diving); (c) obesity; (d) food hygiene; (e) infectious diseases; (f) nutrition; (g) various toxic gases and materials.	x		x	
	Intoxication: (a) prescribed medication; (b) tobacco; (c) alcohol and drugs; (d) caffeine; (e) self-medication.	x		x	
	Basic aviation psychology				
	Human information processing				
	Attention and vigilance: (a) selectivity of attention; (b) divided attention.	x		x	
	Perception: (a) perceptual illusions; (b) subjectivity of perception; (c) processes of perception.	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Memory: (a) sensory memory; (b) working or short term memory; (c) long term memory to include motor memory (skills).	x		x	
	Human error and reliability				
	Reliability of human behaviour	x		x	
	Error generation: social environment (group, organisation)	x		x	
	Decision making				
	Decision-making concepts: (a) structure (phases); (b) limits; (c) risk assessment; (d) practical application.	x		x	
	Avoiding and managing errors: cockpit management				
	Safety awareness: (a) risk area awareness; (b) situational awareness.	x		x	
	Communication: verbal and non-verbal communication	x		x	
	Human behaviour				
	Personality and attitudes: (a) development; (b) environmental influences.	x		x	
	Identification of hazardous attitudes (error proneness)	x		x	
	Human overload and underload				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Arousal	x		x	
	Stress: (a) definition(s); (b) anxiety and stress; (c) effects of stress.	x		x	
	Fatigue and stress management: (a) types, causes and symptoms of fatigue; (b) effects of fatigue; (c) coping strategies; (d) management techniques; (e) health and fitness programmes;	x		x	
3.	METEOROLOGY				
	The atmosphere				
	Composition, extent and vertical division				
	Structure of the atmosphere	x		x	
	Troposphere	x		x	
	Air temperature				
	Definition and units	x		x	
	Vertical distribution of temperature	x		x	
	Transfer of heat	x		x	
	Lapse rates, stability and instability	x		x	
	Development of inversions and types of inversions	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Temperature near the earth's surface, surface effects, diurnal and seasonal variation, effect of clouds and effect of wind	x		x	
	Atmospheric pressure				
	Barometric pressure and isobars	x		x	
	Pressure variation with height	x		x	
	Reduction of pressure to mean sea level	x		x	
	Relationship between surface pressure centres and pressure centres aloft	x		x	
	Air density				
	Relationship between pressure, temperature and density	x		x	
	ISA				
	ICAO standard atmosphere	x		x	
	Altimetry				
	Terminology and definitions Altimeter and altimeter settings	x		x	
		x		x	
	Calculations	x		x	
	Effect of accelerated airflow due to topography	x		x	
	Wind				
	Definition and measurement of wind				
	Definition and measurement	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Primary cause of wind				
	Primary cause of wind, pressure gradient, coriolis force and gradient wind	x		x	
	Variation of wind in the friction layer	x		x	
	Effects of convergence and divergence	x		x	
4.	COMMUNICATIONS				
	VFR COMMUNICATIONS				
	Definitions				
	Meanings and significance of associated terms	x		x	
	ATS abbreviations	x		x	
	Q-code groups commonly used in RTF air-ground communications	x		x	
	Categories of messages	x		x	
	General operating procedures				
	Transmission of letters	x		x	
	Transmission of numbers (including level information)	x		x	
	Transmission of time	x		x	
	Transmission technique	x		x	
	Standard words and phrases (relevant RTF phraseology included)	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	R/T call signs for aeronautical stations including use of abbreviated call signs	x		x	
	R/T call signs for aircraft including use of abbreviated call signs	x		x	
	Transfer of communication	x		x	
	Test procedures including readability scale	x		x	
	Read back and acknowledgement requirements	x		x	
	Relevant weather information terms **(VFR)**				
	Aerodrome weather	x		x	
	Weather broadcast	x		x	
	Action required to be taken in case of communication failure	x		x	
	Distress and urgency procedures				
	Distress (definition, frequencies, watch of distress frequencies, distress signal and distress message)	x		x	
	Urgency (definition, frequencies, urgency signal and urgency message)	x		x	
	General principles of VHF propagation and allocation of frequencies	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
5.	PRINCIPLES OF FLIGHT				
5.1	PRINCIPLES OF FLIGHT: AEROPLANE				
	Subsonic aerodynamics				
	Basics concepts, laws and definitions				
	Laws and definitions:	x	x		
	(a) conversion of units; (b) Newton´s laws; (c) Bernoulli's equation and venture; (d) static pressure, dynamic pressure and total pressure; (e) density; (f) IAS and TAS.				
	Basics about airflow: (a) streamline; (b) two-dimensional airflow; (c) three-dimensional airflow.	x	x		
	Aerodynamic forces on surfaces: (a) resulting airforce; (b) lift; (c) drag; (d) angle of attack.	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Shape of an aerofoil section: (a) thickness to chord ratio; (b) chord line; (c) camber line; (d) camber; (e) angle of attack.	x	x		
	The wing shape: (a) aspect ratio; (b) root chord; (c) tip chord; (d) tapered wings; (e) wing planform.	x	x		
	The two-dimensional airflow about an aerofoil				
	Streamline pattern	x	x		
	Stagnation point	x	x		
	Pressure distribution	x	x		
	Centre of pressure	x	x		
	Influence of angle of attack	x	x		
	Flow separation at high angles of attack	x	x		
	The lift – α graph	x	x		
	The coefficients				
	The lift coefficient C_l: the lift formula	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	The drag coefficient C_d: the drag formula	x	x		
	The three-dimensional airflow round a wing and a fuselage				
	Streamline pattern: (a) span-wise flow and causes; (b) tip vortices and angle of attack; (c) upwash and downwash due to tip vortices; (d) wake turbulence behind an aeroplane (causes, distribution and duration of the phenomenon).	x	x		
	Induced drag: (a) influence of tip vortices on the angle of attack; (b) the induced local α; (c) influence of induced angle of attack on the direction of the lift vector; (d) induced drag and angle of attack.	x	x		
	Drag				
	The parasite drag: (a) pressure drag; (b) interference drag; (c) friction drag.	x	x		
	The parasite drag and speed	x	x		
	The induced drag and speed	x	x		
	The total drag	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	The ground effect				
	Effect on take-off and landing characteristics of an aeroplane	x	x		
	The stall				
	Flow separation at increasing angles of attack: (a) the boundary layer: (1) laminar layer; (2) turbulent layer; (3) transition. (b) separation point; (c) influence of angle of attack; (d) influence on: (1)pressure distribution; (2)location of centre of pressure; (3)C_L; (4)CD; (5)pitch moments. (e) buffet; (f) use of controls.	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	The stall speed: (a) in the lift formula; (b) 1g stall speed; (c) influence of: (1) the centre of gravity; (2) power setting; (3) altitude (IAS); (4) wing loading; (5) load factor n: (i) definition; (ii) turns; (iii) forces.	x	x		
	The initial stall in span-wise direction: (a) influence of planform; (b) geometric twist (wash out); (c) use of ailerons.	x	x		
	Stall warning: (a) importance of stall warning; (b) speed margin; (c) buffet; (d) stall strip; (e) flapper switch; (f) recovery from stall.	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Special phenomena of stall: (a) the power-on stall; (b) climbing and descending turns; (c) t-tailed aeroplane; (d) avoidance of spins: (1) spin development; (2) spin recognition; (3) spin recovery. (e) ice (in stagnation point and on surface): (1) absence of stall warning; (2) abnormal behaviour of the aircraft during stall.	x	x		
	C_L augmentation				
	Trailing edge flaps and the reasons for use in take-off and landing: (a) influence on C_L - α-graph; (b) different types of flaps; (c) flap asymmetry; (d) influence on pitch movement.	x	x		
	Leading edge devices and the reasons for use in take-off and landing	x	x		
	The boundary layer				
	Different types: (a) laminar; (b) turbulent.	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Special circumstances				
	Ice and other contamination: (a) ice in stagnation point; (b) ice on the surface (frost, snow and clear ice); (c) rain; (d) contamination of the leading edge; (e) effects on stall; (f) effects on loss of controllability; (g) effects on control surface moment; (h) influence on high lift devices during take- off, landing and low speeds.	x	x		
	Stability				
	Condition of equilibrium in steady horizontal flight				
	Precondition for static stability	x	x		
	Equilibrium: (a) lift and weight; (b) drag and thrust.	x	x		
	Methods of achieving balance				
	Wing and empennage (tail and canard)	x	x		
	Control surfaces	x	x		
	Ballast or weight trim	x	x		
	Static and dynamic longitudinal stability				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Basics and definitions: (a) static stability, positive, neutral and negative; (b) precondition for dynamic stability; (c) dynamic stability, positive, neutral and negative.	x	x		
	Location of centre of gravity: (a) aft limit and minimum stability margin; (b) forward position; (c) effects on static and dynamic stability.	x	x		
	Dynamic lateral or directional stability				
	Spiral dive and corrective actions	x	x		
	Control				
	General				
	Basics, the three planes and three axis	x	x		
	Angle of attack change	x	x		
	Pitch control				
	Elevator	x	x		
	Downwash effects	x	x		
	Location of centre of gravity	x	x		
	Yaw control				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Pedal or rudder	x	x		
	Roll control				
	Ailerons: function in different phases of flight	x	x		
	Adverse yaw	x	x		
	Means to avoid adverse yaw: (a) frise ailerons; (b) differential ailerons deflection.	x	x		
	Means to reduce control forces				
	Aerodynamic balance: (a) balance tab and anti-balance tab; (b) servo tab.	x	x		
	Mass balance				
	Reasons to balance: means	x	x		
	Trimming				
	Reasons to trim	x	x		
	Trim tabs	x	x		
	Limitations				
	Operating limitations				
	Flutter	x	x		
	V_{fe}	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	v_{no}, v_{ne}	x	x		
	Manoeuvring envelope				
	Manoeuvring load diagram: (a) load factor; (b) accelerated stall speed; (c) v_a; (d) manoeuvring limit load factor or certification category.	x	x		
	Contribution of mass	x	x		
	Gust envelope				
	Gust load diagram	x	x		
	Factors contributing to gust loads	x	x		
	Propellers				
	Conversion of engine torque to thrust				
	Meaning of pitch	x	x		
	Blade twist	x	x		
	Effects of ice on propeller	x	x		
	Engine failure or engine stop				
	Windmilling drag	x	x		
	Moments due to propeller operation				
	Torque reaction	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Asymmetric slipstream effect	x	x		
	Asymmetric blade effect	x	x		
	Flight mechanics				
	Forces acting on an aeroplane				
	Straight horizontal steady flight	x	x		
	Straight steady climb	x	x		
	Straight steady descent	x	x		
	Straight steady glide	x	x		
	Steady coordinated turn: (a) bank angle; (b) load factor; (c) turn radius; (d) rate one turn.	x	x		
.	PRINCIPLES OF FLIGHT: HELICOPTER				
	Subsonic aerodynamics				
	Basic concepts, laws and definitions			x	x
	Conversion of units			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Definitions and basic concepts about air: (a) the atmosphere and International Standard Atmosphere; (b) density; (c) influence of pressure and temperature on density.			x	x
	Newton's laws: (a) Newton's second law: Momentum equation; (b) Newton's third law: action and reaction.			x	x
	Basic concepts about airflow: (a) steady airflow and unsteady airflow; (b) Bernoulli's equation; (c) static pressure, dynamic pressure, total pressure and stagnation point; (d) TAS and IAS; (e) two-dimensional airflow and three-dimensional airflow; (f) viscosity and boundary layer.			x	x
	Two-dimensional airflow			x	x
	Aerofoil section geometry: (a) aerofoil section; (b) chord line, thickness and thickness to chord ratio of a section; (c) camber line and camber; (d) symmetrical and asymmetrical aerofoils sections.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Aerodynamic forces on aerofoil elements: (a) angle of attack; (b) pressure distribution; (c) lift and lift coefficient (d) relation lift coefficient: angle of attack; (e) profile drag and drag coefficient; (f) relation drag coefficient: angle of attack; (g) resulting force, centre of pressure and pitching moment.			x	x
	Stall: (a) boundary layer and reasons for stalling; (b) variation of lift and drag as a function of (c) angle of attack; (d) displacement of the centre of pressure and pitching moment.			x	x
	Disturbances due to profile contamination: (a) ice contamination; (b) ice on the surface (frost, snow and clear ice).			x	x
	The three-dimensional airflow round a wing and a fuselage			x	x
	The wing: (a) planform, rectangular and tapered wings; (b) wing twist.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Airflow pattern and influence on lift: (a) span wise flow on upper and lower surface; (b) tip vortices; (c) span-wise lift distribution.			x	x
	Induced drag: causes and vortices			x	x
	The airflow round a fuselage: (a) components of a fuselage; (b) parasite drag; (c) variation with speed.			x	x
	Transonic aerodynamics and compressibility effects				
	Airflow velocities			x	x
	Airflow speeds: (a) speed of sound; (b) subsonic, high subsonic and supersonic flows.			x	x
	Shock waves: (a) compressibility and shock waves; (b) the reasons for their formation at (c) upstream high subsonic airflow; (d) their effect on lift and drag.			x	x
	Influence of wing planform: sweep-angle			x	x
	Rotorcraft types			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Rotorcraft			x	x
	Rotorcraft types: (a) autogyro; (b) helicopter.			x	x
	Helicopters			x	x
	Helicopters configurations: the single main rotor helicopter			x	x
	The helicopter, characteristics and associated terminology: (a) general lay-out, fuselage, engine and gearbox; (b) tail rotor, fenestron and NOTAR; (c) engines (reciprocating and turbo shaft engines); (d) power transmission; (e) rotor shaft axis, rotor hub and rotor blades; (f) rotor disc and rotor disc area; (g) teetering rotor (two blades) and rotors with more than two blades; (h) skids and wheels; (i) helicopter axes and fuselage centre line; (j) roll axis, pitch axis and normal or yaw axis; (k) gross mass, gross weight and disc loading.			x	x
	Main rotor aerodynamics			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Hover flight outside ground effect			x	x
	Airflow through the rotor discs and round the blades: (a) circumferential velocity of the blade sections; (b) induced airflow, through the disc and downstream; (c) downward fuselage drag; (d) equilibrium of rotor thrust, weight and fuselage drag; (e) rotor disc induced power; (f) relative airflow to the blade (g) pitch angle and angle of attack of a blade section; (h) lift and profile drag on the blade element; resulting lift and thrust on the blade and (i) rotor thrust; (j) collective pitch angle changes and necessity of blade feathering; (k) required total main rotor-torque and rotor-power; (l) influence of the air density.			x	x
	Anti-torque force and tail rotor: (a) force of tail rotor as a function of main rotor-torque; (b) anti-torque rotor power; (c) necessity of blade feathering of tail rotor blades and yaw pedals.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Maximum hover altitude OGE: (a) total power required and power available; (b) maximum hover altitude as a function of pressure altitude and OAT.			x	x
	Vertical climb			x	x
	Relative airflow and angles of attack: (a) climb velocity V_C, induced and relative velocity and angle of attack; (b) collective pitch angle and blade feathering.			x	x
	Power and vertical speed: (a) induced power, climb power and profile power; (b) total main rotor power and main rotor torque; (c) tail rotor power; (d) total power requirement in vertical flight.			x	x
	Forward flight			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Airflow and forces in uniform inflow distribution: (a) assumption of uniform inflow distribution on rotor disc; (b) advancing blade (90°) and retreating blade (270°); (c) airflow velocity relative to the blade sections, area of reverse flow; (d) lift on the advancing and retreating blades at constant pitch angles; (e) necessity of cyclic pitch changes; (f) compressibility effects on the advancing blade tip and speed limitations; (g) high angle of attack on the retreating blade, blade stall and speed limitations; (h) thrust on rotor disc and tilt of thrust vector; (i) vertical component of the thrust vector and gross weight equilibrium; (j) horizontal component of the thrust vector and drag equilibrium.			x	x
	The flare (power flight): (a) thrust reversal and increase in rotor thrust; (b) increase of rotor RPM on non-governed rotor.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Power and maximum speed: (a) induced power as a function of helicopter speed; (b) rotor profile power as a function of helicopter speed; (c) fuselage drag and parasite power as a function of forward speed; (d) tail rotor power and power ancillary equipment; (e) total power requirement as a function of forward speed; (f) influence of helicopter mass, air density and drag of additional external equipment; (g) translational lift and influence on power required.			x	x
	Hover and forward flight in ground effect			x	x
	Airflow in ground effect and downwash: rotor power decrease as a function of rotor height above the ground at constant helicopter mass			x	x
	Vertical descent			x	x
	Vertical descent, power on: (a) airflow through the rotor, low and moderate descent speeds; (b) vortex ring state, settling with power and consequences.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Autorotation: (a) collective lever position after failure; (b) up flow through the rotor, auto-rotation and anti-autorotation rings; (c) tail rotor thrust and yaw control; (d) control of rotor RPM with collective lever; (e) landing after increase of rotor thrust by pulling collective and reduction in vertical speed.			x	x
	Forward flight: Autorotation			x	x
	Airflow through the rotor disc: (a) descent speed and up flow through the disc; (b) the flare, increase in rotor thrust, reduction of vertical speed and ground speed.			x	x
	Flight and landing: (a) turning; (b) flare; (c) autorotative landing; (d) height or velocity avoidance graph and dead man's curve.			x	x
	Main rotor mechanics			x	x
	Flapping of the blade in hover			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Forces and stresses on the blade: (a) centrifugal force on the blade and attachments; (b) limits of rotor RPM; (c) lift on the blade and bending stresses on a rigid attachment; (d) the flapping hinge of the articulated rotor and flapping hinge offset; (e) the flapping of the hinge less rotor and flexible element.			x	x
	Coning angle in hover:			x	x
	(a) lift and centrifugal force in hover and blade weight negligible (b) flapping, tip path plane and disc area.				
	Flapping angles of the blade in forward flight			x	x
	Forces on the blade in forward flight without cyclic feathering: (a) aerodynamic forces on the advancing and retreating blades without cyclic feathering; (b) periodic forces and stresses, fatigue and flapping hinge; (c) phase lag between the force and the flapping angle (about 90°); (d) flapping motion of the hinged blades and tilting of the cone and flap back of rotor; (e) rotor disc attitude and thrust vector tilt.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Cyclic pitch (feathering) in helicopter mode, forward flight: (a) necessity of forward rotor disc tilt and thrust vector tilt; (b) flapping and tip path plane, virtual rotation axis or no flapping axis and plane of rotation; (c) shaft axis and hub plane; (d) cyclic pitch change (feathering) and rotor thrust vector tilt; (e) collective pitch change, collective lever, swash plate, pitch link and pitch horn; (f) cyclic stick, rotating swash plate and pitch link movement and phase angle.			x	x
	Blade lag motion			x	x
	Forces on the blade in the disc plane (tip path plane) in forward flight: (a) forces due to the Coriolis effect because of the flapping; (b) alternating stresses and the need of the drag or lag hinge.			x	x
	The drag or lag hinge: (a) the drag hinge in the fully articulated rotor; (b) the lag flexure in the hinge less rotor; (c) drag dampers.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Ground resonance: (a) blade lag motion and movement of the centre of gravity of the blades and the rotor; (b) oscillating force on the fuselage; (c) fuselage, undercarriage and resonance.			x	x
	Rotor systems			x	x
	See-saw or teetering rotor			x	x
	Fully articulated rotor: (a) three hinges arrangement; (b) bearings and elastomeric hinges.			x	x
	Hinge less rotor and bearing less rotor			x	x
	Blade sailing: (a) low rotor RPM and effect of adverse wind; (b) minimising the danger; (c) droop stops.			x	x
	Vibrations due to main rotor: (a) origins of the vibrations: in plane and vertical; (b) blade tracking and balancing.			x	x
	Tail rotors			x	x
	Conventional tail rotor			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Rotor description: (a) two-blades tail rotors with teetering hinge; (b) rotors with more than two blades; (c) feathering bearings and flapping hinges; (d) dangers to people and to the tail rotor, (e) rotor height and safety.			x	x
	Aerodynamics: (a) induced airflow and tail rotor thrust; (b) thrust control by feathering, tail rotor drift and roll; (c) effect of tail rotor failure and vortex ring.			x	x
	The fenestron: technical lay-out			x	x
	The NOTAR: technical lay-out			x	x
	Vibrations: high frequency vibrations due to the tail rotors			x	x
	Equilibrium, stability and control			x	x
	Equilibrium and helicopter attitudes			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Hover: (a) forces and equilibrium conditions; (b) helicopter pitching moment and pitch angle; (c) helicopter rolling moment and roll angle.			x	x
	Forward flight: (a) forces and equilibrium conditions; (b) helicopter moments and angles; (c) effect of speed on fuselage attitude.			x	x
	Control			x	x
	Control power			x	x
	(a) fully articulated rotor; (b) hinge less rotor; (c) teetering rotor.				
	Static and dynamic roll over			x	x
	Helicopter performances Engine performances Piston engines: (a) power available; (b) effects of density altitude.			x	x
	Turbine engines: (a) power available; (b) effects of ambient pressure and temperature.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Helicopter performances			x	x
	Hover and vertical flight: (a) power required and power available; (b) OGE and IGE maximum hover height; (c) influence of AUM, pressure, temperature and density.			x	x
	Forward flight: (a) maximum speed; (b) maximum rate of climb speed; (c) maximum angle of climb speed; (d) range and endurance; (e) influence of AUM, pressure, temperature and (f) density.			x	x
	Manoeuvring: (a) load factor; (b) bank angle and number of g's; (c) manoeuvring limit load factor.			x	x
	Special conditions: (a) operating with limited power; (b) over pitch and over torque.			x	x
6.	OPERATIONAL PROCEDURES				
	General				
	Operation of aircraft: ICAO Annex 6, General requirements				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Definitions	x	x	x	x
	Applicability	x	x	x	x
	Special operational procedures and hazards (general aspects)	x	x	x	x
	Noise abatement				
	Noise abatement procedures	x	x	x	x
	Influence of the flight procedure (departure, cruise and approach)	x	x	x	x
	Runway incursion awareness (meaning of surface markings and signals)	x	x	x	x
	Fire or smoke				
	Carburettor fire	x	x	x	x
	Engine fire	x	x	x	x
	Fire in the cabin and cockpit, (choice of extinguishing agents according to fire classification and use of the extinguishers)	x	x	x	x
	Smoke in the cockpit and (effects and action to be taken) and smoke in the cockpit and cabin (effects and actions taken)	x	x	x	x
	Windshear and microburst				
	Effects and recognition during departure and approach	x	x	x	x
	Actions to avoid and actions taken during encounter	x	x	x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Wake turbulence				
	Cause	x	x	x	x
	List of relevant parameters	x	x	x	x
	Actions taken when crossing traffic, during take-off and landing	x	x	x	x
	Emergency and precautionary landings				
	Definition	x	x	x	x
	Cause	x	x	x	x
	Passenger information	x	x	x	x
	Evacuation	x	x	x	x
	Action after landing	x	x	x	x
	Contaminated runways				
	Kinds of contamination	x	x		
	Estimated surface friction and friction coefficient	x	x		
	Rotor downwash			x	x
	Operation influence by meteorological conditions (helicopter)				
	White out, sand or dust			x	x
	Strong winds			x	x
	Mountain environment			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Emergency procedures				
	Influence by technical problems				
	Engine failure			x	x
	Fire in cabin, cockpit or engine			x	x
	Tail, rotor or directional control failure			x	x
	Ground resonance			x	x
	Blade stall			x	x
	Settling with power (vortex ring)			x	x
	Overpitch			x	x
	Overspeed: rotor or engine			x	x
	Dynamic rollover			x	x
	Mast bumping			x	x
7.	FLIGHT PERFORMANCE AND PLANNING				
7.1.	**MASS AND BALANCE: AEROPLANES OR HELICOPTERS**				
	Purpose of mass and balance considerations				
	Mass limitations				
	Importance in regard to structural limitations	x	x	x	x
	Importance in regard to performance limitations	x	x	x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	CG limitations				
	Importance in regard to stability and controllability	x	x	x	x
	Importance in regard to performance	x	x	x	x
	Loading				
	Terminology				
	Mass terms	x	x	x	x
	Load terms (including fuel terms)	x	x	x	x
	Mass limits				
	Structural limitations	x	x	x	x
	Performance limitations	x	x	x	x
	Baggage compartment limitations	x	x	x	x
	Mass calculations				
	Maximum masses for take-off and landing	x	x	x	x
	Use of standard masses for passengers, baggage and crew	x	x	x	x
	Fundamentals of CG calculations				
	Definition of centre of gravity	x	x	x	x
	Conditions of equilibrium (balance of forces and balance of moments)	x	x	x	x
	Basic calculations of CG	x	x	x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Mass and balance details of aircraft				
	Contents of mass and balance documentation				
	Datum and moment arm	x	x	x	x
	CG position as distance from datum	x	x	x	x
	Extraction of basic mass and balance data from aircraft documentation				
	BEM	x	x	x	x
	CG position or moment at BEM	x	x	x	x
	Deviations from standard configuration	x	x	x	x
	Determination of CG position				
	Methods				
	Arithmetic method	x	x	x	x
	Graphic method	x	x	x	x
	Load and trim sheet				
	General considerations	x	x	x	x
	Load sheet and CG envelope for light aeroplanes and for helicopters	x	x	x	x
7.2.	PERFORMANCE: AEROPLANES				
	Introduction				
	Performance classes	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Stages of flight	x	x		
	Effect of aeroplane mass, wind, altitude, runway slope and runway conditions	x	x		
	Gradients	x	x		
	SE aeroplanes				
	Definitions of terms and speeds	x	x		
	Take-off and landing performance				
	Use of aeroplane flight manual data	x	x		
	Climb and cruise performance				
	Use of aeroplane flight data	X	x		
	Effect of density altitude and aeroplane mass	x	x		
	Endurance and the effects of the different recommended power or thrust settings	x	x		
	Still air range with various power or thrust settings	x	x		
7.3.	FLIGHT PLANNING AND FLIGHT MONITORING				
	Flight planning for VFR flights				
	VFR navigation plan				
	Routes, airfields, heights and altitudes from VFR charts	x	x	x	x
	Courses and distances from VFR charts	x	x	x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Aerodrome charts and aerodrome directory	x	x	x	x
	Communications and radio navigation planning data	x	x	x	x
	Completion of navigation plan	x	x	x	x
	Fuel planning				
	General knowledge	x	x	x	x
	Pre-flight calculation of fuel required				
	Calculation of extra fuel	x	x	x	x
	Completion of the fuel section of the navigation plan (fuel log) and calculation of total fuel	x	x	x	x
	Pre-flight preparation				
	AIP and NOTAM briefing				
	Ground facilities and services	x	x	x	x
	Departure, destination and alternate aerodromes	x	x	x	x
	Airway routings and airspace structure	x	x	x	x
	Meteorological briefing				
	Extraction and analysis of relevant data from meteorological documents	x	x	x	x
	ICAO flight plan (ATS flight plan)				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Individual flight plan				
	Format of flight plan	x	x	x	x
	Completion of the flight plan	x	x	x	x
	Submission of the flight plan	x	x	x	x
	Flight monitoring and in-flight re-planning				
	Flight monitoring				
	Monitoring of track and time	x	x	x	x
	In-flight fuel management	x	x	x	x
	In-flight re-planning in case of deviation from planned data	x	x	x	x
7.4.	PERFORMANCE: HELICOPTERS				
	General				
	Introduction				
	Stages of flight			x	x
	Effect on performance of atmospheric, airport or heliport and helicopter conditions			x	x
	Applicability of airworthiness requirements			x	x
	Definitions and terminology			x	x
	Performance: SE helicopters				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Definitions of terms (a) masses; (b) velocities: v_x, v_y; (c) velocity of best range and of maximum endurance; (d) power limitations; (e) altitudes.			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Take-off, cruise and landing performance Use and interpretation of diagrams and tables: (a) Take-off: (1) take-off run and distance available; (2) take-off and initial climb; (3) effects of mass, wind and (4) density altitude; (5) effects of ground surface and gradient. (b) Landing: (1) effects of mass, wind, density altitude and approach speed; (2) effects of ground surface and gradient. (c) In-flight: (1) relationship between power required and power available; (2) performance diagram; (3) effects of configuration, mass, temperature and altitude; (4) reduction of performance during climbing turns; (5) autorotation; (6) adverse effects (icing, rain and condition of the airframe).			x	x
8.	AIRCRAFT GENERAL KNOWLEDGE				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
8.1.	AIRFRAME AND SYSTEMS, ELECTRICS, POWERPLANT AND EMERGENCY EQUIPMENT				
	System design, loads, stresses, maintenance				
	Loads and combination loadings applied to an aircraft's structure	x	x	x	x
	Airframe				
	Wings, tail surfaces and control surfaces				
	Design and constructions	x	x		
	Structural components and materials	x	x		
	Stresses	x	x		
	Structural limitations	x	x		
	Fuselage, doors, floor, wind-screen and windows				
	Design and constructions	x	x	x	x
	Structural components and materials	x	x	x	x
	Stresses	x	x	x	x
	Structural limitations	x	x	x	x
	Flight and control surfaces				
	Design and constructions			x	x
	Structural components and materials			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Stresses and aero elastic vibrations			x	x
	Structural limitations			x	x
	Hydraulics				
	Hydromechanics: basic principles	x	x	x	x
	Hydraulic systems	x	x	x	x
	Hydraulic fluids: types and characteristics, limitations	x	x	x	x
	System components: design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Landing gear, wheels, tyres and brakes				
	Landing gear				
	Types and materials	x	x	x	x
	Nose wheel steering: design and operation	x	x		
	Brakes				
	Types and materials	x	x	x	x
	System components: design, operation, indications and warnings	x	x	x	x
	Wheels and tyres				
	Types and operational limitations	x	x	x	x
	Helicopter equipment			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Flight controls				
	Mechanical or powered	x	x	x	x
	Control systems and mechanical	x	x	x	x
	System components: design, operation, indications and warnings, degraded modes of operation and jamming	x	x	x	x
	Secondary flight controls				
	System components: design, operation, degraded modes of operation, indications and warnings	x	x		
	Anti-icing systems				
	Types and operation (pitot and windshield)	x	x	x	x
	Fuel system				
	Piston engine				
	System components: design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Turbine engine				
	System components: design, operation, degraded modes of operation, indications and warnings			x	x
	Electrics				
	Electrics: general and definitions				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Direct current: voltage, current, resistance, conductivity, Ohm's law, power and work	x	x	x	x
	Alternating current: voltage, current, amplitude, phase, frequency and resistance	x	x	x	x
	Circuits: series and parallel	x	x	x	x
	Magnetic field: effects in an electrical circuit	x	x	x	x
	Batteries				
	Types, characteristics and limitations	x	x	x	x
	Battery chargers, characteristics and limitations	x	x	x	x
	Static electricity: general				
	Basic principles	x	x	x	x
	Static dischargers	x	x	x	x
	Protection against interference	x	x	x	x
	Lightning effects	x	x	x	x
	Generation: production, distribution and use				
	DC generation: types, design, operation, degraded modes of operation, indications and warnings	x	x	x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	AC generation: types, design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Electric components				
	Basic elements: basic principles of switches, circuit-breakers and relays	x	x	x	x
	Distribution				
	General: (a) bus bar, common earth and priority; (b) AC and DC comparison.	x	x	x	x
	Piston engines				
	General				
	Types of internal combustion engine: basic principles and definitions	x	x	x	x
	Engine: design, operation, components and materials	x	x	x	x
	Fuel				
	Types, grades, characteristics and limitations	x	x	x	x
	Alternate fuel: characteristics and limitations	x	x	x	x
	Carburettor or injection system				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Carburettor: design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Injection: design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Icing	x	x	x	x
	Air cooling systems				
	Design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Lubrication systems				
	Lubricants: types, characteristics and limitations	x	x	x	x
	Design, operation, degraded modes of operation, indications and warnings	x	x	x	x
	Ignition circuits				
	Design, operation, degraded modes of operation	x	x	x	x
	Mixture				
	Definition, characteristic mixtures, control instruments, associated control levers and indications	x	x	x	x
	Propellers				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Definitions and general: (a) aerodynamic parameters; (b) types; (c) operating modes.	x	x		
	Constant speed propeller: design, operation and system components	x	x		
	Propeller handling: associated control levers, degraded modes of operation, indications and warnings	x	x		
	Performance and engine handling				
	Performance: influence of engine parameters, influence of atmospheric conditions, limitations and power augmentation systems	x	x	x	x
	Engine handling: power and mixture settings during various flight phases and operational limitations	x	x	x	x
	Turbine engines				
	Definitions			x	x
	Coupled turbine engine: design, operation, components and materials			x	x
	Free turbine engine: design, operation, components and materials			x	x
	Fuel				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Types, characteristics and limitations			x	x
	Main engine components				
	Compressor: (a) types, design, operation, components and materials; (b) stresses and limitations; (c) stall, surge and means of prevention.			x	x
	Combustion chamber: (a) types, design, operation, components and materials; (b) stresses and limitations; (c) emission problems.			x	x
	Turbine: (a) types, design, operation, components and materials; (b) stresses, creep and limitations.			x	x
	Exhaust: (a) design, operation and materials; (b) noise reduction.			x	x
	Fuel control units: types, operation and sensors			x	x
	Helicopter air intake: different types, design, operation, materials and optional equipment			x	x
	Additional components and systems				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Helicopter additional components and systems: lubrication system, ignition circuit, starter, accessory gearbox, free wheel units: design, operation and components			x	x
	Performance aspects				
	Torque, performance aspects, engine handling and limitations: (a) engine ratings; (b) engine performance and limitations; (c) engine handling.			x	x
	Protection and detection systems				
	Fire detection systems				
	Operation and indications			x	X
	Miscellaneous systems				
	Rotor design			x	x
	Rotor heads				
	Main rotor				
	Types			x	x
	Structural components and materials, stresses and structural limitations			x	x
	Design and construction			x	x
	Adjustment			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Tail rotor				
	Types			x	x
	Structural components and materials, stresses and structural limitations			x	x
	Design and construction			x	x
	Adjustment			x	x
	Transmission				
	Main gear box				
	Different types, design, operation and limitations			x	x
	Rotor brake				
	Different types, design, operation and limitations			x	x
	Auxiliary systems			x	x
	Drive shaft and associated installation			x	x
	Intermediate and tail gear box				
	Different types, design, operation and limitations			x	x
	Blades				
	Main rotor blade				
	Design and construction			x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Structural components and materials			x	x
	Stresses			x	x
	Structural limitations			x	x
	Adjustment			x	x
	Tip shape			x	x
	Tail rotor blade				
	Design and construction			x	x
	Structural components and materials			x	x
	Stresses			x	x
	Structural limitations			x	x
	Adjustment			x	x
8.2.	INSTRUMENTATION				
	Instrument and indication systems				
	Pressure gauge				
	Different types, design, operation, characteristics and accuracy	x	x	x	x
	Temperature sensing				
	Different types, design, operation, characteristics and accuracy	x	x	x	x
	Fuel gauge				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Different types, design, operation, characteristics and accuracy	x	x	x	x
	Flow meter				
	Different types, design, operation, characteristics and accuracy	x	x	x	x
	Position transmitter				
	Different types, design, operation, characteristics and accuracy	x	x	x	x
	Torque meter				
	Design, operation, characteristics and accuracy			x	x
	Tachometer				
	Design, operation, characteristics and accuracy	x	x	x	x
	Measurement of aerodynamic parameters				
	Pressure measurement				
	Static pressure, dynamic pressure, density and definitions	x	x	x	x
	Design, operation, errors and accuracy	x	x	x	x
	Temperature measurement: aeroplane				
	Design, operation, errors and accuracy	x	x		
	Displays	x	x		

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Temperature measurement: helicopter				
	Design, operation, errors and accuracy			x	x
	Displays			x	x
	Altimeter				
	Standard atmosphere	x	x	x	x
	The different barometric references (QNH, QFE and 1013.25)	x	x	x	x
	Height, indicated altitude, true altitude, pressure altitude and density altitude	x	x	x	x
	Design, operation, errors and accuracy	x	x	x	x
	Displays	x	x	x	x
	Vertical speed indicator				
	Design, operation, errors and accuracy	x	x	x	x
	Displays	x	x	x	x
	Air speed indicator				
	The different speeds IAS, CAS, TAS: definition, usage and relationships	x	x	x	x
	Design, operation, errors and accuracy	x	x	x	x
	Displays	x	x	x	x
	Magnetism: direct reading compass				
	Earth magnetic field	x	x	x	x

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Direct reading compass				
	Design, operation, data processing, accuracy and deviation	x	x	x	x
	Turning and acceleration errors	x	x	x	x
	Gyroscopic instruments				
	Gyroscope: basic principles				
	Definitions and design	x	x	x	x
	Fundamental properties	x	x	x	x
	Drifts	x	x	x	x
	Turn and bank indicator				
	Design, operation and errors	x	x	x	x
	Attitude indicator				
	Design, operation, errors and accuracy	x	x	x	x
	Directional gyroscope				
	Design, operation, errors and accuracy	x	x	x	x
	Communication systems				
	Transmission modes: VHF, HF and SATCOM				
	Principles, bandwidth, operational limitations and use	x	x	x	x
	Voice communication				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Definitions, general and applications	x	x	x	x
	Alerting systems and proximity systems				
	Flight warning systems				
	Design, operation, indications and alarms	x	x	x	x
	Stall warning				
	Design, operation, indications and alarms	x	x		
	Radio-altimeter				
	Design, operation, errors, accuracy and indications			x	x
	Rotor or engine over speed alert system				
	Design, operation, displays and alarms			x	x
	Integrated instruments: electronic displays				
	Display units				
	Design, different technologies and limitations	x	x	x	x
9.	NAVIGATION				
9.1.	**GENERAL NAVIGATION**				
	Basics of navigation				
	The solar system				
	Seasonal and apparent movements of the sun	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	The earth				
	Great circle, small circle and rhumb line	x		x	
	Latitude and difference of latitude	x		x	
	Longitude and difference of longitude	x		x	
	Use of latitude and longitude co-ordinates to locate any specific position	x		x	
	Time and time conversions				
	Apparent time	x		x	
	UTC	x		x	
	LMT	x		x	
	Standard times	x		x	
	Dateline	x		x	
	Definition of sunrise, sunset and civil twilight	x		x	
	Directions				
	True north, magnetic north and compass north	x		x	
	Compass deviation	x		x	
	Magnetic poles, isogonals, relationship between true and magnetic	x		x	
	Distance				

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Units of distance and height used in navigation: nautical miles, statute miles, kilometres, metres and ft	x		x	
	Conversion from one unit to another	x		x	
	Relationship between nautical miles and minutes of latitude and minutes of longitude	x		x	
	Magnetism and compasses				
	General principles				
	Terrestrial magnetism	x		x	
	Resolution of the earth's total magnetic force into vertical and horizontal components	x		x	
	Variation-annual change	x		x	
	Aircraft magnetism				
	The resulting magnetic fields	x		x	
	Keeping magnetic materials clear of the compass	x		x	
	Charts				
	General properties of miscellaneous types of projections				
	Direct Mercator	x		x	
	Lambert conformal conic	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	The representation of meridians, parallels, great circles and rhumb lines				
	Direct Mercator	x		x	
	Lambert conformal conic	x		x	
	The use of current aeronautical charts				
	Plotting positions	x		x	
	Methods of indicating scale and relief (ICAO topographical chart)	x		x	
	Conventional signs	x		x	
	Measuring tracks and distances	x		x	
	Plotting bearings and distances	x		x	
	DR navigation				
	Basis of DR				
	Track	x		x	
	Heading (compass, magnetic and true)	x		x	
	Wind velocity	x		x	
	Air speed (IAS, CAS and TAS)	x		x	
	Groundspeed	x		x	
	ETA	x		x	
	Drift and wind correction angle	x		x	
	DR position fix	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Use of the navigational computer				
	Speed	x		x	
	Time	x		x	
	Distance	x		x	
	Fuel consumption	x		x	
	Conversions	x		x	
	Air speed	x		x	
	Wind velocity	x		x	
	True altitude	x		x	
	The triangle of velocities				
	Heading	x		x	
	Ground speed	x		x	
	Wind velocity	x		x	
	Track and drift angle	x		x	
	Measurement of DR elements				
	Calculation of altitude	x		x	
	Determination of appropriate speed	x		x	
	In-flight navigation				
	Use of visual observations and application to in-flight navigation	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Navigation in cruising flight, use of fixes to revise navigation data				
	Ground speed revision	x		x	
	Off-track corrections	x		x	
	Calculation of wind speed and direction	x		x	
	ETA revisions	x		x	
	Flight log	x		x	
9.2.	RADIO NAVIGATION				
	Basic radio propagation theory				
	Antennas				
	Characteristics	x		x	
	Wave propagation				
	Propagation with the frequency bands	x		x	
	Radio aids				
	Ground DF				
	Principles	x		x	
	Presentation and interpretation	x		x	
	Coverage	x		x	
	Range	x		x	
	Errors and accuracy	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Factors affecting range and accuracy	x		x	
	NDB/ADF				
	Principles	x		x	
	Presentation and interpretation	x		x	
	Coverage	x		x	
	Range	x		x	
	Errors and accuracy	x		x	
	Factors affecting range and accuracy	x		x	
	VOR				
	Principles	x		x	
	Presentation and interpretation	x		x	
	Coverage	x		x	
	Range	x		x	
	Errors and accuracy	x		x	
	Factors affecting range and accuracy	x		x	
	DME				
	Principles	x		x	
	Presentation and interpretation	x		x	
	Coverage	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Range	x		x	
	Errors and accuracy	x		x	
	Factors affecting range and accuracy	x		x	
	Radar				
	Ground radar				
	Principles	x		x	
	Presentation and interpretation	x		x	
	Coverage	x		x	
	Range	x		x	
	Errors and accuracy	x		x	
	Factors affecting range and accuracy	x		x	
	Secondary surveillance radar and transponder				
	Principles	x		x	
	Presentation and interpretation	x		x	
	Modes and codes	x		x	
	GNSS				
	GPS, GLONASS OR GALILEO				
	Principles	x		x	
	Operation	x		x	

		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
	Errors and accuracy	x		x	
	Factors affecting accuracy	x		x	

FCL.215 Theoretical knowledge examination

Applicants for a PPL shall demonstrate a level of theoretical knowledge appropriate to the privileges granted through examinations in the following subjects:

(a) common subjects:

- Air law,
- Human performance,
- Meteorology, and
- Communications;

(b) specific subjects concerning the different aircraft categories:

- Principles of flight,
- Operational procedures,
- Flight performance, planning and loading,
- Aircraft general knowledge, and
- Navigation.

(c) Unless specifically approved by the Authority, an applicant shall take the entire set of examinations in Aruba.

(d) An applicant shall be recommended for an examination by the approved ATO responsible for applicant's training when the applicant has completed the appropriate elements of the course of theoretical knowledge instruction to a satisfactorily standard. An applicant who has failed to complete the examination within the limits imposed by the AUA-FCL will in addition be required to produce evidence from an approved Training Organisation of further training.

(e) If the Authority considers that the applicant is not complying with examination procedures during the examination, this misconduct will be considered with a view to failing the applicant, either in the examination of a single subject or in the examination as a whole.

AMC1 FCL.215; FCL.235 Knowledge, Exams and test

THEORETICAL KNOWLEDGE EXAMINATION AND SKILL TEST FOR THE PPL

(a) Theoretical knowledge examination

(1) The examinations should comprise a total of 120 multiple-choice questions covering all the subjects.

(2) Communication practical classroom testing may be conducted.

(3) The period of 18 months mentioned in FCL.025(b)(2) should be counted from the end of the calendar month when the applicant first attempted an examination.

(b) Skill test

Further training may be required following any failed skill test or part thereof. There should be no limit to the number of skill tests that may be attempted.

(c) Conduct of the test

(1) If the applicant chooses to terminate a skill test for reasons considered inadequate by the FE, the applicant should retake the entire skill test. If the test is terminated for reasons considered adequate by the FE, only those sections not completed should be tested in a further flight.

(2) Any manoeuvre or procedure of the test may be repeated once by the applicant. The FE may stop the test at any stage if it is considered that the applicant's demonstration of flying skill requires a complete retest.

(3) An applicant should be required to fly the aircraft from a position where the PIC functions can be performed and to carry out the test as if there is no other crew member. Responsibility for the flight should be allocated in accordance with national regulations.

FCL.235 Skill test

(a) Applicants for a PPL shall demonstrate through the completion of a skill test the ability to perform, as PIC on the appropriate aircraft category, the relevant procedures and manoeuvres with competency appropriate to the privileges granted.

(b) An applicant for the skill test shall have received flight instruction on the same class or type of aircraft to be used for the skill test.

(c) Pass marks

(1) The skill test shall be divided into different sections, representing all the different phases of flight appropriate to the category of aircraft flown.

(2) Failure in any item of a section will cause the applicant to fail the entire section. Failure in more than 1 section will cause the applicant to fail the entire test. If the applicant fails only 1 section, he/she shall repeat only that section.

(3) When the test needs to be repeated in accordance with (2), failure in any section, including those that have been passed on a previous attempt, will cause the applicant to fail the entire test.

(4) Failure to achieve a pass in all sections of the test in 2 attempts will require further training.

AMC1 FCL.235 Skill test

CONTENTS OF THE SKILL TEST FOR THE ISSUE OF A PPL(A)

(a) The route to be flown for the navigation test should be chosen by the FE. The route may end at the aerodrome of departure or at another aerodrome. The applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board. The navigation section of the test should have a duration that allows the pilot to demonstrate his/her ability to complete a route with at least three identified waypoints and may, as agreed between the applicant and FE, be flown as a separate test.

(b) An applicant should indicate to the FE the checks and duties carried out, including the identification of radio facilities.

(c) Checks should be completed in accordance with the authorised checklist for the aeroplane on which the test is being taken. During pre-flight preparation for the test the applicant should be required to determine power settings and speeds. Performance data for take-off, approach and landing should be calculated by the applicant in compliance with the operations manual or flight manual for the aeroplane used.

FLIGHT TEST TOLERANCE

(a) The applicant should demonstrate the ability to:

(1) operate the aeroplane within its limitations;

(2) complete all manoeuvres with smoothness and accuracy;

(3) exercise good judgment and airmanship;

(4) apply aeronautical knowledge;

(5) maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

(b) The following limits are for general guidance. The FE should make allowance for turbulent conditions and the handling qualities and performance of the aeroplane used:

(1) height:

(i) normal flight	± 150 ft
(ii) with simulated engine failure	± 200 ft (if ME aeroplane is used)

(2) heading or tracking of radio aids:

(i) normal flight	± 10 °
(ii)with simulated engine failure	± 15 ° (if ME aeroplane is used)

(3) speed:

(i) take-off and approach	+15/–5 knots
(ii) all other flight regimes	± 15 knots

CONTENT OF THE SKILL TEST

(a) The skill test contents and sections set out in this AMC should be used for the skill test for the issue of a PPL(A) on SE and ME aeroplanes.

SECTION 1 PRE-FLIGHT OPERATIONS AND DEPARTURE	
Use of checklist, airmanship, control of aeroplane by external visual reference, anti/de-icing procedures, etc. apply in all sections.	
a	Pre-flight documentation, NOTAM and weather briefing
b	Mass and balance and performance calculation
c	Aeroplane inspection and servicing
d	Engine starting and after starting procedures
e	Taxiing and aerodrome procedures, pre-take-off procedures
f	Take-off and after take-off checks
g	Aerodrome departure procedures
h	ATC compliance and R/T procedures
SECTION 2 GENERAL AIRWORK	
a	ATC compliance and R/T procedures

b	Straight and level flight, with speed changes
c	Climbing: (i) best rate of climb; (ii) climbing turns; (iii) levelling off.
d	Medium (30 ° bank) turns
e	Steep (45 ° bank) turns (including recognition and recovery from a spiral dive)
f	Flight at critically low air speed with and without flaps
g	Stalling: (i) clean stall and recover with power; (ii) approach to stall descending turn with bank angle 20^{o}, approach configuration; (iii) approach to stall in landing configuration.
h	Descending: (i) with and without power; (ii) descending turns (steep gliding turns); (iii) levelling off.
SECTION 3 EN-ROUTE PROCEDURES	
a	Flight plan, dead reckoning and map reading
b	Maintenance of altitude, heading and speed
c	Orientation, timing and revision of ETAs and log keeping
d	Diversion to alternate aerodrome (planning and implementation)
e	Use of radio navigation aids
f	Basic instrument flying check (180 ° turn in simulated IMC)
g	Flight management (checks, fuel systems and carburettor icing, etc.)

h	ATC compliance and R/T procedures
SECTION 4 APPROACH AND LANDING PROCEDURES	
a	Aerodrome arrival procedures
b	* Precision landing (short field landing), crosswind, if suitable conditions available
c	* Flapless landing
d	* Approach to landing with idle power (SE only)
e	Touch and go
f	Go-around from low height
g	ATC compliance and R/T procedures
h	Actions after flight
SECTION 5 ABNORMAL AND EMERGENCY PROCEDURES	
This section may be combined with sections 1 through 4	
a	Simulated engine failure after take-off (SE only)
b	* Simulated forced landing (SE only)
c	Simulated precautionary landing (SE only)
d	Simulated emergencies
e	Oral questions
SECTION 6 SIMULATED ASYMMETRIC FLIGHT AND RELEVANT CLASS OR TYPE ITEMS	
This section may be combined with sections 1 through 5	
a	Simulated engine failure during take-off (at a safe altitude unless carried out in an FFS)
b	Asymmetric approach and go-around

c	Asymmetric approach and full stop landing
d	Engine shutdown and restart
e	ATC compliance, R/T procedures or airmanship
f	As determined by the FE: any relevant items of the class or type rating skill test to include, if applicable: (i) aeroplane systems including handling of auto pilot; (ii) operation of pressurisation system; (iii) iuse of de-icing and anti-icing system.
g	Oral questions

* *These items may be combined, at the discretion of the FE.*

AMC2 FCL.235Skill test

CONTENTS OF THE SKILL TEST FOR THE ISSUE OF A PPL(H)

(a) The area and route to be flown should be chosen by the FE and all low level and hover work should be at an adequate aerodrome or site. Routes used for section 3 may end at the aerodrome of departure or at another aerodrome. The applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board. The navigation section of the test, as set out in this AMC should consist of at least three legs, each leg of a minimum duration of 10 minutes. The skill test may be conducted in two flights.

(b) An applicant should indicate to the FE the checks and duties carried out, including the identification of radio facilities. Checks should be completed in accordance with the authorised checklist or pilot operating handbook for the helicopter on which the test is being taken.

(c) During pre-flight preparation for the test the applicant is required to determine power settings and speeds. Performance data for take-off, approach and landing should be calculated by the applicant in compliance with the operations manual or flight manual for the helicopter used.

FLIGHT TEST TOLERANCE

(a) The applicant should demonstrate the ability to:

(1) operate the helicopter within its limitations;

(2) complete all manoeuvres with smoothness and accuracy;

(3) exercise good judgement and airmanship;

(4) apply aeronautical knowledge;

(5) maintain control of the helicopter at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

(b) The following limits are for general guidance. The FE should make allowance for turbulent conditions and the handling qualities and performance of the helicopter used.

(1) height:

(i) normal forward flight	± 150 ft
(ii) with simulated major emergency	± 200 ft
(iii) hovering IGE flight	± 2 ft

(2) heading or tracking of radio aids:

(i) normal flight	± 10 °
(ii) with simulated major emergency	± 15 °

(3) speed

(i) take-off approach	– 10 knots/+15 knots
(ii) all other flight regimes	± 15 knots

(4) ground drift:

(i) take-off hover IGE	± 3 ft
(ii) landing	no sideways or backwards movement

CONTENT OF THE SKILL TEST

The skill test contents and sections set out in this AMC should be used for the skill test for the issue of a PPL(H) on SE or ME helicopters.

SECTION 1 PRE-FLIGHT OR POST-FLIGHT CHECKS AND PROCEDURES
Use of checklist, airmanship, control of helicopter by external visual reference, anti- icing procedures, etc. apply in all sections

a	Helicopter knowledge, (for example technical log, fuel, mass and balance, performance), flight planning, NOTAM and weather briefing
b	Pre-flight inspection or action, location of parts and purpose
c	Cockpit inspection and starting procedure
d	Communication and navigation equipment checks, selecting and setting frequencies
e	Pre-take-off procedure, R/T procedure and ATC compliance
f	Parking, shutdown and post-flight procedure
SECTION 2 HOVER MANOEUVRES, ADVANCED HANDLING AND CONFINED AREAS	
a	Take-off and landing (lift-off and touch down)
b	Taxi and hover taxi
c	Stationary hover with head, cross or tail wind
d	Stationary hover turns, 360 ° left and right (spot turns)
e	Forward, sideways and backwards hover manoeuvring
f	Simulated engine failure from the hover
g	Quick stops into and downwind
h	Sloping ground or unprepared sites landings and take-offs
i	Take-offs (various profiles)
j	Crosswind and downwind take-off (if practicable)
k	Take-off at maximum take-off mass (actual or simulated)
l	Approaches (various profiles)
m	Limited power take-off and landing
n	Autorotations, (FE to select two items from: basic, range, low speed and 360 ° turns)

o	Autorotative landing
p	Practice forced landing with power recovery
q	Power checks, reconnaissance technique, approach and departure technique
SECTION 3 NAVIGATION - EN ROUTE PROCEDURES	
a	Navigation and orientation at various altitudes or heights and map reading
b	Altitude or height, speed, heading control, observation of airspace and altimeter setting
c	Monitoring of flight progress, flight log, fuel usage, endurance, ETA, assessment of track error and re-establishment of correct track and instrument monitoring
d	Observation of weather conditions and diversion planning
e	Use of navigation aids (where available)
f	ATC liaison with due observance of regulations, etc.
SECTION 4 FLIGHT PROCEDURES AND MANOEUVRES	
a	Level flight, control of heading, altitude or height and speed
b	Climbing and descending turns to specified headings
c	Level turns with up to 30 ° bank, 180 ° to 360 ° left and right
d	Level turns 180 ° left and right by sole reference to instruments
SECTION 5 ABNORMAL AND EMERGENCY PROCEDURES (SIMULATED WHERE APPROPRIATE)	
Note 1.— *Where the test is conducted on an ME helicopter, a simulated engine failure drill, including an SE approach and landing should be included in the test.* ***Note 2.***—*The FE should select four items from the following:*	
a	Engine malfunctions, including governor failure, carburettor or engine icing and oil system, as appropriate
b	Fuel system malfunction

c	Electrical system malfunction
d	Hydraulic system malfunction, including approach and landing without hydraulics, as applicable
e	Main rotor or anti-torque system malfunction (FFS or discussion only)
f	Fire drills, including smoke control and removal, as applicable
g	Other abnormal and emergency procedures as outlined in an appropriate flight manual and with reference to Appendix 9 C to AUA-FCL, sections 3 and 4, including for ME helicopters: (a) Simulated engine failure at take-off: ▪ rejected take-off at or before TDP or safe forced landing at or before DPATO; ▪ shortly after TDP or DPATO. (b) Landing with simulated engine failure: ▪ landing or go-around following engine failure before LDP or DPBL; ▪ following engine failure after LDP or safe forced landing after DPBL.

SECTION 2 – SPECIFIC REQUIREMENTS FOR THE PPL AEROPLANES — PPL(A)

FCL.205.A PPL(A) — Privileges

(a) The privileges of the holder of a PPL(A) are to act without remuneration as PIC or co-pilot on aeroplanes engaged in non-commercial operations.

(b) Notwithstanding the paragraph above, the holder of a PPL(A) with instructor or examiner privileges may receive remuneration for:

(1) the provision of flight instruction for the PPL(A);

(2) the conduct of skill tests and proficiency checks for these licences;

(3) the ratings and certificates attached to these licences.

FCL.210.A PPL(A) — Experience requirements and crediting

(a) Applicants for a PPL(A) shall have completed at least 45 hours of flight instruction in aeroplanes, 5 of which may have been completed in an FSTD, including at least:

(1) 25 hours of dual flight instruction; and

(2) 10 hours of supervised solo flight time, including at least 5 hours of solo cross-country flight time with at least 1 cross-country flight of at least 270 km (150 NM), during which full stop landings at 2 aerodromes different from the aerodrome of departure shall be made.

(b) Crediting. Applicants holding a pilot licence for another category of aircraft, shall be credited with 10 % of their total flight time as PIC on such aircraft up to a maximum of 10 hours. The amount of credit given shall in any case not include the requirements in (a)(2).

AMC1 FCL.210.A PPL(A) — Experience requirements and crediting

FLIGHT INSTRUCTION FOR THE PPL(A)

(a) Entry to training

Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted.

(b) Flight instruction

(1) The PPL(A) flight instruction syllabus takes into account the principles of threat and error management and also covers:

(i) pre-flight operations, including mass and balance determination, aircraft inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;

(iii) control of the aircraft by external visual reference;

(iv) flight at critically low air speeds, recognition of, and recovery from, incipient and full stalls;

(v) flight at critically high air speeds, recognition of, and recovery from, spiral dive;

(vi) normal and crosswind take-offs and landings;

(vii) maximum performance (short field and obstacle clearance) take- offs, short-field landings;

(viii) flight by reference solely to instruments, including the completion of a level 180 ° turn;

(ix) cross-country flying using visual reference, dead reckoning and radio navigation aids;

(x) emergency operations, including simulated aeroplane equipment malfunctions;

(xi) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, communication procedures and phraseology.

(2) Before allowing the applicant for a PPL(A) to undertake his/her first solo flight, the FI should ensure that the applicant can use R/T communication.

(c) Syllabus of flight instruction

(1) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(i) the applicant's progress and ability;

(ii) the weather conditions affecting the flight;

(iii) the flight time available;

(iv) instructional technique considerations;

(v) the local operating environment;

(vi) applicability of the exercises to the aeroplane.

(2) Each of the exercises involves the need for the applicant to be aware of the needs of good airmanship and look-out, which should be emphasised at all times.

(i) Exercise 1a: Familiarisation with the aeroplane:
(A) characteristics of the aeroplane; (B) cockpit layout; (C) systems; (D) checklists, drills and controls.

(ii) Exercise 1b: Emergency drills:

(A) action if fire on the ground and in the air;

(B) engine cabin and electrical system fire;

(C) systems failure;

(D) escape drills, location and use of emergency equipment and exits.

(iii) Exercise 2: Preparation for and action after flight:

(A) flight authorisation and aeroplane acceptance;

(B) serviceability documents;

(C) equipment required, maps, etc.;

(D) external checks;

(E) internal checks;

(F) harness, seat or rudder panel adjustments;

(G) starting and warm-up checks;

(H) power checks;

(I) running down system checks and switching off the engine;

(J) parking, security and picketing (for example tie down);

(K) completion of authorisation sheet and serviceability documents.

(iv) Exercise 3: Air experience: flight exercise.

(v) Exercise 4: Effects of controls:

(A) primary effects when laterally level and when banked;
(B) further effects of aileron and rudder;
(C) effects of:
(D) air speed;
(E) slipstream;
(F) power;
(G) trimming controls; flaps;
(H) other controls, as applicable.
(I) operation of:
(J) mixture control;
(K) carburettor heat;
(L) cabin heating or ventilation.

(vi) Exercise 5a: Taxiing:

(A) pre-taxi checks;
(B) starting, control of speed and stopping;
(C) engine handling;
(D) control of direction and turning;
(E) turning in confined spaces;
(F) parking area procedure and precautions;
(G) effects of wind and use of flying controls;
(H) effects of ground surface;
(I) freedom of rudder movement;
(J) marshalling signals;
(K) instrument checks;
(L) air traffic control procedures.

(vii) Exercise 5b: Emergencies: brake and steering failure.

(viii) Exercise 6: Straight and level:

(A) at normal cruising power, attaining and maintaining straight and level flight;

(B) flight at critically high air speeds;

(C) demonstration of inherent stability;

(D) control in pitch, including use of trim;

(E) lateral level, direction and balance and trim;

(F) at selected air speeds (use of power);

(G) during speed and configuration changes;

(H) use of instruments for precision.

(ix) Exercise 7: Climbing:

(A) entry, maintaining the normal and max rate climb and levelling off;

(B) levelling off at selected altitudes;

(C) en-route climb (cruise climb);

(D) climbing with flap down;

(E) recovery to normal climb;

(F) maximum angle of climb;

(G) use of instruments for precision.

(x) Exercise 8: Descending:

(A) entry, maintaining and levelling off;

(B) levelling off at selected altitudes;

(C) glide, powered and cruise descent (including effect of power and air speed);

(D) side slipping (on suitable types);

(E) use of instruments for precision flight.

(xi) Exercise 9: Turning:

(A) entry and maintaining medium level turns;

(B) resuming straight flight;

(C) faults in the turn (for example in correct pitch, bank and balance);

(D) climbing turns;

(E) descending turns;

(F) faults in the turns (slipping and skidding on suitable types);

(G) turns onto selected headings, use of gyro heading indicator and compass;

(H) use of instruments for precision.

(xii) Exercise 10a: Slow flight:

Note. *—the objective is to improve the student's ability to recognise inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal air speed.*

(A) safety checks;

(B) introduction to slow flight;

(C) controlled flight down to critically slow air speed;

(D) application of full power with correct attitude and balance to achieve normal climb speed.

(xiii) Exercise 10b: Stalling:

(A) safety checks;

(B) symptoms;

(C) recognition;

(D) clean stall and recovery without power and with power;

(E) recovery when a wing drops;

(F) approach to stall in the approach and in the landing configurations, with and without power and recovery at the incipient stage.

(xiv) Exercise 11: Spin avoidance:

(A) safety checks;

(B) stalling and recovery at the incipient spin stage (stall with excessive wing drop, about 45 °);

(C) instructor induced distractions during the stall.

Note 1.— *at least two hours of stall awareness and spin avoidance flight training should be completed during the course.*

Note 2.— *consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.*

(xv) Exercise 12: Take-off and climb to downwind position:

(A) pre-take-off checks;

(B) into wind take-off;

(C) safeguarding the nose wheel;

(D) crosswind take-off;

(E) drills during and after take-off;

(F) short take-off and soft field procedure/techniques including performance calculations;

(G) noise abatement procedures.

(xvi) Exercise 13: Circuit, approach and landing:

(A) circuit procedures, downwind and base leg;

(B) powered approach and landing;

(C) safeguarding the nose wheel;

(D) effect of wind on approach and touchdown speeds and use of flaps;

(E) crosswind approach and landing;

(F) glide approach and landing;

(G) short landing and soft field procedures or techniques;

(H) flapless approach and landing;

(I) wheel landing (tail wheel aeroplanes);

(J) missed approach and go-around;

(K) noise abatement procedures.

(xvii) Exercise 12/13: Emergencies:

(A) abandoned take-off;

(B) engine failure after take-off;

(C) mislanding and go-around;

(D) missed approach.

Note.— *in the interests of safety it will be necessary for pilots trained on nose wheel aeroplanes to undergo dual conversion training before flying tail wheel aeroplanes, and vice-versa.*

(xviii) Exercise 14: First solo:

(A) instructor's briefing, observation of flight and de-briefing;

Note.—*during flights immediately following the solo circuit consolidation the following should be revised:*

(B) procedures for leaving and rejoining the circuit;

(C) the local area, restrictions, map reading;

(D) use of radio aids for homing;

(E) turns using magnetic compass, compass errors.

(xix) Exercise 15: Advanced turning:

(A) steep turns (45 °), level and descending;

(B) stalling in the turn and recovery;

(C) recoveries from unusual attitudes, including spiral dives.

(xx) Exercise 16: Forced landing without power:

(A) forced landing procedure;

(B) choice of landing area, provision for change of plan;

(C) gliding distance;

(D) descent plan;

(E) key positions;

(F) engine cooling;

(G) engine failure checks;

(H) use of radio;

(I) base leg;

(J) final approach;

(K) landing;

(L) actions after landing.

(xxi) Exercise 17: Precautionary landing:

(A) full procedure away from aerodrome to break-off height;

(B) occasions necessitating;

(C) in-flight conditions;

(a) landing area selection:

(b) normal aerodrome;

(c) disused aerodrome;

(d) ordinary field.

(D) circuit and approach;

(E) actions after landing.

(xxii) Exercise 18a: Navigation:

(A) flight planning:

(a) weather forecast and actuals;

(b) map selection and preparation:

(1) choice of route;

(2) controlled airspace;

(3) danger, prohibited and restricted areas;

(4) safety altitudes.

(c) calculations:

(1) magnetic heading(s) and time(s) en-route;

(2) fuel consumption;

(3) mass and balance;

(4) mass and performance.

(d) flight information:

(1) NOTAMs etc.;

(2) radio frequencies;

(3) selection of alternate aerodromes.

(e) aeroplane documentation;

(f) notification of the flight:

(1) pre-flight administrative procedures;

(2) flight plan form.

(B) departure:

(a) organisation of cockpit workload;

(b) departure procedures:

(1) altimeter settings;

(2) ATC liaison in controlled or regulated airspace;

(3) setting heading procedure;

(4) noting of ETAs.

(c) maintenance of altitude and heading;

(d) revisions of ETA and heading;

(e) log keeping;

(f) use of radio;
(g) use of navaids;
(h) minimum weather conditions for continuation of flight;
(i) in-flight decisions;
(j) transiting controlled or regulated airspace;
(k) diversion procedures;
(l) uncertainty of position procedure;
(m) lost procedure.

(C) arrival and aerodrome joining procedure:

(a) ATC liaison in controlled or regulated airspace;
(b) altimeter setting;
(c) entering the traffic pattern;
(d) circuit procedures;
(e) parking;
(f) security of aeroplane;
(g) refuelling;
(h) closing of flight plan, if appropriate;
(i) post-flight administrative procedures.

(xxiii) Exercise 18b: Navigation problems at lower levels and in reduced visibility:

(A) actions before descending;
(B) hazards (for example obstacles and terrain);
(C) difficulties of map reading;
(D) effects of wind and turbulence;
(E) vertical situational awareness (avoidance of controlled flight into terrain);
(F) avoidance of noise sensitive areas;
(G) joining the circuit;
(H) bad weather circuit and landing.

(xxiv) Exercise 18c: Radio navigation:

(A) use of GNSS:

(a) selection of waypoints;

(b) to or from indications and orientation;

(c) error messages.

(B) use of VHF omni range:

(a) availability, AIP and frequencies;

(b) selection and identification;

(c) OBS;

(d) to or from indications and orientation;

(e) CDI;

(f) determination of radial;

(g) intercepting and maintaining a radial;

(h) VOR passage;

(i) obtaining a fix from two VORs.

(C) use of ADF equipment: NDBs:

(a) availability, AIP and frequencies;

(b) selection and identification;

(c) orientation relative to the beacon;

(d) homing.

(D) use of VHF/DF:

(a) availability, AIP, frequencies;

(b) R/T procedures and ATC liaison;

(c) obtaining a QDM and homing.

(E) use of en-route or terminal radar:

(a) availability and AIP;

(b) procedures and ATC liaison;

(c) pilot's responsibilities;

(F) secondary surveillance radar:

(a) transponders;

(b) code selection;

(c) interrogation and reply.

(G) use of DME:

(a) station selection and identification;

(b) modes of operation: distance, groundspeed and time to run.

(xxv) Exercise 19: Basic instrument flight:

(A) physiological sensations;

(B) instrument appreciation; attitude instrument flight;

(C) instrument limitations;

(D) basic manoeuvres:

(a) straight and level at various air speeds and configurations;

(b) climbing and descending;

(c) standard rate turns, climbing and descending, onto selected headings;

(d) recoveries from climbing and descending turns.

(d) BITD

(1) A BITD may be used for flight training for:

(i) flight by reference solely to instruments;

(ii) navigation using radio navigation aids;

(iii) basic instrument flight.

(2) The use of the BITD should be subject to the following:

(i) the training should be complemented by exercises on an aeroplane;

(ii) the record of the parameters of the flight must be available;

(iii) A FI(A) or STI(A) should conduct the instruction.

SECTION 3 – SPECIFIC REQUIREMENTS FOR THE PPL HELICOPTERS — PPL(H)

FCL.205.H PPL(H) — Privileges

(a) The privileges of the holder of a PPL(H) are to act without remuneration as PIC or co-pilot of helicopters engaged in non-commercial operations.

(b) Notwithstanding the paragraph above, the holder of a PPL(H) with instructor or examiner privileges may receive remuneration for:

(1) the provision of flight instruction for the PPL(H);

(2) the conduct of skill tests and proficiency checks for these licences;

(3) the ratings and certificates attached to these licences.

FCL.210.H PPL(H) — Experience requirements and crediting

(a) Applicants for a PPL(H) shall have completed at least 45 hours of flight instruction on helicopters, 5 of which may have been completed in an FNPT or FFS, including at least:

(1) 25 hours of dual flight instruction; and

(2) 10 hours of supervised solo flight time, including at least 5 hours of solo cross-country flight time with at least 1 cross-country flight of at least 185 km (100 NM), with full stop landings at 2 aerodromes different from the aerodrome of departure.

(3) 35 of the 45 hours of flight instruction have to be completed on the same type of helicopter as the one used for the skill test.

(b) Applicants holding a pilot licence for another category of aircraft, shall be credited with 10 % of their total flight time as PIC on such aircraft up to a maximum of 6 hours. The amount of credit given shall in any case not include the requirements in (a)(2).

AMC1 FCL.210.H PPL(H) — Experience requirements and crediting

FLIGHT INSTRUCTION FOR THE PPL(H)

(a) Entry to training

Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted.

(b) Ground instruction

Enhanced ground instruction in weather interpretation, planning and route assessment, decision making on encountering DVE including reversing course or conducting a precautionary landing.

(c) Flight instruction

(1) The PPL(H) flight instruction syllabus should take into account the principles of threat and error management and cover:

(i) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic autorotations, simulated engine failure, ground resonance recovery if relevant to type;

(vi) sideways and backwards flight, turns on the spot; incipient vortex ring recognition and recovery;

(vii) touchdown autorotations, simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(viii) steep turns;

(ix) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(x) limited power and confined area operations, including selection of and operations to and from unprepared sites;

(xi) flight by sole reference to basic flight instruments, including completion of a level 180 ° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud (this training may be conducted by an FI(H));

(xii) cross-country flying by using visual reference, DR, GNNS and, where available, radio navigation aids; simulation of deteriorating weather conditions and actions to divert or conduct precautionary landing;

(xiii) operations to, from and transiting controlled aerodromes; compliance with air traffic services procedures, communication procedures and phraseology.

(2) Before allowing the applicant for a PPL(H) to undertake his/her first solo flight, the FI should ensure that the applicant can use R/T communication.

(3) Wherever possible, flight simulation should be used to demonstrate to student pilots the effects of flight into DVE and to enhance their understanding and need for avoidance of this potentially fatal flight regime.

(d) Syllabus of flight instruction

(1) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(i) the applicant’s progress and ability;

(ii) the weather conditions affecting the flight;

(iii) the flight time available;

(iv) instructional technique considerations;

(v) the local operating environment;

(vi) applicability of the exercises to the helicopter.

(2) Each of the exercises involves the need for the applicant to be aware of the needs of good airmanship and look-out, which should be emphasised at all times.

(i) Exercise 1a: Familiarisation with the helicopter:

(A) characteristics of the helicopter, external features;

(B) cockpit layout;

(C) systems;

(D) checklists, procedures and controls.

(ii) Exercise 1b: Emergency procedures:

(A) action if fire on the ground and in the air;

(B) engine, cabin and electrical system fire;

(C) systems failures;

(D) escape drills, location and use of emergency equipment and exits.

(iii) Exercise 2: Preparation for and action after flight:

(A) flight authorisation and helicopter acceptance;

(B) serviceability documents;

(C) equipment required, maps, etc.;

(D) external checks;

(E) internal checks;

(F) seat, harness and flight controls adjustments;

(G) starting and warm up checks clutch engagement and starting rotors;

(H) power checks;

(I) running down system checks and switching off the engine;

(J) parking, security and picketing;

(K) completion of authorisation sheet and serviceability documents.

(iv) Exercise 3: Air experience:

(A) to introduce the student to rotary wing flight;

(B) flight exercise.

(v) Exercise 4: Effects of controls:

(A) function of flight controls, primary and secondary effect;

(B) effects of:

(a) air speed;

(b) power changes (torque);

(c) yaw (sideslip);

(d) disc loading (bank and flare);

(e) controls of selecting hydraulics on/off;

(f) control friction.

(C) instruments;

(D) use of carburettor heat or anti-icing control.

(vi) Exercise 5: Power and attitude changes:

(A) relationship between cyclic control position, disc attitude, fuselage attitude and air speed;

(B) flapback;

(C) power required diagram in relation to air speed;

(D) power and air speed changes in level flight;

(E) use of instruments for precision;

(F) engine and air speed limitations.

(vii) Exercise 6: Straight and level:

(A) at normal cruising power, attaining and maintaining straight and level flight;

(B) control in pitch, including use of control friction or trim;

(C) maintaining direction and balance, (ball or yawstring use);

(D) setting power for selected air speeds and speed changes;

(E) use of instruments for precision.

(viii) Exercise 7: Climbing:

(A) optimum climb speed, best angle or rate of climb from power required diagram;

(B) initiation, maintaining the normal and maximum rate of climb, levelling off;

(C) levelling off at selected altitudes or heights;

(D) use of instruments for precision.

(ix) Exercise 8: Descending:

(A) optimum descent speed, best angle or rate of descent from power required diagram;

(B) initiation, maintaining and levelling off;

(C) levelling off at selected altitudes or heights;

(D) descent (including effect of power and air speed);

(E) use of instruments for precision.

(x) Exercise 9: Turning:

(A) initiation and maintaining medium level turns;

(B) resuming straight flight;

(C) altitude, bank and co-ordination;

(D) climbing and descending turns and effect on rate of climb or descent;

(E) turns onto selected headings, use of gyro heading indicator and compass;

(F) use of instruments for precision.

(xi) Exercise 10: Basic autorotation:

(A) safety checks, verbal warning and look-out;

(B) entry, development and characteristics;

(C) control of air speed and RRPM, rotor and engine limitations;

(D) effect of AUM, IAS, disc loading, G forces and density altitude;

(E) re-engagement and go-around procedures (throttle over- ride or ERPM control);

(F) vortex condition during recovery;

(G) gentle and medium turns in autorotation;

(H) demonstration of variable flare simulated engine off landing.

(xii) Exercise 11a: Hovering:

(A) demonstrate hover IGE, importance of wind effect and attitude, ground cushion, stability in the hover and effects of over controlling;

(B) student holding cyclic stick only;

(C) student handling collective lever (and throttle) only;

(D) student handling collective lever, (throttle) and pedals;

(E) student handling all controls;

(F) demonstration of ground effect;

(G) demonstration of wind effect;

(H) demonstrate gentle forward running touchdown;

(I) specific hazards for example snow, dust and litter.

(xiii) Exercise 11b: Hover taxiing and spot turns:

(A) revise hovering;

(B) precise ground speed and height control;

(C) effect of wind direction on helicopter attitude and control margin;

(D) control and co-ordination during spot turns;

(E) carefully introduce gentle forward running touchdown.

(xiv) Exercise 11c: Hovering and taxiing emergencies:

(A) revise hovering and gentle forward running touchdown, explain (demonstrate where applicable) effect of hydraulics failure in the hover;

(B) demonstrate simulated engine failure in the hover and hover taxi;

(C) demonstrate dangers of mishandling and over-pitching.

(xv) Exercise 12: Take-off and landing:

(A) pre-take-off checks or drills;

(B) look-out;

(C) lifting to hover;

(D) after take-off checks;

(E) danger of horizontal movement near ground;

(F) danger of mishandling and overpitching;

(G) landing (without sideways or backwards movement);

(H) after landing checks or drills;

(I) take-off and landing crosswind and downwind.

(xvi) Exercise 13: Transitions from hover to climb and approach to hover:

(A) look-out;

(B) revise take-off and landing;

(C) ground effect, translational lift and its effects;

(D) flapback and its effects;

(E) effect of wind speed and direction during transitions from or to the hover;

(F) the constant angle approach;

(G) demonstration of variable flare simulated engine off landing.

(xvii) Exercise 14a: Circuit, approach and landing:

(A) revise transitions from hover to climb and approach to hover;

(B) circuit procedures, downwind and base leg;

(C) approach and landing with power;

(D) pre-landing checks;

(E) effect of wind on approach and IGE hover;

(F) crosswind approach and landing;

(G) go-around;

(H) noise abatement procedures.

(xviii) Exercise 14b: Steep and limited power approaches and landings:

(A) revise the constant angle approach;

(B) the steep approach (explain danger of high sink rate and low air speed)

(C) limited power approach (explain danger of high speed at touch down);

(D) use of the ground effect;

(E) variable flare simulated engine off landing.

(xix) Exercise 14c: Emergency procedures:

(A) abandoned take-off;

(B) missed approach and go-around;

(C) hydraulic off landing (if applicable);

(D) tail rotor control or tail rotor drive failure (briefing only)

(E) simulated emergencies in the circuit to include:

(a) hydraulics failure;

(b) simulated engine failure on take-off, crosswind, downwind and base leg;

(c) governor failure.

(xx) Exercise 15: First solo:

(A) instructor's briefing, observation of flight and debriefing;

(B) warn of change of attitude from reduced and laterally displaced weight;

(C) warn of low tail, low skid or wheel during hover, landing;

(D) warn of dangers of loss of RRPM and overpitching;

(E) pre-take-off checks;

(F) into wind take-off;

(G) procedures during and after take-off;

(H) normal circuit, approaches and landings;

(I) action if an emergency.

(xxi) Exercise 16: Sideways and backwards hover manoeuvring:

(A) manoeuvring sideways flight heading into wind;

(B) manoeuvring backwards flight heading into wind;

(C) combination of sideways and backwards manoeuvring;

(D) manoeuvring sideways and backwards and heading out of wind;

(E) stability and weather cocking;

(F) recovery from backwards manoeuvring (pitch nose down);

(G) limitations for sideways and backwards manoeuvring.

(xxii) Exercise 17: Spot turns:

(A) revise hovering into wind and downwind;

(B) turn on spot through 360º:

(a) around pilots position;

(b) around tail rotor;

(c) around helicopter geometric centre;

(d) square and safe visibility clearing turn.

(C) rotor RPM control, torque effect, cyclic limiting stops due to CG position and wind speed and direction.

(xxiii) Exercise 18: Hover OGE and vortex ring:

(D) establishing hover OGE;

(E) drift, height or power control;

(F) demonstration of incipient stage of vortex ring, recognition and recovery (from a safe altitude);

(G) loss of tail rotor effectiveness.

(xxiv) Exercise 19: Simulated EOL:

(A) the effect of weight, disc loading, density attitude and RRPM decay;

(B) revise basic autorotation entry;

(C) optimum use of cyclic and collective to control speed or RRPM;

(D) variable flare simulated EOL;

(E) demonstrate constant attitude simulated EOL;

(F) demonstrate simulated EOL from hover or hover taxi;

(G) demonstrate simulated EOL from transition and low level.

(xxv) Exercise 20: Advanced autorotation:

(A) over a selected point at various height and speed;

(B) revise basic autorotation: note ground distance covered;

(C) range autorotation;

(D) low speed autorotation;

(E) constant attitude autorotation (terminate at safe altitude);

(F) ‘S’ turns;

(G) turns through 180 ° and 360 °;

(H) effects on angles of descent, IAS, RRPM and effect of AUM.

(xxvi) Exercise 21: Practice forced landings:

(A) procedure and choice of the forced landing area;

(B) forced landing checks and crash action;

(C) re-engagement and go-around procedures.

(xxvii) Exercise 22: Steep turns:

(A) steep (level) turns (30 ° bank);

(B) maximum rate turns (45 ° bank if possible);

(C) steep autorotative turns;

(D) faults in the turn: balance, attitude, bank and co-ordination;

(E) RRPM control and disc loading;

(F) vibration and control feedback;

(G) effect of wind at low level.

(xxviii) Exercise 23: Transitions:

(A) revise ground effect, translational lift and flapback;

(B) maintaining constant height, (20-30 ft AGL);

(C) transition from hover to minimum 50 knots IAS and back to hover;

(D) demonstrate effect of wind.

(xxix) Exercise 24: Quick stops:

(A) use of power and controls;

(B) effect of wind;

(C) quick stops into wind;

(D) quick stops from crosswind and downwind terminating into wind;

(E) danger of vortex ring;

(F) danger of high disc loading.

(xxx) Exercise 25a: Navigation:

(A) flight planning:

(a) weather forecast and actuals;

(b) map selection and preparation and use;

(1) choice of route:

(2) controlled airspace, danger and prohibited areas;

(3) safety altitudes and noise abatement considerations.

(c) calculations:

(1) magnetic heading(s) and time(s) en-route;

(2) fuel consumption;

(3) mass and balance.

(d) flight information:

(1) NOTAMs, etc.;

(2) radio frequencies;

(3) selection of alternate landing sites.

(e) helicopter documentation;

(f) notification of the flight:

(1) pre-flight administrative procedures;

(2) flight plan form (where appropriate).

(B) departure:

(a) organisation of cockpit workload;

(b) departure procedures:

(1) altimeter settings;

(2) ATC liaison in controlled or regulated airspace;

(3) setting heading procedure;

(4) noting of ETAs.

(c) maintenance of height or altitude and heading;

(d) revisions of ETA and heading:

(1) 10 ° line, double track and track error and closing angle;

(2) 1 in 60 rule;

(3) amending an ETA.

(e) log keeping;

(f) use of radio;

(g) use of navaids (if fitted);

(h) minimum weather conditions for continuation of flight;

(i) in-flight decisions;

(j) transiting controlled or regulated airspace;

(k) uncertainty of position procedure;

(l) lost procedure.

(C) arrival and aerodrome joining procedure:

(a) ATC liaison in controlled or regulated airspace;

(b) altimeter setting;

(c) entering the traffic pattern;

(d) circuit procedures.

(e) parking;

(f) security of helicopter;

(g) refuelling;

(h) closing of flight plan (if appropriate);

(i) post-flight administrative procedures.

(xxxi) Exercise 25b: Navigation problems at low heights and in reduced visibility:

(A) actions before descending;

(B) hazards (for example obstacles and other aircraft);

(C) difficulties of map reading;

(D) effects of wind and turbulence;

(E) avoidance of noise sensitive areas;

(F) actions in the event of encountering DVE;

(G) decision to divert or conduct precautionary landing;

(H) bad weather circuit and landing;

(I) appropriate procedures and choice of landing area;

(J) precautionary landing.

(xxxii) Exercise 25c: Radio navigation:

(A) use of GNSS:

(a) selection of waypoints;

(b) to or from indications and orientation;

(c) error messages;

(d) hazards of over-reliance on the use of GNSS in the continuation of flight in DVE.

(B) use of VHF omni range:

(a) availability, AIP and frequencies;

(b) selection and identification;

(c) OBS;

(d) to or from indications and orientation;

(e) CDI;

(f) determination of radial;

(g) intercepting and maintaining a radial;

(h) VOR passage;

(i) obtaining a fix from two VORs.

(C) use of ADF equipment: NDBs:

(a) availability, AIP and frequencies;

(b) selection and identification;

(c) orientation relative to the beacon;

(d) homing.

(D) use of VHF/DF:

(a) availability, AIP and frequencies;

(b) RTF procedures and ATC liaison;

(c) obtaining a QDM and homing.

(d) use of en-route or terminal radar:

(e) availability and AIP;

(f) procedures and ATC liaison;

(g) pilots responsibilities;

(h) secondary surveillance radar (if transponder fitted):

(i) transponders;

(ii) code selection;

(iii) interrogation and reply.

(E) use of DME:

(a) station selection and identification;

(b) modes of operation: distance, groundspeed and time to run.

(xxiii) Exercise 26: Advanced take-off, landings and transitions:

(A) landing and take-off out of wind (performance reduction);

(B) ground effect, translational lift and directional stability variation when out of wind;

(C) downwind transitions;

(D) vertical take-off over obstacles;

(E) running take-off;

(F) cushion creep take-off;

(G) reconnaissance of landing site;

(H) running landing;

(I) zero speed landing;

(J) crosswind and downwind landings;

(K) steep approach;

(L) go-around.

(xxiv) Exercise 27: Sloping ground:

(A) limitations and assessing slope angle;

(B) wind and slope relationship: blade and control stops;

(C) effect of CG when on slope;

(D) ground effect on slope and power required;

(E) right skid up slope;

(F) left skid up slope;

(G) nose up slope;

(H) avoidance of dynamic roll over, dangers of soft ground and sideways movement on touchdown;

(I) danger of striking main or tail rotor by harsh control movement near ground.

(xxv) Exercise 28: Limited power:

(A) take-off power check;

(B) vertical take-off over obstacles;

(C) in-flight power check;

(D) running landing;

(E) zero speed landing;

(F) approach to low hover;

(G) approach to hover;

(H) approach to hover OGE;

(I) steep approach;

(J) go-around.

(xxvi) Exercise 29: Confined areas:

(A) landing capability and performance assessment;

(B) locating landing site and assessing wind speed and direction;

(C) reconnaissance of landing site;

(D) select markers;

(E) select direction and type of approach;

(F) circuit;

(G) approach to committed point and go-around;

(H) approach;

(I) clearing turn;

(J) landing;

(K) power check and performance assessment in and out of ground effect;

(L) normal take-off to best angle of climb speed;

(M) vertical take-off from hover.

(xxvii) Exercise 30: Basic instrument flight:

(A) physiological sensations;

(B) instrument appreciation:

(a) attitude instrument flight;

(b) instrument scan.

(C) instrument limitations;

(D) basic manoeuvres:

(a) straight and level at various air speeds and configurations;

(b) climbing and descending;

(c) standard rate turns, climbing and descending, onto selected headings.

(E) recoveries from climbing and descending turns;

(F) recoveries from unusual attitudes.

(xxviii) Exercise 31a: Night flying (if night rating required):

(A) pre-flight inspection using torch, pan lights, etc.;

(B) take-off (no sideways or backwards manoeuvring);

(C) hover taxi (higher and slower than by day);

(D) transition to climb;

(E) level flight;

(F) approach and transition to hover;

(G) landing;

(H) autorotation;

(I) practice forced landing (with flares if appropriate: simulated);

(J) night emergencies (for example failure of lights, etc.).

(xxix) Exercise 31b: Night cross-country (if night rating required):

(A) navigation principles as for day cross-country;

(B) map marking (highlighting built-up areas with thicker lines, etc.).

SUBPART D — COMMERCIAL PILOT LICENCE (CPL)

SECTION 1 — COMMON REQUIREMENTS

FCL.300 CPL — Minimum age

An applicant for a CPL shall be at least 18 years of age.

FCL.305 CPL — Privileges and conditions

(a) Privileges. The privileges of the holder of a CPL are, within the appropriate aircraft category, to:

(1) exercise all the privileges of the holder of a PPL;

(2) act as PIC or co-pilot of any aircraft engaged in operations other than commercial air transport;

(3) act as PIC in commercial air transport of any single-pilot aircraft subject to the restrictions specified in FCL.060 and in this Subpart;

(4) act as co-pilot in commercial air transport subject to the restrictions specified in FCL.060.

(b) Conditions. An applicant for the issue of a CPL shall have fulfilled the requirements for the class or type rating of the aircraft used in the skill test.

FCL.310 CPL — Theoretical knowledge examinations

An applicant for a CPL shall demonstrate a level of knowledge appropriate to the privileges granted in the following subjects:

- Air Law,
- Aircraft General Knowledge — Airframe/Systems/Powerplant,
- Aircraft General Knowledge — Instrumentation,
- Mass and Balance,
- Performance,
- Flight Planning and Monitoring,
- Human Performance,
- Meteorology,
- General Navigation,
- Radio Navigation,
- Operational Procedures,

- Principles of Flight, and
- Visual Flight Rules (VFR) Communications.

(a) Unless specifically approved by the Authority, an applicant shall take the entire set of examinations in Aruba.

(b) An applicant shall be recommended for an examination by the approved ATO responsible for applicant's training when the applicant has completed the appropriate elements of the course of theoretical knowledge instruction to a satisfactorily standard. An applicant who has failed to complete the examination within the limits imposed by the AUA-FCL will in addition be required to produce evidence from an approved Training Organisation of further training.

(c) If the Authority considers that the applicant is not complying with examination procedures during the examination, this misconduct will be considered with a view to failing the applicant, either in the examination of a single subject or in the examination as a whole.

AMC1 FCL.310; FCL.515 (b); FCL.615 (b)

SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE ATPL, CPL AND IR

The following tables contain the detailed theoretical knowledge syllabus for the ATPL, CPL and IR.

Aspects related to non-technical skills shall be included in an integrated manner, taking into account the particular risks associated to the licence and the activity.

The applicable items for each licence or rating are marked with 'x'. An 'x' on the main title of a subject means that all the sub-divisions are applicable.

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
010 00 00 00	**AIR LAW AND ATC PROCEDURES**	x	x	x	x	x	x
010 01 00 00	International Law: Conventions, Agreements and Organisations						
010 02 00 00	Airworthiness of Aircraft						
010 03 00 00	Aircraft Nationality and Registration Marks						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
010 04 00 00	Personnel Licensing						
010 05 00 00	Rules of the Air						
010 06 00 00	Procedures for Air Navigation Services: Aircraft Operations						
010 07 00 00	Air Traffic Services and Air Traffic Management						
010 08 00 00	Aeronautical Information Service						
010 09 00 00	Aerodromes or Heliports						
010 10 00 00	Facilitation						
010 11 00 00	Search and Rescue						
010 12 00 00	Security						
010 13 00 00	Aircraft Accident and Incident Investigation						
021 00 00 00	**AIRCRAFT GENERAL KNOWLEDGE: AIRFRAME AND SYSTEMS, ELECTRICS, POWERPLANT AND EMERGENCY EQUIPMENT**	**x**	**x**	**x**	**x**	**x**	**x**
021 01 00 00	System Design, Loads, Stresses and Maintenance						
021 02 00 00	Airframe						
021 03 00 00	Hydraulics						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
021 04 00 00	Landing Gear, Wheels, Tyres and Brakes						
021 05 00 00	Flight Controls						
021 06 00 00	Pneumatics: Pressurisation And Air Conditioning						
021 07 00 00	Anti and De-Icing Systems						
021 08 00 00	Fuel System						
021 09 00 00	Electrics						
021 10 00 00	Piston Engines						
021 11 00 00	Turbine Engines						
021 12 00 00	Protection and Detection Systems						
021 13 00 00	Oxygen Systems						
021 14 00 00	Helicopter: Miscellaneous Systems						
021 15 00 00	Helicopter: Rotor Heads						
021 16 00 00	Helicopter: Transmission						
021 17 00 00	Helicopter: Blades						
022 00 00 00	**AIRCRAFT GENERAL KNOWLEDGE: INSTRUMENTATION**	**x**	**x**	**x**	**x**	**x**	**x**
022 01 00 00	Sensors and Instruments						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
022 02 00 00	Measurement of Air Data Parameters						
022 03 00 00	Magnetism: Direct Reading Compass And Flux Valve						
022 04 00 00	Gyroscopic Instruments						
022 05 00 00	Inertial Navigation and Reference Systems						
022 06 00 00	Aeroplane: Automatic Flight Control Systems						
022 07 00 00	Helicopter: Automatic Flight Control Systems						
022 08 00 00	Trims, Yaw Damper and Flight Envelope Protection						
022 09 00 00	Autothrottle: Automatic Thrust Control System						
022 10 00 00	Communication Systems						
022 11 00 00	FMS						
022 12 00 00	Alerting Systems and Proximity Systems						
022 13 00 00	Integrated Instruments: Electronic Displays						
022 14 00 00	Maintenance, Monitoring and Recording Systems						
022 15 00 00	Digital Circuits And Computers						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
030 00 00 00	**FLIGHT PERFORMANCE AND PLANNING**	x	x	x	x	x	
031 00 00 00	**MASS AND BALANCE: AEROPLANES OR HELICOPTERS**	x	x	x	x	x	
031 01 00 00	Purpose of Mass and Balance Considerations						
031 02 00 00	Loading						
031 03 00 00	Fundamentals of CG Calculations						
031 04 00 00	Mass and Balance Details of Aircraft						
031 05 00 00	Determination of CG Position						
031 06 00 00	Cargo Handling						
032 00 00 00	**PERFORMANCE: AEROPLANES**	x	x				
032 01 00 00	General						
032 02 00 00	Performance Class B: SE Aeroplanes						
032 03 00 00	Performance Class B: ME Aeroplanes						
032 04 00 00	Performance Class A : Aeroplanes Certificated Under CS-25 Only						
033 00 00 00	**FLIGHT PLANNING AND FLIGHT MONITORING**	x	x	x	x	x	x

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
033 01 00 00	Flight Planning for VFR Flights						
033 02 00 00	Flight Planning for IFR Flights						
033 03 00 00	Fuel Planning						
033 04 00 00	Pre-Flight Preparation						
033 05 00 00	ATS Flight Plan						
033 06 00 00	Flight Monitoring and In-Flight Re-Planning						
034 00 00 00	**PERFORMANCE: HELICOPTERS**			x	x	x	
034 01 00 00	General						
034 02 00 00	Performance Class 3 SE Helicopters Only						
034 03 00 00	Performance Class 2						
034 04 00 00	Performance Class 1 Helicopters Certificated Under CS 29 Only						
040 00 00 00	**HUMAN PERFORMANCE**	x	x	x	x	x	x
040 01 00 00	Human Factors: Basic Concepts						
040 02 00 00	Basic Aviation Physiology and Health Maintenance						
040 03 00 00	Basic Aviation Psychology						
050 00 00 00	**METEOROLOGY**	x	x	x	x	x	x
050 01 00 00	The Atmosphere						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
050 02 00 00	Wind						
050 03 00 00	Thermodynamics						
050 04 00 00	Clouds and Fog						
050 05 00 00	Precipitation						
050 06 00 00	Air Masses and Fronts						
050 07 00 00	Pressure Systems						
050 08 00 00	Climatology						
050 09 00 00	Flight Hazards						
050 10 00 00	Meteorological Information						
060 00 00 00	**NAVIGATION**	x	x	x	x	x	x
061 00 00 00	**GENERAL NAVIGATION**	x	x	x	x	x	x
061 01 00 00	Basics of Navigation						
061 02 00 00	Magnetism and Compasses						
061 03 00 00	Charts						
061 04 00 00	Dead Reckoning Navigation						
061 05 00 00	In-Flight Navigation						
062 00 00 00	**RADIO NAVIGATION**	x	x	x	x	x	x
062 01 00 00	Basic Radio Propagation Theory						
062 02 00 00	Radio Aids						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
062 03 00 00	Radar						
062 04 00 00	Intentionally Left Blank						
062 05 00 00	Area Navigation Systems and RNAV or FMS						
062 06 00 00	GNSS						
070 00 00 00	**OPERATIONAL PROCEDURES**	x	x	x	x	x	
071 01 00 00	General Requirements						
071 02 00 00	Special Operational Procedures and Hazards (General Aspects)						
071 03 00 00	Helicopter Emergency Procedures						
080 00 00 00	**PRINCIPLES OF FLIGHT**	x	x	x	x	x	
081 00 00 00	**PRINCIPLES OF FLIGHT: AEROPLANE**	x	x				
081 01 00 00	Subsonic Aerodynamics						
081 02 00 00	High Speed Aerodynamics						
081 03 00 00	Intentionally Left Blank						
081 04 00 00	Stability						
081 05 00 00	Control						
081 06 00 00	Limitations						
081 07 00 00	Propellers						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
081 08 00 00	Flight Mechanics						
082 00 00 00	**PRINCIPLES OF FLIGHT: HELICOPTER**			x	x	x	
082 01 00 00	Subsonic Aerodynamics						
082 02 00 00	Transonic Aerodynamics and Compressibility Effects						
082 03 00 00	Rotorcraft Types						
082 04 00 00	Main Rotor Aerodynamics						
082 05 00 00	Main Rotor Mechanics						
082 06 00 00	Tail Rotors						
082 07 00 00	Equilibrium, Stability and Control						
082 08 00 00	Helicopter Flight Mechanics						
090 00 00 00	**COMMUNICATIONS**	x	x	x	x	x	x
091 00 00 00	VFR COMMUNICATIONS						
091 01 00 00	Definitions						
091 02 00 00	General Operating Procedures						
091 03 00 00	Relevant Weather Information Terms (VFR)						
091 04 00 00	Action Required to be Taken in Case of Communication Failure						

		Aeroplane		Helicopter			
		ATPL	CPL	ATPL/IR	ATPL	CPL	IR
091 05 00 00	Distress And Urgency Procedures						
091 06 00 00	General Principles of VHF propagation and Allocation of Frequencies						
092 00 00 00	**IFR COMMUNICATIONS**						
092 01 00 00	Definitions						
092 02 00 00	General Operating Procedures						
092 03 00 00	Action Required to be Taken in Case of Communication Failure						
092 04 00 00	Distress and Urgency Procedures						
092 05 00 00	Relevant Weather Information Terms (IFR)						
092 06 00 00	General Principles of VHF Propagation and Allocation of Frequencies						
092 07 00 00	Morse Code						

FCL.315 CPL — Training course

An applicant for a CPL shall have completed theoretical knowledge instruction and flight instruction at an ATO, in accordance with Appendix 3 to this regulation.

FCL.320 CPL — Skill test

An applicant for a CPL shall pass a skill test in accordance with Appendix 4 to this regulation to demonstrate the ability to perform, as PIC of the appropriate aircraft category, the relevant procedures and manoeuvres with the competency appropriate to the privileges granted.

SECTION 2 —SPECIFIC REQUIREMENTS FOR THE AEROPLANE CATEGORY — CPL(A)

FCL.315A CPL (A) — Training Course

Theoretical knowledge and flight instruction for the issue of a CPL(A) shall include upset prevention and recovery training.

FCL.325.A CPL(A) — Specific conditions

(a) The applicant shall have completed not less than 200 hours of flight time, or 150 hours if completed during a course of approved training, as a pilot of aeroplanes. The Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be. Credit for such experience shall be limited to a maximum of 20 hours.

(b) Before exercising the privileges of a CPL(A), the holder of an MPL shall have completed in aeroplanes:

(1) 70 hours of flight time:

(i) as PIC; or

(ii) made up of at least 10 hours as PIC and the additional flight time as PIC under supervision (PICUS).

Of these 70 hours, 20 shall be of VFR cross-country flight time as PIC, or cross-country flight time made up of at least 10 hours as PIC and 10 hours as PICUS. This shall include a VFR cross-country flight of at least 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be flown as PIC;

(2) the elements of the CPL(A) modular course as specified in paragraphs 10(a) and 11 of Appendix 3, E to this regulation; and

(3) the CPL(A) skill test, in accordance with FCL.320.

SUBPART E — MULTI-CREW PILOT LICENCE (MPL)

FCL.400.A MPL — Minimum age

An applicant for an MPL shall be at least 18 years of age.

FCL.405.A MPL — Privileges

(a) The privileges of the holder of an MPL are to act as co-pilot in an aeroplane required to be operated with a co-pilot.

(b) The holder of an MPL may obtain the extra privileges of:

(1) the holder of a PPL(A), provided that the requirements for the PPL(A) specified in Subpart C are met;

(2) a CPL(A), provided that the requirements specified in FCL.325.A are met.

(c) The holder of an MPL shall have the privileges of his/her IR(A) limited to aeroplanes required to be operated with a co-pilot. The privileges of the IR(A) may be extended to single-pilot operations in aeroplanes, provided that the licence holder has completed the training necessary to act as PIC in single-pilot operations exercised solely by reference to instruments and passed the skill test of the IR(A) as a single-pilot.

FCL.410.A MPL — Training course and theoretical knowledge examinations

(a) Course.

An applicant for an MPL shall have completed a training course of theoretical knowledge and flight instruction at an ATO in accordance with Appendix 5 to this regulation.

(b) Examination.

An applicant for an MPL shall have demonstrated a level of theoretical knowledge appropriate to the holder of an ATPL(A), in accordance with FCL.515, and of a multi-pilot type rating.

FCL.415.A MPL — Practical skill

(a) An applicant for an MPL shall have demonstrated through continuous assessment the skills required for fulfilling all the competency units specified in Appendix 5 to this regulation, as pilot flying and pilot not flying, in a multi-engine turbine-powered multi-pilot aeroplane, under VFR and IFR.

(b) On completion of the training course, the applicant shall pass a skill test in accordance with Appendix 9 to this regulation, to demonstrate the ability to perform the relevant procedures and manoeuvres with the competency appropriate to the privileges granted. The skill test shall be taken in the type of aeroplane used on the advanced phase of the MPL integrated training course or in an FFS representing the same type.

(c) During the skill test required under (b) above, the applicant shall satisfactorily demonstrate the competencies identified in an adapted competency model to perform as a co-pilot of a turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots. The adapted competency model shall be approved by the Authority, using as a basis the ICAO aeroplane pilot competency framework contained in the Procedures for Air Navigation *Services—Training* (PANS-TRG, Doc 9868).

SUBPART F — AIRLINE TRANSPORT PILOT LICENCE (ATPL)

SECTION 1 — Common requirements

FCL.500 ATPL — Minimum age

Applicants for an ATPL shall be at least 21 years of age.

FCL.505 ATPL — Privileges

(a) The privileges of the holder of an ATPL are, within the appropriate aircraft category, to:

(1) exercise all the privileges of the holder of a PPL and a CPL;

(2) act as PIC of aircraft engaged in commercial air transport.

(b) Applicants for the issue of an ATPL shall have fulfilled the requirements for the type rating of the aircraft used in the skill test.

FCL.515 ATPL — Training course and theoretical knowledge examinations

(a) Course.

Applicants for an ATPL shall have completed a training course at an ATO. The course shall be either an integrated training course or a modular course, in accordance with Appendix 3 to this regulation.

(b) Examination.

Applicants for an ATPL shall demonstrate a level of knowledge appropriate to the privileges granted in the following subjects:

- Air Law,
- Aircraft General Knowledge — Airframe/Systems/Power plant,
- Aircraft General Knowledge — Instrumentation,
- Mass and Balance,
- Performance,
- Flight Planning and Monitoring,
- Human Performance,
- Meteorology,
- General Navigation,
- Radio Navigation,

- Operational Procedures,
- Principles of Flight,
- VFR Communications,
- IFR Communications.

(c) Unless specifically approved by the Authority, an applicant shall take the entire set of examinations in Aruba.

(d) An applicant shall be recommended for an examination by the approved Training Organisation responsible for applicant's training when the applicant has completed the appropriate elements of the course of theoretical knowledge instruction to a satisfactorily standard. An applicant who has failed to complete the examination within the limits imposed by AUA-FCL will be required to produce evidence from an approved Training Organisation of further training.

(e) If the Authority considers that the applicant is not complying with examination procedures during the examination, this misconduct will be considered with a view to failing the applicant, either in the examination of a single subject or in the examination as a whole.

SECTION 2 —Specific requirements for the aeroplane category ATPL (A)

FCL.505.A ATPL(A) — Restriction of privileges for pilots previously holding an MPL

When the holder of an ATPL(A) has previously held only an MPL, the privileges of the licence shall be restricted to multi-pilot operations, unless the holder has complied with FCL.405.A(b)(2) and (c) for single-pilot operations.

FCL.510.A ATPL(A) — Pre-requisites, experience and crediting

(a) Pre-requisites.

Applicants for an ATPL(A) shall hold:

(1) an MPL; or

(2) a CPL(A) and a multi-engine IR for aeroplanes. In this case, the applicant shall also have received instruction in MCC.

(b) Experience.

Applicants for an ATPL(A) shall have completed a minimum of 1 500 hours of flight time in aeroplanes, including at least:

(1) 500 hours in multi-pilot operations on aeroplanes; Either:

(i) 500 hours as PIC under supervision; or

(ii) 250 hours as PIC; or

(iii) 250 hours, including at least 70 hours as PIC, and the remaining as PIC under supervision;

(2) 200 hours of cross-country flight time of which at least 100 hours shall be as PIC or as PIC under supervision;

(3) 75 hours of instrument time of which not more than 30 hours may be instrument ground time; and

(4) 100 hours of night flight as PIC or co-pilot.

Of the 1 500 hours of flight time, up to 100 hours of flight time may have been completed in an FFS and FNPT. Of these 100 hours, only a maximum of 25 hours may be completed in an FNPT.

(c) Crediting.

(1) When the applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements can be reduced accordingly.

Note.— The extent to which flight time experience may be reduced by the Authority can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the aeroplane category.

(2) In accordance with (1) above, the Authority has determined that holders of a pilot licence for other categories of aircraft shall be credited with flight time up to a maximum of:

(i) for helicopters, 50 % of all the flight time requirements of paragraph (b).

(3) Holders of a flight engineer licence shall be credited with 50 % of the flight engineer time up to a maximum credit of 250 hours. These 250 hours may be credited against the 1 500 hours requirement of paragraph (a), and the 500 hours requirement of paragraph (b)(1), provided that the total credit given against any of these paragraphs does not exceed 250 hours.

(d) The experience required in (b) shall be completed before the skill test for the ATPL(A) is taken.

AMC1 FCL.510.A (b)ATPL(A) — Prerequisites, experience and crediting

Equivalent requirements for CS-25 and CS-23 commuter category are the EASA/FAR-25 transport category, EASA/FAR-23 commuter category, or BCAR or AIR 2051.

FCL.520.A ATPL(A) — Skill test

Applicants for an ATPL(A) shall pass a skill test in accordance with Appendix 9 to this regulation to demonstrate the ability to perform, as PIC of a multi-pilot aeroplane under IFR, the relevant procedures and manoeuvres with the competency appropriate to the privileges granted.

The skill test shall be taken in the aeroplane or an adequately qualified FFS representing the same type.

AMC1 FCL.520.A; FCL.520.H

ATPL SKILL TEST

The ATPL skill test may serve at the same time as a skill test for the issue of the licence and a proficiency check for the revalidation of the type rating for the aircraft used in the test and may be combined with the skill test for the issue of a MP type rating.

SECTION 3 — SPECIFIC REQUIREMENTS FOR THE HELICOPTER CATEGORY ATPL(H)

FCL.510.H ATPL(H) — Pre-requisites, experience and crediting

Applicants for an ATPL(H) shall:

(a) hold a CPL(H) and a multi-pilot helicopter type rating and have received instruction in MCC;

(b) have completed as a pilot of helicopters a minimum of 1 000 hours of flight time including at least:

(1) 350 hours in multi-pilot helicopters;

(2) (i) 250 hours as PIC; or

(ii) 100 hours as PIC and 150 hours as PIC under supervision; or

(iii) 250 hours as PIC under supervision in multi-pilot helicopters. In this case, the ATPL(H) privileges shall be limited to multi-pilot operations only, until 100 hours as PIC have been completed;

(3) 200 hours of cross-country flight time of which at least 100 hours shall be as PIC or as PIC under supervision;

(4) 30 hours of instrument time of which not more than 10 hours may be instrument ground time; and

(5) 100 hours of night flight as PIC or as co-pilot.

Of the 1 000 hours, a maximum of 100 hours may have been completed in an FSTD, of which not more than 25 hours may be completed in an FNPT.

(c) When the applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements can be reduced accordingly.

Note 1.— *The extent to which flight time experience may be reduced by the Authority can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the aeroplane category.*

Note 2.— *In accordance with (c) above, the flight time in aeroplanes shall be credited up to 50 % against the flight time requirements of paragraph (b).*

(d) The experience required in (b) shall be completed before the skill test for the ATPL(H) is taken.

FCL.520.H ATPL(H) — Skill test

Applicants for an ATPL(H) shall pass a skill test in accordance with Appendix 9 to this regulation to demonstrate the ability to perform as PIC of a multi-pilot helicopter the relevant procedures and manoeuvres with the competency appropriate to the privileges granted.

The skill test shall be taken in the helicopter or an adequately qualified FFS representing the same type.

SUBPART G — INSTRUMENT RATING (IR)

SECTION 1 — COMMON REQUIREMENTS

FCL.600 IR — General

Operations under IFR on an aeroplane, helicopter or powered-lift aircraft shall only be conducted by holders of a PPL, CPL, MPL and ATPL with an IR appropriate to the category of aircraft or when undergoing skill testing or dual instruction.

FCL.605 IR — Privileges

(a) The privileges of a holder of an IR are to fly aircraft under IFR, including PBN operations, with a minimum decision height of 200 feet (60 m).

(b) In the case of a multi-engine IR, these privileges may be extended to decision heights lower than 200 feet (60 m) when the applicant has undergone specific training at an ATO and has passed section 6 of the skill test prescribed in Appendix 9 to this regulation in multi-pilot aircraft.

(c) Holders of an IR shall exercise their privileges in accordance with the conditions established in Appendix 8 to this regulation.

(d) Helicopters only. To exercise privileges as PIC under IFR in multi-pilot helicopters, the holder of an IR(H) shall have at least 70 hours of instrument time of which up to 30 hours may be instrument ground time.

FCL.610 IR — Pre-requisites and crediting

Applicants for an IR shall:

(a) hold:

(1) at least a PPL in the appropriate aircraft category, and:

(i) the privileges to fly at night in accordance with FCL.810; or

(ii) an ATPL in another category of aircraft; or

(2) a CPL, in the appropriate aircraft category;

(b) have completed at least 50 hours of cross-country flight time as PIC in aeroplanes or helicopters of which at least 20 hours shall be in the relevant aircraft category.

(c) Helicopters only. Applicants who have completed an ATP(H)/IR, ATP(H), CPL(H)/IR or CPL(H) integrated training course shall be exempted from the requirement in (b).

FCL.615 IR — Theoretical knowledge and flight instruction

(a) Course.

Applicants for an IR shall have received a course of theoretical knowledge and flight instruction at an ATO. The course shall be:

(1) an integrated training course which includes training for the IR, in accordance with Appendix 3 to this regulation; or

(2) a modular course in accordance with Appendix 6 to this regulation.

(b) Examination.

Applicants shall demonstrate a level of theoretical knowledge appropriate to the privileges granted in the following subjects:

- Air Law,
- Aircraft General Knowledge — Instrumentation,
- Flight Performance and Monitoring,
- Human Performance,
- Meteorology,
- Radio Navigation,
- IFR Communications.

FCL.620 IR — Skill test

(a) Applicants for an IR shall pass a skill test in accordance with Appendix 7 to this regulation to demonstrate the ability to perform the relevant procedures and manoeuvres with a degree of competency appropriate to the privileges granted.

(b) For a multi-engine IR, the skill test shall be taken in a multi-engine aircraft. For a single-engine IR, the test shall be taken in a single-engine aircraft. A multi-engine centreline thrust aeroplane shall be considered a single-engine aeroplane for the purposes of this paragraph.

FCL.625 IR — Validity, revalidation and renewal

(a) Validity.

An IR shall be valid for 1 year.

(b) Revalidation.

(1) An IR shall be revalidated within the 3 months immediately preceding the expiry date of the rating by complying with the revalidation criteria for the relevant aircraft category.

(2) If applicants choose to fulfil the revalidation requirements earlier than prescribed in point (1), the new validity period shall commence from the date of the proficiency check

(3) Applicants who fail to pass the relevant section of an IR proficiency check before the expiry date of the IR shall not exercise the IR privileges until they have passed the proficiency check.

(c) Renewal.

If an IR has expired, in order to renew their privileges applicants shall comply with the following:

(1) go through refresher training at an ATO to reach the level of proficiency needed to pass the instrument element of the skill test in accordance with Appendix 9 to this regulation; and

(2) complete a proficiency check in accordance with Appendix 9 to this regulation, in the relevant aircraft category.

(d) If the IR has not been revalidated or renewed within the preceding 7 years, applicants for the IR shall pass again the IR theoretical knowledge examination and skill test.

AMC1 FCL.625IR — Validity, revalidation and renewal

RENEWAL OF INSTRUMENT RATING: REFRESHER TRAINING

(a) Paragraph (b)(1) of FCL.740 determines that if the instrument rating has lapsed, the applicant shall go through refresher training at an ATO, to reach the level of proficiency needed to pass the instrument element of the skill test prescribed in Appendix 9, or the instrument rating skill test as described in Appendix 7 to AUA-FCL. The amount of refresher training needed should be determined on a case-by-case basis by the ATO, taking into account the following factors:

(1) the experience of the applicant. To determine this, the ATO should evaluate the pilot's log book, and, if necessary, conduct a test in an FSTD.

(2) the amount of time lapsed since the expiry of the validity period of the rating. The amount of training needed to reach the desired level of proficiency should increase with the time lapsed. In some cases, after evaluating the pilot, and when the time lapsed is very limited (less than 3 months), the ATO may even determine that no further refresher training is necessary. The following may be taken as guidance when determining the needs of the applicant:

(i) expiry for a period shorter than 3 months:

(A) no supplementary requirements;

(ii) expiry for longer than 3 months but shorter than 1 year:

(A) a minimum of one training session;

(iii) expiry for longer than 1 year but shorter than 7 years:

(A) a minimum of three training sessions;

(iv) expiry for longer than 7 years:

(A) the applicant should undergo the full training course for the issue of the IR.

(3) the complexity of the aircraft

(4) whether the applicant has a current rating on another aircraft type or class; and

(5) where considered necessary, the performance of the applicant during a simulated proficiency check for the rating in a flight simulation training device (FSTD) or an aircraft of a relevant type or class.

The amount of training needed to reach the desired level of competency should increase with the time elapsed since the privileges of the rating were last used.

(b) Once the ATO has determined the needs of the applicant, it should develop an individual training programme, which should be based on the initial training for the issue of instrument ratings and focus on the aspects where the applicant has shown the greatest needs. Theoretical-knowledge instruction should be included, as necessary. The performance of the applicant should be reviewed during the training, and additional instruction should be provided where necessary to reach the standard required for the proficiency check.

(c) After successful completion of the training, the ATO should give a training completion certificate to the applicant, which describes the evaluation of the factors listed under (a) above and the training received, and includes a statement that the training has been successfully completed. The training completion certificate should be presented to the examiner prior to the proficiency check. Following the successful renewal of the rating, the training completion certificate and examiner report form to be submitted to the Authority when applying for the renewal.

(d) Taking into account the factors listed in (a) above, an ATO may also decide that the applicant already possesses the required level of proficiency and that no refresher training is necessary. In such a case, the certificate or other documental evidence referred to in point (c) above should contain a respective statement including sufficient reasoning.

SECTION 2 — SPECIFIC REQUIREMENTS FOR THE AEROPLANE CATEGORY

FCL.625.A IR(A) — Revalidation

(a) Revalidation.

Applicants for the revalidation of an IR(A):

(1) when combined with the revalidation of a class or type rating, shall pass a proficiency check in accordance with Appendix 9 to this regulation;

(2) if the IR revalidation is not combined with the revalidation of a class or type rating, shall:

(i) for single-pilot aeroplanes, complete section 3b and those parts of section 1 which are relevant to the intended flight of the proficiency check in accordance with Appendix 9 to this regulation; and

(ii) for multi-engine aeroplanes, complete section 6 of the proficiency check for single-pilot aeroplanes in accordance with Appendix 9 to this regulation by sole reference to instruments.

(3) An FNPT II or an FFS representing the relevant class or type of aeroplane may be used for the revalidation pursuant to point (2), provided that at least each alternate proficiency check for the revalidation of an IR(A) is performed in an aeroplane.

(b) Cross-credit shall be given in accordance with Appendix 8 to this regulation.

SECTION 3 — SPECIFIC REQUIREMENTS FOR THE HELICOPTER CATEGORY

FCL.625.H IR(H) — Revalidation

(a) To revalidate an IR(H), applicants shall:

(1) when combined with the revalidation of a type rating, shall complete a proficiency check in accordance with Appendix 9 to this regulation, for the relevant type of helicopter;

(2) when not combined with the revalidation of a type rating, shall complete only Section 5 and the relevant parts of Section 1 of the proficiency check established in Appendix 9 to this regulation for the relevant type of helicopter. In this case, an FTD 2/3 or an FFS representing the relevant type of helicopter may be used, but at least each alternate proficiency check for the revalidation of an IR(H) in these circumstances shall be performed in a helicopter.

(b) Cross-credit shall be given in accordance with Appendix 8 to this regulation.

FCL.630.H IR(H) — Extension of privileges from single-engine to multi-engine helicopters

Holders of an IR(H) valid for single-engine helicopters wishing to extend for the first time the IR(H) to multi-engine helicopters shall complete:

(a) a training course at an ATO comprising at least 5 hours dual instrument instruction time, of which 3 hours may be in an FFS or FTD 2/3 or FNPT II/III; and

(b) section 5 of the skill test in accordance with Appendix 9 to this regulation on multi-engine helicopters.

SUBPART H — CLASS AND TYPE RATINGS

SECTION 1 — COMMON REQUIREMENTS

FCL.700 Circumstances in which class or type ratings are required

(a) Holders of a pilot licence shall act as pilots of an aircraft only if they have a valid and appropriate class or type rating, unless any of the following applies:

(1) if they take skill tests or proficiency checks for renewal of class or type ratings;

(2) if they receive flight instruction.

(b) Notwithstanding (a), in the case of flights related to the introduction or modification of aircraft types, pilots may hold a special certificate given by the Authority, authorising them to perform the flights. This authorisation shall have its validity limited to the specific flights.

(c) Without prejudice to (a) and (b), in the case of flights related to the introduction or modification of aircraft types conducted by design or production organisations within the scope of their privileges, as well as instruction flights for the issue of a flight test rating, when the requirements of this Subpart may not be complied with, pilots may hold a flight test rating issued in accordance with FCL.820.

GM1 FCL.700 Circumstances in which class or type ratings are required

LIST OF CLASS OR TYPE RATINGS

The following tables contain lists of aeroplanes that are included in class ratings.

(a) Class ratings (aeroplane): SP and SEP or MEP aeroplane (land or sea):

Manufacturer	Aeroplanes		Licence Endorsement
All manufacturers	SEP (land)	(D)	SEP (land)
	SEP (land) with variable pitch propellers		
	SEP (land) with retractable undercarriage		
	SEP (land) with turbo or super charged engines		
	SEP (land) with cabin pressurisation		

	SEP (land) with tail wheels		
	SEP (land) with EFIS		
	SEP (land) with SLPC		
	SEP (sea)	(D)	SEP (sea)
	SEP (sea) with variable pitch propellers		
	SEP (sea) with turbo or super charged engines		
	SEP (sea) with cabin pressurisation		
	SEP (sea) with EFIS		
	SEP (sea) with SLPC		
All manufacturers	MEP (land)	(D)	MEP (land)
	MEP (sea)	(D)	MEP (sea)

(b) Additional class and type rating lists and endorsement lists are specified in the current:

(1) EASA type rating and licence endorsement list flight crew for all aircraft excluding helicopters; and,

(2) EASA Type Rating & License Endorsement List – Helicopters

(c) Whenever (D) is indicated in one of the lists mentioned in paragraph (a), it indicates that differences training in accordance with FCL.710 is required.

FCL.703 Class and type ratings -general

(a) Class ratings shall be established for aeroplanes certificated for single-pilot operation and shall comprise

(1) single-engine, land;

(2) single-engine, sea;

(3) multi-engine, land;

(4) multi-engine, sea.

(b) Type ratings shall be established for:

(1) aircraft certificated for operation with a minimum crew of at least two pilots;

(2) helicopters and powered-lifts certificated for single-pilot operation; and

(3) any aircraft whenever considered necessary by the Authority.

(c) When an applicant demonstrates skill and knowledge for the initial issue of a pilot licence, the category and the ratings appropriate to the class or type of aircraft used in the demonstration shall be entered on the licence.

(d) The holder of a licence shall not act either as pilot-in-command or as co-pilot of an aeroplane, a helicopter or a powered-lift unless the holder has received authorisation as follows:

(1) the appropriate class rating specified in (a) above; or

(2) a type rating when required in accordance with the provisions of (b) above.

(e) When a type rating is issued limiting the privileges to act as co-pilot, or limiting the privileges to act as pilot only during the cruise phase of the flight, such limitation shall be endorsed on the rating.

(f) For the purpose of training, testing, or specific special purpose non-revenue, non-passenger carrying flights, special authorisation may be provided in writing to the licence holder by the Authority in place of issuing the class or type rating. This authorisation shall be limited in validity to the time needed to complete the specific flight.

(g) The applicant shall have demonstrated a degree of skill appropriate to the licence in an aircraft of the class for which the rating is sought.

(h) For aircraft operating under (b)(1) above, the applicant shall have:

(1) gained, under appropriate supervision, experience in the applicable type of aircraft and/or flight simulator in the following:

- normal flight procedures and manoeuvres during all phases of flight;
- abnormal and emergency procedures and manoeuvres in the event of failures and malfunctions of equipment, such as engine, systems and airframe;
- where applicable, instrument procedures, including instrument approach, missed approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure;
- procedures for crew incapacitation and crew coordination including allocation of pilot tasks; crew cooperation and use of checklists;

(2) demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the duties of a pilot-in-command or a co-pilot as applicable; and

(3) demonstrated, at the airline transport pilot licence level, an extent of knowledge determined by the Authority on the basis of the requirements specified in Subpart F.

(i) For aircraft operated under (b)(2) and (3) above;

(j) The applicant shall have demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the licensing requirements and piloting functions of the applicant.

FCL.705 Privileges of the holder of a class or type rating

The privileges of the holder of a class or type rating are to act as pilot on the class or type of aircraft specified in the rating.

FCL.710 Class and type ratings — variants

(a) Pilots shall complete differences training or familiarisation in order to extend their privileges to another variant of aircraft within one class or type rating. In the case of variants within a class or type rating, the differences training or familiarisation shall include the relevant elements defined by the Authority.

(b) If the pilot has not flown the variant within 2 years following the differences training, a further differences training or a proficiency check in that variant shall be completed , except for types or variants within the single-engine piston class ratings.

(c) The differences training or the proficiency check shall be entered in the pilot's logbook or equivalent record and signed by the instructor as appropriate.

GM1 FCL.710 Class and type ratings — variants

Differences and familiarisation training

(a) Differences training requires the acquisition of additional knowledge and training on an appropriate training device or the aircraft.

(b) Familiarisation training requires the acquisition of additional knowledge.

FCL.725 Requirements for the issue of class and type ratings

(a) Training course. An applicant for a class or type rating shall complete a training course at an ATO. The type rating training course shall include the mandatory training elements for the relevant type as defined by the operational suitability data established for the type or class.

(b) Theoretical knowledge examination. The applicant for a class or type rating shall pass a theoretical knowledge examination organised by the ATO to demonstrate the level of theoretical knowledge required for the safe operation of the applicable aircraft class or type.

(1) For multi-pilot aircraft, the theoretical knowledge examination shall be written and comprise at least 100 multiple-choice questions distributed appropriately across the main subjects of the syllabus.

(2) For single-pilot multi-engine aircraft, the theoretical knowledge examination shall be written and the number of multiple-choice questions shall depend on the complexity of the aircraft.

(3) For single-engine aircraft, the theoretical knowledge examination shall be conducted verbally by the examiner during the skill test to determine whether or not a satisfactory level of knowledge has been achieved.

(4) For single-pilot aeroplanes that are classified as high performance aeroplanes, the examination shall be written and comprise at least 60 multiple-choice questions distributed appropriately across the main subjects of the syllabus.

(c) Skill test. An applicant for a class or type rating shall pass a skill test in accordance with Appendix 9 to this regulation to demonstrate the skill required for the safe operation of the applicable class or type of aircraft.

(d) The applicant shall pass the skill test within a period of 6 months after commencement of the class or type rating training course and within a period of 6 months preceding the application for the issue of the class or type rating.

(e) An applicant who already holds a type rating for an aircraft type, with the privilege for either single-pilot or multi- pilot operations, shall be considered to have already fulfilled the theoretical requirements when applying to add the privilege for the other form of operation on the same aircraft type.

(f) Notwithstanding the paragraphs above, pilots holding a flight test rating issued in accordance with FCL.820 who were involved in development, certification or production flight tests for an aircraft type, and have completed either 50 hours of total flight time or 10 hours of flight time as PIC on test flights in that type, shall be entitled to apply for the issue of the relevant type rating, provided that they comply with the experience requirements and the pre-requisites for the issue of that type rating, as established in this Subpart for the relevant aircraft category.

AMC1 FCL.725 Requirements for the issue of class and type ratings

SYLLABUS OF THEORETICAL KNOWLEDGE FOR CLASS OR TYPE RATINGS

I. SE AND ME AEROPLANES

(a) Detailed listing for aeroplane structure and equipment, normal operation of systems and malfunctions:

(1) dimensions: minimum required runway width for 180 ° turn.

(2) engine including auxiliary power unit:

(i) type of engine or engines;

(ii) in general, function of the following systems or components:

(A) engine;

(B) auxiliary power unit;

(C) oil system;

(D) fuel system;

(E) ignition system;

(F) starting system;

(G) fire warning and extinguishing system;

(H) generators and generator drives;

(I) power indication;

(J) reverse thrust;

(K) water injection.

(iii) on piston or turbine-propeller engines additionally:

(A) propeller system;

(B) feathering system.

(iv) engine controls (including starter), engine instruments and indications in the cockpit, their function, interrelation and interpretation;

(v) engine operation, including APU, during engine start, start and engine malfunctions, procedures for normal operation in the correct sequence.

(3) fuel system:

(i) location of the fuel tanks, fuel pumps, fuel lines to the engines, tank capacities, valves and measuring;

(ii) location of the following systems:

(A) filtering;

(B) heating;

(C) fuelling and defueling;

(D) dumping;

(E) venting.

(iii) in the cockpit:

(A) the monitors and indicators of the fuel system;

(B) quantity and flow indication, interpretation.

(iv) procedures:

(A) fuel procedures distribution into the various tanks;

(B) fuel supply, temperature control and fuel dumping.

(4) pressurisation and air conditioning:

(i) components of the system and protection devices;

(ii) cockpit monitors and indicators;

(iii) interpretation about the operational condition;

(iv) normal operation of the system during start, cruise, approach and landing, air conditioning airflow and temperature control.

(5) ice and rain protection, windshield wipers and rain repellent:

(i) ice protected components of the aeroplane including engines, heat sources, controls and indications;

(ii) operation of the anti-icing or de-icing system during take-off, climb, cruise and descent, conditions requiring the use of the protection systems;

(iii) controls and indications of the windshield wipers and rain repellent systems operation.

(6) hydraulic system:

(i) components of the hydraulic system(s), quantities and system pressure, hydraulically actuated components associated to the respective hydraulic system;

(ii) controls, monitors and indicators in the cockpit, function and interrelation and interpretation of indications.

(7) landing gear:

(i) main components of the:

(A) main landing gear;

(B) nose gear;

(C) gear steering;

(D) wheel brake system, including anti-skid.

(ii) gear retraction and extension (including changes in trim and drag caused by gear operation);

(iii) required tyre pressure, or location of the relevant placard;

(iv) controls and indicators including warning indicators in the cockpit in relation to the retraction or extension condition of the landing gear and brakes;

(v) components of the emergency extension system.

(8) flight controls and high lift devices:

(i) Devices:

(A) aileron system;

(B) elevator system;

(C) rudder system;

(D) trim system;

(E) spoiler system;

(F) lift devices;

(G) stall warning system;

(H) take-off configuration warning system.

(ii) flight control system from the cockpit controls to the flight control or surfaces;

(iii) controls, monitors and indicators including warning indicators of the systems mentioned under (A), interrelation and dependencies.

(9) Electrical power supply:

(i) number, power, voltage, frequency and location of the main power system (AC or DC), auxiliary power system location and external power system;

(ii) location of the controls, monitors and indicators in the cockpit;

(iii) flight instruments, communication and navigation systems, main and back-up power sources;

(iv) location of vital circuit breakers;

(v) generator operation and monitoring procedures of the electrical power supply.

(10) flight instruments, communication, radar and navigation equipment, autoflight and flight data recorders:

(i) visible antennae;

(ii) controls and instruments of the following equipment in the cockpit during normal operation:

(A) flight instruments;

(B) flight management systems;

(C) radar equipment, including radio altimeter;

(D) communication and navigation systems;

(E) autopilot;

(F) flight data recorder, cockpit voice recorder and data-link communication recording function;

(G) TAWS;

(H) collision avoidance system;

(I) warning systems.

(11) cockpit, cabin and cargo compartment:

(i) operation of the exterior, cockpit, cabin and cargo compartment lighting and the emergency lighting;

(ii) operation of the cabin and cargo doors, stairs, windows and emergency exits;

(iii) main components of the oxygen system and their location, oxygen masks and operation of the oxygen systems for the crew and passengers, required amount of oxygen by means of a table or diagram.

(12) emergency equipment operation and correct application of the following emergency equipment in the aeroplane:

(i) portable fire extinguisher;

(ii) first-aid kits;

(iii) portable oxygen equipment;

(iv) emergency ropes;

(v) life-jacket;

(vi) life rafts;

(vii) emergency transmitters;

(viii) crash axes;

(ix) megaphones;

(x) emergency signals.

(13) pneumatic system:

(i) components of the pneumatic system, pressure source and actuated components;

(ii) controls, monitors and indicators in the cockpit and function of the system;

(iii) vacuum system.

(b) Limitations:

(1) general limitations:

(i) certification of the aeroplane, category of operation, noise certification and maximum and minimum performance data for all flight profiles, conditions and aircraft systems:

(A) maximum tail and crosswind-components at take-off and landing;

(B) maximum speeds for flap extension V_{fo};

(C) at various flap settings V_{fe};

(D) for landing gear operation V_{lo}, M_{lo};

(E) for extended landing gear V_{le}, M_{le};

(F) for maximum rudder deflection V_a, M_a;

(G) for tyres;

(H) one propeller feathered.

(ii) (A) minimum control speed air V_{mbe};

(B) minimum control speed ground V_{mcg};

(C) stall speed under various conditions V_{so}, V_{s1};

(D) maximum speed vne, M_{ne};

(E) maximum speed for normal operation V_{mo}, M_{mo};

(F) altitude and temperature limitations;

(G) stick shaker activation.

(iii) (A) maximum airport pressure altitude, runway slope;

(B) maximum taxi mass;

(C) maximum take-off mass;

(D) maximum lift off mass;

(E) maximum landing mass;

(F) zero fuel mass;

(G) maximum dumping speed V_{dco}, M_{dco}, V_{dce}, M_{dce};

(H) maximum load factor during operation;

(I) certificated range of centre of gravity.

(2) engine limitations:

(i) operating data of the engines:

(A) time limits and maximum temperatures;

(B) minimum RPMs and temperatures;

(C) torque;

(D) maximum power for take-off and go-around on pressure altitude or flight altitude and temperature;

(E) piston engines: certified range of mixture;

(F) minimum and maximum oil temperature and pressure;

(G) maximum starter time and required cooling;

(H) time between two start attempts for engines and auxiliary power unit;

(I) for propeller: maximum RPM of propeller triggering of automatic feathering device.

(ii) certified oil grades.

(3) systems limitations:

(i) operating data of the following systems:

(A) pressurisation, air conditioning maximum pressures;

(B) electrical power supply, maximum load of main power system (AC or DC);

(C) maximum time of power supply by battery in case of emergency;

(D) mach trim system and yaw damper speed limits;

(E) autopilot limitations of various modes;

(F) ice protection;

(G) speed and temperature limits of window heat;

(H) temperature limits of engine and wing anti-ice.

(ii) fuel system: certified fuel specifications, minimum and maximum pressures and temperature of the fuel.

(4) minimum equipment list.

(c) Performance, flight planning and monitoring:

(1) performance calculation about speeds, gradients, masses in all conditions for take-off, en-route, approach and landing according to the documentation available (for example for take-off V_1, V_{mbe}, V_r, V_{lof}, V_2, take-off distance, maximum take-off mass and the required stop distance) on the following factors:

(i) accelerate or stop distance;

(ii) take-off run and distance available (TORA, TODA);

(iii) ground temperature, pressure altitude, slope, wind;

(iv) maximum load and maximum mass (for example ZFM);

(v) minimum climb gradient after engine failure;

(vi) influence of snow, slush, moisture and standing water on the runway;

(vii) possible single or dual engine failure during cruise flight;

(viii) use of anti-icing systems;

(ix) failure of water injection system or antiskid system;

(x) speeds at reduced thrust, V_1, V_1red, V_{mbe}, V_{mu}, V_r, V_{lof}, V_2;

(xi) safe approach speed V_{ref}, on V_{mbe} and turbulent conditions;

(xii) effects of excessive approach speed and abnormal glideslope on the landing distance;

(xiii) minimum climb gradient during approach and landing;

(xiv) limiting values for a go-around with minimum fuel;

(xv) maximum allowable landing mass and the landing distance for the destination and alternate aerodrome on the following factors:

(A) available landing distance;

(B) ground temperature, pressure altitude, runway slope and wind;

(C) fuel consumption to destination or alternate aerodrome;

(D) influence of moisture on the runway, snow, slush and standing water;

(E) failure of the water injection system or the anti-skid system;

(F) influence of thrust reverser and spoilers.

(2) flight planning for normal and abnormal conditions:

(i) optimum or maximum flight level;

(ii) minimum required flight altitude;

(iii) drift down procedure after an engine failure during cruise flight;

(iv) power setting of the engines during climb, cruise and holding under various circumstances, as well as the most economic cruising flight level;

(v) calculation of a short range or long range flight plan;

(vi) optimum and maximum flight level and power setting of the engines after engine failure.

(3) flight monitoring.

(d) Load and balance and servicing:

(1) load and balance:

(i) load and trim sheet on the maximum masses for take-off and landing;

(ii) centre of gravity limits;

(iii) influence of fuel consumption on the centre of gravity;

(iv) lashing points, load clamping, maximum ground load.

(2) servicing on ground, servicing connections for:

(i) fuel;

(ii) oil;

(iii) water;

(iv) hydraulic;

(v) oxygen;

(vi) nitrogen;

(vii) conditioned air;

(viii) electric power;

(ix) start air;

(x) toilet and safety regulations.

(e) Emergency procedures:

(1) recognition of the situation as well as immediate memory actions in correct sequence and for those conditions recognised as emergencies by the manufacturer and Authority for certification:

(i) engine failure during take-off before and after v1, as well as in- flight;

(ii) malfunctions of the propeller system;

(iii) engine overheat, engine fire on ground and in-flight;

(iv) wheel well fire;

(v) electrical smoke or fire;

(vi) rapid decompression and emergency descent;

(vii) air-conditioning overheat, anti-ice system overheat;

(viii) fuel pump failure;

(ix) fuel freezing overheat;

(x) electric power failure;

(xi) equipment cooling failure;

(xii) flight instrument failure;

(xiii) partial or total hydraulic failure;

(xiv) failures at the lift devices and flight controls including boosters;

(xv) cargo compartment smoke or fire.

(2) actions according to the approved abnormal and emergency checklist:

(i) engine restart in-flight;

(ii) landing gear emergency extension;

(iii) application of the emergency brake system;

(iv) emergency extension of lift devices;

(v) fuel dumping;

(vi) emergency descent.

(f) Special requirements for extension of a type rating for instrument approaches down to decision heights of less than 200 ft (60 m):

(1) airborne and ground equipment:

(i) technical requirements;

(ii) operational requirements;

(iii) operational reliability;

(iv) fail operational;

(v) fail passive;

(vi) equipment reliability;

(vii) operating procedures;

(viii) preparatory measures;

(ix) operational downgrading;

(x) communications.

(2) procedures and limitations:

(i) operational procedures;

(ii) crew coordination.

(g) Special requirements for 'glass cockpit' aeroplanes with EFIS Additional learning objectives:

(1) general rules of aeroplanes computer hardware and software design;

(2) logic of all crew information and alerting systems and their limitations;

(3) interaction of the different aeroplane computer systems, their limitations, the possibilities of computer fault recognition and the actions to be performed on computer failures;

(4) normal procedures including all crew coordination duties;

(5) aeroplane operation with different computer degradations (basic flying).

(h) Flight management systems.

II. ISE AND ME HELICOPTERS

(a) Detailed listing for helicopters structure, transmissions, rotors and equipment, normal and abnormal operation of systems:

(1) dimensions.

(2) engine including aux. power unit, rotor and transmissions; if an initial type rating for a turbine engine helicopter is applied for, the applicant should have received turbine engine instruction:

(i) type of engine or engines;

(ii) in general, the function of the following systems or components:

(A) engine;

(B) auxiliary power unit;

(C) oil system;

(D) fuel system;

(E) ignition system;

(F) starting system;

(G) fire warning and extinguishing system;

(H) generators and generator drive;

(I) power indication;

(J) water or methanol injection.

(iii) engine controls (including starter), engine instruments and indications in the cockpit, their function and interrelation and interpretation;

(iv) engine operation, including APU, during engine start and engine malfunctions, procedures for normal operation in the correct sequence;

(v) transmission system:

(A) lubrication;

(B) generators and generator drives;

(C) freewheeling units;

(D) hydraulic drives;

(E) indication and warning systems.

(vi) type of rotor systems: indication and warning systems.

(3) fuel system:

(i) location of the fuel tanks, fuel pumps, fuel lines to the engines tank capacities, valves and measuring;

(ii) the following systems:

(A) filtering;

(B) fuelling and defueling heating;

(C) dumping;

(D) transferring;

(E) venting.

(iii) in the cockpit: the monitors and indicators of the fuel system, quantity and flow indication, interpretation;

(iv) fuel procedures distribution into the various tanks fuel supply and fuel dumping.

(4) air conditioning:

(i) components of the system and protection devices;

(ii) cockpit monitors and indicators;

Note. *—–interpretation about the operational condition: normal operation of the system during start, cruise approach and landing, air conditioning airflow and temperature control.*

(5) ice and rain protection, windshield wipers and rain repellent:

(i) ice protected components of the helicopter, including engines and rotor systems, heat sources, controls and indications;

(ii) operation of the anti-icing or de-icing system during take-off, climb, cruise and descent, conditions requiring the use of the protection systems;

(iii) controls and indications of the windshield wipers and rain repellent system operation.

(6) hydraulic system:

(i) components of the hydraulic system(s), quantities and system pressure, hydraulically actuated components associated to the respective hydraulic system;

(ii) controls, monitors and indicators in the cockpit, function and interrelation and interpretation of indications.

(7) landing gear, skids fixed and floats:

(i) main components of the:

(A) main landing gear;

(B) nose gear;

(C) tail gear;

(D) gear steering;

(E) wheel brake system.

(ii) gear retraction and extension;

(iii) required tyre pressure, or location of the relevant placard;

(iv) controls and indicators including warning indicators in the cockpit in relation to the retraction or extension condition of the landing gear;

(v) components of the emergency extension system.

(8) flight controls, stab- and autopilot systems: controls, monitors and indicators including warning indicators of the systems, interrelation and dependencies.

(9) electrical power supply:

(i) number, power, voltage, frequency and if applicable phase and location of the main power system (AC or DC) auxiliary power system location and external power system;

(ii) location of the controls, monitors and indicators in the cockpit;

(iii) main and back-up power sources flight instruments, communication and navigation systems, main and back-up power sources;

(iv) location of vital circuit breakers;

(v) generator operation and monitoring procedures of the electrical power supply.

(10) flight instruments, communication, radar and navigation equipment, autoflight and flight data recorders:

(i) antennas;

(ii) controls and instruments of the following equipment in the cockpit:

(A) flight instruments (for example air speed indicator, pitot static system, compass system, flight director);

(B) flight management systems;

(C) radar equipment (for example weather radar, transponder);

(D) communication and navigation system (for example HF, VHF, ADF, VOR/DME, ILS, marker beacon) and area navigation systems;

(E) stabilisation and autopilot system;

(F) flight data recorder, cockpit voice recorder, data-link communication recording function and radio altimeter;

(G) collision avoidance system;

(H) TAWS;

(I) HUMS.

(11) cockpit, cabin and cargo compartment:

(i) operation of the exterior, cockpit, cabin and cargo compartment lighting and the emergency lighting;

(ii) operation of the cabin doors and emergency exits.

(12) emergency equipment:

(i) operation and correct application of the following mobile emergency equipment in the helicopter:

(A) portable fire extinguisher;

(B) first-aid kits;

(C) portable oxygen equipment;

(D) emergency ropes;

(E) life-jacket;

(F) life rafts;

(G) emergency transmitters;

(H) crash axes;

(I) megaphones;

(J) emergency signals;

(K) torches.

(ii) operation and correct application of the fixed emergency equipment in the helicopter: emergency floats.

(b) Limitations:

(1) general limitations, according to the helicopter flight manual;

(2) minimum equipment list.

(c) Performance, flight planning and monitoring:

(1) performance calculation about speeds, gradients, masses in all conditions for take-off, en-route, approach and landing:

(i) take-off:

(A) hover performance in and out of ground effect;

(B) all approved profiles, cat A and B;

(C) HV diagram;

(D) take-off and rejected take-off distance;

(E) take-off decision point (TDP) or (DPATO);

(F) calculation of first and second segment distances;

(G) climb performance.

(ii) en-route:

(A) air speed indicator correction;

(B) service ceiling;

(C) optimum or economic cruising altitude;

(D) max endurance;

(E) max range;

(F) cruise climb performance.

(iii) landing:

(A) hovering in and out of ground effect;

(B) landing distance;

(C) landing decision point (LDP) or (DPBL).

(iv) knowledge or calculation of: V_{lo}, v_{le}, V_{mo}, V_x, V_y, V_{toss}, V_{ne}, $V_{max\ range}$, V_{mini}.

(2) flight planning for normal and abnormal conditions:

(i) optimum or maximum flight level;

(ii) minimum required flight altitude;

(iii) drift down procedure after an engine failure during cruise flight;

(iv) power setting of the engines during climb, cruise and holding under various circumstances as well as at the most economic cruising flight level;

(v) optimum and maximum flight level and power setting after an engine failure.

(3) effect of optional equipment on performance.

(d) Load, balance and servicing:

(1) load and balance:

(i) load and trim sheet on the maximum masses for take-off and landing;

(ii) centre of gravity limits;

(iii) influence of the fuel consumption on the centre of gravity;

(iv) lashing points, load clamping, max ground load.

(2) servicing on the ground, servicing connections for:

(i) fuel;

(ii) oil, etc.;

(iii) and safety regulations for servicing.

(e) Emergency procedures.

(f) Special requirements for extension of a type rating for instrument approaches down to a decision height of less than 200 ft (60 m):

(1) airborne and ground equipment:

(i) technical requirements;

(ii) operational requirements;

(iii) operational reliability;

(iv) fail operational;

(v) fail passive;

(vi) equipment reliability;

(vii) operating procedures;

(viii) preparatory measures;

(ix) operational downgrading;

(x) communication.

(2) procedures and limitations:

(i) operational procedures;

(ii) crew co-ordination.

(iii) Special requirements for helicopters with EFIS.

(iv) Optional equipment.

AMC2 FCL.725 Requirements for the issue of class and type ratings

TRAINING COURSE

FLIGHT INSTRUCTION FOR TYPE RATINGS: HELICOPTERS

(a) The amount of flight instruction depends on:

(1) complexity of the helicopter type, handling characteristics, level of technology;

(2) category of helicopter (SEP or SE turbine helicopter, ME turbine and MP helicopter);

(3) previous experience of the applicant;

(4) the availability of FSTDs.

(b) FSTDs

The level of qualification and the complexity of the type will determine the amount of practical training that may be accomplished in FSTDs, including completion of the skill test. Before undertaking the skill test, a student should demonstrate competency in the skill test items during the practical training.

(c) Initial issue

The flight instruction (excluding skill test) should comprise:

Helicopter types	In helicopter	In helicopter and FSTD associated training Credits
SEP (H)	5 hrs	Using FFS C/D: At least 2 hrs helicopter and at least 6 hrs total Using FTD 2/3: At least 4 hrs helicopter and at least 6 hrs total
SET(H) under 3175 kg MTOM	5 hrs	Using FFS C/D: At least 2 hrs helicopter and at least 6 hrs total Using FTD 2/3: At least 4 hrs helicopter and at least 6 hrs total
SET(H) at or over 3175 kg MTOM	8 hrs	Using FFS C/D: At least 2 hrs helicopter and at least 10 hrs total Using FTD 2/3: At least 4 hrs helicopter and at least 10 hrs total
SPH MET (H) CS and FAR 27 and 29	8 hrs	Using FFS C/D: At least 2 hrs helicopter and at least 10 hrs total Using FTD 2/3: At least 4 hrs helicopter and at least 10 hrs total
MPH	10 hrs	Using FFS C/D: At least 2 hrs helicopter, and at least 12 hrs total Using FTD 2/3: At least 4 hrs helicopter, and at least 12 hrs total

(d) Additional types

The flight instruction (excluding skill test) should comprise:

Helicopter types	In helicopter	In helicopter and FSTD associated training Credits
SEP(H) to SEP(H) within AMC1 FCL.740.H (a)(3)	2 hrs	Using FFS C/D: At least 1 hr helicopter and at least 3 hrs total Using FTD 2/3: At least 1 hr helicopter and at least 4 hrs total
SEP(H) to SEP(H) not included in AMC1 FCL.740.H (a)(3)	5 hrs	Using FFS C/D: At least 1 hr helicopter and at least 6 hrs total Using FTD 2/3: At least 2 hr helicopter and at least 7 hrs total
SET(H) to SET(H)	2 hrs	Using FFS C/D: At least 1 hr helicopter and at least 3 hrs total Using FTD 2/3: At least 1 hr helicopter and at least 4 hrs total
SE difference training	1 hr	N/A
MET(H) to MET(H)	3 hrs	Using FFS C/D: At least 1 hr helicopter and at least 4 hrs total Using FTD 2/3: At least 2 hrs helicopter and at least 5 hrs total
ME difference training	1 hrs	N/A
MPH to MPH	5 hrs	Using FFS C/D: At least 1 hr helicopter and at least 6 hrs total Using FTD 2/3: At least 2 hrs helicopter and at least 7 hrs total
Extend privileges on the same type rating from SPH to MPH (except for initial MP issue), or from MPH to SPH	2 hrs	Using FFS C/D: At least 1 hr helicopter and at least 3 hrs total

(e) Holders of an IR(H) wishing to extend the IR(H) to further types should have additionally 2 hours flight training on type by sole reference to instruments according to IFR which may be conducted in an FFS C/D or FTD 2/3. Holders of an SE IR(H) wishing to extend the IR privileges to an ME IR(H) for the first time should complete at least 5 hours training.

FCL.740 Validity and renewal of class and type ratings

Validity

(a) The validity period of class and type ratings shall be 1 year, except for single-pilot single-engine class ratings, for which the period of validity shall be 2 years, unless otherwise determined by the operational suitability data, established by the Authority. If pilots choose to fulfil the revalidation requirements earlier than prescribed in points FCL.740.A, FCL.740.H, FCL.740.PL and FCL.740. As, the new validity period shall commence from the date of the proficiency check.

(b) Renewal.

If a class or type rating has expired, the applicant shall comply with the following:

(5) take refresher training at an ATO, when necessary to reach the level of proficiency necessary to safely operate the relevant class or type of aircraft; and

(6) pass a proficiency check in accordance with Appendix 9 to this regulation.

AMC1 FCL.740(b) Validity and renewal of class and type ratings

RENEWAL OF CLASS AND TYPE RATINGS: REFRESHER TRAINING

(a) Paragraph (b)(1) of FCL.740 determines that if a class or type rating has lapsed, the applicant shall take refresher training at an ATO. The objective of the training is to reach the level of proficiency necessary to safely operate the relevant type or class of aircraft. The amount of refresher training needed should be determined on a case-by-case basis by the ATO, taking into account the following factors:

(1) the experience of the applicant. To determine this, the ATO should evaluate the pilot's log book, and, if necessary, conduct a test in an FSTD;

(2) the complexity of the aircraft;

(3) the amount of time lapsed since the expiry of the validity period of the rating. The amount of training needed to reach the desired level of proficiency should increase with the time lapsed. In some cases, after evaluating the pilot, and when the time lapsed is very limited (less than 3 months), the ATO may even determine that no further refresher training is necessary. When determining the needs of the pilot, the following items can be taken into consideration:

(i) expiry shorter than 3 months: no supplementary requirements;

(ii) expiry longer than 3 months but shorter than 1 year: a minimum of two training sessions;

(iii) expiry longer than 1 year but shorter than 3 years: a minimum of three training sessions in which the most important malfunctions in the available systems are covered;

(iv) expiry longer than 3 years: the applicant should again undergo the training required for the initial issue of the rating or, in case of helicopter, the training required for the 'additional type issue', according to other valid ratings held.

(b) Once the ATO has determined the needs of the applicant, it should develop an individual training programme that should be based on the initial training for the issue of the rating and focus on the aspects where the applicant has shown the greatest needs.

(c) After successful completion of the training, the ATO should give a certificate, or other documental evidence that the training has been successfully achieved to the applicant, to be submitted to the Authority when applying for the renewal. The certificate or documental evidence needs to contain a description of the training programme.

SECTION 2 — SPECIFIC REQUIREMENTS FOR THE AEROPLANE CATEGORY

FCL.720.A Experience requirements and pre-requisites for the issue of class or type ratings — aeroplanes

Unless otherwise determined and published by the Authority, an applicant for a class or type rating shall comply with the following experience requirements and pre-requisites for the issue of the relevant rating:

(a) Single-pilot multi-engine aeroplanes.

An applicant for a first class or type rating on a single-pilot multi-engine aeroplane shall have completed at least 70 hours as PIC on aeroplanes.

(b) Single-pilot high performance non-complex aeroplanes.

Before starting flight training, an applicant for a first class or type rating for a single-pilot aeroplane classified as a high performance aeroplane shall:

(1) have at least 200 hours of total flying experience, of which 70 hours as PIC on aeroplanes; and

(2) comply with one of the following requirements:

(i) hold a certificate of satisfactory completion of a course for additional theoretical knowledge undertaken at an ATO; or

(ii) have passed the ATPL(A) theoretical knowledge examinations in accordance with this regulation; or

(iii) hold, in addition to a licence issued in accordance with this regulation, an ATPL(A) or CPL(A)/IR with theoretical knowledge credit for ATPL(A), issued in accordance with ICAO Annex 1 to the Chicago Convention;

(3) in addition, pilots seeking the privilege to operate the aeroplane in multi-pilot operations shall meet the requirements of (d)(4).

(c) Single-pilot high performance complex aeroplanes.

Applicants for the issue of a first type rating for a complex single- pilot aeroplane classified as a high performance aeroplane shall, in addition to meeting the requirements of (b), have fulfilled the requirements for a multi-engine IR(A), as established in Subpart G.

(d) Multi-pilot aeroplanes.

An applicant for the first type rating course for a multi-pilot aeroplane shall be a student pilot currently undergoing training on an MPL training course or comply with the following requirements:

(1) have at least 70 hours of flight experience as PIC on aeroplanes;

(2) hold a multi-engine IR(A);

(3) have passed the ATPL(A) theoretical knowledge examinations in accordance with this regulation; and

(4) except when the type rating course is combined with an MCC course:

(i) hold a certificate of satisfactory completion of an MCC course in aeroplanes; or

(ii) hold a certificate of satisfactory completion of MCC in helicopters and have more than 100 hours of flight experience as a pilot on multi-pilot helicopters; or

(iii) have at least 500 hours as a pilot on multi-pilot helicopters; or

(iv) have at least 500 hours as a pilot in multi-pilot operations on single-pilot multi-engine aeroplanes, in commercial air transport in accordance with the applicable air operations requirements.

(e) Notwithstanding paragraph (d), the Authority may issue a type rating with restricted privileges for multi-pilot aeroplane that allows the holder of such rating to act as a cruise relief co-pilot above Flight Level 200, provided that two other members of the crew have a type rating in accordance with paragraph (d).

(f) Additional multi-pilot and single-pilot high performance complex aeroplane type ratings. An applicant for the issue of additional multi-pilot type ratings and single-pilot high performance complex aeroplanes type ratings shall hold a multi-engine IR(A).

(g) When so determined by the Authority, the exercise of the privileges of a type rating may be initially limited to flight under the supervision of an instructor. The flight hours under supervision shall be entered in the pilot's logbook or equivalent record and signed by the instructor. The limitation shall be removed when the pilot demonstrates that the hours of flight under supervision have been completed.

AMC1 FCL.720.A(b)(2) Experience requirements and prerequisites for the issue of class or type ratings — aeroplanes

ADDITIONAL THEORETICAL KNOWLEDGE FOR A CLASS OR TYPE RATING FOR HIGH PERFORMANCE SP AEROPLANES

(a) A number of aeroplanes certificated for SP operation have similar performances, systems and navigation capabilities to those more usually associated with MP types of aeroplanes, and regularly operate within the same airspace. The level of knowledge required to operate safely in this environment is not part of, or not included to the necessary depth of knowledge in the training syllabi for the PPL, CPL or IR(A) but these licence holders may fly as PIC of such aeroplanes. The additional theoretical knowledge required to operate such aeroplanes safely is obtained by completion of a course at an ATO.

(b) The aim of the theoretical knowledge course is to provide the applicant with sufficient knowledge of those aspects of the operation of aeroplanes capable of operating at high speeds and altitudes, and the aircraft systems necessary for such operation.

(c) The course should cover at least the following items of the aeroplane syllabus to the ATPL(A) level:

LO number	LO topics
021 00 00 00	**AIRCRAFT GENERAL KNOWLEGDE: AIRFRAME AND SYSTEMS, ELECTRICS, POWERPLANT AND EMERGENCY EQUIPMENT**
021 02 02 01 to 021 02 02 03	Alternating current: general Generators AC power distribution
021 01 08 03	Pressurisation (Air driven systems - piston engines)
021 01 09 04	Pressurisation (Air driven systems - turbojet and turbo propeller)
021 03 01 06 021 03 01 07 021 03 01 08 021 03 01 09	Engine performance - piston engines Power augmentation (turbo or supercharging) Fuel Mixture
021 03 02 00 to 021 03 04 09	Turbine engines
021 04 05 00	Aircraft oxygen equipment
032 03 00 00	**Performance class B: ME aeroplanes**
032 03 01 00 to 032 03 04 01	Performance of ME aeroplanes not certificated under CS and FAR 25: entire subject
040 00 00 00	**HUMAN PERFORMANCE**
040 02 01 00 to 040 02 01 03	Basic human physiology and High altitude environment
050 00 00 00	**METEOROLOGY**
050 02 07 00 to 050 02 08 01	Jet streams CAT

	Standing waves
050 09 01 00 to 050 09 04 05	Flight hazards Icing and turbulence Thunderstorms
062 02 00 00	**BASIC RADAR PRINCIPLES**
062 02 01 00 to 062 02 05 00	Basic radar principles Airborne radar SSR
081 00 00 00	**PRINCIPLES OF FLIGHT: AEROPLANES**
081 02 01 00 to 081 02 03 02	Transonic aerodynamics: entire subject Mach number or shockwaves buffet margin or aerodynamic ceiling

FOR IFR OPERATIONS

Subject ref	Syllabus content
010 00 00 00	**AIR LAW**
010 06 07 00	Simultaneous operation on parallel or near-parallel instrument runways
010 06 08 00	Secondary surveillance radar (transponder) operating procedures
022 00 00 00	**AIRCRAFT GENERAL KNOWLEDGE - INSTRUMENTATION**
022 01 02 00	Temperature sensing
022 03 04 00	Flux valve
022 12 00 00	**ALERTING SYSTEMS, PROXIMITY SYSTEMS**
022 12 07 00	Altitude alert system
022 12 08 00	Radio-altimeter

022 12 10 00	**ACAS/TCAS principles and operation**
022 13 03 01	Electronic flight instrument system (EFIS) — Design, operation
050 00 00 00	**METEOROLOGY**
050 02 06 03	Clear-air turbulence (CAT) - Description, cause and location
050 10 02 03	Upper-air charts
062 00 00 00	**RADIO NAVIGATION**
062 02 05 04	ILS — Errors and accuracy

(d) Demonstration of acquisition of this knowledge is undertaken by passing an examination set by ATO. A successful pass of this examination results in the issue of a certificate indicating that the course and examination have been completed.

(e) The certificate represents a 'once only' qualification and satisfies the requirement for the addition of all future high performance aeroplanes to the holder's licence. The certificate is valid indefinitely and is to be submitted with the application for the first HPA type or class rating.

(f) A pass in any theoretical knowledge subjects as part of the HPA course will not be credited against meeting future theoretical examination requirements for issue of a CPL(A), IR(A) or ATPL(A).

(g) The applicant who has completed a competency-based modular IR(A) course according to Appendix 6 Aa needs to complete both VFR and IFR parts of this course.

(h) The applicant who has completed a modular IR(A) course according to Appendix 6 A only needs to complete the VFR part of this course.

FCL.725.A Theoretical knowledge and flight instruction for the issue of class and type ratings — aeroplanes

Unless otherwise determined and published by the Authority:

(a) Single-pilot multi-engine aeroplanes.

(1) The theoretical knowledge course for a single-pilot multi-engine class rating shall include at least 7 hours of instruction in multi-engine aeroplane operations; and

(2) The flight training course for a single-pilot multi-engine class or type rating shall include at least 2 hours and 30 minutes of dual flight instruction under normal conditions of multi-engine aeroplane operations, and not less than 3 hours 30 minutes of dual flight instruction in engine failure procedures and asymmetric flight techniques.

(b) Single-pilot aeroplanes-sea.

(1) The training course for single-pilot aeroplane-sea ratings shall include theoretical knowledge and flight instruction; and

(2) The flight training for a class or type rating-sea for single-pilot aeroplanes-sea shall include at least 8 hours of dual flight instruction if the applicant holds the land version of the relevant class or type rating, or 10 hours if the applicant does not hold such a rating.

(c) for single-pilot non-high-performance complex aeroplanes, single-pilot high-performance complex aeroplanes and multi-pilot aeroplanes, the training courses shall include UPRT theoretical knowledge and flight instruction related to the specificities of the relevant class or type.

AMC1 FCL.725.A Theoretical knowledge and flight instruction for the issue of class and type ratings — aeroplanes

CLASS RATING SEA

(a) The theoretical knowledge instruction should be conducted by an instructor having appropriate experience of class rating sea.

(b) Depending on the equipment and systems installed, the instruction should include, but not be limited to, the following content:

(1) theoretical knowledge:

(i) the aim of the training is to teach:

(A) the importance of preparation for flight and the safe planning taking into consideration all the factors for manoeuvring the aircraft on the wind, tidal currents, high and low water times and water movements at sea, river estuaries and lakes In addition, icing conditions, ice covered water and broken ice flows;

(B) the techniques about the most critical moments at take- off, landing, taxiing and mooring the aircraft;

(C) the construction methods and characteristics of floats and water rudders and the importance of checking for leaks in the floats;

(D) the necessary requirements for the compliance of the rules for the avoidance of collisions at sea, in regard to sea charts, buoys and lights and horns.

(ii) after completing the training, the student should be able to:

(A) describe the factors that have significance for planning and decision about initiation of seaplane flying and alternative measures for completion of flight;

(B) describe how the water level is affected by air pressure, wind, tide, regularisations and the flight safety depending on changes in the water level;

(C) describe the origin of different ice conditions in water areas;

(D) interpret nautical charts and maps about depths and shoals and risk for water currents, shifts of the wind, turbulence;

(E) decide what required equipment to bring during seaplane flying according to the operational requirements;

(F) describe the origin and extension of water waves, swells and water currents and their effect on the aeroplane;

(G) describe how water and air forces effect the aeroplane on water;

(H) describe the effect of water resistance on the aeroplanes' performance on glassy water and during different wave conditions;

(I) describe the consequences of taxiing with too high engine RPM;

(J) describe the effect of pressure and temperature on performance at take-off and climb from lakes located at higher altitude;

(K) describe the effect of wind, turbulence, and other meteorological conditions of special importance for flight over lakes, islands in mountain areas and other broken ground;

(L) describe the function of the water rudder and its handling, including the effect of lowered water rudder at take-off and landing;

(M) describe the parts of the float installation and their function;

(N) describe the effect of the floats on the aeroplanes' aerodynamics and performance in water and in air;

(O) describe the consequences of water in the floats and fouling of float bottoms;

(P) describe aviation requirements that apply specifically for the conduct of aircraft activity on water;

(Q) describe requirements about animal, nature and environment protection of significance for flight by seaplane, including flight in national parks;

(R) describe the meaning of navigation buoys;

(S) describe the organisation and working methods of the Sea Rescue Service;

(T) describe the requirements in ICAO Annex 2 as set out in paragraph 3.2.6 'Water operation', including relevant parts of the Convention on the International Regulations for Preventing Collisions at Sea.

(2) practical training:

(i) the aim of the practical training is to learn:

(A) the skills in manoeuvring aeroplanes on water and in mooring the aeroplane;

(B) the skills required for the reconnaissance of landing and mooring areas from the air, including the take-off area;

(C) the skills for assessing the effects of different water depths, shoals, wind, height of waves and swell;

(D) the skills for flying with floats about their effect on performance and flight characteristics;

(E) the skills for flying in broken ground during different wind and turbulence conditions;

(F) the skills for take-off and landing on glassy water, different ° of swell and water current conditions.

(ii) after the training, the student should be able to:

(A) handle the equipment that shall be brought during seaplane flying;

(B) perform pre-flight daily inspection on aeroplane, float installation and special seaplane equipment, including emptying of floats;

(C) sail, taxi and turn the aeroplane at swell with correct handling of the water rudder;

(D) taxi on the step and perform turns;

(E) establish the wind direction with the aeroplane;

(F) take necessary actions if loss of steering ability and person falling overboard;

(G) make land and moor aeroplane at bridge, buoy and beach with the use of appropriate knots to secure the aircraft;

(H) maintain given rate of descent by means of variometer only;

(I) perform take-off and landing on glassy water with and without outer references;

(J) perform take-off and landing under swell;

(K) perform power-off landing;

(L) from the air, reconnaissance of landing, mooring and take-off areas, observing;

(M) wind direction and strength during landing and take-off;

(N) surrounding terrain;

(O) overhead wires and other obstacles above and under water;

(P) congested areas;

(Q) determine wind direction and assess wind strength from water level and when airborne;

(R) state, for the aeroplane type in question;

(a) maximum wave height allowed;

(b) maximum number of ERPM allowed during taxi;

(S) describe how flying with floats affects the performance and flight characteristics of the aeroplane;

(T) take corrective action at critical moments due to wind shear and turbulence;

(U) navigate on the water with reference to buoys markers, obstacles and other traffic on the water.

(c) For the initial issue of class rating sea for SP, SE and ME aeroplanes, the number of multi-choice questions in the written or computer-based examination should at least comprise thirty questions, and may be conducted by the training organisation. The pass mark should be 75 %.

FCL.730.A Specific requirements for pilots undertaking a zero flight time type rating (ZFTT) course — aeroplanes

(a) A pilot undertaking instruction at a ZFTT course shall have completed, on a multi-pilot turbo-jet aeroplane certificated to the standards of CS-25 or equivalent airworthiness code or on a multi-pilot turbo-prop aeroplane having a maximum certificated take-off mass of not less than 10 tonnes or a certificated passenger seating configuration of more than 19 passengers, at least:

(1) if an FFS qualified to level CG, C or interim C (or FAA equivalent) is used during the course, 1 500 hours flight time or 250 route sectors;

(2) if an FFS qualified to level DG or D (or FAA equivalent) is used during the course, 500 hours flight time or 100 route sectors.

(b) When a pilot is changing from a turbo-prop to a turbo-jet aeroplane or from a turbo-jet to a turbo-prop aeroplane, additional simulator training shall be required.

FCL.735.A Multi-crew cooperation training course — aeroplanes

(a) The MCC training course shall comprise at least:

(1) 25 hours of theoretical knowledge instruction and exercises; and

(2) 20 hours of practical MCC training, or 15 hours in the case of student pilots attending an ATP integrated course. An FNPT II MCC or an FFS shall be used. When the MCC training is combined with initial type rating training, the practical MCC training may be reduced to no less than 10 hours if the same FFS is used for both the MCC and type rating training.

(b) The MCC training course shall be completed within 6 months at an ATO.

(c) Unless the MCC course has been combined with a type rating course, on completion of the MCC training course the applicant shall be given a certificate of completion.

(d) An applicant having completed MCC training for any other category of aircraft shall be exempted from the requirement in (a)(1).

AMC1 FCL.735.A; FCL.735.H Multi-crew cooperation (MCC) training course

MULTI-CREW COOPERATION COURSE

(a) Competency is a combination of knowledge, skills and attitudes required to perform a task to the prescribed standard.

(b) The objectives of MCC training are to develop the technical and non- technical components of the knowledge, skills and attitudes required to operate a multi-crew aircraft.

(c) Training should comprise both theoretical and practical elements and be designed to achieve the following competencies:

Competency	Performance indicators	Knowledge	Practical exercises
Communication	(a) Know what, how much and who to communicate to; (b) Ensure the recipient is ready and able to receive the information; (c) Pass messages and information clearly, accurately, timely and adequately; (d) Check if the other person has the correct understanding when passing important information; (e) Listen actively, patiently and demonstrate understanding when receiving information; (f) Ask relevant and effective questions, and offer suggestions; (g) Use appropriate body language, eye contact and tone; (h) Open and receptive to other people's view.	(a) Human Factors, TEM and CRM; (b) Application of TEM and CRM principles to training.	In a commercial air transport environment, apply multi-crew procedures, including principles of TEM and CRM to the following: (a) Pre-flight preparation: (1) FMS initialisation; (2) radio and navigation equipment preparation; (3) flight documentation; (4) Computation of take-off performance data. (b) Take-off and climb: (1) before take-off checks; (2) normal take-offs; (3) rejected take-offs; (4) take-offs with abnormal and emergency situations included.
Leadership and team working	(a) Friendly, enthusiastic, motivating and considerate of others; (b) Use initiative, give direction and take responsibility when required;		

Competency	Performance indicators	Knowledge	Practical exercises
	(c) Open and honest about thoughts, concerns and intentions; (d) Give and receive criticism and praise well, and admit mistakes; (e) Confidently do and say what is important to him or her; (f) Demonstrate respect and tolerance towards other people; (g) Involve others in planning and share activities fairly.		(c) Cruise: emergency descent. (d) Descent and approach: (1) instrument flight procedures; (2) holding; (3) 3D operation using raw data; (4) 3D operation using flight director; (5) 3D operation using autopilot; (6) one-engine-inoperative approach; (7) 2D operations and circling approaches; (8) computation of approach and landing data; (9) all engines go-around; (10) go-around with one engine inoperative; (11) wind shear during approach. (e) landing: transition from instrument to
Situation awareness	(a) Aware of what the aircraft and its systems are doing; (b) Aware of where the aircraft is and its environment; (c) Keep track of time and fuel; (d) Aware of the condition of people involved in the operation including passengers; (e) Recognise what is likely to happen, plan and stay ahead of the game; (f) Develop what-if scenarios and make pre-decisions; (g) Identify threats to the safety of the aircraft and of the people.		

Competency	Performance indicators	Knowledge	Practical exercises
			visual flight on reaching decision altitude or height or minimum descent altitude or height; (f) after landing and post flight procedures; (g) selected emergency and abnormal procedures.
Workload management	(a) Calm, relaxed, careful and not impulsive; (b) Prepare, prioritise and schedule tasks effectively; (c) Use time efficiently when carrying out tasks; (d) Offer and accept assistance, delegate when necessary and ask for help early; (e) Review and monitor and cross-check actions conscientiously; (f) Follow procedures appropriately and consistently; (g) Concentrate on one thing at a time, ensure tasks are completed and does not become distracted; (h) Carry out instructions as directed.		

Competency	Performance indicators	Knowledge	Practical exercises
Problem solving and decision making	(a) Identify and verify why things have gone wrong and do not jump to conclusions or make assumptions; (b) Seek accurate and adequate information from appropriate resources; (c) Persevere in working through a problem; (d) Use and agree an appropriate decision making process; (e) Agree essential and desirable criteria and prioritises; (f) Consider as many options as practicable; (g) Make decisions when they need to, reviews and changes if required; (h) Consider risks but do not take unnecessary risks.		
Monitoring and cross- checking	(a) Monitor and cross-checks all actions; (b) Monitor aircraft trajectory in critical flight phases; (c) Take appropriate actions in response to deviations from the flight path.	(a) SOPs; (b) Aircraft systems; (c) Undesired aircraft states.	
Task sharing	(a) Apply SOPs in both PF and PNF roles; (b) Makes and responds to standard callouts.	(a) PF and PNF roles; (b) SOPs.	
Use of	Utilise checklists appropriately	(a) SOPs;	

Competency	Performance indicators	Knowledge	Practical exercises
checklists	according to SOPs.	(b) Checklist philosophy.	
Briefings	Prepare and deliver appropriate briefings.	(a) SOPs; (b) Interpretation of FMS data and in-flight documentation.	
Flight management	(a) Maintain a constant awareness of the aircraft automation state; (b) Manage automation to achieve optimum trajectory and minimum workload; (c) Take effective recovery actions from automation anomalies; (d) Manage aircraft navigation, terrain clearance; (e) Manage aircraft fuel state and take appropriate actions.	(a) Understanding of aircraft performance and configuration; (b) Systems; (c) SOPs; (d) Interpretation of FMS data and in-flight documentation; (e) Minimum terrain clearance; (f) Fuel management IFR and VFR regulation.	
FMS use	Programme, manage and monitor FMS in accordance with SOPs.	(a) Systems (FMS); (b) SOPs; (c) Automation.	
Systems normal operations	Perform and monitor normal systems operation in accordance with SOPs.	(a) Systems; (b) SOPs.	
Systems abnormal and emergency operations	(a) Perform and monitor abnormal systems operation in accordance with SOPs;	(a) Systems; (b) SOPs; (c) Emergency and abnormal procedures and checklists;	

Competency	Performance indicators	Knowledge	Practical exercises
	(b) Utilise electronic and paper abnormal checklists in accordance with SOPs.	(d) Recall items.	
Environment, weather and ATC	(a) Communicate effectively with ATC; (b) Avoid misunderstandings by requesting clarification; (c) Adhere to ATC instructions; (d) Construct a mental model of the local ATC and weather environment.	(a) Systems; (b) SOPs; (c) ATC environment and phraseology; (d) Procedures for hazardous weather conditions.	

CERTIFICATE OF COMPLETION FORM

CERTIFICATE OF COMPLETION OF MCC-TRAINING				
Applicant's last name(s):			First name(s):	
Type of licence:			Number:	State:
ME/IR:		**OR**	ME/IR skill test:	
Issued on:			passed on:	
	Signature of applicant:			

The satisfactory completion of MCC-Training according to requirements is certified below:

TRAINING			
Multi-crew co-operation training received during period:			
from:	to:	at:	ATO / operator*
Location and date:		Signature of head of ATO or authorised instructor*:	
Type and number of licence and state of issue:		Name(s) in capital letters of authorised instructor:	

** Delete as appropriate*

AMC2 FCL.735.A Multi-crew cooperation (MCC) training course - aeroplanes

ENHANCED MCC TRAINING TO AIRLINE PILOT STANDARDS (APS MCC) COURSE

(a) The APS MCC training course should comprise both theoretical and practical elements and should be designed to achieve the training objectives, as set out in Table 1 below.

Table 1 -Training Objectives

Training objectives	Performance indicators	Knowledge	Practical exercises
Monitoring and cross-checking	(a) Monitor and cross-check all actions; (b) Monitor aeroplane trajectory in critical flight phases; (c) Take appropriate actions in response to deviations from the flight path.	(a) SOPs (b) Aeroplane systems (c) Undesired aeroplane states	In a commercial air transport environment, apply multi-crew procedures, including principles of TEM and CRM to the following: (a) Pre-flight preparation: (1) FMS initialisation; (2) radio and navigation equipment preparation; (3) flight documentation; (4) Computation of take-off performance data. (b) Take-off and climb:
Task sharing	(a) Apply SOPs in both PF and PM roles; (b) Make and respond to standard call-outs.	(a) PF and PM roles; (b) SOPs	
Use of checklists	Utilise checklists appropriately according to SOPs.	(a) SOPs; (b) Checklist philosophy.	
Briefings	Prepare and deliver appropriate briefings.	(a) SOPs;	

<table>
<tr><th colspan="4">Table 1 -Training Objectives</th></tr>
<tr><th>Training objectives</th><th>Performance indicators</th><th>Knowledge</th><th>Practical exercises</th></tr>
<tr><td></td><td></td><td>(b) Interpretation of FMS data and in-flight documentation.</td><td rowspan="5">(1) before take-off checks;
(2) normal take-offs;
(3) rejected take-offs;
(4) take-offs with abnormal and emergency situations included.
(c) Cruise: emergency descent
(d) Descent and approach:
(1) instrument flight procedures;
(2) holding;
(3) 3D Operations using raw data;
(4) 3D Operations using flight director;
(5) 3D Operations using autopilot;
(6) one-engine-inoperative approach;</td></tr>
<tr><td>Flight management</td><td>(a) Maintain a constant awareness of the aeroplane automation state;
(b) Manage automation to achieve optimum trajectory and minimum workload;
(c) Take effective recovery actions from automation anomalies;
(d) Manage aeroplane navigation, terrain clearance;
(e) Manage aeroplane fuel state and take appropriate actions.</td><td>(a) Understanding of aeroplane performance and configuration;
(b) Systems;
(c) SOPs;
(d) Interpretation of FMS data and in-flight documentation;
(e) Minimum terrain clearance;
(f) Fuel management IFR and VFR regulation.</td></tr>
<tr><td>FMS use</td><td>Programme, manage and monitor FMS in accordance with SOPs.</td><td>(a) Systems (FMS);
(b) SOPs;
(c) Automation.</td></tr>
<tr><td>Systems normal operations</td><td>Perform and monitor normal systems operation in accordance with SOPs.</td><td>(a) Systems;
(b) SOPs.</td></tr>
<tr><td>Systems abnormal and</td><td>(a) Perform and monitor abnormal systems operation in</td><td>(a) Systems;
(b) SOPs;</td></tr>
</table>

Table 1 -Training Objectives			
Training objectives	**Performance indicators**	**Knowledge**	**Practical exercises**
emergency operations	accordance with SOPs; (b) Utilise electronic and paper abnormal checklists in accordance with SOPs.	(c) Emergency and abnormal procedures and checklists; (d) Recall items.	(7) 2D Operations and circling; (8) computation of approach and landing data; (9) all engines go-around; (10) go-around with one engine inoperative; (11) wind shear during approach. (e) landing: transition from instrument to visual flight on reaching decision altitude or height or minimum descent altitude or height; (f) after landing and post flight procedures; (g) selected emergency and abnormal procedures.
Environment, weather and air traffic control (ATC)	(a) Communicate effectively with ATC; (b) Avoid misunderstandings by requesting clarification; (c) Adhere to ATC instructions; (d) Construct a mental model of the local ATC and weather environment.	(a) Systems; (b) SOPs; (c) ATC environment and phraseology; (d) Procedures for hazardous weather conditions.	

(b) The APS MCC training course should include advanced swept-wing jet aeroplane training and airline operations scenario training to equip a pilot with the knowledge, skills, and attitudes required to commence initial type rating training to the standards generally required by a commercial air transport (CAT) operator certified pursuant to AUA-OPS1.

(c) The APS MCC course should consist of the following:

(1) the content of the MCC training course;

(2) advanced swept-wing jet aeroplane training;

(3) advanced airline operations scenario training; and

(4) a final assessment.

(d) The flight simulation training device (FSTD) time per crew during practical training should be a minimum of 40 hours, or 35 for an integrated airline transport pilot licence (ATPL) holders, as set out in Table 2 below.

Table 2 – Minimum hours	
Training element	**Minimum FSTD per crew**
MCC TRAINING	20 hours/15 hours
ADVANCED SWEPT-WING JET AEROPLANE TRAINING	12 hours
ADVANCED AIRLINE OPERATIONS SCENARIO TRAINING	6 hours
FINAL ASSESSMENT	2 hours

The training elements may be ordered, split and combined, as determined by the approved training organisation (ATO)'s course design.

(e) The ATO should provide generic stand-alone or CAT-operator-specific APS MCC training, advanced swept-wing jet aeroplane training and advanced airline operations scenario training. In the case of generic stand-alone training, the ATO should establish appropriate documentation and manuals representative of a CAT operator, such as manuals for aeroplane original-equipment manufacturers (OEMs), standard operating procedures (SOPs), flight documentation, as well as reporting and documentation for management systems.

FSTDs

(f) The practical training in the APS MCC training course should be based on a multi-pilot, multi-engine aeroplane type capable of carrying at least 50 passengers or equivalent mass. The FSTD used should be type-specific and equipped with a visual system that provides at least 180° horizontal and 40° vertical field of view. However, an FNPT II MCC that has a similar visual cueing system to the above or is approved for MCC pursuant to FCL.735.A may also be acceptable provided that the device is representative of the same class of multi-pilot, multi-engine aeroplane specified in this paragraph in terms of passenger load, mass and performance, and equipped with equivalent aeroplane systems and avionics functionality.

(g) In the case of advanced swept-wing jet aeroplane practical training, an FSTD representing a swept-wing multi-engine jet aeroplane should be used.

INSTRUCTOR QUALIFICATION

(h) The minimum qualification level of an instructor to deliver the training course should be an MCCI(A). The ATO should ensure that:

(1) all the instructors, before delivering the training course content, have received training on the application of core competencies as well as competency-based training; and

(2) before the MCCI(A) delivers the advanced swept-wing jet handling or airline operations scenario training elements, they have satisfactorily completed relevant specific handling, systems and technical instructor training under the supervision of an SFI or TRI with the privilege to instruct for multi-pilot aeroplanes.

(i) The final assessment should be completed by an instructor nominated by the head of training (HT) for this purpose.

COURSE DESIGN AND CORE COMPETENCIES

(j) The course should be designed using instructional systems design (ISD) methodology.

(k) Progress should be monitored throughout the course in accordance with the course design.

(l) A final progress assessment should be conducted at the end of the practical training.

PROGRESS ASSESSMENTS AND COURSE COMPLETION CERTIFICATE

(m) Practical training and progress assessments should be conducted to ensure that the student pilot has demonstrated the required level of competency (see Tables 1, 2, 3, 4 and 5 of this AMC).

(n) During progress assessments, the student's knowledge, skills and attitudes in both pilot flying and pilot monitoring roles should be assessed; those assessments should be integrated into the training sessions.

(o) All assessments should be graded. An example of a grading system for the APS MCC is provided in GM3 FCL.735.A.

(p) For the final assessment, the minimum standard for each competency should be at least 'satisfactory'. 'Satisfactory' is defined as demonstrating 75 % or greater of the relevant performance indicators/observable behaviours set out in the table of GM3 FCL.735.A.

(q) A student pilot who has reached a satisfactory or higher standard at the final assessment of the practical training should be awarded the APS MCC course completion certificate pursuant to AMC2 FCL.735.A.

(r) Alternatively, a student pilot who completes the APS MCC course but does not achieve the APS MCC standard should be awarded the MCC course completion certificate pursuant to AMC1 FCL.735.A; FCL.735.H .

APS MCC TRAINING COURSE CONTENT AND PERFORMANCE INDICATORS

(s) The elements of AMC1 FCL.735.A(c) should be enhanced as a result of the additional training in an airline context.

(t) CRM training should be provided to an APS MCC standard.

Table 3 — APS MCC CRM TRAINING CONTENT AND PERFORMANCE INDICATORS

Training	Performance indicators	Knowledge	Practical exercises
CRM training	(a) Display competency in the relevant CRM-related behaviours. (b) Successfully complete the final progress check.	Understand the CRM concepts set out in ORO.FC.115 of Annex III (Part-ORO) to the Air OPS Regulation.	Integrate CRM into all practical exercises

(1) The ATO should ensure that the student pilot understands how multi-crew coordination as well as the content and intent of CRM is applied in an airline context.

(2) In order to impart maximum learning to the student pilot, the ATO should ensure the following:

(i) CRM is integrated into all practical exercises of the APS MCC; and

(ii) Threat-and-error management (TEM) is central to the course instruction; the concepts of threat anticipation, threat recognition, recovery to safe flight, error management, and consequent avoidance of undesired aeroplanes states is emphasised at all times.

Table 4 — ADVANCED APS MCC FLYING TRAINING COURSE CONTENT AND PERFORMANCE INDICATORS			
Training	**Performance indicators**	**Knowledge**	**Practical exercises**
Advanced swept-wing flying training	(a) Understand and apply combinations of thrust and attitude that ensure a stable, safe flight in various aeroplane configurations and altitudes. (b) Manage the (much) wider range of speed and thrust at both low level and high level. (c) Demonstrate good judgement and correct use of lift and drag devices during various phases of the flight. (d) Use displays along with all available aids to stay mentally ahead when piloting all profiles. (e) Understand and recognise the precursors of high-energy approaches. (f) Know angle-of-attack (AoA) versus attitude indications at low level as well as at high level. (g) Practice upset prevention as a priority, and clearly recognise when and how recovery is necessary, by using	Elements and components of jet orientation: (a) glass cockpit displays; (b) propulsion; (c) aerodynamics; (d) flight controls; (e) performance; (f) jet flight planning; (g) weight and balance; (h) basic jet flying; (i) pilot techniques for jet flying, advanced-handling-skills development; (j) flight path management; (k) auto flight; (l) high-altitude operations; (m) introduction (n) into prevention and recovery of upsets.	(a) Take-off, approach, landing, go-around. (b) Flight deck management practices. (c) Complex problem-solving techniques. (d) Advanced handling. (e) Manual handling skills (no autopilot, no auto thrust, and where possible, no flight director). (f) Flight at different speeds, including slow flight and altitudes within the normal flight envelope. (g) Steep turns. (h) Aeroplane stability and stall awareness. (i) Upset prevention techniques and approach-to-stall recovery events appropriate to

	the required pilot skills to mitigate loss of control in-flight (LOC-I) events.		FSTD limitations and capabilities). (j) High-energy approach prevention. (k) Go-around management of approach and landing configurations.
Advanced airline operations scenario training	(a) Execute pre-flight preparation in accordance with airline or OEM SOPs. (b) Conduct an effective crew briefing, including cabin crew managers (CCMs). (c) Display good airmanship and TEM skills in assessing aeroplane serviceability, weather planning, fuel planning, and destination facilities. (d) Conduct cockpit preparation and briefings in an effective and accurate manner. (e) Manage and execute engine start, taxi-out and pre-take-off checks safely and in accordance with airline or OEM SOPs. (f) Manage and execute runway line-up, take-	(a) Knowledge of systems as set out in this AMC. (b) SOPs. (c) Normal-and non-normal operations' checklists and procedures.	(a) CHECK-IN PROCEDURES. (b) PRE-FLIGHT PREPARATION: (1) weather analysis; (2) flight planning; (3) fuel planning; (4) configuration deviation list (CDL), dispatch deviation procedures guide (DDPG), and minimum equipment list (MEL) analysis; and (5) cabin crew briefing. (c) NORMAL PROCEDURES: cockpit preparation, pushback, engine starting, taxiing, take-off, climb, cruising, descent, landing, shutdown,

	off, climb, cruising, descent, approach, landing and taxi-in safely and in accordance with airline or OEM SOPs. (g) During non-normal operations, display good system knowledge, and apply non- normal procedures, communications, TEM, situational awareness (SA), decision-making and aeroplane handling.		and disembarkation procedures. (d) ON TIME PERFORMANCE: (1) weather analysis; (2) flight planning; and (3) fuel planning. NON-NORMAL PROCEDURES: (1) as per (c) above, in case of a technical or operational non-normal event; (2) TEM; (3) diversion decision-making; (4) communication; (5) diversion; (6) fuel SA; and (7) passenger and crew care.

Table 5 — ADVANCED APS MCC FLYING TRAINING COURSE CONTENT AND PERFORMANCE INDICATORS			
Training	**Performance indicators**	**Knowledge**	**Practical exercises**
Airline-oriented training	(a) Understand the roles of airline departments. (b) Understand the challenges faced by airline departments. (c) Understand the relationships between airline departments. (d) Understand airline responsibilities. (e) Understand a pilot's responsibilities as a crew member	Appropriate elements of the applicable Regulation (AUA-OPS 1)	The exercise should provide the student pilot with a practical understanding of airline operations. This may be achieved through a visit to an airline or alternative means.

CERTIFICATE OF COMPLETION FORM

CERTIFICATE OF COMPLETION OF MCC-TRAINING				
Applicant's last name(s):			First name(s):	
Type of licence:			Number:	State:
ME/IR:		**OR**	ME/IR skill test:	
Issued on:			passed on:	
	Signature of applicant:			

The satisfactory completion of MCC-Training according to requirements is certified below:

TRAINING			
Multi-crew co-operation training received during period:			
from:	to:	at:	ATO / operator*
Location and date:		Signature of head of ATO or authorised instructor*:	
Type and number of licence and state of issue:		Name(s) in capital letters of authorised instructor:	

** Delete as appropriate*

GM1 FCL.735.A Multi-crew cooperation (MCC) training course — aeroplanes

ENHANCED MCC TRAINING TO AIRLINE PILOT STANDARDS (APS MCC) COURSE

(a) The ATO should be responsible for the initial course design based on the instructional systems design (ISD) methodology, as well as for the integral evaluation and further development of the course.

(b) Technical-knowledge instruction

To maximise the benefit during the training in a flight simulation training device (FSTD), it is essential that the student pilot understands the aeroplane systems. Consequently, the approved training organisation (ATO) should provide sufficient systems training to ensure that student pilots are capable of effective situational awareness (SA) of the aeroplane systems when following normal and non-normal procedures and completing the related checklists. The standard of technical-knowledge training should be limited to this goal unless the course is part of a combined APS MCC/type rating course. ATOs providing APS MCC training in a combined APS MCC/type rating course may provide systems training up to type rating standard.

Aeroplane systems training may be delivered by any means provided that the training ensures knowledge transfer to a standard within the scope of the ATO's APS MCC training course approval. This training may be delivered either through distance learning or instructor-led classroom instruction or a combination thereof. If distance learning is utilised as an element of the course, it should be supplemented by instructor-led training.

Aeroplane systems knowledge at the required level should be confirmed by an assessment determined by the ATO's course design.

(c) Advanced swept-wing jet flying training (see Table 4 of AMC2 FCL.735.A)

The student pilot should develop a flight path management competency, including energy management, as pilot flying (PF), and associated active monitoring skills as pilot monitoring (PM). Aeroplane and airline procedures used during this training should develop the student pilot's understanding of the aeroplane flight envelope and inertia, as well as of the relationship between thrust and attitude. This phase should include an introduction to prevention and recovery of upsets, which builds confidence, skill, and resilience.

(d) Advanced airline operations scenario training (see Table 4 of AMC2 FCL.735.A)

(1) The student pilot should be trained to apply the core competencies to conduct a safe and efficient operation in realistic airline operations scenarios.

(2) The airline-representative scenarios should include normal and non-normal situations.

(3) Operations should be run in real time according to a typical schedule.

(4) The scenarios should be constructed in an airline context in order to emphasise the following:

(i) threat-and-error management (TEM);

(ii) crew resource management (CRM);

(iii) flight path management, including energy management; and

(iv) interaction with internal and external stakeholders in the resolution of scenarios.

(e) Airline-oriented training (see Table 5 of AMC2 FCL.735.A)

The training should provide an understanding of the regulatory framework that an airline must operate in. The student pilot should understand the context and operational environment that applies to airline employees. Subjects should include but are not limited to the following:

(1) regulation of operations and aircrew;

(2) safety management systems (SMSs) with emphasis on the pilot's reporting obligations and 'just culture';

(3) fatigue management and fatigue risk management system (FRMS) with emphasis on the airline's and pilot's obligations;

(4) flight time limitations (FTLs), including crew scheduling and crew control functions;

(5) flight operations planning and flight watch reporting systems;

(6) airline maintenance department and interaction with flight operations;

(7) ground operations and interaction with flight operations; and

(8) in-flight department and interaction with flight operations.

GM2 FCL.735.A Multi-crew cooperation (MCC) training course — aeroplanes

ENHANCED MCC TRAINING TO AIRLINE PILOT STANDARDS (APS MCC) COURSE

The approved training organisation (ATO) should ensure that their course design develops the required core competencies through their training and assessment plan based on the competency framework provided in Table 1 below. An ATO may adapt this framework to include additional competencies and/or performance indicators/observable behaviours

Table 1 — COMPETENCIES		
Competency	**Description**	**Performance indicators/observable behaviours**
Application of knowledge	Relates and applies relevant knowledge in the operational environment and in scenario settings.	— Demonstrates the acquisition and retention of required aviation knowledge; — Relates knowledge between subject areas; — Applies knowledge to the operational environment; — Correctly identifies threats and errors in a timely manner; — Uses knowledge to create valid options of managing threats, errors, and undesirable aeroplane states; — Mentally resolves basic-mathematics problems relating to operational situations, both under normal circumstances and under pressure; — Shares knowledge with others openly and constructively, as and when appropriate.
Application of regulations and procedures	Identifies and applies appropriate procedures in accordance with published operating instructions and pursuant to applicable regulations.	— Identifies where to find the information; — Follows standard operating procedures (SOPs) unless a higher degree of safety dictates an appropriate deviation therefrom; — Follows all operating instructions in a timely manner; — Correctly operates aeroplane systems and associated equipment; — Monitors the status of aeroplane systems; — Complies with applicable regulations; — Applies relevant procedural knowledge.
Communication	Communicates through appropriate means in normal and non-normal situation	— Ensures that the recipient is ready and able to receive the information; — Shares appropriate information; — Selects appropriately what, when, how, and with whom to communicate; — Conveys messages clearly, accurately, and concisely; — Confirms that the recipient correctly understands important information;

		— Listens actively and demonstrates understanding when receiving information; — Asks relevant and effective questions; — Communicates in order to resolve deviations identified through monitoring; — Adheres to standard radiotelephony phraseology and procedures; — Accurately reads, interprets, drafts, and responds to data link messages in English; — Correctly uses and interprets non-verbal communication.
Aeroplane flight path management - automation	Controls the aeroplane flight path through automation.	— Uses appropriate flight management and guidance systems as well as automation, as installed and as appropriate to the conditions; — Monitors and detects deviations from the desired aeroplane trajectory and takes appropriate action; — Manages the flight path to optimise the operational performance; — Maintains the desired flight path during flight using automation, whilst managing other tasks and distractions; — Effectively monitors automation, including engagement and automatic-mode transitions.
Aeroplane flight path management – manual control	Controls the aeroplane flight path through manual flight.	— Uses appropriate flight management and guidance systems and automation, as installed and appropriate to the conditions; — Manually controls the aeroplane using only the relationship between aeroplane attitude, speed and thrust, as well as navigation signals or visual information; — Monitors and detects deviations from the desired aeroplane trajectory and takes appropriate action; — Manages the flight path to optimise the operational performance; — Maintains the desired flight path during manual flight, whilst managing other tasks and distractions;

		— Effectively monitors flight guidance systems, including engagement and automatic-mode transitions.
Leadership and teamwork	Influences others so that they contribute to a shared purpose. Collaborates to accomplish the goals of the team.	— Creates an atmosphere of open communication and encourages team participation; — Displays initiative and gives directions when required; — Admits mistakes and takes responsibility; — Carries out instructions when directed; — Gives and receives feedback constructively; — Applies effective intervention strategies to resolve deviations identified whilst monitoring; — Takes into account cultural differences; — Engages others in planning; — Addresses and resolves conflicts and disagreements in a constructive manner; — Exercises decisive leadership.
Problem-solving and decision-making	Identifies problem precursors and resolves actual problems, using decision-making techniques, in a timely manner.	— Seeks accurate and appropriate information from appropriate sources; — Identifies and verifies what and why has failed; — Perseveres with resolving problems whilst prioritising safety; — Uses appropriate and timely decision-making techniques; — Sets priorities appropriately; — Identifies and considers options, as appropriate; — Monitors, reviews, and adapts decisions, as required; — Identifies, assesses, and manages risks effectively; — Adapts when faced with situations where no guidance or procedure exists.
Situational awareness (SA) and information management	Perceives, comprehends, and manages information, as well as anticipates its effect on the operation.	— Monitors, identifies, and assesses accurately the aeroplane’s state and systems; — Monitors, identifies, and assesses accurately the aeroplane’s energy state and anticipated flight path;

		— Monitors, identifies, and assesses accurately the general environment as it may affect the operation; — Validates the accuracy of information and checks for gross errors; — Maintains the awareness of the people involved in or affected by the operation as well as their capacity to perform as expected; — Anticipates what could happen, plans, and stays ahead of the situation; — Develops effective contingency plans based upon potential threats; — Recognises and effectively responds to indications of reduced SA.
Workload management	Maintains available workload capacity through prioritisation and distribution of tasks, using resources.	— Exercises self-control in all situations; — Plans, prioritises, and schedules tasks effectively; — Manages time efficiently when carrying out tasks; — Offers and gives assistance, delegates when necessary; — Seeks and accepts assistance, when necessary; — Monitors, reviews, and cross-checks taken action conscientiously; — Verifies that tasks are completed as expected; — Manages and recovers from interruptions, distractions, variations, and failures effectively, while performing tasks.

GM3 FCL.735.A Multi-crew cooperation (MCC) training course — aeroplanes

EXAMPLE OF AN ENHANCED MCC TRAINING TO AIRLINE PILOT STANDARDS (APS MCC) GRADING SYSTEM

EXAMPLE OF AN APS MCC GRADING SYSTEM					
Competency	**Unsatisfactory**	**Satisfactory**	**Good**	**Very Good**	**Exemplary**
General description of each	The pilot's performance in this	The pilot's performance in this	The pilot's performance in this	The pilot's performance in this	The pilot's performance in this

competency level.	competency was unsatisfactory with a negative effect on safety. The pilot did not demonstrate the majority of the relevant performance indicators.	competency was satisfactory with a slightly positive effect on safety. The pilot demonstrated most of the relevant performance indicators in this competency to at least a satisfactory standard.	competency was effective with a significant contribution to safety. The pilot consistently demonstrated most of the relevant performance indicators in this competency to a good standard.	competency was very effective, which significantly enhanced safety. The pilot regularly demonstrated all of the relevant performance indicators in this competency to a very good standard.	competency was exemplary with an outstanding effect on safety. The pilot always demonstrated all of the relevant performance indicators in this competency to an exemplary standard.
Notes			— Most: 75 % or greater. — Relevant performance indicator: a performance indicator/observable behaviour that is expected to be demonstrated during the assessment.		

GM4 FCL.735.A Multi-crew cooperation (MCC) training course — aeroplanes

ENHANCED MCC TRAINING TO AIRLINE PILOT STANDARDS (APS MCC).- SPECIFIC ARRAGEMENT

(a) The specific arrangement between an approved training organisation (ATO) and an operator for the APS MCC course should cover at least the following points:

(1) pre-entry requirements (including screening and selection);

(2) provision of the relevant documentation (operations manuals (OMs) and training manuals);

(3) design of the training programme;

(4) content of the course, including criteria to ensure that the operator's documentation, manuals, standard operating procedures (SOPs), reporting structures, and management system are represented throughout the training course;

(5) training effectiveness;

(6) performance data feedback from the ATO to the operator;

(7) course evaluation and improvement;

(8) alignment of the grading and assessment criteria; and

(9) use of the operator's crew resource management (CRM) content and utilisation of a flight crew CRM trainer, standardised by the operator.

(b) The ATO and the operator may use their OMs and training manuals to identify additional areas to be covered by the specific arrangement.

FCL.740.A Revalidation of class and type ratings — aeroplanes

(a) Revalidation of multi-engine class ratings and type ratings. For revalidation of multi-engine class ratings and type ratings, the applicant shall:

(1) pass a proficiency check in accordance with Appendix 9 to this regulation in the relevant class or type of aeroplane or an FSTD representing that class or type, within the 3 months immediately preceding the expiry date of the rating; and

(2) complete during the period of validity of the rating, at least:

(i) 10 route sectors as pilot of the relevant class or type of aeroplane; or

(ii) 1 route sector as pilot of the relevant class or type of aeroplane or FFS, flown with an examiner. This route sector may be flown during the proficiency check.

(3) A pilot working for a commercial air transport operator approved in accordance with the applicable air operations requirements who has passed the operators proficiency check combined with the proficiency check for the revalidation of the class or type rating shall be exempted from complying with the requirement in (2).

(4) The revalidation of an IR(A), if held, may be combined with a proficiency check for the revalidation of a class or type rating.

(b) Revalidation of single-pilot single-engine class ratings.

(1) Single-engine piston aeroplane class ratings. For revalidation of single-pilot single-engine piston aeroplane class ratings the applicant shall:

(i) within the 3 months preceding the expiry date of the rating, pass a proficiency check in the relevant class in accordance with Appendix 9 to this regulation with an examiner; or

(ii) within the 12 months preceding the expiry date of the rating, complete 12 hours of flight time in the relevant class, including:

- 6 hours as PIC,
- 12 take-offs and 12 landings, and
- a training flight of at least 1 hour with a flight instructor (FI) or a class rating instructor (CRI). Applicants shall be exempted from this flight if they have passed a class or type rating proficiency check or skill test in any other class or type of aeroplane.

(2) Single-pilot single-engine turbo-prop aeroplanes. For revalidation of single-engine turbo-prop class ratings applicants shall pass a proficiency check on the relevant class in accordance with

Appendix 9 to this regulation with an examiner, within the 3 months preceding the expiry date of the rating.

(3) When applicants hold both a single-engine piston aeroplane-land class rating and a single-engine piston aeroplane-sea class rating, they may complete the requirements of (b)(1)in either class or a combination thereof, and achieve the fulfilment of these requirements for both ratings. At least 1 hour of required PIC time and 6 of the required 12 take-offs and landings shall be completed in each class.

(4) Single-pilot single-engine turbo-prop aeroplanes. For revalidation of single-engine turbo-prop class ratings applicants shall pass a proficiency check on the relevant class in accordance with Appendix 9 to this regulation with an examiner, within the 3 months preceding the expiry date of the rating.

(c) Applicants who fail to achieve a pass in all sections of a proficiency check before the expiry date of a class or type rating shall not exercise the privileges of that rating until a pass in the proficiency check has been achieved.

FCL.745.A Advanced UPRT course – aeroplanes

(a) The advanced UPRT course shall be completed at an ATO and shall comprise at least:

(1) 5 hours of theoretical knowledge instruction;

(2) preflight briefings and postflight debriefings; and

(3) 3 hours of dual flight instruction with a flight instructor for aeroplanes FI(A) qualified in accordance with point FCL.915(e) and consisting of advanced UPRT in an aeroplane qualified for the training task.

(b) Upon completion of the UPRT course, applicants shall be issued with a certificate of completion by the ATO.

AMC1 FCL.745.A Advanced UPRT course — aeroplanes

COURSE OBJECTIVE AND CONTENT

COURSE OBJECTIVE

(a) The objective of the course is for the pilot under training:

(1) to understand how to cope with the physiological and psychological aspects of dynamic upsets in aeroplanes; and

(2) to develop the necessary competence and resilience to be able to apply appropriate recovery techniques during upsets.

(b) In order to meet the objective as specified in point (a), the course should:

(1) emphasise physiological and psychological effects of an upset and develop strategies to mitigate those effects;

(2) be delivered in a suitable training aircraft in order to expose trainees to conditions that cannot be replicated in an FSTD; and

(3) employ recovery techniques that are suitable for the aircraft used for training in order to support the training objectives. In order to minimise the risk associated with potential negative transfer of training, the recovery techniques used during the course should be compatible with techniques typically used for transport category aeroplanes.

THEORETICAL KNOWLEDGE

(c) Theoretical knowledge instruction supports the objectives of the course and should include the following:

(1) a review of basic aerodynamics typically applicable to aeroplane upsets in transport category aeroplanes, including case studies of incidents involving potential or actual upsets.

(2) aerodynamics relevant to the aeroplane and exercises used in the practical training, including differences to aerodynamics as referred to in point (1);

(3) possible physiological and psychological effects of an upset, including surprise and startle effect;

(4) strategies to develop resilience and mitigate startle effect; and

(5) memorising the appropriate procedures and techniques for upset recovery.

FLIGHT INSTRUCTION

(d) Flight instruction should include:

(1) exercises to demonstrate:

(i) the relationship between speed, attitude and AoA;

(ii) the effect of g-load on aeroplane performance, including stall events at different attitudes and airspeeds;

(iii) aerodynamic indications of a stall including buffeting, loss of control authority and inability to arrest a descent;

(iv) the physiological effects of different g-loads between -1 and 2.5G; and

(v) surprise and the startle effect;

(2) training in techniques to recover from:

(i) nose high at various bank angles;

(ii) nose low at various bank angles;

(iii) spiral dives;

(iv) stall events; and

(v) incipient spin; and

(3) training to develop resilience and to employ strategies to mitigate the startle effect.

COURSE COMPLETION

(e) The course is considered to have been satisfactorily completed if the trainee is able to successfully:

(1) apply strategies to mitigate psychological and physical effects;

(2) recognise upsets;

(3) apply correct recovery techniques from upset scenarios as specified in point (d)(2).

GM1 FCL.745.A Advanced UPRT course — aeroplanes

UPSET RECOVERY TRAINING EXERCISES

GENERAL

(a) The objective of this GM is to provide instructors with further guidance on the conduct of the various upset recovery exercises, which requires instructor performance beyond that experienced in normal operations.

(b) Instructors should:

(1) ensure that the risk mitigation measures determined by the ATO are strictly adhered to;

(2) continuously assess the performance of the student to ensure that the training objectives of the upset recovery exercises are achieved;

(3) understand that all-attitude/on-aeroplane upset recovery exercises serve primarily as resilience-builder. In other words, the training serves mainly human-factor training objectives and not only flying skills training;

(4) understand the differences between all-attitude UPRT and aerobatics training;

(5) have knowledge and understanding of how:

(i) on-aeroplane and FSTD UPRT complement each other; and

(ii) to ensure that negative transfer of training from small aeroplanes to heavier transport category aeroplanes is avoided. This may be achieved by observing UPRT in an FSTD, especially in a type-specific FFS; and

(6) have knowledge and understanding of the upset prevention theoretical knowledge and flight instruction elements taught during the CPL(A) and ATPL(A) training courses to ensure continuity and consistency in delivering UPRT.

__Note.__—Instructors should be aware that the safety and potential human factor implications of poor upset recovery instructional technique or misleading information are more significant than in any other areas of pilot training.

(c) In order to increase the applicant's resilience related to the handling of aeroplane upsets, the advanced UPRT course needs to include the development of confidence and competence in recognising and recovering safely from upsets under the presence of the real human factors. Such confidence building is specifically addressed by:

(i) successfully overcoming natural stress response (startle and surprise); and

(ii) performing critically important counter-intuitive actions.

Advanced UPRT therefore considers pitch attitudes, bank angles, AOA/airspeeds, sideslip and g-loads, none of which are normally experienced during routine operations.

(d) Aeroplanes used in this course should be:

(1) appropriately certified and operated by the ATO in a manner that takes into account the effects of repeated training manoeuvres on airframe fatigue life; and

(2) provide sufficient safety margins to cater for student and instructor errors.

(e) This course complements UPRT in FSTDs by providing exposure to psycho-physiological conditions, which cannot be delivered by the motion systems of today's qualified FSTDs. At completion of the course, the student should pilot to be able to:

(1) recognise and confirm the upset-situation;

(2) manage stress response;

(3) apply the correct recovery strategy timely and effectively;

(4) stay within the defined training envelope;

(5) stabilise the flight path after recovery; and

(6) become competent and confident in recovering from upsets.

SPECIFIC EXERCISES

(f) Exercise 1 — Nose HIGH recovery

Exercise 1 Recovery from **Nose HIGH** upsets at various bank angles	
(1) Training objectives	The student pilot should: (i) recognise and confirm the Nose HIGH situation (AOA, attitude, energy, trends); (ii) announce 'Nose High'; and (iii) apply the correct recovery strategy.

(2) Training tasks	The student pilot should: (i) regain situation awareness; (ii) recognise and analyse AOA, pitch, bank, energy state and trends; (iii) note natural and synthetic indications for AOA, attitude, and energy; (iv) manage human factors, stress response (startle and surprise, counter-intuitive actions); (v) take manual control; (vi) identify and apply the Nose HIGH recovery strategy; (vii) correct any out-of-trim condition; (viii) manage nose-down movement; (ix) manage g-load; (x) use the effects of power to assist nose-down movement; (xi) use bank to orient the lift vector as necessary; (xii) stabilise the flight path after recovery using basic pitch/power settings;
(3) Enabling objectives	The student pilot should: (i) decide if Stall Recovery or Nose HIGH recovery is applicable; (ii) perform control inputs deliberately; (iii) use up to full control deflections; (iv) avoid unnecessary low or high loads; (v) use secondary flight controls (trim/power) as necessary to support primary flight control inputs (i.e. nose-down movement); apply control inputs in the correct sequence (see Table 1, Nose-HIGH Recovery Strategy); apply counter-intuitive actions as necessary: (A) unloading; (B) power-reduction in Nose-HIGH attitude (depending on engine mounting); and (C) using bank to orient the lift vector downwards.

Note.—*Refer to GM to Appendix 9 Table 2: Recommended nose-high recovery strategy template.*

(g) Exercise 2 — Nose LOW recovery

Exercise 2 Recovery from **Nose LOW** upsets at various bank angles

(1) Training objectives	The student pilot should: (i) recognise and confirm the situation (AOA, attitude, energy, trends); (ii) announce 'Nose LOW'; (iii) apply the correct recovery strategy.
(2) Training tasks	The student pilot should: (i) regain situation awareness; (ii) recognise and analyse AOA, pitch, bank, energy state and trends; (iii) note natural and synthetic indications for AOA, attitude and energy; (iv) manage human factors, stress response (startle and surprise, counter-intuitive actions); (v) take manual control; (vi) identify and apply the Nose LOW recovery strategy; (vii) correct out-of-trim condition; (viii) decide if aircraft is stalled; (ix) manage g-load; (x) identify the correct direction to roll; (xi) roll to wings level to orient the lift vector upwards; (xii) manage power and drag; and (xiii) stabilise the flight path after recovery using basic pitch/power settings
(3) Enabling objectives	The student pilot should: (i) perform control inputs deliberately; (ii) use up to full control deflections; (iii) avoid unnecessary low or high loads; (iv) apply control inputs in the correct sequence (see Table 2, Nose-LOW Recovery Strategy); and (v) apply counter-intuitive actions as necessary: (A) apply Stall Recovery in nose low attitude first if needed; (B) unloading instead of pulling; (C) unloading to increase roll rate; (D) avoid 'rolling-pull'; and (E) accept the priority of rolling to wings level first, before reducing power and before pulling.

Note.— *Refer to GM to Appendix 9 Table 3: Recommended nose-low recovery strategy template.*

(h) Exercise 3 —Recovery from spiral dive

Exercise 3 Recovery from **Spiral Dive**	
(1) Training objectives	The student pilot should: i) recognise the spiral dive as a result of improper nose-up elevator input during a Nose LOW turning situation; and ii) apply the Nose LOW Recovery Strategy.
(2) Training tasks	The student pilot should: i) maintain/regain situation awareness; ii) recognise and analyse AOA, pitch, bank, energy state and trends; iii) manage human factors, stress response (startle and surprise, counter-intuitive actions); iv) take manual control; v) identify and apply the Nose LOW recovery strategy; and vi) stabilise the flight path after recovery using basic pitch/power settings.
(3) Enabling objectives	The student pilot should: i) perform control inputs deliberately and in the correct sequence; ii) use up to full control deflections, if required; and iii) apply counter-intuitive actions as necessary: (A) unloading instead of pulling; (B) unloading to increase roll rate; (C) avoid ‘rolling-pull’; and (D) accepting the priority of rolling to wings level first, before reducing power and before pulling.

(i) Exercise 4 — Stall Event Recovery

Exercise 4 Recovery from **Stall event**	
(1) Training objectives	The student pilot should: (i) recognise and confirm the situation (AOA, attitude, energy, trends); (ii) announce 'Stall'; (iii) apply the Stall Event Recovery Strategy
(2) Training tasks	The student pilot should: (i) regain situation awareness; (ii) recognise and analyse AOA, pitch, bank, energy state and trends; (iii) note natural and synthetic indications for high AOA/stall; (iv) manage human factors, stress response (startle and surprise, counter-intuitive actions); (v) recover from: (A) approach to stall (B) full stall, wings level and during turn (C) slipping stall (D) skidding stall (E) accelerated stall (F) secondary stall (vi) take manual control; (vii) identify and apply the Stall Event Recovery Template or the aircraft manufacturer Stall Recovery SOP; (viii) apply nose-down elevator input to reduce AOA; (ix) manage trim; (x) consider power reduction (if engine mounting induces a nose-up effect); (xi) accept altitude loss; (xii) identify the correct direction to roll to wings level; (xiii) manage power and drag; (xiv) manage g-load and energy to avoid secondary stall; and

	(xv) stabilise the flight path after recovery using basic pitch/power settings.
(3) Enabling objectives	The student pilot should: (i) perform control inputs deliberately; (ii) use up to full control deflections; (iii) apply control inputs in the correct sequence (see Table 3, Stall Event Recovery Strategy Template); and (iv) apply counter-intuitive actions as necessary: (A) unloading to reduce AOA; (B) unloading before rolling; (C) power reduction if necessary; (D) accepting altitude loss; and (E) waiting for airspeed increase before loading again.

Note.—*Refer to GM to Appendix 9 Table 1: Recommended stall event recovery template.*

(j) Exercise 5—Recovery from spin

Exercise 5 Recovery from incipient spin	
(1) Training objectives	The pilot should: (i) recognise and confirm the spin (AOA, yaw, attitude, energy, roll, trends); (ii) apply the OEM Incipient Spin Recovery procedure.
(2) Training tasks	The pilot should: (i) be aware of the aircraft response to all possible pitch and roll control inputs and to thrust/power changes during (incipient) spin; (ii) maintain/regain situation awareness; (iii) recognise and analyse AOA, attitude, energy, yaw, roll, trends); (iv) note natural and synthetic indications for high AOA, stall, spin;

	(v) manage human factors, stress response (startle and surprise, counter-intuitive actions); (vi) take manual control; (vii) identify and apply the OEM Incipient Spin Recovery Procedure; (viii) manage AOA, g-load and energy to avoid secondary stall; and (ix) stabilise the flight path after recovery using basic pitch/power settings.
(3) Enabling objectives	The pilot should: (i) perform control inputs deliberately and in the correct sequence; (ii) use up to full control deflections as required by the procedure; (iii) apply counter-intuitive actions as necessary; (iv) avoid un-reflected control inputs; and (v) allow time for control inputs to show results.

(k) Assessment of student performance

By collecting evidence from observable behaviours, the instructor will continuously assess whether the student meets the required competency standards under the given conditions.

Pilot competencies and behavioural indicators in the context of the Advanced UPRT Course

(1) Application of procedures

(i) Follows the recommended Nose HIGH or Nose LOW recovery strategy or the Stall Event Recovery Template / STALL RECOVERY SOP

(ii) Identifies and follows operating instructions in a timely manner

(iii) Correctly operates aircraft systems and equipment

(iv) Applies relevant procedural knowledge

(2) Communication

(i) Adheres to callouts

(ii) Verbalises the essential steps during the recoveries

(3) Aeroplane flight path management — automation

Disconnects autopilot and autothrust/autothrottle before initiating the recovery (to be simulated if the training aeroplane is not fitted with autothrust/autothrottle)

(4) Aeroplane flight path management — manual control

(i) Detects deviations from the desired aircraft trajectory and takes appropriate action

(ii) Controls the aircraft using appropriate attitude and power settings

(iii) Contains the aircraft within the defined flight envelope

(5) Leadership and teamwork

(i) Understands and agrees with the crew's roles and objectives

(ii) Uses initiative and gives directions when required

(iii) Admits mistakes and takes responsibility

(iv) Communicates relevant concerns and intentions

(v) Gives and receives feedback constructively

(vi) Projects self-control in all situations

(6) Problem-solving and decision-making

(i) Seeks accurate and adequate information from appropriate sources

(ii) Identifies and verifies what and why things have gone wrong

(iii) Perseveres in working through the event safely

(iv) Sets priorities appropriately

(7) Situation awareness and information management

(i) Identifies and assesses accurately the state of the aircraft and its systems

(ii) Identifies and assesses accurately the aircraft's vertical and lateral position, and its anticipated flight path

(iii) Anticipates accurately what could happen, plans and stays ahead of the situation

(iv) Recognises and effectively responds to indications of reduced situation awareness.

(8) Workload management

(i) Maintains self-control in all situations Manages and recovers from stress response (startle surprise), interruptions, distractions, variations and errors effectively

(ii) Reviews, monitors and cross-checks actions conscientiously

(iii) Verifies that tasks are completed to the expected outcome

(iv) Offers and accepts assistance, delegates when necessary, and asks for help early

(v) Manages and recovers from interruptions, distractions, variations and failures effectively

FCL.750.A Type ratings for aeroplanes where two pilots are required

For aircraft certificated for operation with a minimum crew of at least two pilots the applicant shall have:

(a) gained, under appropriate supervision, experience in the applicable type of aircraft and/or flight simulator in the following:

(1) normal flight procedures and manoeuvres during all phases of flight;

(2) abnormal and emergency procedures and manoeuvres in the event of failures and malfunctions of equipment, such as engine, systems and airframe;

(3) where applicable, instrument procedures, including instrument approach, missed approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure;

(4) for the issue of an aeroplane category type rating, upset prevention and recovery training; and

(5) procedures for crew incapacitation and crew coordination including allocation of pilot tasks; crew cooperation and use of checklists;

(b) demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the duties of a pilot-in-command or a co-pilot as applicable; and

(c) demonstrated, at the airline transport pilot licence level, an extent of knowledge determined by the Authority on the basis of the requirements specified in Subpart F.

SECTION 3 — SPECIFIC REQUIREMENTS FOR THE HELICOPTER CATEGORY

FCL.720.H Experience requirements and pre-requisites for the issue of type ratings — helicopters

Unless otherwise determined and published by the Authority, an applicant for the issue of the first helicopter type rating shall comply with the following experience requirements and pre-requisites for the issue of the relevant rating:

(a) Multi-pilot helicopters.

An applicant for the first type rating course for a multi-pilot helicopter type shall:

(1) have at least 70 hours as PIC on helicopters;

(2) except when the type rating course is combined with an MCC course:

(i) hold a certificate of satisfactory completion of an MCC course in helicopters; or

(ii) have at least 500 hours as a pilot on multi-pilot aeroplanes; or

(iii) have at least 500 hours as a pilot in multi-pilot operations on multi-engine helicopters; (3) have passed the ATPL(H) theoretical knowledge examinations.

(b) An applicant for the first type rating course for a multi-pilot helicopter type who is a graduate from an ATP(H)/IR, ATP(H), CPL(H)/IR or CPL(H) integrated course and who does not comply with the requirement of (a)(1), shall have the type rating issued with the privileges limited to exercising functions as co-pilot only. The limitation shall be removed once the pilot has:

(1) completed 70 hours as PIC or pilot-in-command under supervision of helicopters;

(2) passed the multi-pilot skill test on the applicable helicopter type as PIC.

(c) Single-pilot multi-engine helicopters.

An applicant for the issue of a first type rating for a single-pilot multi-engine helicopter shall:

(1) before starting flight training:

(i) have passed the ATPL(H) theoretical knowledge examinations; or

(ii) hold a certificate of completion of a pre-entry course conducted by an ATO. The course shall cover the following subjects of the ATPL(H) theoretical knowledge course:

- Aircraft General Knowledge: airframe/systems/power plant, and instrument/electronics,
- Flight Performance and Planning: mass and balance, performance;

(2) in the case of applicants who have not completed an ATP(H)/IR, ATP(H), or CPL(H)/IR integrated training course, have completed at least 70 hours as PIC on helicopters.

FCL.735.H Multi-crew cooperation training course — helicopters

(a) The MCC training course shall comprise at least:

(1) for MCC/IR:

(i) 25 hours of theoretical knowledge instruction and exercises; and

(ii) 20 hours of practical MCC training or 15 hours, in the case of student pilots attending an ATP(H)/IR integrated course. When the MCC training is combined with the initial type rating training for a multi- pilot helicopter, the practical MCC training may be reduced to not less than 10 hours if the same FSTD is used for both MCC and type rating;

(2) for MCC/VFR:

(i) 25 hours of theoretical knowledge instruction and exercises; and

(ii) 15 hours of practical MCC training or 10 hours, in the case of student pilots attending an ATP(H)/IR integrated course. When the MCC training is combined with the initial type rating training for a multi- pilot helicopter, the practical MCC training may be reduced to not less than 7 hours if the same FSTD is used for both MCC and type rating.

(b) The MCC training course shall be completed within 6 months at an ATO.

(c) An FNPT II or III qualified for MCC, an FTD 2/3 or an FFS shall be used.

(d) Unless the MCC course has been combined with a multi-pilot type rating course, on completion of the MCC training course the applicant shall be given a certificate of completion.

(e) An applicant having completed MCC training for any other category of aircraft shall be exempted from the requirement in (a)(1)or (a)(2)(i), as applicable.

(f) An applicant for MCC/IR training who has completed MCC/VFR training shall be exempted from the requirement in (a)(1)(i), and shall complete 5 hours of practical MCC/IR training.

FCL.740.H Revalidation of type ratings — helicopters

(a) Revalidation.

For revalidation of type ratings for helicopters, the applicant shall:

(1) pass a proficiency check in accordance with Appendix 9 to this regulation in the relevant type of helicopter or an FSTD representing that type within the 3 months immediately preceding the expiry date of the rating; and

(2) complete at least 2 hours as a pilot of the relevant helicopter type within the validity period of the rating. The duration of the proficiency check may be counted towards the 2 hours.

(3) When applicants hold more than 1 type rating for single-engine piston helicopters, they may achieve revalidation of all the relevant type ratings by completing the proficiency check in only 1 of the relevant types held, provided that they have completed at least 2 hours of flight time as

PIC on the other types during the validity period. The proficiency check shall be performed each time on a different type.

(4) When applicants hold more than 1 type rating for single-engine turbine helicopters with a maximum certificated take-off mass up to 3 175 kg, they may achieve revalidation of all the relevant type ratings by completing the proficiency check in only 1 of the relevant types held, provided that they have completed:

(i) 300 hours as PIC on helicopters;

(ii) 15 hours on each of the types held; and

(iii) at least 2 hours of PIC flight time on each of the other types during the validity period. The proficiency check shall be performed each time on a different type.

(5) A pilot who successfully completes a skill test for the issue of an additional type rating shall achieve revalidation for the relevant type ratings in the common groups, in accordance with (3) and (4).

(6) The revalidation of an IR(H), if held, may be combined with a proficiency check for a type rating.

(b) An applicant who fails to achieve a pass in all sections of a proficiency check before the expiry date of a type rating shall not exercise the privileges of that rating until a pass in the proficiency check has been achieved. In the case of (a)(3) and (4), the applicant shall not exercise his/her privileges in any of the types.

AMC1 FCL.740.H(a)(3) Revalidation of type ratings — helicopters

Only the following SEP helicopter types can be considered for crediting of the proficiency check. Other SEP helicopters (for example the R22 and R44) should not be given credit for.

Manufacturer	Helicopter type and licence endorsement
Agusta-Bell	
SEP	Bell47
Bell Helicopters	
SEP	Bell47
Brantley	
SEP	Brantley B2
Breda Nardi	
SEP	HU269
Enstrom	

SEP	ENF28
Hélicoptères Guimbal	
SEP	Cabri G2
Hiller	
SEP	UH12
Hughes or Schweizer	
SEP	HU269
Westland	
SEP	Bell47

SECTION 4 – SPECIFIC REQUIREMENTS FOR THE POWERED-LIFT AIRCRAFT CATEGORY

FCL.720.PL Experience requirements and pre-requisites for the issue of type ratings — powered-lift aircraft

Unless otherwise determined by the Authority, an applicant for the first issue of a powered-lift type rating shall comply with the following experience requirements and pre-requisites:

(a) for pilots of aeroplanes:

(1) hold a CPL/IR(A) with ATPL theoretical knowledge or an ATPL(A);

(2) hold a certificate of completion of an MCC course;

(3) have completed more than 100 hours as pilot on multi-pilot aeroplanes;

(4) have completed 40 hours of flight instruction in helicopters;

(b) for pilots of helicopters:

(1) hold a CPL/IR(H) with ATPL theoretical knowledge or an ATPL/IR(H);

(2) hold a certificate of completion of an MCC course;

(3) have completed more than 100 hours as a pilot on multi-pilot helicopters;

(4) have completed 40 hours of flight instruction in aeroplanes;

(c) for pilots qualified to fly both aeroplanes and helicopters:

(1) hold at least a CPL(H);

(2) hold an IR and ATPL theoretical knowledge or an ATPL in either aeroplanes or helicopters;

(3) hold a certificate of completion of an MCC course in either helicopters or aeroplanes;

(4) have completed at least 100 hours as a pilot on multi-pilot helicopters or aeroplanes;

(5) have completed 40 hours of flight instruction in aeroplanes or helicopters, as applicable, if the pilot has no experience as ATPL or on multi-pilot aircraft.

GM1 FCL.720.PL Experience requirements and prerequisites for the issue of type ratings — powered-lift aircraft

The endorsement of a powered-lift type rating to an aeroplane or helicopter licence does not confer upon its holder the privileges to fly helicopters or aeroplanes, respectively.

FCL.725.PL Flight instruction for the issue of type ratings — powered-lift aircraft

The flight instruction part of the training course for a powered-lift type rating shall be completed in both the aircraft and an FSTD representing the aircraft and adequately qualified for this purpose.

FCL.740.PL Revalidation of type ratings — powered-lift aircraft

(a) Revalidation.

For revalidation of powered-lift type ratings, the applicant shall:

(1) pass a proficiency check in accordance with Appendix 9 to this regulation in the relevant type of powered-lift within the 3 months immediately preceding the expiry date of the rating;

(2) complete during the period of validity of the rating, at least:

(i) 10 route sectors as pilot of the relevant type of powered-lift aircraft; or

(ii) 1 route sector as pilot of the relevant type of powered-lift aircraft or FFS, flown with an examiner. This route sector may be flown during the proficiency check.

(3) A pilot working for a commercial air transport operator approved in accordance with the applicable air operations requirements who has passed the operators proficiency check combined with the proficiency check for the revalidation of the type rating shall be exempted from complying with the requirement in (2).

(b) An applicant who fails to achieve a pass in all sections of a proficiency check before the expiry date of a type rating shall not exercise the privileges of that rating until the a pass in the proficiency check has been achieved.

SUBPART I – ADDITIONAL RATINGS

FCL.800 Aerobatic rating

(a) Holders of a pilot licence for aeroplanes shall undertake aerobatic flights only if they hold the appropriate rating in accordance with this point.

(b) Applicants for an aerobatic rating shall have completed:

(1) at least 40 hours of flight time as PIC in the appropriate aircraft category, completed after the issue of the licence;

(2) a training course at an ATO, including:

(i) theoretical knowledge instruction appropriate for the rating;

(ii) at least 5 hours or 20 flights of aerobatic instruction in the appropriate aircraft category.

(c) The privileges of the aerobatic rating shall be limited to the aircraft category in which the flight instruction was completed. The privileges will be extended to another category of aircraft if the pilot holds a licence for that aircraft category and has successfully completed at least 3 dual training flights covering the full aerobatic training syllabus in that category of aircraft.

AMC1 FCL.800 Aerobatic rating

THEORETICAL KNOWLEDGE AND FLYING TRAINING

(a) The aim of the aerobatic training is to qualify licence holders to perform aerobatic manoeuvres.

(b) The ATO should issue a certificate of satisfactory completion of the instruction to licence endorsement.

(c) Theoretical knowledge

The theoretical knowledge syllabus should cover the revision or explanation of:

(1) human factors and body limitation:

(i) spatial disorientation;

(ii) airsickness;

(iii) body stress and G-forces, positive and negative;

(iv) effects of grey- and blackouts.

(2) technical subjects:

(i) legislation affecting aerobatic flying to include environmental and noise subjects;

(ii) principles of aerodynamics to include slow flight, stalls and spins, flat and inverted;

(iii) general airframe and engine limitations (if applicable).

(3) limitations applicable to the specific aircraft category (and type):

(i) air speed limitations (aeroplane, helicopter, as applicable);

(ii) symmetric load factors (type-related, as applicable);

(iii) rolling Gs (type-related, as applicable).

(4) aerobatic manoeuvres and recovery:

(i) entry parameters;

(ii) planning systems and sequencing of manoeuvres;

(iii) rolling manoeuvres;

(iv) looping manoeuvres;

(v) combination manoeuvres;

(vi) entry and recovery from developed spins, flat, accelerated and inverted.

(5) emergency procedures:

(i) recovery from unusual attitudes;

(ii) drills to include the use of parachutes (if worn) and aircraft abandonment.

(d) Flying training

The exercises of the aerobatic flying training syllabus should be repeated as necessary until the applicant achieves a safe and competent standard. Having completed the flight training, the student pilot should be able to perform a solo flight containing a sequence of aerobatic manoeuvres. The dual training and the supervised solo training flights should be tailored to the category of aircraft and limited to the permitted manoeuvres of that type of aircraft. The exercises should comprise at least the following practical training items:

(1) confidence manoeuvres and recoveries:

(i) slow flights and stalls;

(ii) steep turns;

(iii) side slips;

(iv) engine restart in-flight (if applicable);

(v) spins and recovery;

(vi) recovery from spiral dives;

(vii) recovery from unusual attitudes.

(2) aerobatic manoeuvres:

(i) Chandelle;

(ii) Lazy Eight;

(iii) rolls;

(iv) loops;

(v) inverted flight;

(vi) Hammerhead turn;

(vii) Immelmann.

FCL.805 Sailplane towing and banner towing ratings

(a) Holders of a pilot licence with privileges to fly aeroplanes shall only tow sailplanes or banners when they hold the appropriate sailplane towing or banner towing rating.

(b) Applicants for a sailplane towing rating shall have completed:

(1) at least 30 hours of flight time as PIC and 60 take-offs and landings in aeroplanes completed after the issue of the licence;

(2) a training course at an ATO including:

(i) theoretical knowledge instruction on towing operations and procedures;

(ii) at least 10 instruction flights towing a sailplane, including at least 5 dual instruction flights; and

(iii) 5 familiarisation flights in a sailplane which is launched by an aircraft.

(c) Applicants for a banner towing rating shall have completed:

(1) at least 100 hours of flight time and 200 take-offs and landings as PIC on aeroplanes after the issue of the licence. At least 30 of these hours shall be in aeroplanes;

(2) a training course at an ATO including:

(i) theoretical knowledge instruction on towing operations and procedures;

(ii) at least 10 instruction flights towing a banner, including at least 5 dual flights.

(d) The privileges of the sailplane and banner towing ratings shall be limited to aeroplanes on which aircraft the flight instruction was completed. The privileges will be extended to another aeroplane if the pilot has successfully completed at least 3 dual training flights covering the full towing training syllabus in that aeroplane.

(e) In order to exercise the privileges of the sailplane or banner towing ratings, the holder of the rating shall have completed a minimum of 5 tows during the last 24 months.

(f) When the pilot does not comply with the requirement in (e), before resuming the exercise of his/her privileges, the pilot shall complete the missing tows with or under the supervision of an instructor.

AMC1 FCL.805Sailplane towing and banner towing rating

THEORETICAL KNOWLEDGE AND FLYING TRAINING

(a) The aim of the towing instruction is to qualify licence holders to tow banners or sailplanes.

(b) The ATO should issue a certificate of satisfactory completion of the instruction that can be used for licence endorsement.

(c) Theoretical knowledge: towing of sailplanes

The theoretical knowledge syllabus for towing of sailplanes should cover the revision or explanation of:

(1) regulations about towing flights;

(2) equipment for the towing activity;

(3) sailplane towing techniques, including:

(i) signals and communication procedures;

(ii) take-off (normal and crosswind);

(iii) in-flight launch procedures;

(iv) descending on tow;

(v) sailplane release procedure;

(vi) tow rope release procedure;

(vii) landing with tow rope connected (if applicable);

(viii) emergency procedures during tow, including equipment malfunctions;

(ix) safety procedures;

(x) flight performance of the applicable aircraft type when towing sailplanes;

(xi) look-out and collision avoidance;

(xii) performance data sailplanes, including:

(A) suitable speeds;

(B) stall characteristics in turns.

(d) Theoretical knowledge: banner towing

The theoretical knowledge syllabus for banner towing should cover the revision or explanation of:

(1) regulations about banner towing;

(2) equipment for the banner towing activity;

(3) ground crew coordination;

(4) pre-flight procedures;

(5) banner towing techniques, including:

(i) take-off launch;

(ii) banner pickup manoeuvres;

(iii) flying with a banner in tow;

(iv) release procedure;

(v) landing with a banner in tow (if applicable);

(vi) emergency procedures during tow, including equipment malfunctions;

(vii) safety procedures;

(viii) flight performance of the applicable aircraft type when towing a heavy or light banner;

(ix) prevention of stall during towing operations.

(e) Flying training: towing of sailplanes

The exercises of the towing training syllabus for towing sailplanes should be repeated as necessary until the student achieves a safe and competent standard and should comprise at least the following practical training items:

(1) take-off procedures (normal and crosswind take-offs);

(2) 360 ° circles on tow with a bank of 30 ° and more;

(3) descending on tow;

(4) release procedure of the sailplane;

(5) landing with the tow rope connected (if applicable);

(6) tow rope release procedure in-flight;

(7) emergency procedures (simulation);

(8) signals and communication during tow.

(f) Flying training: banner towing

The exercises of the towing training syllabus for banner towing should be repeated as necessary until the student achieves a safe and competent standard and should comprise at least the following practical training items:

(1) pickup manoeuvres;

(2) towing in-flight techniques;

(3) release procedures;

(4) flight at critically low air speeds;

(5) maximum performance manoeuvres;

(6) emergency manoeuvres to include equipment malfunctions (simulated);

(7) specific banner towing safety procedures;

(8) go-around with the banner connected;

(9) loss of engine power with the banner attached (simulated).

FCL.810 Night rating

(a) Aeroplanes.

Applicants shall have completed a training course within a period of up to 6 months at an ATO to exercise the privileges of an PPL for aeroplanes, in VFR conditions at night. The course shall comprise:

(i) theoretical knowledge instruction;

(ii) at least 5 hours of flight time in the appropriate aircraft category at night, including at least 3 hours of dual instruction, including at least 1 hour of cross-country navigation with at least one dual cross-country flight of at least 50 km and 5 solo take-offs and 5 solo full-stop landings.

(b) Helicopters.

If the privileges of a PPL for helicopters are to be exercised in VFR conditions at night, the applicant shall have:

(1) completed at least 100 hours of flight time as pilot in helicopters after the issue of the licence, including at least 60 hours as PIC on helicopters and 20 hours of cross-country flight;

(2) completed a training course at an ATO. The course shall be completed within a period of 6 months and comprise:

(i) 5 hours of theoretical knowledge instruction;

(ii) 10 hours of helicopter dual instrument instruction time; and

(iii) 5 hours of flight time at night, including at least 3 hours of dual instruction, including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing.

(3) An applicant who holds or has held an IR in an aeroplane, shall be credited with 5 hours towards the requirement in (2)above.

Note. *—VFR-night flying is not allowed in the Beatrix Control Zone (article 59 Landsbesluit Luchtverkeer (AB 2008 no. 44).*

AMC1 FCL.810(a) Night rating

AEROPLANE NIGHT RATING COURSE

(a) The aim of the course is to qualify holders of AUA-FCL licences with privileges to fly aeroplanes to exercise their privileges at night.

(b) The ATO should issue a certificate of satisfactory completion of the instruction that can be used for licence endorsement.

(c) Theoretical knowledge. The theoretical knowledge syllabus should cover the revision or explanation of:

(1) night VMC minima;

(2) rules about airspace control at night and facilities available;

(3) rules about aerodrome ground, runway, and obstruction lighting;

(4) aircraft navigation lights and collision avoidance rules;

(5) physiological aspects of night vision and orientation;

(6) dangers of disorientation at night;

(7) dangers of weather deterioration at night;

(8) instrument systems or functions and errors;

(9) instrument lighting and emergency cockpit lighting systems;

(10) map marking for use under cockpit lighting;

(11) practical navigation principles;

(12) radio navigation principles;

(13) planning and use of safety altitude; and

(14) danger from icing conditions, as well as from avoidance and escape manoeuvres.

(d) Flying training

The exercises of the night rating flight syllabus should be repeated as necessary until the student achieves a safe and competent standard.

(1) In all cases, exercises 4 to 7 of the night rating flight syllabus should be completed in an aeroplane.

(2) For exercises 1 to 3, up to 50 % of the required flight training may be completed in an FSTD(A). However, each item of exercises 1 to 3 should be completed in an aeroplane in flight.

(3) Starred items (*) should be completed in simulated IMC and may be completed in daylight.

(4) The flying exercises should comprise:

(i) exercise 1:

(A) revise basic manoeuvres when flying by sole reference to instruments*;

(B) explain and demonstrate transition from visual flight to instrument flight*; and

(C) explain and revise recovery from unusual attitudes by sole reference to instruments*;

(ii) exercise 2:

explain and demonstrate the use of radio navigation aids when flying by sole reference to instruments, to include position finding and tracking*;

(iii) exercise 3:

explain and demonstrate the use of radar assistance*;

(iv) exercise 4:

(A) explain and demonstrate night take-off techniques;

(B) explain and demonstrate night circuit techniques;

(C) explain and demonstrate night approaches with or without visual approach aids; and

(D) practise take-offs, circuits, as well as approaches and landings;

(v) exercise 5:

explain and demonstrate night emergency procedures including:

(A) simulated engine failure (to be terminated with recovery at a safe altitude);

(B) simulated engine failure at various phases of flight;

(C) simulated inadvertent entry to IMC (not on base leg or final approach);

(D) internal and external lighting failure; and

(E) other malfunctions and emergency procedures, as required by the AFM;

(vi) exercise 6:

solo night circuits; and

(vii) exercise 7:

(A) explain and demonstrate night cross-country techniques; and

(B) practise night cross-country dual flight and optionally supervised solo to a satisfactory standard.

AMC1 FCL.810Night rating

PPL(H) NIGHT RATING COURSE

(a) The aim of the course is to qualify PPL(H) holders to exercise the privileges of the licence at night.

(b) The ATO should issue a certificate of satisfactory completion of the instruction that can be used for licence endorsement.

(c) Theoretical knowledge

The theoretical knowledge syllabus should cover the revision or explanation of:

(1) night VMC minima;

(2) rules about airspace control at night and facilities available;

(3) rules about aerodrome ground, runway, landing site and obstruction lighting;

(4) aircraft navigation lights and collision avoidance rules;

(5) physiological aspects of night vision and orientation;

(6) dangers of disorientation at night;

(7) dangers of weather deterioration at night;

(8) instrument systems or functions and errors;

(9) instrument lighting and emergency cockpit lighting systems;

(10) map marking for use under cockpit lighting;

(11) practical navigation principles;

(12) radio navigation principles;

(13) planning and use of safety altitude;

(14) danger from icing conditions, avoidance and escape manoeuvres.

(d) Flying training

The exercises of the night rating flight syllabus should be repeated as necessary until the student achieves a safe and competent standard:

(1) In all cases, exercises 4 to 6 of the night rating flight syllabus should be completed.

(2) For exercises 1 to 3, up to 50 % of the required flight training may be completed in an FSTD(H). However, all items within each exercise should be conducted in a helicopter in-flight.

(3) Items marked (*) should be completed in simulated IMC and may be completed in daylight.

(4) The flying exercises should comprise:

(i) Exercise 1:

(A) revise basic manoeuvres when flying by sole reference to instruments*;

(B) explain and demonstrate transition to instrument flight from visual flight*;

(C) explain and revise recovery from unusual attitudes by sole reference to instruments*.

(ii) Exercise 2:

Explain and demonstrate the use of radio navigation aids when flying by sole reference to instruments, to include position finding and tracking*.

(iii) Exercise 3:

Explain and demonstrate the use of radar assistance*.

(iv) Exercise 4:

(A) explain and demonstrate the use and adjustment of landing light;

(B) explain and demonstrate night hovering:

(a) higher and slower than by day;

(b) avoidance of unintended sideways or backwards movements.

(C) explain and demonstrate night take-off techniques;

(D) explain and demonstrate night circuit technique;

(E) explain and demonstrate night approaches (constant angle) with or without visual approach aids to:

(a) heliports;

(b) illuminated touchdown areas.

(F) practise take-off's, circuits and approaches;

(G) explain and demonstrate night emergency procedures to include:

(a) simulated engine failure (to be terminated with power recovery at a safe altitude);

(b) simulated engine failure, including SE approach and landing (ME only);

(c) simulated inadvertent entry to IMC (not on base leg or final);

(d) simulated hydraulic control failure (to include landing);

(e) internal and external lighting failure;

(f) other malfunctions and emergency procedures as required by the aircraft flight manual.

(v) Exercise 5:

Solo night circuits.

(vi) Exercise 6:

(A) explain and demonstrate night cross-country techniques;

(B) practice night cross-country dual and as SPIC to a satisfactory standard.

FCL.815 Mountain rating

(a) Privileges. The privileges of the holder of a mountain rating are to conduct flights with aeroplanes to and from surfaces designated as requiring such a rating by the appropriate authorities designated by the Authority.

The initial mountain rating may be obtained either on:

(1) wheels, to grant the privilege to fly to and from such surfaces when they are not covered by snow; or

(2) skis, to grant the privilege to fly to and from such surfaces when they are covered by snow.

(3) The privileges of the initial rating may be extended to either wheel or ski privileges when the pilot has undertaken an appropriate additional familiarisation course, including theoretical knowledge instruction and flight training, with a mountain flight instructor.

(b) Training course. Applicants for a mountain rating shall have completed, within a period of 24 months, a course of theoretical knowledge instruction and flight training at an ATO. The content of the course shall be appropriate to the privileges sought.

(c) Skill test. After the completion of the training, the applicant shall pass a skill test with an FE qualified for this purpose. The skill test shall contain:

(1) a verbal examination of theoretical knowledge;

(2) 6 landings on at least 2 different surfaces designated as requiring a mountain rating other than the surface of departure.

(d) Validity. A mountain rating shall be valid for a period of 24 months.

(e) Revalidation.

For revalidation of a mountain rating, the applicant shall:

(1) have completed at least 6 mountain landings in the past 24 months; or

(2) pass a proficiency check. The proficiency check shall comply with the requirements in (c).

(f) Renewal. If the rating has lapsed, the applicant shall comply with the requirement in (e)(2).

AMC1 FCL.815 Mountain rating

THEORETICAL KNOWLEDGE AND FLYING TRAINING

THEORETICAL KNOWLEDGE	
WHEEL	**SKI**
1. Equipment	
W.1.1 Personal equipment for the flight	S.1.1 Personal equipment for the flight

W.1.2 Aircraft equipment for the flight	S.1.2 Aircraft equipment for the flight
2. Take-off techniques	
W.2.1 Technique for approach and landing on a mountain surface	S.2.1 Technique for approach and landing on a mountain surface S.2.2 Landing technique on skis
W.2.2 Rolling techniques of the aircraft on various runway profiles	S.2.3 Rolling techniques of the aircraft on skis about the snow nature
W.2.3 Take-off technique	S.2.4 Take-off technique on surfaces covered with snow
W.2.4 Aircraft and engine performances about altitude	S.2.5 Aircraft and engine performances about altitude
3. Rules	
W.3.1 Mountain rating	S.3.1 Mountain rating
W.3.2 Overflight rules	S.3.2 Overflight rules
W.3.3 Surfaces classification	S.3.3 Surfaces classification
W.3.4 PIC responsibilities	S.3.4 PIC responsibilities
W.3.5 Responsibilities of the surface manager	S.3.5 Responsibilities of the surface manager
W.3.6 Flight plan	S.3.6 Flight plan S.3.7 Certification of the ski mounted aeroplanes
4. Meteorology	
W.4.1 Movements of the air mass	S.4.1 Movements of the air mass
W.4.2 Flight consequences	S.4.2 Flight consequences
W.4.3 Relief effect on the movement of the air masses	S.4.3 Relief effect on the movement of the air masses

W.4.4 Altimetry	S.4.4 Altimetry
5. Human Performance and Limitations	
W.5.1 The cold	S.5.1 The cold
W.5.2 The food	S.5.2 The food
W.5.3 The hypoxia	S.5.3 The hypoxia
W.5.4 The radiance	S.5.4 The radiance
W.5.5 The thirst	S.5.5 The thirst
W.5.6 The tiredness	S.5.6 The tiredness
W.5.7 Turbulence effects in altitude	S.5.7 Turbulence effects in altitude
6. Navigation	
W.6.1 Progress of the flight	S.6.1 Progress of the flight
W.6.2 Dead reckoning	S.6.2 Dead reckoning
W.6.3 The path over the relief	S.6.3 The path over the relief
W.6.4 Progress in the valleys	S.6.4 Progress in the valleys
W.6.5 Detection of obstacles (high voltage lines, chairlifts, cables, etc.).	S.6.5 Detection of obstacles (high voltage lines, chairlifts, cables, etc.)
7. Specific items	
	S.7.1 Knowledge of the snow and assessment of the snow nature in-flight S.7.2 Knowledge of the glacier S.7.3 Life of the glacier S.7.4 Formation of the cracks S.7.5 Snow bridges S.7.6 Avalanches
8. Survival	

	S.8.1 Ways of survival (psychological aspects) S.8.2 Use of the equipment S.8.3 Removal of snow from the aircraft S.8.4 Building of a shelter S.8.5 How to eat and feed
FLIGHT INSTRUCTION	
WHEEL	**SKI**
I.- Navigation	
W.I.1 Flight techniques in the valleys W.I.2 Flight over mountain passes and ridges W.I.3 U-turn in narrow valleys W.I.4 Choice of the flight path of aerology W.I.5 Map reading	S.I.1 Flight techniques in the valleys S.I.2 Flight over mountain passes and ridges S.I.3 U-turn in narrow valleys S.I.4 Choice of the flight path of aerology S.I.5 Map reading
II.- Arrival and reconnaissance	
W.II.1 Choice of the altitude of arrival	S.II.1 Choice of the arrival altitude
W.II.2 Choice of the arrival and overflight pattern	S.II.2 Choice of the arrival and overflight pattern
W.II.3 Choice of the landing pattern	S.II.3 Description of the circuit pattern
W.II.4 Aerology awareness	S.II.4 Aerology awareness
W.II.5 Evaluation of the length of the runway	S.II.5 Evaluation of the runway length
W.II.6 Evaluation of the runway profile (slope and banking)	S.II.6 Evaluation of the runway profile (slope and banking)
W.II.7 Collision avoidance	S.II.7 Collision avoidance
W.II.8 Definition of the references for the landing (touchdown point)	S.II.8 Definition of the references for the landing (touchdown point)
W.II.9 Determination of the circuit pattern altitude	S.II.9 Determination of the circuit pattern altitude

W.II.10 Choice of the final speed depending on the runway profile	S.II.10 Choice of the final speed depending on the runway profile S.II.11 Choice of the take-off axis S.II.12. Choice of the landing axis S.II.13 Choice of the parking area S.II.14 Observation of the obstacles on the ground (cracks, snow bridges, avalanches) S.II.15 Estimation of the snow nature S.II.16 Observation of the way to reach a refuge from the landing area
III.- Approach and landing	
W.III.1 Landing pattern altitude	S.III.1 Landing pattern altitude
W.III.2 Precision of flight along the landing path	S.III.2 Precision of flight along the landing path
W.III.3 Corrections on the landing path (accuracy and effectiveness)	S.III.3 Corrections on the landing path (accuracy and effectiveness)
W.III.4 Landing (precision of the flare and of the touchdown point)	S.III.4 Landing (precision of the flare and of the touchdown point)
W.III.5 Taxiing (use of the engine power) on various profiles	S.III.5 Taxi of the aircraft on various snows and various runway profiles
W.III.6 Parking of the aircraft (depending on the runway profile, the traffic, etc.)	S.III.6 Parking of the aircraft (depending on the snow nature and the profile of the apron) S.III.7 Turns on various snow nature and various ground profiles
IV.- Take-off	
W.IV.1 Safety checks before take-off	S. IV.1 Safety checks before take-off.
W.IV.2 Lining up on the runway	S.IV.2 Lining up on the runway
W.IV.3 Control of the runway axis during take-off	S.IV.3 Control of the runway axis during take-off

W.IV.4 Choice and use of the visual references of the take-off axis	S.IV.4 Choice and use of the visual references of the take-off axis S.IV.5 Acceleration depending on the nature of the snow S.IV.6 Short take-off S.IV.7 Take-off avoiding the skid of the skis
V.- Survival	
	S.V.1 Use of the snowshoes S.V.2 Use of the markings

AMC2 FCL.815 Mountain rating

SKILL TEST AND PROFICIENCY CHECK

The skill test for the issue or the proficiency check for the revalidation or renewal of a mountain rating should contain the following elements:

(a) oral examination

This regulation should be done before the flight and should cover all the relevant parts of the theoretical knowledge. At least one question for each of the following sections should be asked:

(1) specific equipment for a mountain flight (personal and aircraft);

(2) rules of the mountain flight.

If the oral examination reveals a lack in theoretical knowledge, the flight test should not be done and the skill test is failed.

(b) practical skill test

During the flight test, two sites different from the departure airport should be used for recognition, approach, landing and take-off. For the mountain rating ski or the extension from wheel to ski, one of the two different sites should be a glacier.

FCL.820 Flight test rating

(a) Holders of a pilot licence for aeroplanes or helicopters shall only act as PIC in category 1 or 2 flight tests when they hold a flight test rating.

Note 1.— *Flight test – Category 1 means*

- *Initial flight(s) of a new type of aircraft or of an aircraft of which flight and/or handling characteristics may have been significantly modified;*
- *Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;*
- *Flights to investigate novel or unusual aircraft design features or techniques;*
- *Flights to determine or expand the flight envelope;*
- *Flights to determine the regulatory performances, flight characteristics and handling qualities when flight envelope limits are approached; and*
- *Flight test training for Category 1 flight tests.*

Note 2. —*Flight test – Category 2 means*

- *Flights not classified as Category 1 on an aircraft whose type is not yet certified;*
- *Flights which are not classified Category 1 on an aircraft of an already certified type, after embodiment of a not yet approved modification and which:*

- *require an assessment of the general behaviour of the aircraft; or*
- *require an assessment of basic crew procedures, when a new or modified system is operating or is needed; or*
- *are required to intentionally fly outside of the limitations of the currently approved operational envelope, but within the investigated flight envelope.*
- *Flight test training for Category 2 flight tests.*

(b) The obligation to hold a flight test rating established in (a) shall only apply to flight tests conducted on:

(1) helicopters certificated or to be certificated in accordance with the standards of CS-27 or CS-29 or equivalent airworthiness codes; or

(2) aeroplanes certificated or to be certificated in accordance with:

(i) the standards of CS-25 or equivalent airworthiness codes; or

(ii) the standards of CS-23 or equivalent airworthiness codes, except for aeroplanes with an maximum take-off mass of less than 2 000 kg.

(c) The privileges of the holder of a flight test rating are to, within the relevant aircraft category:

(1) in the case of a category 1 flight test rating, conduct all categories of flight tests, either as PIC or co-pilot;

(2) in the case of a category 2 flight test rating:

(i) conduct category 1 flight tests:

– as a co-pilot, or

– as PIC, in the case of aeroplanes referred to in (b)(2)(ii), except for those within the commuter category or having a design diving speed above 0.6 mach or a maximum ceiling above 25 000 feet;

(ii) conduct all other categories of flight tests, either as PIC or co-pilot;

(3) in addition, for both category 1 or 2 flight test ratings, to conduct flights specifically related to the activity of design and production organisations, within the scope of their privileges, when the requirements of Subpart H may not be complied with.

(d) Applicants for the first issue of a flight test rating shall:

(1) hold at least a CPL and an IR in the appropriate aircraft category;

(2) have completed at least 1 000 hours of flight time in the appropriate aircraft category, of which at least 400 hours as PIC;

(3) have completed a training course at an ATO appropriate to the intended aircraft and category of flights. The training shall cover at least the following subjects:

– Performance,

– Stability and control/Handling qualities,
– Systems,
– Test management,
– Risk/Safety management.

(e) The privileges of holders of a flight test rating may be extended to another category of flight test and another category of aircraft when they have completed an additional course of training at an ATO.

AMC1 FCL.820 Flight test rating

TRAINING COURSE

GENERAL

(a) Competency-based training:

(1) Training courses for the flight test rating should be competency-based. The training programme should follow as much as possible the syllabus outlined below, but may be adapted taking into account the previous experience, skill and theoretical knowledge level of the applicants.

(2) It should also be recognised that the syllabi below assume that suitable flight test experience will be gained subsequent to attendance at the course. Should the applicant be significantly experienced already, then consideration should be made of that experience and it is possible that course content might be reduced in areas where that experience has been obtained.

(3) Furthermore, it should be noted that flight test ratings are specific to both a certain category of aircraft (aeroplanes or helicopters) and to a certain category of flight test (category 1 or 2). Therefore, holders of a flight test rating wishing to extend their privileges to further categories of aircraft or to further categories of flight test (this is only relevant for holders of a category 2 flight test rating since the category one flight test rating includes the privileges for category 2 test flights) should not be requested to undertake the same course as an 'ab-initio' applicant. In these cases, the ATO should develop specific 'bridge courses' taking into account the same principles mentioned above.

(4) To allow proper consideration of the applicant's previous experience, a pre-entry assessment of the applicant's skills should be undertaken by the applicant, on the basis of which the ATO may evaluate the level of the applicant to better tailor the course. Thus, the syllabi listed below should be regarded as a list of individual demonstrable competencies and qualifications rather than a list of mandatory training objectives.

(b) Continuous evaluation

Training courses for the flight test rating should be built on a continuous evaluation model to guarantee that successful completion of the course ensures that the applicant has reached the level of competence (both theoretical and practical) to be issued a flight test rating.

CONTENT OF THE COURSE

(c) In addition, the content of the course should vary taking into account whether the applicant seeks privileges for a category 1 or 2 flight test rating, as well as the relevant category of aircraft, and their level of complexity. To better take these factors into account, training courses for the flight test rating have been divided into two conditions:

(1) condition 1 courses apply to category 1 flight test ratings on:

(i) helicopters certificated in accordance with the standards of CS-27 or CS-29 or equivalent airworthiness codes;

(ii) aeroplanes certificated in accordance with:

(A) the standards of CS-25 or equivalent airworthiness codes; or

(B) the standards of CS-23 or equivalent airworthiness codes, within the commuter category or having an M_D above 0.6 or a maximum ceiling above 25 000 ft.

(2) condition 2 training courses apply to:

(i) category 2 flight test ratings for:

(A) helicopters certificated in accordance with the standards of CS-27 or CS-29 or equivalent airworthiness codes;

(B) aeroplanes certificated in accordance with:

(a) the standards of CS-25 or equivalent airworthiness codes; or

(b) the standards of CS-23 or equivalent airworthiness codes (included those mentioned in (c)(1)(ii)(B)), except for aeroplanes with a maximum take-off mass of less than 2 000 kg.

(ii) category 1 flight tests for aeroplanes certificated in accordance with the standards of CS-23, with a maximum take-off mass of more than 2 000kg, with the exclusion of those mentioned in (c)(1)(ii)(B) (which are subject to condition 1 courses).

AEROPLANES

(d) Condition 1 courses for aeroplanes

(1) These courses should include approximately:

(i) 350 hours of ground training;

(ii) 100 hours of flight test training, during which at least 15 flights should be made without an instructor on board;

(iii) principles of test management and risk and safety managements should be integrated throughout the course. In addition, principles and methods applicable to the certification activity, as well as safety assessments should be taught.

(2) These courses should include instruction on at least 10 different aeroplane types, of which at least one should be certificated in accordance with CS-25 standards or equivalent airworthiness codes.

(3) During the course the student should be required to develop at least five substantial flight test reports.

(4) The student should be evaluated through examinations on all of the theoretical knowledge subjects, and undertake a final in-flight test upon completion of the syllabus.

(5) Syllabus. The following subjects should be covered in the course:

CONDITION 1 - AEROPLANES		
Theoretical knowledge	(a) aerodynamics; (b) stability and control or handling qualities; (c) engines and performance; (d) measurements and flight test instrumentation (including telemetry).	
Flight test techniques and flight training	(a) performance: (at least one flight test report should be developed)	(1) air speed calibration; (2) climb ME; (3) take-off and landing, including turboprop or turbofan OEI.
	(b) engines	Turboprop or turbofan limitations and relight envelope
	(c) handling qualities (at least two flight test reports should be developed)	(1) flight controls characteristics; (2) longitudinal handling qualities; (3) longitudinal manoeuvre stability; (4) take-off and landing MET or ME turbofan, including V_{mcq} and V_{mbe}; (5) lateral, directional handling qualities; (6) handling qualities evaluation; (7) variable stability demo flights including HOFCS; (8) stalls; (9) spins; (10) V_{mca}.
	(d) systems (at least one flight test report should be developed)	At least three different systems, for example: (1) autopilot or AFCS; (2) glass cockpit evaluation;

		(3) radio navigation, instruments qualification and integrated avionics; (4) TAWS; (5) ACAS.
	(e) high speed certification test	
	(f) final evaluation exercise (a flight test report should be developed)	

(e) Condition 2 courses for aeroplanes

(1) These courses should include approximately:

(i) 150 hours of ground training;

(ii) 50 hours of flight test training, during which at least eight flights should be made without an instructor on board.

Principles of test management and risk and safety managements should be integrated throughout the course. In addition, principles and methods applicable to the certification activity, as well as safety assessments should be taught.

(2) These courses should include instruction on at least seven different aeroplane types, of which at least one should be certificated in accordance with CS-25 standards or equivalent airworthiness codes.

(3) During the course the student should be required to develop at least three substantial flight test reports.

(4) The student should be evaluated through examinations on all of the theoretical knowledge subjects, and undertake a final in-flight test upon completion of the syllabus.

(5) Syllabus. The following subjects should be covered in the course:

CONDITION 2 - AEROPLANES		
Theoretical knowledge	(a) aerodynamics; (b) stability and control or handling qualities; (c) engines and performance; (d) measurements and flight test instrumentation (e) (including telemetry).	
Flight test techniques and flight training	(a) performance: (at least one flight test report should be developed)	(1) air speed calibration; (2) climb ME; (3) take-off and landing MET or ME turbofan.
	(a) handling qualities	(1) flight control characteristics; (2) longitudinal static, dynamic stability and control or handling qualities; (3) lateral, directional stability and control or handling qualities; (4) stalls; (5) spins.
	(b) systems (at least one flight test report should be developed)	At least three different systems, for example: (1) autopilot or AFCS; (2) glass cockpit evaluation; (3) radio navigation, instruments qualification and integrated avionics; (4) TAWS; (5) ACAS.
	(c) final evaluation exercise (a) flight test report should be developed)	

HELICOPTERS

(f) Condition 1 courses for helicopters:

(1) These courses should include approximately:

(i) 350 hours of ground training;

(ii) 100 hours of flight test training, during which at least 20 flights should be made without an instructor on board.

Principles of test management and risk and safety managements should be integrated throughout the course. In addition, principles and methods applicable to the certification activity, as well as safety assessments should be taught.

(2) These courses should include instruction on at least eight different helicopter types, of which at least one should be certificated in accordance with CS-29 standards or equivalent airworthiness codes.

(3) During the course the student should be required to develop at least five substantial flight test reports.

(4) The student should be evaluated through examinations on all of the theoretical knowledge subjects, and undertake a final in-flight test upon completion of the syllabus.

(5) Syllabus. The following subjects should be covered in the course:

<table>
<tr><th colspan="3">CONDITION 1 - HELICOPTERS</th></tr>
<tr><td>Theoretical knowledge</td><td colspan="2">(a) aerodynamics;
(b) stability and control or handling qualities;
(c) engines and performance;
(d) measurements and flight test instrumentation (including telemetry).</td></tr>
<tr><td rowspan="4">Flight test techniques and flight training</td><td>(a) performance:
(at least one flight test report should be developed)</td><td>(1) air speed calibration;
(2) level flight, climb and descent, vertical and hover performance;</td></tr>
<tr><td>(b) engines</td><td>(1) digital engine governing;
(2) turbine or piston engine evaluation.</td></tr>
<tr><td>(c) handling qualities
(at least one flight test report should be developed)</td><td>(1) flight control characteristics;
(2) longitudinal static, dynamic stability and control or handling qualities;
(3) lateral, directional dynamic stability and control or handling qualities;
(4) ADS 33;
(5) teetering rotor assessment;
(6) rigid rotor assessment;
(7) variable stability demo flights including HOFCS.</td></tr>
<tr><td>(d) systems
(at least one flight test report should be developed)</td><td>At least three different systems, for example:
(1) navigation management systems)
(2) autopilot or AFCS;
(3) night vision goggles or electro-optics;
(4) glass cockpit evaluation;</td></tr>
<tr><td rowspan="5"></td><td colspan="2">(e) height and velocity envelope and EOL, including relights</td></tr>
<tr><td colspan="2">(f) category A procedure</td></tr>
<tr><td colspan="2">(g) vibrations and rotor adjustments</td></tr>
<tr><td colspan="2">(h) auto rotations</td></tr>
<tr><td colspan="2">(i) final evaluation exercise (a flight test report should be developed)</td></tr>
</table>

(g) Condition 2 courses for helicopters

(1) These courses should include approximately:

(i) 150 hours of ground training;

(ii) 50 hours of flight test training, during which at least eight flights should be made without an instructor on board.

Principles of test management and risk and safety management should be integrated throughout the course. In addition, principles and methods applicable to the certification activity, as well as safety assessments should be taught.

(2) These courses should include instruction on at least four different helicopters types, of which at least one should be certificated in accordance with CS-29 standards or equivalent airworthiness codes.

(3) During the course the student should be required to develop at least three substantial flight test reports.

(4) The student should be evaluated through examinations on all of the theoretical knowledge subjects, and undertake a final in-flight test upon completion of the syllabus.

(5) Syllabus. The following subjects should be covered in the course:

CONDITION 2 - HELICOPTERS		
Theoretical knowledge	(a) aerodynamics; (b) stability and control or handling qualities; (c) engines and performance; (d) measurements and flight test instrumentation (including telemetry).	
Flight test techniques and flight training	(a) performance: (at least one flight test report should be developed)	(1) air speed calibration; (2) level flight, climb and descent, vertical and hover performance.
	(b) engines	(1) digital engines governing; (2) turbine or piston engine evaluation.
	(c) handling qualities	(1) flight control characteristics; (2) longitudinal static, dynamic stability and control or handling qualities; (3) lateral, directional stability and control or handling qualities.
	(d) systems (at least one flight test report should be developed)	At least three different systems, for example: (1) navigation management systems; (2) autopilot or AFCS; (3) night vision goggles or electro-optics; (4) glass cockpit evaluation.
	(e) vibration and rotor adjustments	
	(f) final evaluation exercise (a flight test report should be developed)	

SUBPART J – INSTRUCTORS

SECTION 1 – COMMON REQUIREMENTS

FCL.900 Instructor certificates

(a) General. A person shall only carry out:

(1) flight instruction in aircraft when he/she holds:

(i) a pilot licence issued or accepted in accordance with this regulation;

(ii) an instructor certificate appropriate to the instruction given, issued in accordance with this Subpart;

(2) synthetic flight instruction or MCC instruction when he/she holds an instructor certificate appropriate to the instruction given, issued in accordance with this Subpart.

(b) Special conditions:

(1) The competent authority may issue a specific certificate granting privileges for flight instruction when compliance with the requirements established in this Subpart is not possible in the case of the introduction of new aircraft in an operator's fleet.

Such a certificate shall be limited to the instruction flights necessary for the introduction of the new type of aircraft and its validity shall not, in any case, exceed 1 year.

(2) Holders of a certificate issued in accordance with (b)(1) who wish to apply for the issue of an instructor certificate shall comply with the pre-requisites and revalidation requirements established for that category of instructor. Notwithstanding FCL.905.TRI(b), a TRI certificate issued in accordance with this (sub)paragraph will include the privilege to instruct for the issue of a TRI or SFI certificate for the relevant type.

(c) Instruction outside the territory of the Aruba:

(1) Notwithstanding point (a), in the case of flight instruction provided in an ATO located outside the territory of Aruba, the Authority may issue an instructor certificate to an applicant holding a pilot licence issued by another country in accordance with Annex 1 to the Chicago Convention, provided that the applicant:

(i) holds at least an equivalent licence, rating, or certificate to the one for which they are authorised to instruct and in any case at least a CPL;

(ii) complies with the requirements established in this Subpart for the issue of the relevant instructor certificate;

(iii) demonstrates to the Authority an adequate level of knowledge of aviation safety rules to be able to exercise instructional privileges in accordance with this regulation.

(2) The certificate shall be limited to providing flight instruction:

(i) in ATOs located outside the territory of Aruba;

(ii) to student pilots who have sufficient knowledge of the language in which flight instruction is given.

GM1 FCL.900 Instructor certificates

GENERAL

(a) Nine instructor categories are recognised:

(1) FI certificate: aeroplane (FI(A)), helicopter (FI(H));

(2) TRI certificate: aeroplane (TRI(A)), helicopter (TRI(H)), powered-lift aircraft (TRI(PL));

(3) CRI certificate: aeroplane (CRI(A));

(4) IRI certificate: aeroplane (IRI(A)) and helicopter (IRI(H));

(5) SFI certificate: aeroplane (SFI(A)), helicopter (SFI(H)) and powered-lift aircraft (SFI(PL));

(6) MCCI certificate: aeroplanes (MCCI(A)), helicopters (MCCI(H)) and powered-lift aircraft (MCCI(PL));

(7) STI certificate: aeroplane (STI(A)) and helicopter (STI(H));

(8) MI certificate: (MI);

(9) FTI certificate: (FTI).

(b) For categories (1) to (4) and for (8) and (9) the applicant needs to hold a pilot licence. For categories (5) to (7) no licence is needed, only an instructor certificate.

(c) A person may hold more than one instructor certificate.

SPECIAL CONDITIONS

(a) When new aircraft are introduced, requirements such as to hold a licence and rating equivalent to the one for which instruction is being given, or to have adequate flight experience, may not be possible to comply with. In this case, to allow for the first instruction courses to be given to applicants for licences or ratings for these aircraft, competent authorities need the possibility to issue a specific certificate that does not have to comply with the requirements established in this Subpart.

(b) The Authority should only give these certificates to holders of other instruction qualifications. As far as possible, preference should be given to persons with at least 100 hours of experience in similar types or classes of aircraft.

(c) When the new aircraft type introduced in an operator's fleet already existed on the Aruban Registry, the Authority should only give the specific certificate to an applicant that is qualified as PIC on that aircraft.

(d) The certificate should ideally be limited in validity to the time needed to qualify the first instructors for the new aircraft in accordance with this Subpart, but in any case it should not exceed the 1 year established in the rule.

FCL.915 General pre-requisites and requirements for instructors

(a) General.

An applicant for an instructor certificate shall be at least 18 years of age.

(b) Additional requirements for instructors providing flight instruction in aircraft.

An applicant for or the holder of an instructor certificate with privileges to conduct flight instruction in an aircraft shall:

(1) hold at least the licence and, where relevant, the rating for which flight instruction is to be given;

(2) except in the case of the flight test instructor, have:

(i) completed at least 15 hours of flight as a pilot on the class or type of aircraft on which flight instruction is to be given, of which a maximum of 7 hours may be in an FSTD representing the class or type of aircraft, if applicable; or

(ii) passed an assessment of competence for the relevant category of instructor on that class or type of aircraft;

(3) be entitled to act as PIC on the aircraft during such flight instruction.

(c) Credit towards further ratings and for the purpose of revalidation:

(1) Applicants for further instructor certificates may be credited with the teaching and learning skills already demonstrated for the instructor certificate held.

(2) Hours flown as an examiner during skill tests or proficiency checks shall be credited in full towards revalidation requirements for all instructor certificates held.

(d) Additional requirements for instructing in a training course in accordance with FCL.745.A:

(1) In addition to (b), before acting as instructors for a training course according to FCL.745.A, holders of an instructor certificate shall:

(i) have at least 500 hours of flight time as pilots of aeroplanes, including 200 hours of flight instruction;

(ii) after complying with the experience requirements in point (e)(1)(i), have completed a UPRT instructor training course at an ATO, during which the competence of applicants shall have been assessed continuously; and

(iii) upon completion of the course, have been issued with a certificate of course completion by the ATO, whose Head of Training (HT) shall have entered the privileges specified in point (e)(1) in the logbook of the applicants.

(2) The privileges referred to in point (e)(1) shall only be exercised if instructors have, during the last year, received refresher training at an ATO during which the competence required to instruct on a course in accordance with point FCL.745.A is assessed to the satisfaction of the HT.

(3) Instructors holding the privileges specified in point (e)(1) may act as instructors for a course as specified in point (e)(1)(ii), provided that they:

i. have 25 hours of flight instruction experience during training according to FCL745.A;

ii. have completed an assessment of competence for this privilege; and

iii. comply with the recency requirements in point (e)(2).

(4) These privileges shall be entered in the logbook of the instructors and signed by the examiner.'

AMC1 FCL.915 (d) General prerequisites and requirements for instructors

ADDITIONAL REQUIREMENTS FOR INSTRUCTING IN A TRAINING COURSE WITH FCL.745.A – GENERAL

(a) The objective of the course required by point FCL.915(d)(1) is to train instructors to deliver training on the advanced UPRT course according to point FCL.745.A using the train-to-proficiency concept.

(b) Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching upset recovery techniques and strategies, whilst exploring the associated physiological and psychological aspects.

(c) Within 6 months preceding the start of the course, the instructor should have completed a pre-course assessment with an instructor holding the privilege in accordance with FCL.915(d)(1) to assess their ability to undertake the course.

(d) The training course should comprise:

(1) theoretical knowledge instruction on the theoretical knowledge elements presented in the advanced UPRT course and the additional elements required for an instructor to deliver effective training;

(2) flight instruction on the exercises used in the advanced UPRT course; and

(3) flight instruction on recovery from upsets that could result from students mis-handling the aircraft during the advanced UPRT course including spin recovery.

(e) The content of the theoretical knowledge and flight instruction should be tailored to the competence of the applicant as demonstrated during both pre-course and continuous assessment.

(f) Successful completion of the course requires that the instructor:

(1) demonstrates the resilience to be able to recover from any feasible upset in the aircraft to be used for training;

(2) demonstrates the ability to provide instruction to achieve the objectives of the advanced UPRT course to a wide range of trainees; and

(3) manages the physiological and psychological well-being of students during training.

(g) The instructor should be issued with a certificate following successful completion of the course.

AMC2 FCL.915(d) General prerequisites and requirements for instructors

ADDITIONAL REQUIREMENTS FOR INSTRUCTING IN A TRAINING COURSE IN ACCORDANCE WITH FCL.745.A – SYLLABUS

The following tables contain theoretical knowledge (Table 1) and practical training exercises (Table 2) that should be taught in the context of the advanced UPRT course as per point FCL.745.A.

TABLE 1: THEORETICAL KNOWLEDGE	
1.	Completion of a flight risk assessment
2.	Resilience-building strategies, managing startle and surprise
3.	The limitations and type-specific characteristics of the aeroplane used for training
4.	The importance of adhering to the scenarios that have been validated by the training programme developer
5.	Instructor techniques to induce and manage startle and surprise
6.	Upset recognition and recovery strategies
7.	Disorientation
8.	Distraction
9.	Immediate recognition of student pilot errors
10.	Intervention strategies
11.	Delivery of the theoretical knowledge instruction of the advanced UPRT course

TABLE 2: PRACTICAL TRAINING EXERCISES	
SECTION 1 — PRE-FLIGHT PREPARATION	
1.1	Correct completion of a flight risk assessment (such as weather, terrain, traffic density, student’s experience level and capabilities)

1.2	Safety briefing
SECTION 2 — FLIGHT	
2.1	Selection of suitable airspace for the conduct of recovery exercises
2.2	Accurate execution of all of the manoeuvres required for the advanced UPRT course
2.3.	Recovery from upsets that could result from the student or instructor mishandling the aeroplane including: — timely and appropriate intervention; — accelerated stall; — secondary stall; — incipient spin; — fully developed spin; and — Spiral dive.
2.4	Delivery of all of the training exercises in the advanced UPRT course
2.5	Anticipating and immediately recognising incorrect student inputs which might exceed aeroplane limitations and acting swiftly and appropriately to maintain the necessary margins of safety
2.6	Exercises to surprise the student
2.7	Adapt the training programme to take account of the physiological and psychological state of the student
2.8	Ensure the safety of the operation during training by maintaining awareness of the operating environment
2.9	Assess the competence of the student
SECTION 3 — POST-FLIGHT	
3.1	Provide effective instructor feedback to the student and plan subsequent training details
3.2	Avoid negative transfer of training

GM1 FCL.915(d) General prerequisites and requirements for instructors

TRAINING ON SPIN AVOIDANCE AND SPIN RECOVERY

(a) While the purpose of advanced UPRT course is to expose students to psychological and physiological effects, students' responses and actions on controls may take any conceivable variations, including some which can initiate spin entry or, most importantly, can highly aggravate the upset or loss-of-control they are supposed to recover from.

(b) The advanced UPRT course in accordance with point FCL.745.A is not aerobatic training and only requires training for the incipient spin as well as uncoordinated side slipped stalls which are prone to initiating spins. Full spin training or the development of spin recovery proficiency is reserved for the training course in accordance with point FCL.915(d).

(c) Even though most flights will go exactly as planned without an unanticipated departure from controlled flight, the instructor is responsible for the safety of flight despite anomalies or unexpected student inputs.

(d) Even in a case where an aeroplane is not certified for intentional flat or aggravated or inverted spins, it does not mean that mishandled student recovery avoids placing the aeroplane in such a situation. Some student inputs will take the aeroplane uncontrolled far beyond the normal scope of the aerobatic rating as defined in point FCL.800. Those situations might also have the potential to draw the aeroplane outside its certified flight envelope (e.g. overloads, snap-roll departures above limit speed, spin or inverted spin when not certified for, flat spins, etc.). Most importantly, those resulting situations could startle the instructor.

(e) For the reasons specified in point (d), instructors should:

(1) be trained to the extent of proficiency on the specific type of aircraft they use to deliver the course;

(2) have academic understanding of the factors assisting or deterring spin recoveries (upright and inverted spins), altitude requirements for safe recovery margins, and other operational considerations;

(3) demonstrate that they have the ability to early recognise abnormal situations, timely take action, and safely recover from all the conditions that they may encounter in the delivery of training; and

(4) demonstrate their ability to recover from all spin types, not only from spins entered intentionally, but from spins of unannounced direction of autorotation, and from all potential spin variations, including:

(i) normal (non-aggravated) spins;

(ii) flat spins;

(iii) accelerated spins; and

(iv) transition spins (incorrect recovery resulting in reversal of rotation).

(f) In the context of points (d) and (e), it is recommended that candidates either hold an aerobatic rating for aeroplanes or have equivalent experience.

AMC3 FCL.915(d) General prerequisites and requirements for instructors

CONTENT OF THE REFRESHER TRAINING FOR UPRT INSTRUCTIONAL PRIVILEGES

(a) The objective of the refresher training is for the instructor to maintain or to re-obtain, as applicable, the level of competence required for instructing on a training course as per point FCL.745.A.

(b) The content of the refresher training should:

(1) consist of elements from the initial UPRT instructor training course as per point FCL.915(d)(1)(ii); and

(2) be determined by the ATO on a case-by-case basis, considering the needs of the individual instructor and taking into account the following factors:

(i) the experience of the instructor;

(ii) the amount of time elapsed since the instructor provided instruction on a training course as per point FCL.745.A for the last time; and

(iii) the performance of the instructor during a simulated UPRT training session comprising exercises from the advanced UPRT course as per point FCL.745.A. During this simulated training session, another instructor qualified in accordance with point FCL.915(d) should play the role of the student on the advanced UPRT course.

(c) Taking into account the factors listed in (b)(2) above, the ATO may also count the simulated training session as per point (b)(2)as refresher training without the need for further refresher training sessions, provided that the instructor demonstrates that he or she already possesses the required level of competence.

(d) The completion of the refresher training should be entered in the logbook of the instructor and should be signed by the head of training of the ATO.

FCL.920 Instructor competencies and assessment

All instructors shall be trained to achieve the following competences:

- Prepare resources,
- Create a climate conducive to learning,
- Present knowledge,
- Integrate Threat and Error Management (TEM) and crew resource management,
- Manage time to achieve training objectives,
- Facilitate learning,
- Assess trainee performance,
- Monitor and review progress,
- Evaluate training sessions,

- Report outcome.

AMC1 FCL.920 Instructor competencies and assessment

(a) Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching and assessing threat and error management and CRM.

(b) The training and assessment of instructors should be made against the following performance standards:

Competence	Performance	Knowledge
Prepare resources	(a) ensures adequate facilities; (b) prepares briefing material; (c) manages available tools; (d) plans training within the training envelope of the training platform, as determined by the ATO.	(a) understand objectives; (b) available tools; (c) competency-based training methods. (d) understands the training envelope of the training platform, as determined by the ATO and avoids training beyond the boundaries of this envelope.
Create a climate conducive to learning	(a) establishes credentials, role models appropriate behaviour; (b) clarifies roles; (c) states objectives; (d) ascertains and supports trainees needs.	(a) barriers to learning; (b) learning styles.
Present knowledge	(a) communicates clearly; (b) creates and sustains realism; (c) looks for training opportunities.	teaching methods.
Integrate TEM or CRM	(a) makes TEM or CRM links with technical training. (b) for aeroplanes: makes upset prevention links with technical training.	(a) HF, TEM or CRM; (b) Causes and countermeasures against undesired aircraft states.
Manage time to achieve training objectives	Allocates time appropriate to achieving competency objective.	Syllabus time allocation.
Facilitate learning	(a) encourages trainee participation;	(a) facilitation;

	(b) shows motivating, patient, confident and assertive manner; (c) conducts one-to-one coaching; (d) encourages mutual support.	(b) how to give constructive feedback; (c) how to encourage trainees to ask questions and seek advice.
Assesses trainee performance	(a) assesses and encourages trainee self-assessment of performance against competency standards; (b) makes assessment decision and provide clear feedback; (c) observes CRM behaviour.	(a) observation techniques; (b) methods for recording observations.
Monitor and review progress	(a) compares individual outcomes to defined objectives; (b) identifies individual differences in learning rates; (c) applies appropriate corrective action.	(a) learning styles; (b) strategies for training adaptation to meet individual needs.
Evaluate training sessions	(a) elicits feedback from trainees; (b) tracks training session processes against competence criteria; (c) keeps appropriate records.	(a) competency unit and associated elements; (b) performance criteria.
Report outcome	reports accurately using only observed actions and events.	(a) phase training objectives; (b) individual versus systemic weaknesses.

FCL.925 Additional requirements for instructors for the MPL

(a) Instructors conducting training for the MPL shall:

(1) have successfully completed an MPL instructor training course at an ATO; and

(2) additionally, for the basic, intermediate and advanced phases of the MPL integrated training course:

(i) be experienced in multi-pilot operations; and

(ii) have completed initial crew resource management training with a commercial air transport operator approved in accordance with the applicable air operations requirements.

(b) MPL instructors training course

(1) The MPL instructor training course shall comprise at least 14 hours of training. Upon completion of the training course, the applicant shall undertake an assessment of instructor competencies and of knowledge of the competency-based approach to training.

(2) The assessment shall consist of a practical demonstration of flight instruction in the appropriate phase of the MPL training course. This assessment shall be conducted by an examiner qualified in accordance with Subpart K.

(3) Upon successful completion of the MPL training course, the ATO shall issue an MPL instructor qualification certificate to the applicant.

(c) In order to maintain the privileges, the instructor shall have, within the preceding 12 months, conducted within an MPL training course:

(1) 1 simulator session of at least 3 hours; or

(2) 1 air exercise of at least 1 hour comprising at least 2 take-offs and landings.

(d) If the instructor has not fulfilled the requirements of (c), before exercising the privileges to conduct flight instruction for the MPL he/she shall:

(1) receive refresher training at an ATO to reach the level of competence necessary to pass the assessment of instructor competencies; and

(2) pass the assessment of instructor competencies as set out in (b)(2).

AMC1 FCL.925 Additional requirements for instructors for the MPL

MPL INSTRUCTOR COURSE

(a) The objectives of the MPL instructors training course are to train applicants to deliver training in accordance with the features of a competency-based approach to training and assessment.

(b) Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching and assessing threat and error management and CRM in the multi-crew environment.

(c) The course is intended to adapt instructors to conduct competency-based MPL training. It should cover the items specified below:

THEORETICAL KNOWLEDGE

(d) Integration of operators and organisations providing MPL training:

(1) reasons for development of the MPL;

(2) MPL training course objective;

(3) adoption of harmonised training and procedures;

(4) feedback process.

(e) The philosophy of a competency-based approach to training: principles of competency-based training.

(f) Regulatory framework, instructor qualifications and competencies:

(1) source documentation;

(2) instructor qualifications;

(3) syllabus structure.

(g) Introduction to Instructional systems design methodologies (see ICAO PANS-TRG Doc):

(1) analysis;

(2) design and production;

(3) evaluation and revision.

(h) Introduction to the MPL training scheme:

(1) training phases and content;

(2) training media;

(3) competency units, elements and performance criteria.

(i) Introduction to human performance limitations, including the principles of threat and error management and appropriate countermeasures developed in CRM:

(1) definitions;

(2) appropriate behaviours categories;

(3) assessment system.

(j) Application of the principles of threat and error management and CRM principles to training:

(1) application and practical uses;

(2) assessment methods;

(3) individual corrective actions;

(4) debriefing techniques.

(k) The purpose and conduct of assessments and evaluations:

(1) basis for continuous assessment against a defined competency standard;

(2) individual assessment;

(3) collection and analysis of data;

(4) training system evaluation.

PRACTICAL TRAINING

(l) Practical training may be conducted by interactive group classroom modules, or by the use of training devices. The objective is to enable instructors to:

(1) identify behaviours based on observable actions in the following areas:

(i) communications;

(ii) team working;

(iii) situation awareness;

(iv) workload management;

(v) problem solving and decision making.

(1) analyse the root causes of undesirable behaviours;

(2) debrief students using appropriate techniques, in particular:

(i) use of facilitative techniques;

(ii) encouragement of student self-analysis.

(3) agree corrective actions with the students;

(4) determine achievement of the required competency.

AMC2 FCL.925(d) Additional requirements for instructors for the MPL

RENEWAL OF PRIVILEGES: REFRESHER TRAINING

(a) Paragraph (d) of FCL.925 determines that if the applicant has not complied with the requirements to maintain his/her privileges to conduct competency-based approach training, he or she shall receive refresher training at an ATO to reach the level of competence necessary to pass the assessment of instructor competencies. The amount of refresher training needed should be determined on a case-by-case basis by the ATO, taking into account the following factors:

(1) the experience of the applicant;

(2) the amount of time lapsed since the last time the applicant has conducted training in an MPL course. The amount of training needed to reach the desired level of competence should increase with the time lapsed. In some cases, after evaluating the instructor, and when the time lapsed is very limited, the ATO may even determine that no further refresher training is necessary.

(b) Once the ATO has determined the needs of the applicant, it should develop an individual training programme, which should be based on the MPL instructor course and focus on the aspects where the applicant has shown the greatest needs.

GM1 FCL.925 Additional requirements for instructors for the MPL

MPL INSTRUCTORS

The following table summarises the instructor qualifications for each phase of MPL integrated training course:

Phase of training	Qualification
Line flying under supervision according to operational requirements	Line training captain or TRI(A)
Phase 4: Advanced base training	TRI(A)
Phase 4: Advanced skill test	TRE(A)
Phase 4: Advanced	SFI(A) or TRI(A)
Phase 3: Intermediate	SFI(A) or TRI(A)
Phase 2: Basic	(a) FI(A) or IRI(A) and IR(A)/ME/MCC and 1500 hours multi-crew environment and IR(A) instructional privileges, or (b) FI(A) and MCCI(A), or (c) FI(A) and SFI(A), or (d) FI(A) and TRI(A)
Phase 1: Core flying skills	FI(A) and 500 hours, including 200 hours of instruction Instructor qualifications and privileges should be in accordance with the training items within the phase. STI for appropriate exercises conducted in an FNPT or BITD.

FCL.930 Training course

(a) Applicants for an instructor certificate shall have completed a course of theoretical knowledge and flight instruction at an ATO.

(b) In addition to the specific elements prescribed in this regulation for each category of instructor, the course shall contain the elements required in FCL.920.

FCL.935 Assessment of competence

(a) Except for the multi-crew cooperation instructor (MCCI), the synthetic training instructor (STI), the mountain rating instructor (MI) and the flight test instructor (FTI), an applicant for an instructor certificate shall pass an assessment of competence in the appropriate aircraft category to demonstrate to an examiner qualified in accordance with Subpart K the ability to instruct a student pilot to the level required for the issue of the relevant licence, rating or certificate.

(b) This assessment shall include:

(1) the demonstration of the competencies described in FCL.920, during pre-flight, post-flight and theoretical knowledge instruction;

(2) oral theoretical examinations on the ground, pre-flight and post-flight briefings and in-flight demonstrations in the appropriate aircraft class, type or FSTD;

(3) exercises adequate to evaluate the instructor's competencies.

(c) The assessment shall be performed on the same class or type of aircraft or FSTD used for the flight instruction.

(d) When an assessment of competence is required for revalidation of an instructor certificate, an applicant who fails to achieve a pass in the assessment before the expiry date of an instructor certificate shall not exercise the privileges of that certificate until the assessment has successfully been completed.

AMC1 FCL.935 Assessment of competence

GENERAL

(a) The format and application form for the assessment of competence are determined by the Authority.

(b) When an aircraft is used for the assessment, it should meet the requirements for training aircraft.

(c) If an aircraft is used for the test or check, the examiner acts as the PIC, except in circumstances agreed upon by the examiner when another instructor is designated as PIC for the flight.

(d) During the skill test the applicant occupies the seat normally occupied by the instructor (instructors seat if in an FSTD, or pilot seat if in an aircraft). The examiner, another instructor or, for MPA in an FFS, a real crew under instruction, functions as the 'student'. The applicant is required to explain the relevant exercises and to demonstrate their conduct to the 'student', where appropriate. Thereafter, the 'student' executes the same manoeuvres (if the 'student' is the examiner or another instructor, this can include typical mistakes of inexperienced students). The applicant is expected to correct mistakes orally or, if necessary, by intervening physically.

(e) The assessment of competence should also include additional demonstration exercises, as decided by the examiner and agreed upon with the applicant before the assessment. These additional exercises should be related to the training requirements for the applicable instructor certificate.

(f) All relevant exercises should be completed within a period of 6 months. However, all exercises should, where possible, be completed on the same day. In principle, failure in any exercise requires a retest covering all exercises, with the exception of those that may be retaken separately. The examiner may terminate the assessment at any stage if they consider that a retest is required.

AMC2 FCL.935 Assessment of competence

MCCI, STI AND MI

In the case of the MCCI, STI and MI, the instructor competencies are assessed continuously during the training course.

AMC3 FCL.935 Assessment of competence

CONTENT OF THE ASSESSMENT FOR THE FI

(a) In the case of the FI, the content of the assessment of competence should be the following:

SECTION 1 THEORETICAL KNOWLEDGE ORAL	
1.1	Air law
1.2	Aircraft general knowledge
1.3	Flight performance and planning
1.4	Human performance and limitations
1.5	Meteorology
1.6	Navigation
1.7	Operational procedures
1.8	Principles of flight
1.9	Training administration

Sections 2 and 3 selected main exercises:

SECTION 2 PRE-FLIGHT BRIEFING	
2.1	Visual presentation
2.3	Technical accuracy

2.4	Clarity of explanation
2.5	Clarity of speech
2.6	Instructional technique
2.7	Use of models and aids
2.8	Student participation

SECTION 3 FLIGHT	
3.1	Arrangement of demo
3.2	Synchronisation of speech with demo
3.3	Correction of faults
3.4	Aircraft handling
3.5	Instructional technique
3.6	General airmanship and safety
3.7	Positioning and use of airspace

SECTION 4 ME EXERCISES	
4.1	Actions following an engine failure shortly after take-off [1]
4.2	SE approach and go-around [1]
4.3	SE approach and landing [1]

[1] *These exercises are to be demonstrated at the assessment of competence for FI for ME aircraft.*

SECTION 5 POST-FLIGHT DE-BRIEFING	
5.1	Visual presentation

5.2	Technical accuracy
5.3	Clarity of explanation
5.4	Clarity of speech
5.5	Instructional technique
5.6	Use of models and aids
5.7	Student participation

(b) Section 1, the oral theoretical knowledge examination part of the assessment of competence, is for all FI and is subdivided into two parts:

(1) The applicant is required to give a lecture under test conditions to other 'student(s)', one of whom will be the examiner. The test lecture is to be selected from items of section 1. The amount of time for preparation of the test lecture is agreed upon beforehand with the examiner. Appropriate literature may be used by the applicant. The test lecture should not exceed 45 minutes;

(2) The applicant is tested orally by an examiner for knowledge of items of section 1 and the 'core instructor competencies: teaching and learning' content given in the instructor courses.

(c) Sections 2, 3 and 5 are for all FIs. These sections comprise exercises to demonstrate the ability to be an FI (for example instructor demonstration exercises) chosen by the examiner from the flight syllabus of the FI training courses. The applicant is required to demonstrate FI abilities, including briefing, flight instruction and de-briefing.

(d) Section 4 comprises additional instructor demonstration exercises for an FI for ME aircraft. This section, if applicable, is done in an ME aircraft, or an FFS or FNPT II simulating an ME aircraft. This section is completed in addition to sections 2, 3 and 5.

AMC4 FCL.935 Assessment of competence

CONTENT OF THE ASSESSMENT FOR THE SFI

The assessment should consist of at least 3 hours of flight instruction related to the duties of an SFI on the applicable FFS or FTD 2/3.

AMC5 FCL.935 Assessment of competence

REPORT FORMS FOR THE INSTRUCTOR CERTIFICATES

(a) Assessment of competence form for the FI, IRI and CRI certificates:

APPLICATION AND REPORT FORM FOR THE INSTRUCTOR ASSESSMENT OF COMPETENCE			
1	**Applicants personal particulars:**		
Applicant's last name(s):		First name(s):	
Date of birth:		Tel (home):	Tel (work):
Address:		Country:	
2	**Licence details**		
Licence type:		Number:	
Class ratings included in the licence:		Exp. Date:	
Type ratings included in the licence:	1.		
	2.		
	3.		
	4.		
	5.		
Other ratings included in the licence:	1.		
	2.		
	3.		
	4.		
	5.		

3	**Pre-course flying experience**			
Total flying hours	PIC SEP hours	SEP preceding 6 months	Instrument flight instruction	Cross-country hours

4	**Pre-entry flight test**
I recommend ....for the FI course.	
Name of ATO:	Date of flight test:

Name(s) of FI conducting the test (capital letters):					
Licence number:					
Signature:					
5	**Declaration by the applicant**				
I have received a course of training in accordance with the syllabus for the: (tick as applicable)					
FI certificate FI(A)/(H)		IRI certificate IRI(A)/(H)		CRI certificate CRI(A)	
Applicant's name(s): (capital letters)			Signature:		
6	**Declaration by the CFI**				
I certify that .... has satisfactorily completed an approved course of training for the:					
FI certificate FI(A)/(H)		IRI certificate IRI(A)/(H)		CRI certificate CRI(A)	
in accordance with the relevant syllabus.					
Flying hours during the course:					
Aircraft or FSTDs used :					
Name(s) of CFI:					
Signature:					
Name of ATO:					
7	**Flight instructor examiner's certificate**				
I have tested the applicant according to AUA-FCL					
A. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT (in case of partial pass):					
Theoretical oral examination:			Skill test:		
Passed	Failed		Passed	Failed	

	I recommend further flight or ground training with an instructor before re-test
	I do not consider further flight or theoretical instruction necessary before re-test (tick as applicable)
B. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT:	
	FI certificate
	IRI certificate
	CRI certificate (tick as applicable)
Name(s) of FIE (capital letters):	
Signature:	
Licence number:	Date:

FCL.940 Validity of instructor certificates

With the exception of the MI, and without prejudice to FCL.900(b)(1), instructor certificates shall be valid for a period of 3 years.

SECTION 2 – SPECIFIC REQUIREMENTS FOR THE FLIGHT INSTRUCTOR — FI

FCL.905.FI FI — Privileges and conditions

The privileges of FIs are to conduct flight instruction for the issue, revalidation or renewal of:

(a) a PPL in the appropriate aircraft category;

(b) class and type ratings for single-pilot, single-engine aircraft, except for single-pilot high performance complex aeroplanes;

(c) a CPL in the appropriate aircraft category, provided that the FI has completed at least 500 hours of flight time as a pilot on that aircraft category, including at least 200 hours of flight instruction;

(d) the night rating, provided that the FI:

(1) is qualified to fly at night in the appropriate aircraft category;

(2) has demonstrated the ability to instruct at night to an FI qualified in accordance with point (h); and

(3) complies with the night experience requirement of FCL.060(b)(2);

(e) a towing or aerobatic rating, provided that such privileges are held and the FI has demonstrated the ability to instruct for that rating to an FI qualified in accordance with point (h) below;

(f) an IR in the appropriate aircraft category, provided that the FI has:

(1) at least 200 hours of flight time under IFR, of which up to 50 hours may be instrument ground time in an FFS, an FTD 2/3 or FNPT II;

(2) completed as a student pilot the IRI training course and has passed an assessment of competence for the IRI certificate; and

(3) in addition:

(i) for multi-engine aeroplanes, met the requirements for the issue of a CRI certificate;

(ii) for multi-engine helicopters, met the requirements for the issue of a TRI certificate.

(g) single-pilot multi-engine class or type ratings, except for single-pilot high performance complex aeroplanes, provided that the FI meets:

(1) in the case of aeroplanes, the pre-requisites for the CRI training course established in FCL.915.CRI(a) and the requirements of FCL.930.CRI and FCL.935;

(2) in the case of helicopters, the requirements established in FCL.910.TRI(c)(1) and the pre-requisites for the TRI(H) training course established in FCL.915.TRI(b)(2);

(h) an FI, IRI, CRI, STI or MI certificate provided that the FI has:

(1) completed at least 500 hours of flight instruction in the appropriate aircraft category or as established by the Authority;

(2) passed an assessment of competence in accordance with FCL.935 in the appropriate aircraft category to demonstrate to a Flight Instructor Examiner (FIE) the ability to instruct for the FI certificate;

(i) an MPL, provided that the FI:

(1) for the core flying phase of the training, has completed at least 500 hours of flight time as a pilot on aeroplanes, including at least 200 hours of flight instruction;

(2) for the basic phase of the training:

(i) holds a multi-engine aeroplane IR and the privilege to instruct for an IR; and

(ii) has at least 1 500 hours of flight time in multi-crew operations;

(3) in the case of an FI already qualified to instruct on ATP(A) or CPL(A)/IR integrated courses, the requirement of (2) (ii) may be replaced by the completion of a structured course of training consisting of:

(i) MCC qualification;

(ii) observing 5 sessions of flight instruction in Phase 3 of an MPL course;

(iii) observing 5 sessions of flight instruction in Phase 4 of an MPL course;

(iv) observing 5 operator recurrent line oriented flight training sessions;

(v) the content of the MCCI instructor course.

In this case, the FI shall conduct its first 5 instructor sessions under the supervision of a TRI(A), MCCI(A) or SFI(A) qualified for MPL flight instruction.

FCL.910.FI FI — Restricted privileges

(a) An FI shall have his/her privileges limited to conducting flight instruction under the supervision of an FI for the same category of aircraft nominated by the ATO for this purpose, in the following cases:

(1) for the issue of the PPL;

(2) in all integrated courses at PPL level, in case of aeroplanes and helicopters;

(3) for class and type ratings for single-pilot and single-engine aircraft;

(4) for the night, towing or aerobatic ratings.

(b) While conducting training under supervision, in accordance with (a), the FI shall not have the privilege to authorise student pilots to conduct first solo flights and first solo cross-country flights.

(c) The limitations in (a) and (b) shall be removed from the FI certificate when the FI has completed at least:

(1) for the FI(A), 100 hours of flight instruction in aeroplanes and, in addition, has supervised at least 25 student solo flights;

(2) for the FI(H) 100 hours of flight instruction in helicopters and, in addition, has supervised at least 25 student solo flight air exercises.

FCL.915.FI FI — Pre-requisites

An applicant for an FI certificate shall:

(a) in the case of the FI(A) and FI(H):

(1) have received at least 10 hours of instrument flight instruction on the appropriate aircraft category, of which not more than 5 hours may be instrument ground time in an FSTD;

(2) have completed 20 hours of VFR cross-country flight on the appropriate aircraft category as PIC; and

(b) additionally, for the FI(A):

(1) hold at least a CPL(A); or

(2) hold at least a PPL(A) and have:

(i) met the requirements for CPL theoretical knowledge; and

(ii) completed at least 200 hours of flight time on aeroplanes of which 150 hours as PIC;

(3) have completed at least 30 hours on single-engine piston powered aeroplanes of which at least 5 hours shall have been completed during the 6 months preceding the pre-entry flight test set out in FCL.930.FI(a);

(4) have completed a VFR cross-country flight as PIC, including a flight of at least 540 km (300 NM) in the course of which full stop landings at 2 different aerodromes shall be made;

(c) additionally, for the FI(H), have completed 250 hours total flight time as pilot on helicopters of which:

(1) at least 100 hours shall be as PIC, if the applicant holds at least a CPL(H); or

(2) at least 200 hours as PIC, if the applicant holds at least a PPL(H) and has met the requirements for CPL theoretical knowledge;

FCL.930.FI FI — Training course

(a) Applicants for the FI certificate shall have passed a specific pre-entry flight test with an FI qualified in accordance with FCL.905.FI(h) within the 6 months preceding the start of the course, to assess their ability to undertake the course. This pre-entry flight test shall be based on the proficiency check for class and type ratings as set out in Appendix 9 to this regulation.

(b) The FI training course shall include:

(1) 25 hours of teaching and learning;

(2) in the case of an FI(A) and FI(H), at least 100 hours of theoretical knowledge instruction, including progress tests, with at least 30 hours of flight instruction, of which 25 hours shall be dual flight instruction, of which 5 hours may be conducted in an FFS, an FNPT I or II or an FTD 2/3;

(3) Applicants for the FI certificate in another category of aircraft, who are holding or have held an FI(A) or FI(H) shall be credited with 55 hours towards the requirement in (b)(2)or with 18 hours towards the requirements in (b)(2).

AMC1 FCL.930.FI FI — Training course

FI(A) AND FI(H) TRAINING COURSE

GENERAL

(a) The aim of the FI training course is to train aircraft licence holders to the level of competence defined in FCL.920.

(b) The training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to the FI task including at least the following:

(1) refresh the technical knowledge of the student instructor;

(2) train the student instructor to teach the ground subjects and air exercises;

(3) ensure that the student instructor's flying is of a sufficiently high standard;

(4) teach the student instructor the principles of basic instruction and to apply them at the PPL level.

FLIGHT INSTRUCTION

(c) The remaining 5 hours in FCL.930.FI (b)(3) may be mutual flying (that is, two applicants flying together to practice flight demonstrations).

(d) The skill test is additional to the course training time.

CONTENT

(e) The training course consists of two parts:

(1) Part 1, theoretical knowledge, including the teaching and learning instruction that should comply with AMC1 FCL.920;

(2) Part 2, flight instruction.

Part 1

TEACHING AND LEARNING

(a) The course should include at least 125 hours of theoretical knowledge instruction, including at least 25 hours teaching and learning instruction.

CONTENT OF THE TEACHING AND LEARNING INSTRUCTIONS (INSTRUCTIONAL TECHNIQUES):

(b) The learning process:

(1) motivation;

(2) perception and understanding;

(3) memory and its application;

(4) habits and transfer;

(5) obstacles to learning;

(6) incentives to learning;

(7) learning methods;

(8) rates of learning.

(c) The teaching process:

(1) elements of effective teaching;

(2) planning of instructional activity;

(3) teaching methods;

(4) teaching from the ‘known’ to the ‘unknown’;

(5) use of ‘lesson plans’.

(d) Training philosophies:

(1) value of a structured (approved) course of training;

(2) importance of a planned syllabus;

(3) integration of theoretical knowledge and flight instruction;

(e) Techniques of applied instruction:

(1) theoretical knowledge: classroom instruction techniques:

(i) use of training aids;

(ii) group lectures;

(iii) individual briefings;

(iv) student participation or discussion.

(2) flight: airborne instruction techniques:

(i) the flight or cockpit environment;

(ii) techniques of applied instruction;

(iii) post-flight and in-flight judgement and decision making.

(f) Student evaluation and testing:

(1) assessment of student performance:
    (i) the function of progress tests;
    (ii) recall of knowledge;
    (iii) translation of knowledge into understanding;
    (iv) development of understanding into actions;
    (v) the need to evaluate rate of progress.
(2) analysis of student errors:
    (i) establish the reason for errors;
    (ii) tackle major faults first, minor faults second;
    (iii) avoidance of over criticism;
    (iv) the need for clear concise communication.

(g) Training programme development:
(1) lesson planning;
(2) preparation;
(3) explanation and demonstration;
(4) student participation and practice;
(5) evaluation.

(h) Human performance and limitations relevant to flight instruction:
(1) physiological factors:
    (i) psychological factors;
    (ii) human information processing;
    (iii) behavioural attitudes;
    (iv) development of judgement and decision making.
(2) threat and error management.

(i) Specific hazards involved in simulating systems failures and malfunctions in the aircraft during flight:
(1) importance of 'touch drills';
(2) situational awareness;
(3) adherence to correct procedures.

(j) Training administration:
(1) flight or theoretical knowledge instruction records;
(2) pilot's personal flying logbook;

(3) the flight or ground curriculum;

(4) study material;

(5) official forms;

(6) flight manual or equivalent document (for example owner's manual or pilot's operating handbook);

(7) flight authorisation papers;

(8) aircraft documents;

(9) the private pilot's licence regulations.

A. Aeroplanes

Part 2

AIR EXERCISES

(a) The air exercises are similar to those used for the training of PPL(A) but with additional items designed to cover the needs of an FI.

(b) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide: therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment.

(c) It follows that student instructors will eventually be faced with similar interrelated factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make the best use of each flight lesson, combining parts of the set exercises as necessary.

GENERAL

(d) The briefing normally includes a statement of the aim and a brief allusion to principles of flight only if relevant. An explanation is to be given of exactly what air exercises are to be taught by the instructor and practised by the student during the flight. It should include information on how the flight will be conducted, who is to fly the aeroplane and what airmanship, weather and flight safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(e) The four basic components of the briefing will be:

(1) the aim;

(2) principles of flight (briefest reference only);

(3) the air exercise(s) (what, and how and by whom);

(4) airmanship (weather, flight safety etc.).

PLANNING OF FLIGHT LESSONS

(f) The preparation of lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of flight lesson plans.

GENERAL CONSIDERATIONS

(g) The student instructor should complete flight training to practise the principles of basic instruction at the PPL(A) level.

(h) During this training, except when acting as a student pilot for mutual flights, the student instructor occupies the seat normally occupied by the FI(A).

(i) It is to be noted that airmanship and look-out is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at all times.

(j) If the privileges of the FI(A) certificate are to include instruction for night flying, exercises 19 and 20 of the flight instruction syllabus should be undertaken at night in addition to by day either as part of the course or subsequent to certification issue.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

SYLLABUS OF FLIGHT INSTRUCTION CONTENTS

LONG BRIEFINGS AND AIR EXERCISES

Note.—*though exercise 11b is not required for the PPL(A) course, it is a requirement for the FI course.*

EXERCISE 1: FAMILIARISATION WITH THE AEROPLANE
(a) Long briefing objectives:
(1) introduction to the aeroplane;

(2) explanation of the cockpit layout;

(3) aeroplane and engine systems;

(4) checklists, drills and controls;

(5) propeller safety;

(i) precautions general;

(ii) precautions before and during hand turning;

(iii) hand swinging technique for starting (if applicable to type).

(6) differences when occupying the instructor's seat;

(7) emergency drills:

(i) action if fire in the air and on the ground: engine, cock cabin and electrical fire; or

(ii) system failure as applicable to type;

(iii) escape drills: location and use of emergency equipment and exits.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 2: PREPARATION FOR AND ACTION AFTER FLIGHT

(a) Long briefing objectives:

(1) flight authorisation and aeroplane acceptance, including technical log (if applicable) and certificate of maintenance;

(2) equipment required for flight (maps, etc.);

(3) external checks;

(4) internal checks;

(5) student comfort, harness, seat or rudder pedal adjustment;

(6) starting and warming up checks;

(7) power checks;

(8) running down, system checks and switching off the engine;

(9) leaving the aeroplane, parking, security and picketing;

(10) completion of authorisation sheet and aeroplane serviceability documents.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 3: AIR EXPERIENCE

(a) Long briefing objectives:

Note.——*there is no requirement for a long briefing for this exercise.*

(b) Air exercise:

(1) air experience;

(2) cockpit layout, ergonomics and controls;

(3) cockpit procedures: stability and control.

EXERCISE 4: EFFECTS OF CONTROLS

(a) Long briefing objectives:

(1) function of primary flying controls: when laterally level and banked;

(2) further effect of ailerons and rudder;

(3) effect of inertia;

(4) effect of air speed;

(5) effect of slipstream;

(6) effect of power;

(7) effect of trimming controls;

(8) effect of flaps;

(9) operation of mixture control;

(10) operation of carburettor heat control;

(11) operation of cabin heat or ventilation systems;

(b) Air exercise:

(1) primary effects of flying controls: when laterally level and banked;

(2) further effects of ailerons and rudder;

(3) effect of air speed;

(4) effect of slipstream;

(5) effect of power;

(6) effect of trimming controls;

(7) effect of flaps;

(8) operation of mixture control;

(9) operation of carburettor heat control;

(10) operation of cabin heat or ventilation systems;

(11) effect of other controls as applicable.

EXERCISE 5: TAXIING

(a) Long briefing objectives:

(1) pre-taxiing checks;

(2) starting, control of speed and stopping;

(3) engine handling;

(4) control of direction and turning (including manoeuvring in confined spaces);

(5) parking area procedures and precautions;

(6) effect of wind and use of flying controls;

(7) effect of ground surface;

(8) freedom of Rudder movement;

(9) marshalling signals;

(10) instrument checks;

(11) ATC procedures;

(12) emergencies: steering failure and brake failure.

(b) Air exercise:

(1) pre-taxiing checks;

(2) starting, control of speed and stopping;

(3) engine handling;

(4) control of direction and turning;

(5) turning in confined spaces;

(6) parking area procedures and precautions;

(7) effect of wind and use of flying control;

(8) effect of ground surface;

(9) freedom of Rudder movement;

(10) marshalling signals;

(11) instrument checks;

(12) ATC procedures;

(13) emergencies: steering failure and brake failure.

EXERCISE 6: STRAIGHT AND LEVEL FLIGHT

(a) Long briefing objectives:

(1) the forces;

(2) longitudinal stability and control in pitch;

(3) relationship of CG to control in pitch;

(4) lateral and directional stability (control of balance); lateral level and

(5) attitude and balance control;

(6) trimming;

(7) power settings and air speeds;

(8) drag and power curves;

(9) range and endurance.

(b) Air exercise:

(1) at normal cruising power;

(2) attaining and maintaining straight and level flight;

(3) demonstration of inherent stability;

(4) control in pitch, including use of elevator trim control;

(5) lateral level, direction and balance, use of rudder trim controls as applicable at selected air speeds (use of power):

(i) effect of drag and use of power (two air speeds for one power setting);

(ii) straight and level in different aeroplane configurations (flaps and landing gear);

(iii) use of instruments to achieve precision flight.

EXERCISE 7: CLIMBING

(a) Long briefing objectives:

(1) the forces;

(2) relationship between power or air speed and rate of climb (power) curves maximum rate of climb (vy));

(3) effect of mass;

(4) effect of flaps;

(5) engine considerations;

(6) effect of density altitude;

(7) the cruise climb;

(8) maximum angle of climb (vx).

(b) Air exercise:

(1) entry and maintaining the normal maximum rate climb;

(2) levelling off;

(3) levelling off at selected altitudes;

(4) climbing with flaps down;

(5) recovery to normal climb;

(6) en-route climb (cruise climb);

(7) maximum angle of climb;

(8) use of instruments to achieve precision flight.

EXERCISE 8: DESCENDING

(a) Long briefing objectives:

(1) the forces;

(2) glide descent: angle, air speed and rate of descent;

(3) effect of flaps;

(4) effect of wind;

(5) effect of mass;

(6) engine considerations;

(7) power assisted descent: power or air speed and rate of descent;

(8) cruise descent;

(9) sideslip.

(b) Air exercise:

(1) entry and maintaining the glide;

(2) levelling off;

(3) levelling off at selected altitudes;

(4) descending with flaps down;

(5) powered descent: cruise descent (including effect of power and air speed);

(6) side-slipping (on suitable types);

(7) use of instrument to achieve precision flight.

EXERCISE 9: TURNING

(a) Long briefing objectives:

(1) the forces;

(2) use of controls;

(3) use of power;

(4) maintenance of attitude and balance;

(5) medium level turns;

(6) climbing and descending turns;

(7) slipping turns;

(8) turning onto selected headings: use of gyro heading indicator and magnetic compass.

(b) Air exercise:

(1) entry and maintaining medium level turns;

(2) resuming straight flight;

(3) faults in the turn (incorrect pitch, bank and balance);

(4) climbing turns;

(5) descending turns;

(6) slipping turns (on suitable types);

(7) turns to selected headings: use of gyro heading indicator and magnetic compass

(8) use of instruments to achieve precision flight;

Note. *—–stall or spin awareness and avoidance training consists of exercises 10a, 10b and 11a.*

EXERCISE 10a: SLOW FLIGHT

(a) Long briefing objectives:

(1) aeroplane handling characteristics during slow flight at:

(i) V_{s1} & V_{so} + 10 knots;

(ii) V_{s1} & V_{so} + 5 knots.

(2) slow flight during instructor induced distractions;

(3) effect of overshooting in configurations where application of engine power causes a strong 'nose-up' trim change.

(b) Air exercise:

(1) safety checks;

(2) introduction to slow flight;

(3) controlled slow flight in the clean configuration at:

(i) V_{s1} + 10 knots and with flaps down;

(ii) V_{so} + 10 knots;

(iii) straight and level flight;

(iv) level turns;

(v) climbing and descending;

(vi) climbing and descending turns.

(4) controlled slow flight in the clean configuration at:

(i) v_{s1} + 5 knots and with flaps down;

(ii) v_{so} + 5 knots;

(iii) straight and level flight;

(iv) level turns;

(v) climbing and descending;

(vi) climbing and descending turns;

(vii) descending 'unbalanced' turns at low air speed: the need to maintain balanced flight.

(5) 'instructor induced distractions' during flight at low air speed: the need to maintain balanced flight and a safe air speed;

(6) effect of going around in configurations where application of engine power causes a strong 'nose up' trim change.

EXERCISE 10b: STALLING

(a) Long briefing objectives:

(1) characteristics of the stall;

(2) angle of attack;

(3) effectiveness of the controls at the stall;

(4) factors affecting the stalling speed:

(i) effect of flaps, slats and slots;

(ii) effect of power, mass, CG and load factor.

(5) effects of unbalance at the stall;

(6) symptoms of the stall;

(7) stall recognition and recovery;

(8) stalling and recovery:

(i) without power;

(ii) with power on;

(iii) with flaps down;

(iv) maximum power climb (straight and turning flight to the point of stall with uncompensated yaw);

(v) stalling and recovery during manoeuvres involving more than 1 G (accelerated stalls, including secondary stalls and recoveries);

(vi) recovering from incipient stalls in the landing and other configurations and conditions;

(vii) recovering at the incipient stage during change of configuration;

(viii) stalling and recovery at the incipient stage with 'instructor induced' distractions.

Note. *— consideration is to be given to manoeuvre limitations and references to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) in relation to mass and balance limitations. The safety checks should take into account the minimum safe altitude for initiating such exercises in order to ensure an adequate margin of safety for the recovery. If specific procedures for stalling or spinning exercises and for the recovery techniques are provided by the flight manual or equivalent document (for example owner's manual or pilot's operating handbook), they have to be taken into consideration. These factors are also covered in the next exercise spinning.*

(b) Air exercise:

(1) safety checks;

(2) symptoms of the stall;

(3) stall recognition and recovery:

(i) without power;

(ii) with power on;

(iii) recovery when a wing drops at the stall;

(iv) stalling with power 'on' and recovery;

(v) stalling with flap 'down' and recovery;

(vi) maximum power climb (straight and turning flight) to the point of stall with uncompensated yaw: effect of unbalance at the stall when climbing power is being used;

(vii) stalling and recovery during manoeuvres involving more than 1 G (accelerated stalls, including secondary stalls and recoveries);

(viii) recoveries from incipient stalls in the landing and other configurations and conditions;

(ix) recoveries at the incipient stage during change of configuration;

(x) instructor induced distractions during stalling.

Note. *—— consideration of manoeuvre limitations and the need to refer to the aeroplane manual and weight (mass) and balance calculations. The safety checks should take into account the minimum safe altitude for initiating such exercises in order to ensure an adequate margin of safety for the recovery. If specific procedures for stalling or spinning exercises and for the recovery techniques are provided by the flight manual or equivalent document (for example owner's manual or pilot's operating handbook), they have to be taken into consideration. These factors are to be covered in the next exercise: spinning.*

EXERCISE 11a: SPIN RECOVERY AT THE INCIPIENT STAGE

(a) Long briefing objectives:

(1) causes, stages, autorotation and characteristics of the spin;

(2) recognition and recovery at the incipient stage: entered from various flight attitudes;

(3) aeroplane limitations.

(b) Air exercise:

(1) aeroplane limitations;

(2) safety checks;

(3) recognition at the incipient stage of a spin;

(4) recoveries from incipient spins entered from various attitudes with the aeroplane in the clean configuration, including instructor induced distractions.

EXERCISE 11b: SPIN RECOVERY AT THE DEVELOPED STAGE

(a) Long briefing objectives:

(1) spin entry;

(2) recognition and identification of spin direction;

(3) spin recovery;

(4) use of controls;

(5) effects of power or flaps (flap restriction applicable to type);

(6) effect of the CG upon spinning characteristics;

(7) spinning from various flight attitudes;

(8) aeroplane limitation;

(9) safety checks.

(b) Air exercise:

(1) aeroplane limitations;

(2) safety checks;

(3) spin entry;

(4) recognition and identification of the spin direction;

(5) spin recovery (reference to flight manual);

(6) use of controls;

(7) effects of power or flaps (restrictions applicable to aeroplane type);

(8) spinning and recovery from various flight attitudes.

EXERCISE 12: TAKE-OFF AND CLIMB TO DOWNWIND POSITION

(a) Long briefing objectives:

(1) handling: factors affecting the length of take-off run and initial climb;

(2) correct lift off speed, use of elevators (safeguarding the nose wheel), rudder and power;

(3) effect of wind (including crosswind component);

(4) effect of flaps (including the decision to use and the amount permitted);

(5) effect of ground surface and gradient upon the take-off run;

(6) effect of mass, altitude and temperature on take-off and climb performance;

(7) pre take-off checks;

(8) ATC procedure before take-off;

(9) drills, during and after take-off;

(10) noise abatement procedures;

(11) tail wheel considerations (as applicable);

(12) short or soft field take-off considerations or procedures;

(13) emergencies:

(i) aborted take-off;

(ii) engine failure after take-off.

(14) ATC procedures.

(b) Air exercise:

(1) take-off and climb to downwind position;

(2) pre take-off checks;

(3) into wind take-off;

(4) safeguarding the nose wheel;

(5) crosswind take-off;

(6) drills during and after take-off;

(7) short take-off and soft field procedure or techniques (including performance calculations);

(8) noise abatement procedures.

EXERCISE 13: CIRCUIT, APPROACH AND LANDING
(a) Long briefing objectives:
(1) downwind leg, base leg and approach: position and drills;
(2) factors affecting the final approach and the landing run;
(3) effect of mass;
(4) effects of altitude and temperature;
(5) effect of wind;
(6) effect of flap;
(7) landing;
(8) effect of ground surface and gradient upon the landing run;
(9) types of approach and landing: (i) powered; (ii) crosswind; (iii) flapless (at an appropriate stage of the course); (iv) glide; (v) short field; (vi) soft field.
(10) tail wheel aeroplane considerations (as applicable);
(11) missed approach;
(12) engine handling;
(13) wake turbulence awareness;
(14) windshear awareness;

(15) ATC procedures;

(16) mislanding and go-around;

(17) special emphasis on look-out.

(b) Air exercise:

(1) circuit approach and landing;

(2) circuit procedures: downwind and base leg;

(3) powered approach and landing;

(4) safeguarding the nose wheel;

(5) effect of wind on approach and touchdown speeds and use of flaps;

(6) crosswind approach and landing;

(7) glide approach and landing;

(8) flapless approach and landing (short and soft field);

(9) short field and soft field procedures;

(10) wheel landing (tail wheel aircraft);

(11) missed approach and go-around;

(12) mislanding and go-around;

(13) noise abatement procedures.

EXERCISE 14: FIRST SOLO AND CONSOLIDATION

Note.*—a summary of points to be covered before sending the student on first solo.*

(a) Long briefing objectives:

During the flights immediately following the solo circuit consolidation period the following should be covered:

(1) procedures for leaving and rejoining the circuit;

(2) local area (restrictions, controlled airspace, etc.);

(3) compass turns;

(4) QDM meaning and use.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 15: ADVANCED TURNING

(a) Long briefing objectives:

(1) the forces;

(2) use of power;

(3) effect of load factor:

(i) structural considerations;

(ii) increased stalling speed.

(4) physiological effects;

(5) rate and radius of turn;

(6) steep, level, descending and climbing turns;

(7) stalling in the turn and how to avoid it;

(8) spinning from the turn: recovery at the incipient stage;

(9) spiral dive;

(10) unusual attitudes and recoveries.

Note.**—***considerations are to be given to manoeuvre limitations and reference to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) in relation to mass and balance, and any other restrictions for practice entries to the spin.*

(b) Air exercise:

(1) level, descending and climbing steep turns;

(2) stalling in the turn;

(3) spiral dive;

(4) spinning from the turn;

(5) recovery from unusual attitudes;

(6) maximum rate turns.

EXERCISE 16: FORCED LANDING WITHOUT POWER

(a) Long briefing objectives:

(1) selection of forced landing areas;

(2) provision for change of plan;

(3) gliding distance: consideration;

(4) planning the descent;

(5) key positions;

(6) engine failure checks;

(7) use of radio: R/T 'distress' procedure;

(8) base leg;

(9) final approach;

(10) go-around;

(11) landing considerations;

(12) actions after landing: aeroplane security;

(13) causes of engine failure.

(b) Air exercise:

(1) forced landing procedures;

(2) selection of landing area:

(i) provision for change of plan;

(ii) gliding distance considerations.

(3) planning the descent;

(4) key positions;

(5) engine failure checks;

(6) engine cooling precautions;

(7) use of radio;

(8) base leg;

(9) final approach;

(10) landing;

(11) actions after landing: when the exercise is conducted at an aerodrome;

(12) aeroplane security.

EXERCISE 17: PRECAUTIONARY LANDING

(a) Long briefing objectives:

(1) occasions when necessary (in-flight conditions);

(2) landing area selection and communication (R/T procedure);

(3) overhead inspection;

(4) simulated approach;

(5) climb away;

(6) landing area selection:

(i) normal aerodrome;

(ii) disused aerodrome;

(iii) ordinary field;

(7) circuit and approach;

(8) actions after landing; aeroplane security.

(b) Air exercise:

(1) occasions when necessary (in-flight conditions):

(2) landing area selection

(3) overhead inspection

(4) simulated approach

(5) climb away

(6) landing area selection:

(i) normal aerodrome;

(ii) disused aerodrome;

(iii) ordinary field;

(7) circuit and approach;

(8) actions after landing; aeroplane security;

EXERCISE 18a: NAVIGATION

(a) Long briefing objectives:

(1) flight planning;

(i) weather forecast and actual(s);

(ii) map selection, orientation, preparation and use:

(A) choice of route;

(B) regulated or controlled airspace;

(C) danger, prohibited and restricted areas;

(D) safety altitude.

(iii) calculations:

(A) magnetic heading(s) and time(s) en-route;

(B) fuel consumption;

(C) mass and balance;

(D) mass and performance.

(iv) flight information:

(A) NOTAMs etc.;

(B) noting of required radio frequencies;

(C) selection of alternate aerodrome(s).

(D) aeroplane documentation.

(v) notification of the flight:

(A) pre-flight administration procedures;

(B) flight plan form (where appropriate).

(2) departure;

(i) organisation of cockpit workload;

(ii) departure procedures:

(A) altimeter settings;

(B) setting heading procedures;

(C) noting of ETA(s).

(iii) en-route map reading: identification of ground features;

(iv) maintenance of altitudes and headings;

(v) revisions to ETA and heading, wind effect, drift angle and groundspeed checks;

(vi) log keeping;

(vii) use of radio (including VDF if applicable);

(viii) minimum weather conditions for continuance of flight;

(ix) ‘in-flight’ decisions;

(x) diversion procedures;

(xi) operations in regulated or controlled airspace;

(xii) procedures for entry, transit and departure;

(xiii) navigation at minimum level;

(xiv) uncertainty of position procedure, including R/T procedure;

(xv) lost procedure;

(xvi) use of radio navaids.

(3) arrival procedures and aerodrome circuit joining procedures:

(i) ATC liaison, R/T procedure, etc.;

(ii) altimeter setting,

(iii) entering the traffic aerodromes); pattern (controlled or uncontrolled

(iv) circuit procedures;

(v) parking procedures;

(vi) security of aircraft;

(vii) refuelling;

(viii) booking in.

(b) Air exercise:

(1) flight planning:

(i) weather forecast and actual(s);

(ii) map selection and preparation:

(A) choice of route;

(B) regulated or controlled airspace;

(C) danger, prohibited and restricted areas;

(D) safety altitude.

(iii) calculations:

(A) magnetic heading(s) and time(s) en-route;

(B) fuel consumption;

(C) mass and balance;

(D) mass and performance.

(iv) flight information:

(A) NOTAMs etc.;

(B) noting of required radio frequencies;

(C) selection of alternate aerodromes.

(v) aircraft documentation;

(vi) notification of the flight:

(A) flight clearance procedures (as applicable);

(B) flight plans.

(2) aerodrome departure;

(i) organisation of cockpit workload;

(ii) departure procedures:

(A) altimeter settings;

(B) en-route:

(C) noting of ETA(s).

(iii) wind effect, drift angle and ground speed checks;

(iv) maintenance of altitudes and headings;

(v) revisions to ETA and heading;

(vi) log keeping;

(vii) use of radio (including VDF if applicable);

(viii) minimum weather conditions for continuance of flight;

(ix) ‘in-flight’ decisions;

(x) diversion procedure;

(xi) operations in regulated or controlled airspace;

(xii) procedures for entry, transit and departure;

(xiii) uncertainty of position procedure;

(xiv) lost procedure;

(xv) use of radio navaids.

(3) arrival procedures and aerodrome joining procedures:

(i) ATC liaison, R/T procedure etc.;

(ii) altimeter setting,

(iii) entering the traffic pattern;

(iv) circuit procedures;

(v) parking procedures

(vi) security of aircraft;

(vii) refuelling;

(viii) booking in.

EXERCISE 18b: NAVIGATION AT LOWER LEVELS AND IN REDUCED VISIBILITY

(a) Long briefing objectives:

(1) general considerations:

(i) planning requirements before flight in entry or exit lanes;

(ii) ATC rules, pilot qualifications and aircraft equipment;

(iii) entry or exit lanes and areas where specific local rules apply.

(2) low level familiarisation:

(i) actions before descending;

(ii) visual impressions and height keeping at low altitude;

(iii) effects of speed and inertia during turns;

(iv) effects of wind and turbulence;

(3) low level operation:

(i) weather considerations;

(ii) low cloud and good visibility;

(iii) low cloud and poor visibility;

(iv) avoidance of moderate to heavy rain showers;

(v) effects of precipitation;

(vi) joining a circuit;

(vii) bad weather circuit, approach and landing.

(b) Air exercise:

(1) general considerations: entry or exit lanes and areas where specific local rules apply;

(2) low level familiarisation:

(i) actions before descending;

(ii) visual impressions and height keeping at low altitude;

(iii) effects of speed and inertia during turns;

(iv) effects of wind and turbulence;

(v) hazards of operating at low levels;

(3) low level operation:

(i) weather considerations;

(ii) low cloud and good visibility;

(iii) low cloud and poor visibility;

(iv) avoidance of moderate to heavy rain showers;

(v) effects of precipitation (forward visibility);

(vi) joining a circuit;

(vii) bad weather circuit, approach and landing.

EXERCISE 18c: USE OF RADIO NAVIGATION AIDS UNDER VFR

(a) Long briefing objectives:

(1) use of VOR:

(i) availability, AIP and frequencies;

(ii) signal reception range;

(iii) selection and identification;

(iv) radials and method of numbering;

(v) use of OBS;

(vi) to or from indication and station passage;

(vii) selection, interception and maintaining a radial;

(viii) use of two stations to determine position.

(2) use of ADF equipment:

(i) availability of NDB stations, AIP and frequencies;

(ii) signal reception range;

(iii) selection and identification;

(iv) orientation in relation to NDP;

(v) homing to an NDP.

(3) use of VHF/DF:

(i) availability. AIP and frequencies;

(ii) R/T procedures;

(iii) obtaining QDMs and QTEs.

(4) use of radar facilities:

(i) availability and provision of service and AIS;

(ii) types of service;

(iii) R/T procedures and use of transponder:

(A) mode selection;

(B) emergency codes.

(5) use of distance DME:

(i) availability and AIP;

(ii) operating modes;

(iii) slant range.

(6) use of GNSS (RNAV – SATNAV):

(i) availability;

(ii) operating modes;

(iii) limitations.

(b) Air exercise:

(1) use of VOR:

(i) availability, AIP and frequencies;

(ii) selection and identification;

(iii) use of OBS;

(iv) to or from indications: orientation;

(v) use of CDI;

(vi) determination of radial;

(vii) intercepting and maintaining a radial;

(viii) VOR passage;

(ix) obtaining a fix from two VORs.

(2) use of ADF equipment;

(i) availability of NDB stations, AIP and frequencies;

(ii) selection and identification;

(iii) orientation relative to the beacon;

(iv) homing.

(3) availability, AIP and frequencies;

(i) R/T procedures and ATC liaison;

(ii) obtaining a QDM and homing.

(4) use of en-route or terminal radar:

(i) availability and AIP;

(ii) procedures and ATC liaison;

(iii) pilot’s responsibilities;

(iv) secondary surveillance radar;

(v) transponders;

(vi) code selection;

(vii) interrogation and reply.

(5) use of DME:

(i) station selection and identification;

(ii) modes of operation.

(6) use of GNSS (RNAV – SATNAV):

(i) setting up;

(ii) operation;

(iii) interpretation.

EXERCISE 19: BASIC INSTRUMENT FLIGHT

(a) Long briefing objectives:

(1) flight instruments;

(i) physiological sensations;

(ii) instrument appreciation;

(iii) attitude instrument flight;

(iv) pitch indications;

(v) bank indications;

(vi) different dial presentations;

(vii) introduction to the use of the attitude indicator;

(viii) pitch attitude;

(ix) bank attitude;

(x) maintenance of heading and balanced flight;

(xi) instrument limitations (inclusive system failures).

(xii) attitude, power and performance;

(2) attitude instrument flight:

(i) control instruments;

(ii) performance instruments;

(iii) effect of changing power and configuration;

(iv) cross-checking the instrument indications;

(v) instrument interpretation;

(vi) direct and indirect indications (performance instruments);

(vii) instrument lag;

(viii) selective radial scan;

(3) basic flight manoeuvres (full panel);

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns onto pre-selected headings:

(A) level;

(B) climbing;

(C) descending.

(b) Air exercise:

(1) Introduction to instrument flying

(i) flight instruments;

(ii) physiological sensations;

(iii) instrument appreciation;

(iv) attitude instrument flight;

(v) pitch attitude;

(vi) bank attitude;

(vii) maintenance of heading and balanced flight;

(2) attitude, power and performance;

(i) attitude instrument flight;

(ii) effect of changing power and configuration;

(iii) cross-checking the instruments;

(iv) selective radial scan;

(3) basic flight manoeuvres (full panel);

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns onto pre-selected headings:

(A) level;

(B) climbing;

(C) descending.

EXERCISE 20: NIGHT FLYING (if night instructional qualification required)

(a) Long briefing objectives:

(1) start up procedures;

(2) local procedures: including ATC liaison;

(3) taxiing:

(i) parking area and taxiway lighting;

(ii) judgement of speed and distances;

(iii) use of taxiway lights;

(iv) avoidance of hazards: obstruction lighting;

(v) instrument checks;

(vi) holding point: lighting procedure;

(vii) initial familiarisation at night;

(viii) local area orientation;

(ix) significance of lights on other aircraft;

(x) ground obstruction lights;

(xi) division of piloting effort: external or instrument reference;

(xii) rejoining procedure;

(xiii) aerodrome lighting: approach and runway lighting (including VASI and PAPI):

(A) threshold lights;

(B) approach lighting;

(C) visual approach slope indicator systems.

(4) night circuits;

(i) take-off and climb:

(A) line up;

(B) visual references during the take-off run;

(C) transfer to instruments;

(D) establishing the initial climb;

(E) use of flight instruments;

(F) instrument climb and initial turn.

(ii) circuit:

(A) aeroplane positioning: reference to runway lighting;

(B) the traffic pattern and look-out;

(C) initial approach and runway lighting demonstration;

(D) aeroplane positioning;

(E) changing aspect of runway lights and VASI (or PAPI);

(F) intercepting the correct approach path;

(G) the climb away.

(iii) approach and landing:

(A) positioning, base leg and final approach;

(B) diurnal wind effect;

(C) use of landing lights;

(D) the flare and touchdown;

(E) the roll out;

(F) turning off the runway: control of speed.

(iv) missed approach:

(A) use of instruments;

(B) re-positioning in the circuit pattern;

(5) night navigation:

(i) particular emphasis on flight planning;

(ii) selection of ground features visible at night:

(A) air light beacons;

(B) effect of cockpit lighting on map colours;

(C) use of radio aids;

(D) effect of moonlight upon visibility at night;

(iii) emphasis on maintaining a 'minimum safe altitude';

(iv) alternate aerodromes: restricted availability;

(v) restricted recognition of weather deterioration;

(vi) lost procedures;

(6) night emergencies;

(i) radio failure;

(ii) failure of runway lighting;

(iii) failure of aeroplane landing lights;

(iv) failure of aeroplane internal lighting;

(v) failure of aeroplane navigation lights;

(vi) total electrical failure;

(vii) abandoned take-off;

(viii) engine failure;

(ix) obstructed runway procedure.

(b) Air exercise: during the air exercise all long briefing objectives mentioned above should also be trained on site and the student instructor should demonstrate the following items:

(1) how to plan and to perform a flight at night;

(2) how to advise the student pilot to plan and prepare a flight at night;

(3) how to advise the student pilot to perform a flight at night;

(4) how to analyse and correct errors as necessary.

B. Helicopters

GROUND INSTRUCTION

Note. *—During ground instruction the student instructor should pay specific attention to the teaching of enhanced ground instruction in weather interpretation, planning and route assessment, decision making on encountering DVE including reversing course or conduction a precautionary landing.*

Part 2

AIR EXERCISES

(a) The air exercises are similar to those used for the training of PPL(H) but with additional items designed to cover the needs of an FI.

(b) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide: therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment;

(6) applicability of the exercises to the helicopter type.

(c) It follows that student instructors will eventually be faced with similar interrelated factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make the best use of each flight lesson, combining parts of the set exercises as necessary.

GENERAL

(d) The briefing normally includes a statement of the objectives and a brief reference to principles of flight only if relevant. An explanation is to be given of exactly what air exercises are to be taught by the instructor and practised by the student during the flight. It should include how the flight will be conducted about who is to fly the helicopter and what airmanship, weather and flight safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(e) The four basic components of the briefing will be:

(1) the aim;

(2) principles of flight (briefest reference only);

(3) the air exercise(s) (what, and how and by whom);

(4) airmanship (weather, flight safety etc.).

PLANNING OF FLIGHT LESSONS

(f) The preparation of lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of flight lesson plans.

GENERAL CONSIDERATIONS

(g) The student instructor should complete flight training to practise the principles of basic instruction at the PPL(H) level.

(h) During this training, except when acting as a student pilot for mutual flights, the student instructor occupies the seat normally occupied by the FI(H).

(i) It is to be noted that airmanship and look-out is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at all times.

(j) If the privileges of the FI(H) certificate are to include instruction for night flying, exercise 28 should be undertaken either as part of the course or subsequent to certificate issue.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

(l) The student instructor should be trained to keep in mind that wherever possible, flight simulation should be used to demonstrate to student pilots the effects of flight into DVE and to enhance their understanding and need for avoidance of this potentially fatal flight regime.

SYLLABUS OF FLIGHT INSTRUCTION CONTENTS

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: FAMILIARISATION WITH THE HELICOPTER
(a) Long briefing objectives:
(1) introduction to the helicopter;
(2) explanation of the cockpit layout;
(3) helicopter and engine systems;

(4) checklist(s) and procedures;

(5) familiarisation with the helicopter controls;

(6) differences when occupying the instructor's seat;

(7) emergency drills:

(i) action if fire in the air and on the ground: engine, cockpit or cabin and electrical fire;

(ii) system failure drills as applicable to type;

(iii) escape drills: location and use of emergency equipment and exits.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 2: PREPARATION FOR AND ACTION AFTER FLIGHT

(a) Long briefing objectives:

(1) flight authorisation and helicopter acceptance, including technical log (if applicable) and certificate of maintenance:

(2) equipment required for flight (maps, etc.);

(3) external checks;

(4) internal checks;

(5) student comfort, harness, seat and rudder pedal adjustment;

(6) starting and after starting checks;

(7) system, power or serviceability checks (as applicable);

(8) closing down or shutting down the helicopter (including system checks).

(9) parking and leaving the helicopter (including safety or security as applicable);

(10) completion of authorisation sheet and helicopter serviceability documents.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 3: AIR EXPERIENCE

(a) Long briefing objectives:

Note. — *there is no requirement for a long briefing for this exercise*.

(b) Air exercise:

(1) air experience;

(2) cockpit layout, ergonomics and controls;

(3) cockpit procedures: stability and control.

EXERCISE 4: EFFECTS OF CONTROLS

(a) Long briefing objectives:

(1) function of the flying controls (primary and secondary effect);

(2) effect of air speed;

(3) effect of power changes (torque);

(4) effect of yaw (sideslip);

(5) effect of disc loading (bank and flare);

(6) effect on controls of selecting hydraulics on/off;

(7) effect of control friction;

(8) use of instruments;

(9) operation of carburettor heat or anti-icing control.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 5: POWER AND ATTITUDE CHANGES

(a) Long briefing objectives:

(1) relationship between cyclic control position, disc attitude, fuselage attitude and air speed flap back;

(2) power required diagram in relation to air speed;

(3) power and air speed changes in level flight;

(4) use of the instruments for precision;

(5) engine and air speed limitations;

(b) Air exercise:

(1) relationship between cyclic control position, disc attitude, fuselage attitude and air speed flap back;

(2) power and air speed changes in level flight;

(3) use of instruments for precision (including instrument scan and look-out).

EXERCISE 6: LEVEL FLIGHT, CLIMBING, DESCENDING AND TURNING

Note.— *for ease of training this exercise is divided into four separate parts in the PPL(H) syllabus but may be taught complete or in convenient parts.*

(a) Long briefing objectives:

(1) basic factors involved in level flight;

(2) normal power settings;

(3) use of control friction or trim;

(4) importance of maintaining direction and balance;

(5) power required or power available diagram;

(6) optimum climb and descent speeds, angles or rates;

(7) importance of balance, attitude and co-ordination in the turn;

(8) effects of turning on rate of climb or descent;

(9) use of the gyro direction or heading indicator and compass;

(10) use of instruments for precision.

(b) Air exercises:

(1) maintaining straight and level flight at normal cruise power;

(2) control in pitch, including use of control friction or trim;

(3) use of the ball or yaw string to maintain direction and balance;

(4) setting and use of power for selected air speeds and speed changes;

(5) entry to climb;

(6) normal and maximum rate of climb;

(7) levelling off from climb at selected altitudes or heights;

(8) entry to descent;

(9) effect of power and air speed on rate of descent;

(10) levelling off from descent at selected altitudes or heights;

(11) entry to medium rate turns;

(12) importance of balance, attitude and co-ordination to maintain level turn;

(13) resuming straight and level flight;

(14) turns onto selected headings, use of direction indicator and compass;

(15) turns whilst climbing and descending;

(16) effect of turn on rate of climb or descent;

(17) use of instruments for precision (including instrument scan and look-out).

EXERCISE 7: AUTOROTATION

(a) Long briefing objectives:

(1) characteristics of autorotation;

(2) safety checks (including look-out and verbal warning);

(3) entry and development of autorotation;

(4) effect of AUM, IAS, disc loading, G forces and density altitude on RRPM and rate of descent;

(5) rotor and engine limitations;

(6) control of air speed and RRPM;

(7) recovery to powered flight;

(8) throttle override and control of ERPM or RRPM during re- engagement (as applicable);

(9) danger of vortex condition during recovery.

(b) Air exercise:

(1) safety checks (including verbal warning and look-out);

(2) entry to and establishing in autorotation;

(3) effect of IAS and disc loading on RRPM and rate of descent;

(4) control of air speed and RRPM;

(5) recovery to powered flight;

(6) medium turns in autorotation;

(7) simulated engine off landing (as appropriate).

EXERCISE 8: HOVERING AND HOVER TAXIING

(a) Long briefing objectives:

(1) ground effect and power required;

(2) effect of wind, attitude and surface;

(3) stability in hover and effects of over controlling;

(4) effect of control in hover;

(5) control and co-ordination during spot turns;

(6) requirement for slow hover speed to maintain ground effect;

(7) effect of hydraulic failure in hover;

(8) specific hazards, for example snow, dust, etc.

(b) Air exercise:

(1) ground effect and power or height relationship;

(2) effect of wind, attitude and surface;

(3) stability in hover and effects of over controlling;

(4) effect of control and hover technique;

(5) gentle forward running touchdown;

(6) control and co-ordination during spot (90 ° clearing) turns;

(7) control and co-ordination during hover taxi;

(8) dangers of mishandling and over pitching;

(9) (where applicable) effect of hydraulics failure in hover;

(10) simulated engine failure in the hover and hover taxi.

EXERCISE 9: TAKE-OFF AND LANDING

(a) Long briefing objectives:

(1) pre take-off checks or drills;

(2) importance of good look-out;

(3) technique for lifting to hover;

(4) after take-off checks;

(5) danger of horizontal movement near ground;

(6) dangers of mishandling and over pitching;

(7) technique for landing;

(8) after landing checks;

(9) take-off and landing crosswind and downwind.

(b) Air exercise:

(1) pre take-off checks or drills:

(2) pre take-off look-out technique;

(3) lifting to hover;

(4) after take-off checks;

(5) landing;

(6) after landing checks or drills;

(7) take-off and landing crosswind and downwind.

EXERCISE 10: TRANSITIONS FROM HOVER TO CLIMB AND APPROACH TO HOVER

(a) Long briefing objectives:

(1) revision of ground effect;

(2) translational lift and its effects;

(3) inflow roll and its effects;

(4) revision of flap back and its effects;

(5) avoidance of curve diagram and associated dangers;

(6) effect or dangers of wind speed and direction during transitions;

(7) transition to climb technique;

(8) constant angle approach;

(9) transition to hover technique.

(b) Air exercise:

(1) revision of take-off and landing;

(2) transition from hover to climb;

(3) effect of translational lift, inflow roll and flap back;

(4) constant angle approach;

(5) technique for transition from descent to hover;

(6) a variable flare simulated engine off landing.

EXERCISE 11: CIRCUIT, APPROACH AND LANDING

(a) Long briefing objectives:

(1) circuit and associated procedures;

(2) take-off and climb (including checks or speeds);

(3) crosswind leg (including checks, speeds or angles of bank in turns);

(4) downwind leg (including pre-landing checks);

(5) base leg (including checks, speeds or angles of bank in turns);

(6) final approach (including checks or speeds);

(7) effect of wind on approach and hover IGE;

(8) crosswind approach and landing technique;

(9) missed approach and go-around technique (as applicable);

(10) steep approach technique (including danger of high sink rate);

(11) limited power approach technique (including danger of high speed at touchdown);

(12) use of the ground effect;

(13) abandoned take-off technique;

(14) hydraulic failure drills and hydraulics off landing technique (where applicable);

(15) drills or technique for tail rotor control or tail rotor drive failure;

(16) engine failure drills in the circuit to include;

(17) engine failure

(18) on take-off:

(i) crosswind;

(ii) downwind;

(iii) base leg;

(iv) on final approach.

(19) noise abatement procedures (as applicable).

(b) Air exercise:

(1) revision of transitions and constant angle approach;

(2) basic training circuit, including checks;

(3) crosswind approach and landing technique;

(4) missed approach and go-around technique (as applicable);

(5) steep approach technique;

(6) basic limited power approach or run on technique;

(7) use of ground effect;

(8) hydraulic failure and approach to touchdown with hydraulics off and to recover at safe height (as applicable);

(9) simulated engine failure on take-off, crosswind, downwind, base leg and finals;

(10) variable flare simulated engine off landing.

EXERCISE 12: FIRST SOLO

(a) Long briefing objectives:

(1) warning of change of attitude due to reduced and laterally displaced weight;

(2) low tail, low skid or wheel during hover or landing;

(3) dangers of loss of RRPM and over pitching;

(4) pre take-off checks;

(5) into wind take-off;

(6) drills during and after take-off;

(7) normal circuit, approach and landing;

(8) action if an emergency.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 13: SIDEWAYS AND BACKWARDS HOVER MANOEUVRING

(a) Long briefing objectives:

(1) revision of hovering;

(2) directional stability and weather cocking effect;

(3) danger of pitching nose down on recovery from backwards manoeuvring;

(4) helicopter limitations for sideways and backwards manoeuvring;

(5) effect of CG position.

(b) Air exercise:

(1) revision of hovering and 90 ° clearing turns;

(2) manoeuvring sideways heading into wind;

(3) manoeuvring backwards heading into wind;

(4) manoeuvring sideways and backwards heading out of wind;

(5) manoeuvring backwards too fast and recovery action.

EXERCISE 14: SPOT TURNS
(a) Long briefing objectives:
(1) revision of ground effect and effect of wind;
(2) weather cocking and control actions;
(3) control of RRPM;
(4) torque effect;
(5) cyclic limiting stops due to CG position (where applicable);
(6) rate of turn limitations;
(7) spot turn about pilot position;
(8) spot turn about tail rotor position;
(9) spot turn about helicopter geometric centre;
(10) square (safe visibility) and clearing turn.
(b) Air exercise:
(1) weather cocking, torque effect and control actions;
(2) rate of turn;
(3) spot turn about pilot position;
(4) spot turn about tail rotor position;
(5) spot turn about helicopter geometric centre;
(6) square and clearing turn.

EXERCISE 15: HOVER OUT OF GROUND EFFECT AND VORTEX RING

(a) Long briefing objectives:

(1) revision of ground effect and power required diagram;

(2) drift, height and power control, look-out or scan;

(3) vortex ring, (including dangers, recognition and recovery actions);

(4) loss of tail rotor effectiveness.

(b) Air exercise:

(1) to demonstrate hover OGE;

(2) drift, height, power control and look-out, and instrument scan technique;

(3) recognition of incipient stage of vortex ring and settling with power;

(4) recovery action from incipient stage of vortex ring;

(5) recognition of loss of tail rotor effectiveness and recovery actions.

EXERCISE 16: SIMULATED ENGINE OFF LANDINGS

(a) Long briefing objectives:

(1) revision of basic autorotation;

(2) effect of AUM, disc loading, density altitude and RRPM decay;

(3) use of cyclic and collective to control speed or RRPM;

(4) torque effect;

(5) use of flare or turn to restore RRPM;

(6) technique for variable flare simulated EOL;

(7) technique for constant attitude simulated EOL;

(8) revision of technique for hover or hover taxi simulated EOL;

(9) emergency technique for engine failure during transition;

(10) technique for low level simulated EOL.

(b) Air exercise

(1) revision of entry to and control in autorotation;

(2) variable flare simulated EOL

(3) constant attitude simulated EOL;

(4) hover simulated EOL;

(5) hover taxi simulated EOL;

(6) low level simulated EOL.

EXERCISE 17: ADVANCED AUTOROTATIONS

(a) Long briefing objectives:

(1) effect of air speed or AUM on angles or rates of descent

(2) effect of RRPM setting on angle or rate of descent;

(3) reason and technique for range autorotation;

(4) reason and technique for constant attitude autorotation;

(5) reason and technique for low speed and ‘S’ turns in autorotation;

(6) speed or bank limitations in turns in autorotation;

(7) revision of re-engagement or go-around procedures.

(b) Air exercise:

(1) selection of ground marker and standard datum height to determine distance covered during various autorotation techniques;

(2) revision of basic autorotation;

(3) technique for range autorotation;

(4) technique for constant attitude autorotation;

(5) technique for low speed autorotation, including need for timely speed recovery;

(6) technique for ‘S’ turn in autorotation;

(7) 180 and 360 ° turns in autorotation;

(8) revision of re-engagement and go-around technique.

EXERCISE 18: PRACTICE FORCED LANDINGS

(a) Long briefing objectives:

(1) types of terrain or surface options for choice of best landing area;

(2) practice forced landing procedure;

(3) forced landing checks and crash actions;

(4) rules or height for recovery and go-around.

(b) Air exercise:

(1) recognition of types of terrain from normal cruise height or altitude;

(2) practice forced landing technique;

(3) revision of recovery or go-around technique.

EXERCISE 19: STEEP TURNS

(a) Long briefing objectives:

(1) air speed or angle of bank limitations;

(2) technique for co-ordination to hold bank or attitude;

(3) revision of speed or bank limitations in autorotation including RRPM control;

(4) significance of disc loading, vibration and control feedback;

(5) effect of wind in turns at low level.

(b) Air exercise:

(1) technique for turning at 30 ° of bank;

(2) technique for turning at 45 ° of bank (where possible);

(3) steep autorotative turns;

(4) explanation of faults in the turn: balance, attitude, bank and co- ordination;

(5) effect of wind at low level.

EXERCISE 20: TRANSITIONS

(a) Long briefing objectives:

(1) revision of effect of ground cushion, translational lift and flap back;

(2) training requirement for precision exercise;

(3) technique for transition to forward flight and back to hover as precision exercise;

(4) effect of wind.

(b) Air exercise:

(1) transition from hover to minimum 50 knots IAS and back to hover;

Note. *—– select constant height (20 - 30 ft) and maintain.*

(2) effect of wind.

EXERCISE 21: QUICK STOPS

(a) Long briefing objectives:

(1) power control co-ordination;

(2) revision of effect of wind;

(3) technique for quick stop into wind;

(4) technique for quick stop from crosswind;

(5) revision of air speed and angles of bank limitations;

(6) technique for emergency turn from downwind;

(7) technique for quick stop from downwind from high speed: flare and turn;

(8) technique for quick stop from downwind from low speed: turn and flare;

Note. *—–use reasonable datum speed for example high speed, low speed.*

(9) danger of holding flare when downwind, (vortex ring) - (minimum speed 70 knots);

(10) to revise danger of high disc loading.

(b) Air exercise:

(1) technique for quick stop into wind;

(2) technique for quick stop from crosswind;

(3) danger of vortex ring and disc loading;

(4) technique for quick stop from downwind with low speed;

(5) technique for quick stop from downwind with high speed;

(6) emergency turns from downwind.

EXERCISE 22: NAVIGATION

(a) Long briefing objectives:

Note. *—to be broken down into manageable parts at discretion of instructor.*

(1) flight planning:

(i) weather forecasts and actuals;

(ii) map selection, orientation, preparation and use:

(A) choice of route;

(B) regulated or controlled airspace;

(C) danger, prohibited and restricted areas;

(D) safety altitude.

(iii) calculations:

(A) magnetic heading(s), time(s) en route;

(B) fuel consumption;

(C) mass and balance.

(iv) flight information:

(A) NOTAMs etc;

(B) noting of required radio frequencies;

(C) selection of alternate landing sites.

(v) helicopter documentation;

(vi) notification of the flight:

(A) pre-flight administration procedures;

(B) flight plan form (where appropriate).

(2) departure:

(i) organisation of cockpit workload;

(ii) departure procedures:

(A) altimeter settings;

(B) ATC liaison in controlled or regulated airspace;

(C) setting heading procedure;

(D) noting of ETA(s);

(E) maintenance of height or altitude and heading.

(iii) procedure for revisions of ETA and headings to include:

(A) 10 ° line, double track, track error and closing angle;

(B) 1 in 60 rule;

(iv) amending an ETA;

(v) log keeping;

(vi) use of radio;

(vii) use of navaids;

(viii) weather monitoring and minimum weather conditions for continuation of flight;

(ix) significance of in-flight decision making;

(x) technique for transiting controlled or regulated airspace;

(xi) uncertainty of position procedure;

(xii) lost procedure.

(3) arrival:

(i) aerodrome joining procedure, in particular ATC liaison in controlled or regulated airspace:

(A) altimeter setting;

(B) entering traffic pattern;

(C) circuit procedures.

(ii) parking procedures, in particular:

(A) security of helicopter;

(B) refuelling;

(C) closing of flight plan, (if appropriate);

(D) post flight administrative procedures.

(4) navigation problems at low heights and reduced visibility:

(i) actions before descending;

(ii) significance of hazards, (for example obstacles and other traffic);

(iii) difficulties of map reading;

(iv) effects of wind and turbulence;

(v) significance of avoiding noise sensitive areas;

(vi) procedures for joining a circuit from low level;

(vii) procedures for a bad weather circuit and landing;

(viii) actions in the event of encountering DVE;

(ix) appropriate procedures and choice of landing area for precautionary landings;

(x) decision to divert or conduct precautionary landing;

(xi) precautionary landing.

(5) radio navigation:

(i) use of VOR:

(A) availability, AIP and frequencies;

(B) selection and identification;

(C) use of OBS;

(D) to or from indications: orientation;

(E) use of CDI;

(F) determination of radial;

(G) intercepting and maintaining a radial;

(H) VOR passage;

(I) obtaining a fix from two VORs.

(ii) use of ADF equipment:

(A) availability of NDB stations, AIP and frequencies;

(B) selection and identification;

(C) orientation relative to beacon;

(D) homing.

(iii) use of VHF/DF

(A) availability, AIP and frequencies;

(B) R/T procedures and ATC liaison;

(C) obtaining a QDM and homing.

(iv) use of en-route or terminal radar:

(A) availability and AIP;

(B) procedures and ATC liaison;

(C) pilots responsibilities;

(D) secondary surveillance radar:

(a) transponders;

(b) code selection;

(E) interrogation and reply.

(v) use of DME:

(A) station selection and identification;

(B) modes of operation: distance, groundspeed and time to run.

(vi) use of GNSS:

(vii) selection of waypoints;

(viii) to or from indications and orientation;

(ix) error messages;

(x) hazards of over-reliance in the continuation of flight in DVE.

(b) Air exercise:

(1) navigation procedures as necessary;

(2) to advise student and correct errors as necessary;

(3) map reading techniques;

(4) the significance of calculations;

(5) revision of headings and ETA's;

(6) use of radio;

(7) use of navaids: ADF/NDB, VOR, VHF/DF, DME and transponder;

(8) cross-country flying by using visual reference, DR, GNNS and, where available, radio navigation aids; simulation of deteriorating weather conditions and actions to divert or conduct precautionary landing;

(9) log keeping;

(10) importance of decision making;

(11) procedure to deal with uncertainty of position;

(12) lost procedure;

(13) appropriate procedures and choice of landing area for precautionary landings;

(14) aerodrome joining procedure;

(15) parking and shut-down procedures;

(16) post-flight administration procedures.

EXERCISE 23: ADVANCED TAKE-OFF, LANDINGS AND TRANSITIONS

(a) Long briefing objectives:

(1) Revision of landing and take-off out of wind (performance reduction);

(2) revision of wind limitations;

(3) revision of directional stability variation when out of wind;

(4) revision of power required diagram;

(5) technique for downwind transitions;

(6) technique for vertical take-off over obstacles;

(7) reconnaissance technique for landing site;

(8) power checks;

(9) technique for running landing;

(10) technique for zero speed landing;

(11) technique for crosswind and downwind landings;

(12) steep approach, including dangers;

(13) revision of go-around procedures.

(b) Air exercise

(1) technique for downwind transition;

(2) technique for vertical take-off over obstacles;

(3) reconnaissance technique for landing site;

(4) power check and assessment;

(5) technique for running landing;

(6) technique for zero speed landing;

(7) technique for crosswind and downwind landings;

(8) technique for steep approach;

(9) go-around procedures.

EXERCISE 24: SLOPING GROUND

(a) Long briefing objectives:

(1) limitations;

(2) wind and slope relationship, including blade and control stops;

(3) effect of CG when on slope;

(4) ground effect and power required when on slope;

(5) landing technique when on slope, left, right and nose-up;

(6) avoidance of dynamic rollover, dangers of soft ground and sideways movement;

(7) dangers of over controlling near ground on slope;

(8) danger of striking main or tail rotor on up slope.

(b) Air exercise

(1) technique for assessing slope angle;

(2) technique for landing and take-off left skid up slope;

(3) technique for landing and take-off right skid up slope;

(4) technique for landing nose up slope;

(5) dangers of over controlling near ground.

EXERCISE 25: LIMITED POWER

(a) Long briefing objectives:

(1) use of appropriate helicopter performance graphs;

(2) selection of technique according to available power;

(3) effect of wind on available power.

(b) Air exercise: to revise and refine techniques demonstrated in exercise 23.

EXERCISE 26: CONFINED AREAS

(a) Long briefing objectives:

(1) revision of use of helicopter performance graphs;

(2) procedure for locating landing site and selecting site marker;

(3) procedures for assessing wind speed and direction;

(4) landing site reconnaissance techniques;

(5) reason for selecting landing markers;

(6) procedure for selecting direction and type of approach;

(7) dangers of out of wind approach;

(8) circuit procedures;

(9) reason for approach to committal point and go-around, (practice approach);

(10) approach technique;

(11) revision of clearing turn and landing (sloping ground technique);

(12) hover power check or performance assessment IGE and OGE (if necessary);

(13) take-off procedures.

(b) Air exercise

(1) procedures for locating landing site and selecting site marker;

(2) procedures for assessing wind speed and direction;

(3) landing site reconnaissance techniques;

(4) selecting landing markers, direction and type of approach;

(5) circuit procedure;

(6) practice approach, go-around and approach technique;

(7) revision of clearing turn and landing (sloping ground technique);

(8) hover power check or performance assessment IGE and OGE (if necessary);

(9) take-off procedures.

EXERCISE 27: BASIC INSTRUMENT FLIGHT

(a) Long briefing objectives:

(1) physiological sensations;

(2) instrument appreciation;

(3) attitude instrument flight;

(4) instrument scan;

(5) instrument limitations;

(6) basic manoeuvres by sole reference to instruments:

(i) straight and level flight at various air speeds and configurations;

(ii) climbing and descending;

(iii) standard rate turns, climbing and descending, onto selected headings;

(iv) recoveries from climbing and descending turns (unusual attitudes).

(b) Air exercise:

(1) attitude instrument flight and instrument scan;

(2) basic manoeuvres by sole reference to instruments:

(3) straight and level flight at various air speeds and configurations;

(4) climbing and descending;

(5) standard rate turns, climbing and descending, onto selected headings;

(6) recoveries from climbing and descending turns (unusual attitudes).

EXERCISE 28: NIGHT FLYING (IF NIGHT INSTRUCTIONAL QUALIFICATION REQUIRED)

(a) Long briefing objectives:

(1) medical or physiological aspects of night vision;

(2) requirement for torch to be carried (pre-flight inspection, etc.);

(3) use of the landing light;

(4) take-off and hover taxi procedures at night;

(5) night take-off procedure;

(6) cockpit procedures at night;

(7) approach techniques;

(8) night landing techniques;

(9) night autorotation techniques (power recovery at safe height);

(10) technique for practice forced landing at night (using appropriate illumination);

(11) emergency procedures at night;

(12) navigation principles at night;

(13) map marking for night use (highlighting built up or lit areas with thicker lines, etc.).

(b) Air exercise:

(1) use of torch for pre-flight inspection;

(2) use of landing light;

(3) night take-off to hover (no sideways or backwards movement);

(4) night hover taxi (higher and slower than by day);

(5) night transition procedure;

(6) night circuit;

(7) night approach and landing (including use of landing light);

(8) night autorotation (power recovery at safe height);

(9) practice forced landing at night (using appropriate illumination);

(10) night emergency procedures;

(11) night cross country techniques, as appropriate.

FCL.940.FI FI — Revalidation and renewal

(a) For revalidation of an FI certificate, the holder shall fulfil 2 of the following 3 requirements:

(1) complete, in the case of an FI(A) and (H), at least 50 hours of flight instruction in the appropriate aircraft category during the period of validity of the certificate as, FI, TRI, CRI, IRI, MI or examiner. If the privileges to instruct for the IR are to be revalidated, 10 of these hours shall be flight instruction for an IR and shall have been completed within the last 12 months preceding the expiry date of the FI certificate;

(2) complete an instructor refresher seminar, within the validity period of the FI certificate;

(3) pass an assessment of competence in accordance with FCL.935, within the 12 months preceding the expiry date of the FI certificate.

(b) For the at least each alternate subsequent revalidation in the case of FI(A) or FI(H), the holder shall have to pass an assessment of competence in accordance with FCL.935.

(c) Renewal. If the FI certificate has lapsed, the applicant shall, within a period of 12 months before renewal:

(1) attend an instructor refresher seminar;

(2) pass an assessment of competence in accordance with FCL.935.

AMC1 FCL.940.FI(a); FCL.940.IRI Revalidation and renewal

(a) The instructor refresher training for the revalidation of the FI and IRI certificates should be provided as a seminar by an ATO.

(1) FI or IRI refresher seminars should have due regard to geographical location, numbers attending, and periodicity.

(2) Such seminars should run for at least 2 days (1 day = 6 hours), and attendance from participants will be required for the whole duration of the seminar including breakout groups and workshops. Different aspects, such as inclusion of participants holding certificates in other categories of aircraft, should be considered.

(3) Appropriately experienced FIs or IRIs currently involved with flying training and with a practical understanding of the revalidation requirements and current instructional techniques should be included as speakers at these seminars.

(4) The attendance form will be completed and signed by the organiser of the seminar as approved by the competent authority, following attendance and satisfactory participation by the FI or IRI.

(5) The content of the FI or IRI refresher seminar should be selected from the following:

(i) new or current rules or regulations, with emphasis on knowledge of AUA-FCL and operational requirements;

(ii) teaching and learning;

(iii) instructional techniques;

(iv) the role of the instructor;

(v) national regulations (as applicable);

(vi) human factors;

(vii) flight safety, incident and accident prevention;

(viii) airmanship;

(ix) legal aspects and enforcement procedures;

(x) navigational skills including new or current radio navigation aids;

(xi) teaching instrument flying;

(xii) weather-related topics including methods of distribution;

(xiii) any additional topic selected by the competent authority.

(6) Formal sessions should allow time for presentations and related questions. The use of visual aids is recommended, with interactive videos and other teaching aids (where available) for breakout groups and workshops.

(b) If the instructor certificate lapsed, the ATO, should consider all the above as well as the following, when assessing the refresher training programme:

(1) the ATO should determine on a case-by-case basis the amount of refresher training needed, following an assessment of the candidate taking into account the following factors:

(i) the experience of the applicant;

(ii) the amount of time elapsed since the expiry of the FI or IRI certificate; and

(iii) the technical elements of the FI or IRI training course, as determined by the assessment of the candidate by the ATO; and

(2) the individual training programme should be based on the content of the FI or IRI training course and focus on the aspects where the applicant showed the greatest needs.

(c) After successful completion of the seminar or refresher training, as applicable, the ATO should:

(1) in case of a seminar, in accordance with point (a), issue the applicant with a seminar completion certificate or another document specified by the competent authority, which describes the content of the seminar as in point (a), as well as a statement that the seminar was successfully completed; and

(2) in case of refresher training, in accordance with point (b), issue the applicant with a training completion certificate or another document specified by the competent authority, which describes the evaluation of the factors listed in point (b)(1) and the training received, as well as a statement that the training was successfully completed; the training completion certificate should be presented to the examiner prior to the assessment of competence.

Upon successful completion of the refresher seminar or refresher training, as applicable, the ATO should submit the seminar or training completion certificate, or the other document specified by the competent authority, to the competent authority.

(d) Taking into account the factors listed in point (b)(1), the ATO, may also decide that it is sufficient for the candidate to complete a seminar in accordance with point (a). In such a case, the completion certificate or the other document that is referred to in point (c) should contain a related statement with sufficient reasoning.

GM1 FCL.940FI(a) FI — Revalidation and renewal

FI — Revalidation and renewal

FI CERTIFICATE: REVALIDATION AND RENEWAL FORM

A. AEROPLANES

<table>
<tr><th colspan="5">INSTRUCTIONAL FLYING EXPERIENCE</th></tr>
<tr><td colspan="5">Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.</td></tr>
<tr><td colspan="2">SINGLE-ENGINE</td><td colspan="2">MULTI-ENGINE</td><td>INSTRUMENT</td></tr>
<tr><td>DAY</td><td>NIGHT</td><td>DAY</td><td>NIGHT</td><td></td></tr>
<tr><td colspan="5">Total instructional hours (preceding 36 months):</td></tr>
<tr><td colspan="5">Total instructional hours (preceding 12 months):</td></tr>
<tr><th colspan="5">FI REFRESHER SEMINAR</th></tr>
<tr><td>1</td><td colspan="4">This is to certify that the undersigned attended an FI seminar</td></tr>
</table>

2	Attendee's personal particulars:	
Name(s):		Address:
Licence number:		Expiration date of FI(A) certificate
3	Seminar particulars:	
Date(s) of seminar:		Place:
4	Declaration by the responsible organiser:	
I certify that the above data are correct and that the FI seminar was carried out.		
Date of approval:		Name(s) of organiser: (capital letters)
Date and place:		Signature:
5	Declaration by the attendee:	
I confirm the data under 1 through 3		
Attendee's signature:		
PROFICIENCY CHECK		
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.		
Flying time:		Aeroplane or FFS used:
Main exercise:		
Name(s) of FIE:		Licence number:
Date and place:		Signature:

B. HELICOPTERS

INSTRUCTIONAL FLYING EXPERIENCE		
Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.		
Instrument:		
Total instructional hours (preceding 36 months):		
Total instructional hours (preceding 12 months):		
FI REFRESHER SEMINAR		
1	This is to certify that the undersigned attended an FI seminar	
2	Attendees personal particulars:	
Name(s):		Address:
Licence number:		Expiration date of FI(H) certificate:

3	Seminar particulars:		
Date(s) of seminar:		Place:	
4	Declaration by the responsible organiser:		
I certify that the above data are correct and that the FI seminar was carried out.			
Date of approval:		Name(s) of organiser: (capital letters)	
Date and place:		Signature:	
5	Declaration by the attendee:		
I confirm the data under 1 through 3			
Attendee's signature:			
PROFICIENCY CHECK			
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.			
Flying time:		Helicopter or FFS used:	
Main exercise:			
Name(s) of FIE:		Licence number:	
Date and place:			
	Signature:		

SECTION 4 — SPECIFIC REQUIREMENTS FOR THE TYPE RATING INSTRUCTOR — TRI

FCL.905.TRI TRI — Privileges and conditions

The privileges of a TRI are to instruct for:

(a) the revalidation and renewal of IRs, provided the TRI holds a valid IR;

(b) the issue of a TRI or SFI certificate, provided that the holder has 3 years of experience as a TRI; and

(c) in the case of the TRI for single-pilot aeroplanes:

(1) the issue, revalidation and renewal of type ratings for single-pilot high performance complex aeroplanes when the applicant seeks privileges to operate in single-pilot operations.

The privileges of the TRI(SPA) may be extended to flight instruction for single-pilot high performance complex aeroplanes type ratings in multi-pilot operations, provided that the TRI:

(i) holds or has held a TRI certificate for multi-pilot aeroplanes;

(ii) has at least 500 hours on aeroplanes in multi-pilot operations and completed an MCCI training course in accordance with point FCL.930.MCCI.

(2) the MPL course on the basic phase, provided that he/she has the privileges extended to multi-pilot operations and holds or has held an FI(A) or an IRI(A) certificate;

(d) in the case of the TRI for multi-pilot aeroplanes:

(1) the issue, revalidation and renewal of type ratings for:

(i) multi-pilot aeroplanes;

(ii) single-pilot high performance complex aeroplanes when the applicant seeks privileges to operate in multi-pilot operations;

(2) MCC training;

(3) the MPL course on the basic, intermediate and advanced phases, provided that, for the basic phase, they hold or have held an FI(A) or IRI(A) certificate;

(e) in the case of the TRI for helicopters:

(1) the issue, revalidation and renewal of helicopter type ratings;

(2) MCC training, provided he/she holds a multi-pilot helicopter type rating;

(3) the extension of the single-engine IR(H) to multi-engine IR(H);

(f) in the case of the TRI for powered-lift aircraft:

(1) the issue, revalidation and renewal of powered-lift type ratings;

(2) MCC training.

GM1 FCL.905.TRI(b) Privileges and conditions

INSTRUCTORS INSTRUCTING FOR THE ISSUE OF A TRI OR SFI CERTIFICATE

Training in an aeroplane is not a requirement for the issue of an SFI or a TRI certificate. In order to deliver effective UPRT, it is beneficial for the instructor to have first-hand experience of the critical psychological and physiological human factors, which might be present during recoveries from developed upsets. These human factors (effects of unusual acceleration, such as variations from normal 1G flight, the difficulty to perform counter-intuitive actions, and the management of the associated stress response) can only be experienced during training in an aeroplane because FFSs are not capable of reproducing sustained accelerations. Completion of the advanced UPRT course in accordance with FCL.745.A would provide such experience and is therefore useful for instructors providing instruction for the issue of a TRI or an SFI certificate.

FCL.910.TRI TRI — Restricted privileges

(a) General. If the TRI training is carried out in an FFS only, the privileges of the TRI shall be restricted to training in the FFS. In restriction shall however include the following privileges for conducting, in the aircraft:

(1) LIFUS, provided that the TRI training course has included the training specified in point FCL.930.TRI(a)(4)(i);

(2) landing training, provided that the TRI training course has included the training specified in point FCL.930.TRI(a)(4)(ii); or

(3) the training flight specified in point FCL.060(c)(2), provided that the TRI training course has included the training referred to in points (a)(1) or (a)(2).

The restriction to FSTD shall be removed if TRIs have completed an assessment of competence in the aircraft.

(b) TRI for aeroplanes and for powered-lift aircraft — TRI(A) and TRI(PL). The privileges of a TRI are restricted to the type of aeroplane or powered-lift aircraft in which the training and the assessment of competence were conducted. The privileges of the TRI shall be extended to further types when the TRI has:

(1) completed within the 12 months preceding the application, at least 15 route sectors, including take-offs and landings on the applicable aircraft type, of which 7 sectors may be completed in an FFS;

(2) completed the technical training and flight instruction parts of the relevant TRI course;

(3) passed the relevant sections of the assessment of competence in accordance with FCL.935 in order to demonstrate to an FIE or a TRE qualified in accordance with Subpart K his/her ability to instruct a pilot to the level required for the issue of a type rating, including pre-flight, post-flight and theoretical knowledge instruction.

(c) TRI for helicopters — TRI(H).

(1) The privileges of a TRI(H) are restricted to the type of helicopter in which the skill test for the issue of the TRI certificate was taken. The privileges of the TRI shall be extended to further types when the TRI has:

(i) completed the appropriate type technical part of the TRI course on the applicable type of helicopter or an FSTD representing that type;

(ii) conducted at least 2 hours of flight instruction on the applicable type, under the supervision of an adequately qualified TRI(H); and

(iii) passed the relevant sections of the assessment of competence in accordance with FCL.935 in order to demonstrate to an FIE or TRE qualified in accordance with Subpart K his/her ability to instruct a pilot to the level required for the issue of a type rating, including pre-flight, post-flight and theoretical knowledge instruction.

(2) Before the privileges of a TRI(H) are extended from single-pilot to multi-pilot privileges on the same type of helicopters, the holder shall have at least 100 hours in multi-pilot operations on this type.

(d) Notwithstanding the paragraphs above, holders of a TRI certificate who have received a type rating in accordance with FCL.725(e) shall be entitled to have their TRI privileges extended to that new type of aircraft.

FCL.915.TRI TRI — Pre-requisites

An applicant for a TRI certificate shall:

(a) hold a CPL, MPL or ATPL pilot licence on the applicable aircraft category;

(b) for a TRI(MPA) certificate:

(1) have completed 1 500 hours flight time as a pilot on multi-pilot aeroplanes; and

(2) have completed, within the 12 months preceding the date of application, 30 route sectors, including take-offs and landings, as PIC or co-pilot on the applicable aeroplane type, of which 15 sectors may be completed in an FFS representing that type;

(c) for a TRI(SPA) certificate:

(1) have completed, within the 12 months preceding the date of application, 30 route sectors, including take-offs and landings, as PIC on the applicable aeroplane type, of which 15 sectors may be completed in an FFS representing that type; and

(2) (i) have competed at least 500 hours flight time as pilot on aeroplanes, including 30 hours as PIC on the applicable type of aeroplane; or

(ii) hold or have held an FI certificate for multi-engine aeroplanes with IR(A) privileges;

(d) for TRI(H):

(1) for a TRI(H) certificate for single-pilot single-engine helicopters, have completed 250 hours as a pilot on helicopters;

(2) for a TRI(H) certificate for single-pilot multi-engine helicopters, have completed 500 hours as pilot of helicopters, including 100 hours as PIC on single-pilot multi-engine helicopters;

(3) for a TRI(H) certificate for multi-pilot helicopters, have completed 1 000 hours of flight time as a pilot on helicopters, including:

(i) 350 hours as a pilot on multi-pilot helicopters; or

(ii) for applicants already holding a TRI(H) certificate for single-pilot multi-engine helicopters, 100 hours as pilot of that type in multi-pilot operations.

(4) Holders of an FI(H) certificate shall be fully credited towards the requirements of (1) and (2) in the relevant single- pilot helicopter;

(e) for TRI(PL):

(1) have completed 1 500 hours flight time as a pilot on multi-pilot aeroplanes, powered-lift, or multi-pilot helicopters; and

(2) have completed, within the 12 months preceding the application, 30 route sectors, including take-offs and landings, as PIC or co-pilot on the applicable powered-lift type, of which 15 sectors may be completed in an FFS representing that type.

FCL.930.TRI TRI — Training course

(a) The TRI training course shall include, at least:

(1) 25 hours of teaching and learning;

(2) 10 hours of technical training, including revision of technical knowledge, the preparation of lesson plans and the development of classroom/simulator instructional skills;

(3) 5 hours of flight instruction on the appropriate aircraft or a simulator representing that aircraft for single-pilot aircraft and 10 hours for multi-pilot aircraft or a simulator representing that aircraft.

(4) the following training, as applicable:

(i) additional specific training before conducting LIFUS;

(ii) additional specific training before conducting landing training. That training in the FSTD shall include training for emergency procedures related to the aircraft.

(b) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

(c) An applicant for a TRI certificate who holds an SFI certificate for the relevant type shall be fully credited towards the requirements of this paragraph for the issue of a TRI certificate restricted to flight instruction in simulators.

AMC1 FCL.930.TRI TRI — Training course

TRI TRAINING COURSE: AEROPLANES

(a) General

(1) The training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to the TRI task, and should be designed to give adequate training to the applicant in theoretical knowledge instruction, flight instruction and FSTD instruction to instruct for an aeroplane type rating for which the applicant is qualified.

(2) The TRI(A) training course should give particular emphasis to the role of the individual in relation to the importance of human factors in the man- machine environment and the role of CRM.

(3) Special attention should be given to the applicant's maturity and judgment including an understanding of adults, their behavioural attitudes and variable levels of learning ability. During the training course the applicants should be made aware of their own attitudes to the importance of flight safety. It will be important during the training course to aim at giving the applicant the knowledge, skills and attitudes relevant to the role of the TRI.

(4) For a TRI(A) the amount of flight training will vary depending on the complexity of the aeroplane type. A similar number of hours should be used for the instruction and practice of pre-flight and post flight briefing for each exercise. The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently and should be related to the type of aeroplane on which the applicant wishes to instruct. The content of the training programme should cover training exercises applicable to the aeroplane type as set out in the applicable type rating courses.

(5) A TRI(A) may instruct in a TRI(A) course once he or she has conducted a minimum of four type rating instruction courses.

(6) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(7) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

(b) Content

The training course consists of three parts:

— Part 1: teaching and learning instruction that should comply with AMC1 FCL.920;

— Part 2: technical theoretical knowledge instruction (technical training);

— Part 3: flight instruction.

(1) Part 1 — The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

(2) Part 2 — Technical Theoretical Knowledge Instruction Syllabus

(i) The technical theoretical knowledge instruction should comprise of not less than 10 hours training to include the revision of technical knowledge, the preparation of lesson plans and the development of classroom instructional skills to enable the TRI(A) to instruct the technical theoretical knowledge syllabus.

(ii) If a TRI(A) certificate for MP aeroplanes is sought, particular attention should be given to multi-crew cooperation. If a TRI(A) certificate for SP aeroplanes is sought, particular attention should be given to the duty in SP operations.

(iii) The type rating theoretical syllabus should be used to develop the TRI(A)'s teaching skills in relation to the type technical course syllabus. The course instructor should deliver example lectures from the applicable type technical syllabus and the candidate instructor should prepare and deliver lectures on topics selected by the course instructor from the type rating course.

Part 3 — Flight Instruction Syllabus

(i) General

(A) The course should be related to the type of aeroplane on which the applicant wishes to instruct. It should consist of at least 5 hours of flight instruction for SP aeroplanes that are operated in SP operations, and at least 10 hours for MP aeroplanes or SP-certified aeroplanes that are operated in MP operations, per candidate instructor.

(B) TEM, CRM and the appropriate use of behavioural markers should be integrated throughout.

(C) Training courses should be developed to help the candidate instructor gain experience in the training of a variety of exercises, covering both normal and abnormal operations..

(D) The syllabus should be tailored and appropriate to the aeroplane type, and the exercises used should be more demanding for each individual student.

(E) The course should cover the whole range of instructor skills to enable the candidate instructor to plan sessions, brief, train and debrief using all relevant training techniques that are appropriate to pilot training

(ii) Use FSTDs

(A) The applicant for a TRI(A) certificate should be taught and made familiar with the device, its limitations, capabilities and safety features, and the instructor station, including emergency evacuation.

(B) The applicant for a TRI(A) certificate should be instructed in providing and evaluating training from the instructor station and from all pilot operating positions, including demonstrations of handling exercises

(C) The syllabus should include engine-out handling and engine-out operations in addition to representative exercises from the type rating course.

(D) Where no FSTD exists for the type of aeroplane for which the certificate is sought, or if the FSTD is not suitable to complete all the elements of the training programme for the TRI certificate, the entire course or a part of it should be conducted in the applicable aeroplane type, and the synthetic device elements should be replaced with appropriate exercises in the aeroplane.

The assessment of competence should be performed:

- when no FSTD exists, in the aeroplane; and
- when not all elements of the training are completed in the FSTD, in both the aeroplane and the FSTD; this combined use of aeroplane and FSTD in the assessment of competence should reflect and be similar to the combined use of aeroplane and FSTD during the training course.

(F) In general, TRI training is designed to develop the competencies of a pilot to become an instructor. From this perspective, the training may be provided in several arrangements:

- the candidate instructor is seating in either pilot seat;
- the candidate instructor is seating at the IOS; or
- the candidate instructor is observing (seating as an observer).

The combination of the above-mentioned training arrangements and the allocation of time to each one of them depends on an analysis of several elements, including but not limited to the following:

- previous experience and curriculum of each candidate (e.g. previous instructor experience, experience on aeroplane type, total flight experience, etc.) in isolation and as part of the course group(s);
- specific requirements for aeroplane type and related training exercises;
- overall maturity and experience of the ATO in providing TRI training courses; and
- type, fidelity level, and reliability of the available devices.

Subject to particular training arrangements that are determined by the ATO and approved by the competent authority, a TRI may instruct in parallel two TRI candidate instructors under the following scenarios:

- one candidate is sitting at the controls (supported by a suitable pilot), while the second candidate is sitting at the IOS; this scenario may be used for demonstration of flight manoeuvres or engine out exercises; or
- both candidates receive instruction (general introduction and handling) at the IOS.

In this way, both candidates can independently develop specific competencies.

Additional TRI candidate instructors may be present as observers during such an instruction given in parallel, with no credit of hours for their TRI training.

For an initial TRI training course, such 'in parallel' instruction should be given only for a reasonable part of the overall TRI training course duration. For a TRI type extension, the amount of hours required for such an instruction may be increased.

In any case, the way of instruction largely depends on the experience of the TRI trainer in the various training arrangements and on the general experience of the candidate instructor.

(iii) SP MET aeroplane training for asymmetric power flight

During this part of the training, particular emphasis should be placed on:

(A) the circumstances under which the actual feathering and unfeathering is practised, e.g. safe altitude, compliance with regulations regarding minimum altitude or height for feathering, weather conditions, distance from the nearest available aerodrome;

(B) the procedure that should be used for cooperation between instructor and student, e.g. the correct use of touch drills and the prevention of misunderstandings, especially during feathering and unfeathering and when zero thrust is used for asymmetric circuits; this procedure should include a positive agreement on which engine should be shut down or restarted or set at zero thrust, as well as on identifying each control and the engine it will affect;

(C) avoiding overworking the operating engine and preventing degraded performance when operating the aeroplane in asymmetric flight; and

(D) the need to use the specific checklist for the given aeroplane type.

(iv) Long briefings on SP MET aeroplanes

Long briefings provide an essential link between academic principles and air exercises. They introduce aeronautical theory and the practical application of aeronautical principles to the student.

The instructor should ensure that the candidate instructor is able to teach all the following subjects:

(A) Asymmetric power flight:

(a) introduction to asymmetric flight;

(b) feathering the propeller: method of operation;

(c) effects on aeroplane handling at cruising speed;

(d) introduction to the effects upon aeroplane performance;

(e) identification of the foot load to maintain a constant heading (no rudder trim);

(f) feathering the propeller: regaining normal flight;

(g) finding the zero-thrust setting: comparison of foot load when the propeller is feathered and thrust is set to zero;

(h) effects and recognition of engine failure in level flight;

(i) forces and effects of yaw;

(j) types of failure:

(1) sudden or gradual, and

(2) complete or partial;

(k) yaw direction and further effects of yaw;

(l) flight instrument indications;

(m) identification of failed engine;

(n) couples and residual out-of-balance forces: resultant flight attitude;

(o) use of rudder to counteract yaw;

(p) use of aileron: dangers of misuse;

(q) use of elevator to maintain level flight;

(r) use of power to maintain safe airspeed and altitude;

(s) supplementary recovery to straight and level flight: simultaneous increase in speed and reduction in power;

(t) identification of failed engine: idle engine;

(u) use of engine instruments for identification:

(1) fuel pressure or flow;

(2) RPM gauge response effect of constant speed unit (CSU) action at lower and higher airspeed; and

(3) engine temperature gauges;

(v) confirmation of identification: closing the throttle of the identified failed engine;

(w) effects and recognition of engine failure in turns;

(x) identification and control; and

(y) side forces and effects of yaw.

(B) Turning flight:

(a) effect of ‘inside’ engine failure: sudden and pronounced effect;

(b) effect of ‘outside’ engine failure: less sudden and pronounced effect;

(c) possible confusion in identification (particularly at low power):

(1) correct use of rudder; and

(2) possible need to return to lateral level flight to confirm correct identification;

(d) visual and flight instrument indications;

(e) effect of varying speed and power;

(f) speed and thrust relationship;

(g) at normal cruising speed and cruising power: engine failure clearly recognised;

(h) at low safe speed and climb power: engine failure most likely recognised; and

(i) at high-speed descent and low power: asymmetry (engine failure) possibly not recognised.

(C) Minimum control speeds:

(a) Air speed indicator (ASI) colour coding: red radial line.

Note.— *this exercise is intended to explore the ultimate boundaries of controllability of the aeroplane aircraft in an asymmetric state in various conditions with a steady power setting. A steady power setting is achieved by using a fixed power setting and adjusting the aircraft attitude to obtain a gradual speed reduction. The failure exercise should not be performed as a sudden and complete failure at the VMCA given in the AFM. The purpose of the exercise is to continue the gradual introduction of a student to the control of an aeroplane in asymmetric power flight in extreme or critical situations, and not to demonstrate VMCA.*

(b) Techniques for assessing critical speeds at wings level, and recovery from those speeds; dangers involved when minimum control speed and stalling speed are very close: use of safe single-engine speed (Vsse).

(c) Establishing a minimum control speed for each asymmetrically disposed engine: establishing the critical engine (if applicable).

(d) Effects on minimum control speeds of:

(i) bank;

(ii) zero-thrust setting; and

(iii) take-off configuration:

(A) landing gear down and take-off flap set; and

(B) landing gear up and take-off flap set.

Note. *—the use of 5 ° of bank towards the operating engine results in a better climb performance than that obtained with wings level held. Manufacturers may use these conditions when determining the asymmetric climb performance of the aircraft.*

Thus, the VMCA quoted in the AFM may be different from the speeds that are determined during this exercise.

(D) Feathering and unfeathering:

(a) minimum heights for practising feathering and unfeathering drills; and

(b) engine-handling precautions (overheating, icing conditions, priming, warm-up, method of simulating an engine failure: refer to the aircraft engine manual, service instructions, and bulletins).

(E) Engine failure procedure:

(a) once control is maintained, the phase of operation and the aircraft type determine in which order the procedures should be followed; and

(b) the flight phase should be:

(1) in cruising flight; or

(2) a critical phase, e.g. immediately after take-off or during approach to landing or during a go-around.

(F) Aircraft type:

Variations in the order of certain drills and checks inevitably occur due to differences between aeroplane types and perhaps between models of the same aeroplane type. The AFM should be consulted to establish the exact order of the related procedures.

For example, one AFM may call for the raising of flaps and landing gear before feathering, whereas another AFM may recommend feathering as a first step. The reason for this latter procedure may be that some engines cannot be feathered if RPM drop below a certain figure.

However, in some aeroplanes, the raising of the landing gear may create more drag during retraction due to the transient position of the landing gear doors, and as a result, retraction should be avoided until feathering is completed and propeller drag reduced.

Therefore, the order in which the drills and checks are presented under immediate and subsequent actions in this syllabus should be considered as general guidance only; the exact order of precedence is determined by reference to the AFM for the specific aeroplane type used in the course.

(G) In-flight engine failure during cruising or other flight phase not including take-off or landing:

(a) immediate actions:

(1) control of the aircraft;

(2) recognition of asymmetric condition;

(3) identification and confirmation of failed engine:

(i) idle leg = idle engine; and

(ii) closing of throttle or pulling back of power lever, as appropriate, for confirmation;

(4) identification of failure cause and fire check:

(i) typical reasons for failure; and

(ii) methods of rectification; and

(5) feathering decision and procedure:

(i) reduction of other drag;

(ii) need for speed but not haste; and

(iii) use of rudder trim;

(b) subsequent actions:

(1) operating engine:

(i) temperature, pressure, and power;

(ii) remaining services;

(iii) electrical load: assess and reduce, as necessary;

(iv) effect on power source for air-driven instruments;

(v) landing gear; and (vi) flaps and other services;

(2) replanning of the flight:

(i) ATC and weather;

(ii) terrain clearance, SE cruising speed; and

(iii) decision to divert or continue;

(3) fuel management: best use of remaining fuel;

(4) dangers of restarting damaged engine;

(5) action if unable to maintain altitude: effect of altitude on available power;

(6) effects on performance;

(7) effects on available power and required power;

(8) effects on various airframe configurations and propeller settings;

(9) use of AFM:

(i) cruising;

(ii) climbing: ASI colour coding (blue line);

(iii) descending; and (iv) turning;

(10) limitations and handling of operating engine; and

(11) control and performance of take-off and approach.

(H) Significant factors:

(a) significance of take-off safety speed:

(1) effect on aeroplane performance of landing gear, flap, feathering, take-off, trim setting, and systems for operating landing gear and flaps; and

(2) effect on aeroplane performance of mass, altitude, and temperature;

(b) significance of best SE climb speed (Vyse):

(1) accelerating to Vyse and establishing a positive climb;

(2) relationship between Vyse and normal climb speed; and

(3) action, if unable to climb; and

(c) significance of asymmetric committal height and speed: action, if baulked below asymmetric committal height.

(I) Engine failure during take-off:

(a) below VMCA or unstick speed:

(1) use AFM data, if available ; and

(2) accelerate or stop distance considerations;

(b) above VMCA or unstick speed and below safety speed;

(c) immediate relanding or use of remaining power for forced landing; and

(d) considerations:

(1) degree of engine failure;

(2) speed at the time;

(3) mass, altitude, temperature performance;

(4) configuration;

(5) length of remaining runway; and

(6) position of any obstacles ahead.

(J) Engine failure after take-off:

(a) simulated at a safe height and at or above take-off safety speed;

(b) considerations:

(1) need to maintain control;

(2) use of bank technique towards operating engine;

(3) use of available power to reach Vyse;

(4) mass, altitude, temperature performance; and

(5) effect of prevailing conditions and circumstances;

(c) immediate actions:

(1) maintaining control, including airspeed and use of power;

(2) recognition of asymmetric condition;

(3) identification and confirmation of failed engine;

(4) feathering and removal of drag (procedure for specific type); and

(5) reaching and maintaining Vyse; and

(d) subsequent actions, whilst carrying out an asymmetric power climb to the downwind position at Vyse:

(1) identification of failure and fire check;

(2) handling considerations for operating engine;

(3) remaining services;

(4) liaison with ATC; and

(5) fuel management.

Note.—*these procedures are dependent upon the aeroplane type concerned and actual flight situation.*

(K) Asymmetric committal height

(a) Asymmetric committal height is the minimum height needed to put the aircraft into a positive climb, whilst maintaining an adequate speed to control the aircraft and reduce drag during an approach to landing.

(b) Due to the significantly reduced performance of many CS-23 aeroplanes when operating with one engine, a minimum height should be considered from which it would be safe to attempt a goaround procedure during an approach when the aeroplane must change from descent to climb in a high-drag configuration.

(c) Due to the height loss that occurs when the operating engine is turned to full power, with landing gear and flap retracted, and the aeroplane is put into a climb at Vyse, a minimum height (often referred to as 'asymmetric committal height') should be selected below which the pilot should not attempt to fly another circuit. This height should be compatible with the aeroplane type, all-up weight, altitude of the aerodrome used, air temperature, wind, height of obstructions along the climb-out path, and the pilot's competence.

(d) Circuit approach and landing with asymmetric power:

(1) definition and use of asymmetric committal height;

(2) use of standard pattern and normal procedures;

(3) action, if unable to maintain circuit height;

(4) speed and power settings required; and

(5) decision to land or execute a go-around at asymmetric committal height: factors to be considered.

(e) Undershooting: importance of maintaining an appropriate airspeed.

(L) Speed and heading control:

(a) relationship between height, speed, and power: need for minimum possible drag; and

(b) reaching a positive climb at Vyse:

(1) effect of availability of systems, and power for the flap and landing gear; and

(2) operation and rapid clean-up.

Note 1.—*the airspeed at which the decision is made to make a landing or execute a go-around should normally be Vyse and not lower than the safety speed.*

Note 2.—*instrument approach 'decision height' and its associated procedures should not be confused with the selection of minimum height for initiating a go-around in asymmetric power flight.*

(M) Engine failure during an all-engine approach or missed approach:

(a) use of asymmetric committal height, and speed considerations; and

(b) speed and heading control: decision to attempt a landing, go-around or forced landing depending on circumstances.

Note.—*at least one demonstration and practice of engine failure in this situation should be performed during the course.*

(N) Instrument flying with asymmetric power:

(a) considerations relating to aircraft performance during:

(1) straight and level flight;

(2) climb and descent;

(3) standard rate turns; and

(4) level, climbing, and descending turns including turns to preselected headings;

(b) availability of vacuum-operated instruments; and

(c) electrical power source.

(v) Specific trainings: LIFUS training and landing training The applicant for a TRI(A) certificate should receive instruction in an FSTD in accordance with FCL.930.TRI(a)(4).

(A) LIFUS training: content

(a) Training in an FSTD:

(1) familiarisation as PF on both seats, as applicable, which should include at least the following:

(i) pre-flight preparation and use of checklists;

(ii) taxiing;

(iii) take-off;

(iv) rejected take-off;

(v) engine failure during take-off, after take-off decision speed (V1);

(vi) one-engine-inoperative approach and go-around;

(vii) one-engine-inoperative (critical, simulated) landing;

(viii) other emergency and abnormal operating procedures (as necessary);

(ix) emergency evacuations; and

(x) task sharing and decision-making; and

(2) aeroplane training techniques:

(i) methods of providing appropriate commentary; and

(ii) intervention strategies developed from situations that are role-played by a TRI training course instructor, taken from but not limited to:

(A) take-off:

— tail strike awareness and avoidance,

— rejected take-off,

— actual engine failure,

— take-off configuration warning, and

— overcontrolling;

(B) approach and landing:

— normal approach,

— high flare, long float, no flare,

— immediate go-around after touchdown,

— baulked landing,

— rejected landing,

— crosswind, and

— overcontrolling; and

(C) flight management:

— task sharing and handover of controls,

— effect of ATC-delaying actions on endurance,

— alternate management and diversion, and

— traffic awareness when flying in pattern.

(b) Training in aeroplane (in flight)

This training should consist of at least one route sector where the candidate instructor:

(1) either observes a TRI(A) who conducts line flying under supervision, or

(2) conducts role play line flying under supervision for a TRI(A) who is qualified for line flying under supervision.

Upon completion of the above-mentioned training, the candidate instructor should complete a route sector under the supervision and to the satisfaction of a TRI(A) who is nominated for that purpose by the ATO.

(B) Landing training: content

(a) Training in an FSTD

The training in an FSTD should be tailored and appropriate to the aeroplane type, and the exercises should be more demanding for each candidate instructor. In addition to the LIFUS training items in the FSTD (listed under (a)(1) and (a)(2) above), the landing training should comprise a variety of exercises that cover both normal and abnormal operations including the following:

(1) consideration of threats during touch-and-go:

— operating at low altitude;

— General Aviation (GA) traffic;

— increased fuel consumption;

— bird strikes;

— decision to continue touch-and-go or make a full-stop landing; and

— aspects of performance and associated risks;

(2) incorrect rudder inputs;

(3) failure of a critical engine;

(4) approach and full-stop landing in simulated engine-out flight; and

(5) go-around in simulated engine-out flight. The applicant needs to be additionally trained in other abnormal items during the training course, if required.

(b) Training in an aeroplane

(1) Upon completion of the FSTD training, the applicant should perform role-play flying for landing training under the supervision and to the satisfaction of a TRI(A) who is nominated for that purpose by the ATO.

The training should cover at least the following elements:

— take-off,

— traffic pattern,

— touch-and-go,

— go-around, and

— full-stop landing with different flap settings.

(2) In exceptional circumstances, it may be necessary to perform simulated engine-out handling and engine-out operations in an aeroplane in addition to representative exercises from the type rating course.

(vi) UPRT

Instructors should have the specific competence to provide UPRT during the type rating training course, including the ability to demonstrate knowledge and understanding of the type-specific upset recovery procedures and of the recommendations that are developed by the original equipment manufacturers (OEMs). Therefore, during the TRI training course, the student instructor should:

(A) be able to apply the correct upset recovery techniques for the specific aeroplane type;

(B) understand the importance of applying type-specific OEM procedures for recovery manoeuvres;

(C) be able to distinguish between the applicable SOPs and OEM recommendations (if available);

(D) understand the capabilities and limitations of the FSTDs that are used for UPRT;

(E) ensure that the training remains within the FSTD training envelope to avoid the risk of negative transfer of training;

(F) understand and be able to use the IOS of the FSTD in the context of providing effective UPRT;

(G) understand and be able to use the available FSTD instructor tools to provide accurate feedback on pilot performance;

(H) understand the importance of adhering to the FSTD UPRT scenarios that are validated by the training programme developer; and

(I) understand the missing critical human factor aspects due to the limitations of the FSTD, and convey this to the student pilot(s) receiving the training.

AMC2 FCL.930.TRI TRI — training course

HELICOPTERS GENERAL

(a) The aim of the TRI(H) course is to train helicopter licence holders to the level of competence defined in FCL.920 and adequate for a TRI.

(b) The training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to the TRI(H) task, and should be designed to give adequate training to the applicant in theoretical knowledge instruction, flight instruction and FSTD instruction to instruct for a helicopter type rating for which the applicant is qualified.

(c) The TRI(H) training course should give particular emphasis to the role of the individual in relation to the importance of human factors in the man- machine environment and the role of CRM.

(d) Special attention should be given to the applicant's maturity and judgment including an understanding of adults, their behavioural attitudes and variable levels of learning ability. During the training course the applicants should be made aware of their own attitudes to the importance of flight safety. It will be important during the course of training to aim at giving the applicant the knowledge, skills and attitudes relevant to the role of the TRI.

(e) For a TRI(H) certificate the amount of flight training will vary depending on the complexity of the helicopter type.

(f) A similar number of hours should be used for the instruction and practice of pre-flight and post flight briefing for each exercise. The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently and should be related to the type of helicopter on which the applicant wishes to instruct. The content of the training program should cover training exercises applicable to the helicopter type as set out in the applicable type rating course syllabus.

(g) A TRI(H) may instruct in a TRI(H) course once he or she has conducted a minimum of four type rating instruction courses.

CONTENT

(h) The training course consists of three parts:

(1) Part 1: teaching and learning, that should comply with AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

TECHNICAL THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

(a) The technical theoretical knowledge instruction should comprise of not less than 10 hours training to include the revision of technical knowledge, the preparation of lesson plans and the development of classroom instructional skills to enable the TRI(H) to instruct the technical theoretical knowledge syllabus.

(b) If a TRI(H) certificate for MP helicopters is sought, particular attention should be given to multi-crew cooperation.

(c) The type rating theoretical syllabus should be used to develop the TRI(H)'s teaching skills in relation to the type technical course syllabus. The course instructor should deliver example lectures from the applicable type technical syllabus and the candidate instructor should prepare and deliver lectures on topics selected by the course instructor from the subject list below:

(1) helicopter structure, transmissions, rotor and equipment, normal and abnormal operation of systems:

   (i) dimensions;

   (ii) engine including aux. power unit, rotors and transmissions;

   (iii) fuel system;

   (iv) air-conditioning;

   (v) ice protection, windshield wipers and rain repellent;

   (vi) hydraulic system;

   (vii) landing gear;

   (viii) flight controls, stability augmentation and autopilot systems;

   (ix) electrical power supply;

   (x) flight instruments, communication, radar and navigation

   (xi) equipment; cockpit, cabin and cargo compartment;

   (xii) emergency equipment.

(2) limitations:

   (i) general limitations, according to the helicopter flight manual;

   (ii) minimum equipment list.

(3) performance, flight planning and monitoring:

   (i) performance;

   (ii) flight planning.

(4) load and balance and servicing:

   (i) load and balance;

   (ii) servicing on ground;

(5) emergency procedures;

(6) special requirements for helicopters with EFIS;

(7) optional equipment.

Part 3

FLIGHT INSTRUCTION SYLLABUS

(a) The amount of flight training will vary depending on the complexity of the helicopter type. At least 5 hours flight instruction for a SP helicopter and at least 10 hours for a MP ME helicopter should be counted. A similar number of hours should be used for the instruction and practice of pre-flight and post flight briefing for each exercise. The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently and related to the type of helicopter on which the applicant wishes to instruct. The content of the training programme should only cover training exercises applicable to the helicopter type as set out in Appendix 9 to AUA-FCL.

(b) If a TRI(H) certificate for MP helicopters is sought, particular attention should be given to MCC.

(c) If a TRI(H) certificate for revalidation of instrument ratings is sought, then the applicant should hold a valid instrument rating.

FLIGHT OR FSTD TRAINING

(d) The training course should be related to the type of helicopter on which the applicant wishes to instruct.

(e) For MP helicopter type ratings MCC, CRM and the appropriate use of behavioural markers should be integrated throughout.

(f) The content of the training programme should cover identified and significant exercises applicable to the helicopter type.

FSTD TRAINING

(g) The applicant for a TRI(H) certificate should be taught and made familiar with the device, its limitations, capabilities and safety features, and the instructor station.

(h) The applicant for a TRI(H) certificate should be taught and made familiar with giving instruction from the instructor station seat as well as the pilot's seats, including demonstrations of appropriate handling exercises.

(i) Training courses should be developed to give the applicant experience in training a variety of exercises, covering both normal and abnormal operations. The syllabus should be tailored appropriate to the helicopter type, using exercises considered more demanding for the student. This should include engine-out handling and engine-out operations in addition to representative exercises from the type transition course.

(j) The applicant should be required to plan, brief, train and debrief sessions using all relevant training techniques.

HELICOPTER TRAINING

(k) The applicant for a TRI(H) certificate should receive instruction in an FSTD to a satisfactory level in:

(1) left hand seat familiarisation, and in addition right hand seat familiarisation where instruction is to be given to co-pilots operating in the left hand seat, which should include at least the following as pilot flying:

(i) pre-flight preparation and use of checklists;

(ii) taxiing: ground and air;

(iii) take-off and landings;

(iv) engine failure during take-off, before DPATO;

(v) engine failure during take-off, after DPATO;

(vi) engine inoperative approach and go-around;

(vii) one engine simulated inoperative landing;

(viii) autorotation to landing or power recovery;

(ix) other emergency and abnormal operating procedures (as necessary);

(x) instrument departure, approach and go-around with one engine simulated inoperative should be covered where TRI(H) privileges include giving instrument instruction for the extension of an IR(H) to additional types.

(2) helicopter training techniques:

(i) methods for giving appropriate commentary;

(ii) instructor demonstrations of critical manoeuvres with commentary;

(iii) particularities and safety considerations associated with handling the helicopter in critical manoeuvres such as one-engine- inoperative and autorotation exercises;

(iv) where relevant, the conduct of instrument training with particular emphasis on weather restrictions, dangers of icing and limitations on the conduct of critical manoeuvres in instrument meteorological conditions;

(v) intervention strategies developed from situations role-played by a TRI(H) course instructor, taken from but not limited to:

(A) incorrect helicopter configuration;

(B) over controlling;

(C) incorrect control inputs;

(D) excessive flare close to the ground;

(E) one-engine-inoperative take-off and landings;

(F) incorrect handling of autorotation;

(G) static or dynamic rollover on take-off or landing;

(H) too high on approach with associated danger of vortex ring or settling with power;

(I) incapacitation;

(J) abnormal and emergency procedures and appropriate methods and minimum altitudes for simulating failures in the helicopter;

(K) failure of the driving engine during OEI manoeuvres.

(l) Upon successful completion of the training above, the applicant should receive sufficient training in an helicopter in-flight under the supervision of a TRI(H) to a level where the applicant is able to conduct the critical items of the type rating course to a safe standard. Of the minimum course requirements of 5 hours flight training for a SP helicopter or 10 hours for a MP helicopter, up to 3 hours of this may be conducted in an FSTD.

TRAINING WHERE NO FSTD EXISTS

(m) Where no FSTD exists for the type for which the TRI(H) certificate is sought, a similar course of training should be conducted in the applicable helicopter type. This includes all elements listed under sub paragraphs (k)(1) and (2) of this AMC, the FSTD elements being replaced with appropriate exercises in a helicopter of the applicable type, subject to any restrictions placed on the conduct of critical exercises associated with helicopter flight manual limitations and safety considerations.

FCL.935.TRI TRI — Assessment of competence

If the TRI assessment of competence is conducted in an FFS, the TRI certificate shall be restricted to flight instruction in FFSs. The restriction shall be lifted when the TRI has passed the assessment of competence on an aircraft.

FCL.940.TRI TRI — Revalidation and renewal

(a) Revalidation

(1) Aeroplanes.

For revalidation of a TRI(A) certificate, the applicant shall, within the last 12 months immediately preceding the expiry date of the certificate, fulfil two of the following 3 requirements:

(i) conduct one of the following parts of a complete type rating training course: simulator session of at least 3 hours or one air exercise of at least 1 hour comprising a minimum of 2 take-offs and landings;

(ii) complete instructor refresher training as a TRI at an ATO;

(iii) pass the assessment of competence in accordance with FCL.935.

(2) Helicopters and powered lift.

For revalidation of a TRI (H) or TRI(PL) certificate, the applicant shall, within the validity period of the TRI certificate, fulfil 2 of the following 3 requirements:

(i) complete 50 hours of flight instruction on each of the types of aircraft for which instructional privileges are held or in an FSTD representing those types, of which at least 15 hours shall be within the 12 months preceding the expiry date of the TRI certificate. In the case of TRI(PL), these hours of flight instruction shall be flown as a TRI or type rating examiner (TRE), or SFI or synthetic flight examiner (SFE). In the case of TRI(H), time flown as FI, instrument rating instructor (IRI), synthetic training instructor (STI) or as any kind of examiner shall also be relevant for this purpose;

(ii) complete instructor refresher training as a TRI at an ATO;

(iii) pass the assessment of competence in accordance with FCL.935.

(3) For at least each alternate revalidation of a TRI certificate, the holder shall have to pass the assessment of competence in accordance with FCL.935.

(4) If a person holds a TRI certificate on more than one type of aircraft within the same category, the assessment of competence taken on one of those types shall revalidate the TRI certificate for the other types held within the same category of aircraft.

(5) Specific requirements for revalidation of a TRI(H) certificate. A TRI(H) holding an FI(H) certificate on the relevant type shall have full credit towards the requirements in (a) above. In this case, the TRI(H) certificate will be valid until the expiry date of the FI(H) certificate.

(b) Renewal

To renew a TRI certificate, applicants shall, within the 12 months immediately preceding the date of the application, have passed the assessment of competence in accordance with point FCL.935 and shall have completed the following:

(1) Aeroplanes:

(i) at least 30 route sectors, including take-offs and landings on the applicable aeroplane type, of which maximum 15 sectors may be completed in a flight simulator;

(ii) completed the relevant parts of a TRI course at an approved ATO;

(iii) conducted on a complete type rating course at least 3 hours of flight instruction on the applicable type of aeroplane under the supervision of a TRI(A).

(2) Helicopters and powered lift.

(i) at least 10 hours of flight time, including take-offs and landings on the applicable aircraft type, of which maximum 5 hours may be completed in an FFS or FTD 2/3;

(ii) receive instructor refresher training as a TRI at an ATO, which should cover the relevant elements of the TRI training course; and

(iii) pass the assessment of competence in accordance with FCL.935 in each of the types of aircraft in which renewal of the instructional privileges is sought.

SECTION 5 — SPECIFIC REQUIREMENTS FOR THE CLASS RATING INSTRUCTOR — CRI

FCL.905.CRI CRI — Privileges and conditions

(a) The privileges of a CRI are to instruct for:

(1) the issue, revalidation or renewal of a class or type rating for non-complex non-high performance single-pilot aeroplanes, when the privileges sought by the applicant are to fly in single-pilot operations;

(2) a towing or aerobatic rating for the aeroplane category, provided the CRI holds the relevant rating and has demonstrated the ability to instruct for that rating to an FI qualified in accordance with FCL.905.FI(h).

(b) The privileges of a CRI are restricted to the class or type of aeroplane in which the instructor assessment of competence was taken. The privileges of the CRI shall be extended to further classes or types when the CRI has completed, within the last 12 months:

(1) 15 hours flight time as PIC on aeroplanes of the applicable class or type of aeroplane;

(2) one training flight from the right hand seat under the supervision of another CRI or FI qualified for that class or type occupying the other pilot's seat.

FCL.915.CRI CRI — Pre-requisites

An applicant for a CRI certificate shall have completed at least:

(a) for multi-engine aeroplanes:

(1) 500 hours flight time as a pilot on aeroplanes;

(2) 30 hours as PIC on the applicable class or type of aeroplane;

(b) for single-engine aeroplanes:

(1) 300 hours flight time as a pilot on aeroplanes;

(2) 30 hours as PIC on the applicable class or type of aeroplane.

FCL.930.CRI CRI — Training course

(a) The training course for the CRI shall include, at least:

(1) 25 hours of teaching and learning instruction;

(2) 10 hours of technical training, including revision of technical knowledge, the preparation of lesson plans and the development of classroom/simulator instructional skills;

(3) 5 hours of flight instruction on multi-engine aeroplanes, or 3 hours of flight instruction on single-engine aeroplanes, given by an FI(A) qualified in accordance with FCL.905.FI(h).

(b) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

AMC1 FCL.930.CRI CRI — Training course

GENERAL

(a) The aim of the CRI training course is to train aircraft licence holders to the level of competence defined in FCL.920 and adequate to a CRI.

(b) The training course should be designed to give adequate training to the applicant in theoretical knowledge instruction, flight instruction and FSTD instruction to instruct for any class or type rating for non-complex non-high performance SP aeroplanes for which the applicant is qualified.

(c) The flight training should be aimed at ensuring that the applicant is able to teach the air exercises safely and efficiently to students undergoing a course of training for the issue of a class or type rating for non-complex non-high performance SP aeroplanes. The flight training may take place on the aeroplane or an FFS.

(d) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(e) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

CONTENT

(f) The training course consists of three parts:

(1) Part 1: teaching and learning that should follow the content of AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

(a) The technical theoretical-knowledge instruction should comprise at least 10 hours of training to include the revision of technical knowledge, preparation of lesson plans, and development of classroom instructional skills to enable the CRI to teach the technical theoretical-knowledge syllabus.

(b) The type or class rating theoretical syllabus should be used to develop the CRI teaching skills in relation to the type or class technical course syllabus. The course instructor should deliver example lectures from the applicable type or class technical syllabus. The candidate instructor should prepare and deliver lectures on topics that are selected by the course instructor from the type/class rating course and the generic topics listed further below.

(c) The 10 hours of technical theoretical-knowledge instruction should develop the applicant's ability to teach a student the knowledge and understanding that are required for the relevant air exercises for either SE or ME aeroplanes, depending on the privileges sought by the candidate.

(d) If CRI privileges for both SE and ME aeroplanes are sought, the applicant should complete 10 hours of technical theoretical-knowledge instruction related to SE and ME aeroplanes each.

(e) This following syllabus of general subjects concerns training only on ME aeroplanes.

GENERAL SUBJECTS

- (a) Air legislation:
  - (1) aeroplane performance group definitions;
  - (2) methods of factoring gross performance.
- (b) Asymmetric power flight;
- (c) Principles of flight;
- (d) The problems:
  - (1) asymmetry;
  - (2) control;
  - (3) performance;
- (e) The forces and couples:
  - (1) offset thrust line;
  - (2) asymmetric blade effect;
  - (3) offset drag line;
  - (4) failed engine propeller drag;
  - (5) total drag increase;
  - (6) asymmetry of lift;
  - (7) uneven propeller slipstream effect;
  - (8) effect of yaw in level and turning flight;
  - (9) thrust and rudder side force couples;
  - (10) effect on moment arms.
- (f) Control in asymmetric power flight:

(1) use, misuse and limits of:
    (i) rudder;
    (ii) aileron;
    (iii) elevators.
(2) effect of bank or sideslip and balance;
(3) decrease of aileron and rudder effectiveness;
(4) fin stall possibility;
(5) effect of IAS and thrust relationship;
(6) effect of residual unbalanced forces;
(7) foot loads and trimming.

(g) Minimum control and safety speeds:
(1) minimum control speed (Vmc);
(2) definition;
(3) origin;
(4) factors affecting (Vmc):
    (i) thrust;
    (ii) mass and centre of gravity position;
    (iii) altitude;
    (iv) landing gear;
    (v) flaps;
    (vi) cowl flaps or cooling gills;
    (vii) turbulence or gusts;
    (viii) pilot reaction or competence;
    (ix) banking towards the operating engine;
    (x) drag;
    (xi) feathering;
    (xii) critical engine.
(5) take-off safety speed;
(6) definition or origin of V_2;
(7) other relevant v codes;

(h) Aeroplane performance: one engine inoperative:

(1) effect on excess power available;

(2) SE ceiling;

(3) cruising, range and endurance;

(4) acceleration and deceleration;

(5) zero thrust, definition and purpose;

(i) Propellers:

(1) variable pitch: general principles;

(2) feathering and un-feathering mechanism and limitations (for example minimum RPM);

(j) Specific aeroplane type;

(k) Aeroplane and engine systems:

(1) operation normal;

(2) operation abnormal;

(3) emergency procedures.

(l) Limitations: airframe:

(1) load factors;

(2) landing gear and flap limiting speeds (V_{lo} and V_{fe});

(3) rough air speed (vra);

(4) maximum speeds (vno and vne).

(m) Limitations: engine:

(1) RPM and manifold pressure;

(2) oil temperature and pressure;

(3) emergency procedures.

(n) Mass and balance:

(to be covered in conjunction with the flight manual or equivalent document (for example owner's manual or pilot's operating handbook))

(1) mass and balance documentation for aeroplane type;

(2) revision of basic principles;

(3) calculations for specific aeroplane type.

(o) Mass and performance:

(to be covered in conjunction with the flight manual or equivalent document (for example owner's manual or pilot's operating handbook))

(1) calculations for specific aeroplane type (all engines operating);
(2) take-off run;
(3) take-off distance;
(4) accelerate and stop distance;
(5) landing distance;
(6) landing run;
(7) take-off or climb out flight path;
(8) calculations for specific aeroplane type (one engine operating);
(9) climb out flight path;
(10) landing distance;
(11) landing run.

Part 3

FLIGHT INSTRUCTION SYLLABUS: NORMAL FLIGHT

(a) This part is similar to the air exercise sections of the SE FI course, including 'Introduction to instrument flying' except that the objectives, airmanship considerations and common errors are related to the operation of an ME aeroplane.

(b) The purpose of this regulation is to acquaint the applicant with the teaching aspects of the operational procedures and handling of an ME aeroplane with all engines functioning.

(c) The following items should be covered:

(1) aeroplane familiarisation;
(2) pre-flight preparation and aeroplane inspection;
(3) engine starting procedures;
(4) taxiing;
(5) pre take-off procedures;
(6) the take-off and initial climb:
  (i) into wind;
  (ii) crosswind;
  (iii) short field.
(7) climbing;
(8) straight and level flight;

(9) descending (including emergency descent procedures);

(10) turning;

(11) slow flight;

(12) stalling and recoveries;

(13) instrument flight: basic;

(14) emergency drills (not including engine failure);

(15) circuit, approach and landing:

(i) into wind;

(ii) crosswind;

(iii) short field;

(16) mislanding and going round again;

(17) actions after flight.

AIR EXERCISES

(d) The following air exercises are developments of the basic SE syllabus which are to be related to the handling of ME types to ensure that the student learns the significance and use of controls and techniques which may be strange to the student in all normal, abnormal and emergency situations, except that engine failure and flight on asymmetric power are dealt with separately in the air exercises in Part 2.

EXERCISE 1: FAMILIARISATION WITH THE AEROPLANE
(a) Long briefing objectives:
(1) introduction to the aeroplane;
(2) explanation of the cockpit layout;
(3) systems and controls;
(4) aeroplane power plant;
(5) checklists and drills;
(6) differences when occupying the instructor’s seat;

(7) emergency drills:

(i) action in event of fire in the air and on the ground;

(ii) escape drills: location of exits and use of emergency equipment (for example fire extinguishers, etc.).

(8) pre-flight preparation and aeroplane inspection:

(i) aeroplane documentation;

(ii) external checks;

(iii) internal checks;

(iv) harness, seat or rudder pedal adjustment;

(9) engine starting procedures:

(i) use of checklists;

(ii) checks before starting;

(iii) checks after starting.

(b) Air exercise:

(1) external features;

(2) cockpit layout;

(3) aeroplane systems;

(4) checklists and drills;

(5) action if fire in the air and on the ground;

(i) engine;

(ii) cabin;

(iii) electrical.

(6) systems failure (as applicable to type);

(7) escape drills (location and use of emergency equipment and exits);

(8) preparation for and action after flight:

(i) flight authorisation and aeroplane acceptance;

(ii) technical log or certificate of maintenance release;
(iii) mass and balance and performance considerations;
(iv) external checks;
(v) internal checks, adjustment of harness or rudder pedals;
(vi) starting and warming up engines;
(vii) checks after starting;
(viii) radio navigation and communication checks;
(ix) altimeter checks and setting procedures;
(x) power checks;
(xi) running down and switching off engines;
(xii) completion of authorisation sheet and aeroplane serviceability documents.

EXERCISE 2: TAXIING

(a) Long briefing objectives:

(1) pre-taxiing area precautions (greater mass: greater inertia);

(2) effect of differential power;

(3) precautions on narrow taxiways;

(4) pre take-off procedures:
(i) use of checklist;
(ii) engine power checks;
(iii) pre take-off checks;
(iv) instructor's briefing to cover the procedure to be followed should an emergency occur during take-off, for example engine failure.

(5) the take-off and initial climb:
(i) ATC considerations;
(ii) factors affecting the length of the take-off run or distance;
(iii) correct lift-off speed;

(iv) importance of safety speed;

(v) crosswind take-off, considerations and procedures;

(vi) short field take-off, considerations and procedures;

(vii) engine handling after take-off: throttle, pitch and engine synchronisation.

(6) climbing:

(i) pre-climbing checks;

(ii) engine considerations (use of throttle or pitch controls);

(iii) maximum rate of climb speed;

(iv) maximum angle of climb speed;

(v) synchronising the engines.

(b) Air exercise

(1) pre-taxing checks;

(2) starting, control of speed and stopping;

(3) control of direction and turning;

(4) turning in confined spaces;

(5) leaving the parking area;

(6) freedom of rudder movement (importance of pilot ability to use full rudder travel);

(7) instrument checks;

(8) emergencies (brake or steering failure);

(9) pre take-off procedures:

(i) use of checklist;

(ii) engine power and system checks;

(iii) pre take-off checks;

(iv) instructor’s briefing if emergencies during take-off.

(10) the take-off and initial climb:

(i) ATC considerations;

(ii) directional control and use of power;

(iii) lift-off speed;

(iv) crosswind effects and procedure;

(v) short field take-off and procedure.

(vi) procedures after take-off (at an appropriate stage of the course):

(A) landing gear retraction;

(B) flap retraction (as applicable);

(C) selection of manifold pressure and RPM;

(D) engine synchronisation;

(E) other procedures (as applicable).

(11) climbing:

(i) pre-climbing checks;

(ii) power selection for normal and maximum rate climb;

(iii) engine and RPM limitations;

(iv) effect of altitude on manifold pressure, full throttle;

(v) levelling off: power selection;

(vi) climbing with flaps down;

(vii) recovery to normal climb;

(viii) en-route climb (cruise climb);

(ix) maximum angle of climb;

(x) altimeter setting procedures;

(xi) prolonged climb and use of cowl flaps or cooling gills;

(xii) instrument appreciation.

EXERCISE 3: STRAIGHT AND LEVEL FLIGHT

(a) Long briefing objectives:

(1) selection of power: throttle or pitch controls;

(2) engine synchronisation;

(3) fuel consumption aspects;

(4) use of trimming controls: elevator and rudder (aileron as applicable);

(5) operation of flaps:

(i) effect on pitch attitude;

(ii) effect on air speed

(6) operation of landing gear:

(i) effect on pitch attitude;

(ii) effect on air speed.

(7) use of mixture controls;

(8) use of alternate air or carburettor heat controls;

(9) operation of cowl flaps or cooling gills;

(10) use of cabin ventilation and heating systems;

(11) operation and use of the other systems (as applicable to type);

(12) descending:

(i) pre-descent checks;

(ii) normal descent;

(iii) selection of throttle or pitch controls;

(iv) engine cooling considerations;

(v) emergency descent procedure.

(13) turning:

(i) medium turns;

(ii) climbing and descending turns;

(iii) steep turns (45 ° of bank or more).

(b) Air exercise:

(1) at normal cruising power:

(i) selection of cruise power;

(ii) manifold pressure or RPM;

(iii) engine synchronisation;

(iv) use of trimming controls;

(v) performance considerations: range or endurance.

(2) instrument appreciation;

(3) operation of flaps (in stages):

(i) air speed below V_{fe};

(ii) effect on pitch attitude;

(iii) effect on air speed.

(4) operation of landing gear:

(i) air speed below V_{lo} / V_{le};

(ii) effect on pitch attitude;

(iii) effect on air speed.

(5) use of mixture controls;

(6) use of alternate air or carburettor control;

(7) operation of cowl flaps or cooling gills;

(8) operation of cabin ventilation or heating systems;

(9) operation and use of other systems (as applicable to type);

(10) descending;

(i) pre-descent checks;

(ii) power selection: manifold pressure or RPM;

(iii) powered descent (cruise descent);

(iv) engine cooling considerations: use of cowl flaps or cooling gills;

(v) levelling off;

(vi) descending with flaps down;

(vii) descending with landing gear down;

(viii) altimeter setting procedure;

(ix) instrument appreciation;

(x) emergency descent:

(A) as applicable to type;

(B) limitations in turbulence V_{no}.

(11) turning:

(i) medium turns;

(ii) climbing and descending turns;

(iii) steep turns: 45 ° of ban;

(iv) instrument appreciation.

EXERCISE 4: SLOW FLIGHT

(a) Long briefing objectives:

(1) aeroplane handling characteristics during slow flight: flight at V_{s1} and V_{so} +5 knots;

(2) simulated go-around from slow flight:

(i) at V_{sse} with flaps down;

(ii) note pitch trim change.

(3) stalling:

(i) power selection;

(ii) symptoms approaching the stall;

(iii) full stall characteristics;

(iv) recovery from the full stall;

(v) recovery at the incipient stall;

(vi) stalling and recovery in the landing configuration;

(vii) recovery at the incipient stage in the landing configuration.

(4) instrument flight (basic):

  (i) straight and level;

  (ii) climbing;

  (iii) turning;

  (iv) descending.

(5) emergency drills (not including engine failure), as applicable to type;

(6) circuit approach and landing:

  (i) downwind leg:

    (A) air speed below V_{fe};

    (B) use of flaps (as applicable);

    (C) pre-landing checks;

    (D) position to turn onto base leg.

  (ii) base leg:

    (A) selection of power (throttle or pitch), flaps and trimming controls;

    (B) maintenance of correct air speed.

  (iii) final approach:

    (A) power adjustments (early reaction to undershooting);

    (B) use of additional flaps (as required);

    (C) confirmation of landing gear down;

    (D) selection 'touch down' point;

    (E) air speed reduction to Vat;

    (F) maintenance of approach path.

  (iv) landing:

    (A) greater sink rate;

    (B) longer landing distance and run;

    (C) crosswind approach and landing;

    (D) crosswind considerations;

    (E) short field approach and landing;

    (F) short field procedure: considerations.

(b) Air exercise

(1) safety checks;

(2) setting up and maintaining (flaps up);

(i) v_{s1} + 5 knots;

(ii) note aeroplane handling characteristics.

(3) setting up and maintaining (flaps down):

(i) V_{so} + 5 knots;

(ii) note aeroplane handling characteristics.

(4) simulated go-around from a slow flight with flaps:

(i) down and air speed not below V_{sse}, for example air speed at V_{sse} or V_{mbe} + 10 knots;

(ii) increase to full power and enter a climb;

(iii) note pitch change.

(5) resume normal flight.

(6) stalling;

(i) selection of RPM;

(ii) stall symptoms;

(iii) full stall characteristics;

(iv) recovery from the full stall: care in application of power;

(v) recovery at the incipient stage;

(vi) stalling and recovery in landing configuration;

(vii) stall recovery at the incipient stage in the landing configuration.

(7) instrument flight (basic):

(i) straight and level;

(ii) climbing;

(iii) turning;

(iv) descending.

(8) emergency drills (not including engine failure), as applicable to type;

(9) circuit, approach and landing:

(i) downwind leg:

(A) control of speed (below V_{fe});

(B) flaps as applicable;

(C) pre-landing checks;

(D) control of speed and height;

(E) base leg turn.

(ii) base leg:

(A) power selection;

(B) use of flap and trimming controls;

(C) maintenance of correct air speed.

(iii) final approach:

(A) use of additional flap (as required);

(B) confirmation of landing gear down;

(C) selection of touchdown point;

(D) air speed reduction to V_{at};

(E) maintaining correct approach path: use of power.

(iv) landing:

(A) control of sink rate during flare;

(B) crosswind considerations;

(C) longer landing roll;

(D) short or soft field approach and landing;

(E) considerations and precautions.

(10) Asymmetric power flight.

During this regulation, special emphasis is to be placed on the:

(i) circumstances in which actual feathering and un-feathering practice will be done, for example safe altitude; compliance with regulations about minimum altitude or height for feathering practice, weather conditions, distance from nearest available aerodrome;

(ii) procedure to use for instructor and student co-operation, for example the correct use of touch drills and the prevention of misunderstandings, especially during feathering and un- feathering practice and when zero thrust is being used for asymmetric circuits. This procedure is to include positive agreement as to which engine is being shut down or re-started or set at zero thrust and identifying each control and naming the engine it is going to affect;

(iii) consideration to be given to avoid over-working the operating engine, and the degraded performance when operating the aeroplane during asymmetric flight;

(iv) need to use the specific checklist for the aeroplane type.

EXERCISE 5: FLIGHT ON ASYMMETRIC POWER

(a) Long briefing objectives:

(1) introduction to asymmetric flight:

(2) feathering the propeller: method of operation;

(3) effects on aeroplane handling at cruising speed;

(4) introduction to effects upon aeroplane performance;

(5) note foot load to maintain a constant heading (no rudder trim);

(6) un-feathering the propeller;

(7) return to normal flight finding the zero thrust setting;

(8) comparison of foot load when feathered and with zero thrust set.

(9) effects and recognition of engine failure in level flight;

(10) forces and the effects of yaw;

(11) types of failure:

(i) sudden or gradual;

(ii) complete or partial.

(12) yaw, direction and further effects of yaw;

(13) flight instrument indications;

(14) identification of failed engine;

(15) the couples and residual out of balance forces: resultant flight attitude;

(16) use of rudder to counteract yaw;

(17) use of aileron: dangers of misuse;

(18) use of elevator to maintain level flight;

(19) use of power to maintain a safe air speed and altitude;

(20) supplementary recovery to straight and level flight: simultaneous increase of speed and reduction in power;

(21) identification of failed engine: idle leg = idle engine;

(22) use of engine instruments for identification:

- (i) fuel pressure or flow;
- (ii) RPM gauge response effect of CSU action at lower and higher air speed;
- (iii) engine temperature gauges.

(23) confirmation of identification: close the throttle of identified failed engine;

(24) effects and recognition of engine failure in turns;

(25) identification and control;

(26) side forces and effects of yaw.

(27) During turning flight:

- (i) effect of 'inside' engine failure: effect sudden and pronounced;
- (ii) effect of 'outside' engine failure: effect less sudden and pronounced;
- (iii) the possibility of confusion in identification (particularly at low power):
  - (A) correct use of rudder;
  - (B) possible need to return to lateral level flight to confirm correct identification.
- (iv) visual and flight instrument indications;
- (v) effect of varying speed and power;

(vi) speed and thrust relationship;

(vii) at normal cruising speed and cruising power: engine failure clearly recognised;

(viii) at low safe speed and climb power: engine failure most positively recognised;

(ix) high speed descent and low power: possible failure to notice asymmetry (engine failure).

(28) Minimum control speeds:

(i) ASI colour coding: red radial line.

Note.— *this exercise is concerned with the ultimate boundaries of controllability in various conditions that a student can reach in a steady asymmetric power state, approached by a gradual speed reduction. Sudden and complete failure should not be given at the Flight Manual* V_{mbe}. *The purpose of the exercise is to continue the gradual introduction of a student to control an aeroplane in asymmetric power flight during extreme or critical situations. It is not a demonstration of* V_{mbe}.

(ii) Techniques for assessing critical speeds with wings level and recovery: dangers involved when minimum control speed and the stalling speed are very close: use of V_{sse};

(iii) Establish a minimum control speed for each asymmetrically disposed engine to establish critical engine (if applicable);

(iv) Effects on minimum control speeds of:

(A) bank;

(B) zero thrust setting;

(C) take-off configuration:

(a) landing gear down and take-off flap set;

(b) landing gear up and take-off flap set.

Note.— *it is important to appreciate that the use of 5 ° of bank towards the operating engine produces a lower* V_{mca} *and also a better performance than that obtained with the wings held level. It is now normal for manufacturers to use 5 ° of bank in this manner when determining the* V_{mca} *for the specific type. Thus, the* V_{mca} *quoted in the aeroplane manual will have been obtained using the technique.*

(29) Feathering and un-feathering:

(i) minimum heights for practising feathering or un-feathering drills;

(ii) engine handling: precautions (overheating, icing conditions, priming, warm-up, method of simulating engine failure: reference to aircraft engine manual and service instructions and bulletins).

(30) Engine failure procedure:

(i) once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.

(ii) flight phase:

(A) in cruising flight;

(B) critical phase such as immediately after take-off or during the approach to landing or during a go-around.

(31) Aircraft type:

Variations will inevitably occur in the order of certain drills and checks due to differences between aeroplane types and perhaps between models of the same type, and the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) is to be consulted to establish the exact order of these procedures.

For example, one flight manual or equivalent document (for example owner's manual or pilot's operating handbook) may call for the raising of flaps and landing gear before feathering, whilst another may recommend feathering as a first step. The reason for this latter procedure could be due to the fact that some engines cannot be feathered if the RPM drops below a certain figure.

Again, in some aeroplanes, the raising of the landing gear may create more drag during retraction due to the transient position of the landing gear doors and as a result of this retraction would best be left until feathering has been accomplished and propeller drag reduced.

Therefore, the order in which the drills and checks are shown in this syllabus under 'immediate actions' and 'subsequent actions' are to be used as a general guide only and the exact order of precedence is determined by reference to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) for the specific aeroplane type being used on the course.

(32) In-flight engine failure in cruise or other flight phase not including take-off or landing:

(i) immediate actions:

(A) recognition of asymmetric condition and control of the aircraft;

(B) identification and confirmation of failed engine:

(a) idle leg = idle engine;

(b) closing of throttle for confirmation.

(C) cause and fire check:

(a) typical reasons for failure;

(b) methods of rectification.

(D) feathering decision and procedure:

(a) reduction of other drag;

(b) need for speed but not haste;

(c) use of rudder trim.

(ii) subsequent actions;

(A) live engine:

(a) temperature, pressures and power;

(b) remaining services;

(c) electrical load: assess and reduce as necessary;

(d) effect on power source for air driven instruments;

(e) landing gear;

(f) flaps and other services.

(B) re-plan flight:

(a) ATC and weather;

(b) terrain clearance, SE cruise speed;

(c) decision to divert or continue.

(C) fuel management: best use of remaining fuel;

(D) dangers of re-starting damaged engine;

(E) action if unable to maintain altitude: effect of altitude on power available;

(F) effects on performance;

(G) effects on power available and power required;

(H) effects on various airframe configuration and propeller settings;

(I) use of flight manual or equivalent document (for example owner's manual or pilot's operating handbook):

(a) cruising;

(b) climbing: ASI colour coding (blue line);

(c) descending;

(d) turning.

(J) ‘live’ engine limitations and handling;

(K) take-off and approach: control and performance.

(33) Significant factors:

(i) significance of take-off safety speed:

(A) effect of landing gear, flap, feathering, take-off, trim setting, systems for operating landing gear and flaps;

(B) effect on mass, altitude and temperature (performance).

(ii) significance of best SE climb speed (V_{yse}):

(A) acceleration to best engine climb speed and establishing a positive climb;

(B) relationship of SE climb speed to normal climb speed;

(C) action if unable to climb.

(iii) significance of asymmetric committal height and speed: action if baulked below asymmetric committal height.

(34) Engine failure during take-off:

(i) below V_{mca} or unstick speed:

(A) accelerate or stop distance considerations;

(B) prior use of flight manual data if available.

(ii) above V_{mca} or unstick speed and below safety speed;

(iii) immediate re-landing or use of remaining power to achieve forced landing;

(iv) considerations:

(A) degree of engine failure;

(B) speed at the time;

(C) mass, altitude and temperature (performance);

(D) configuration;

(E) length of runway remaining;

(F) position of any obstacles ahead.

(35) Engine failure after take-off:

(i) simulated at a safe height and at or above take-off safety speed;

(ii) considerations:

(A) need to maintain control;

(B) use of bank towards operating engine;

(C) use of available power achieving best SE climb speed;

(D) mass, altitude, temperature (performance);

(E) effect of prevailing conditions and circumstances.

(36) Immediate actions: maintenance of control, including air speed and use of power:

(i) recognition of asymmetric condition;

(ii) identification and confirmation of failed engine;

(iii) feathering and removal of drag (procedure for type);

(iv) establishing best SE climb speed.

(37) Subsequent actions: whilst carrying out an asymmetric power climb to the downwind position at SE best rate of climb speed:

(i) cause and fire check;

(ii) live engine, handling considerations;

(iii) remaining services;

(iv) ATC liaison;

(v) fuel management.

***Note.** —these procedures are applicable to aeroplane type and flight situation.*

(38) Significance of asymmetric committal height:

(i) Asymmetric committal height is the minimum height needed to establish a positive climb whilst maintaining adequate speed for control and removal of drag during an approach to a landing.

Because of the significantly reduced performance of many CS/FAR 23 aeroplanes when operating on one engine, consideration is to be given to a minimum height from which it would be safely possible to attempt a go-around procedure, during an approach when the flight path will have to be changed from a descent to a climb with the aeroplane in a high drag configuration.

Due to the height loss which will occur during the time that the operating engine is brought up to full power, landing gear and flap retracted, and the aeroplane established in a climb at V_{yse} a minimum height (often referred to as 'Asymmetric committal height') is to be selected, below which the pilot should not attempt to take the aeroplane round again for another circuit. This height will be compatible with the aeroplane type, all up weight, altitude of the aerodrome being used, air temperature, wind, the height of obstructions along the climb out path, and pilot competence.

(ii) circuit approach and landing on asymmetric power:

(A) definition and use of asymmetric committal height;

(B) use of standard pattern and normal procedures;

(C) action if unable to maintain circuit height;

(D) speed and power settings required;

(E) decision to land or go-around at asymmetric committal height: factors to be considered.

(iii) undershooting importance of maintaining correct air speed (not below V_{yse}).

(39)Speed and heading control:

(i) height, speed and power relationship: need for minimum possible drag;

(ii) establishing positive climb at best SE rate of climb speed:

(A) effect of availability of systems, power for flap and landing gear;

(B) operation and rapid clean up.

Note 1. *—The air speed at which the decision is made to commit the aeroplane to a landing or to go-around should normally be the best SE rate of climb speed and in any case not less than the safety speed.*

Note *2.— On no account should instrument approach 'decision height' and its associated procedures be confused with the selection of minimum height for initiating a go-around in asymmetric power flight.*

(40) Engine failure during an all engines approach or missed approach:

(i) use of asymmetric committal height and speed considerations;

(ii) speed and heading control;

(iii) decision to attempt a landing, go-around or force land as circumstances dictate.

Note.*—at least one demonstration and practice of engine failure in this situation should be performed during the course.*

(41) Instrument flying on asymmetric power:

(i) considerations relating to aircraft performance during:

(A) straight and level flight;

(B) climbing and descending;

(C) standard rate turns;

(D) level, climbing and descending turns including turns onto pre-selected headings.

(ii) availability of vacuum operated instruments;

(iii) availability of electrical power source.

(b) Air exercise

This section covers the operation of a SP ME aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Checklists should be used as applicable.

(1) introduction to asymmetric flight:

(2) close the throttle of one engine;

(3) feather its propeller;

(4) effects on aeroplane handling at cruising speed;

(5) effects on aeroplane performance for example cruising speed and rate of climb;

(6) note foot load to maintain a constant heading;

(7) un-feather the propeller;

(8) return to normal flight finding the zero thrust throttle setting;

(9) comparison of foot load when feathered and with zero thrust set.

(10) effects and recognition of engine failure in level flight with the aeroplane straight and level at cruise speed:

(i) slowly close the throttle of one engine;

(ii) note yaw, roll and spiral descent.

(11) return to normal flight:

(i) close throttle of other engine;

(ii) note same effects in opposite direction.

(12) methods of control and identification of failed engine close one throttle and maintain heading and level flight by use of:

(i) rudder to control yaw;

(ii) aileron to hold wings level;

(iii) elevators to maintain level flight;

(iv) power (as required) to maintain air speed and altitude.

(13) alternative or supplementary method of control:

(i) simultaneously;

(ii) lower aeroplane nose to increase air speed;

(iii) reduce power;

(iv) loss of altitude: inevitable.

(14) identification of failed engine: idle foot = idle engine;

(15) use of instruments for identification:

(i) fuel pressure or fuel flow;

(ii) RPM gauge or CSU action may mask identification;

(iii) engine temperature gauges.

(16) confirmation of identification: close the throttle of the identified failed engine;

(17) effects and recognition of engine failure in turns and effects of 'inside' engine failure:

(i) more pronounced yaw;

(ii) more pronounced roll;

(iii) more pronounced pitch down.

(18) effects of 'outside' engine failure:

(i) less pronounced yaw;

(ii) less pronounced roll;

(iii) less pronounced pitch down.

(19) possibility of confusion in identification:

use of correct rudder application;

return to lateral level flight if necessary.

(20) flight instrument indications;

(21) effect of varying speed and power;

(22) failure of one engine at cruise speed and power: engine failure clearly recognised;

(23) failure of one engine at low speed and high power (not below V_{sse}): engine failure most positively recognised;

(24) failure of one engine at higher speeds and low power: possible failure to recognise engine failure;

(25) minimum control speeds;

(26) establish the V_{yse}:

(i) select maximum permitted manifold pressure and RPM;

(ii) close the throttle on one engine;

(iii) raise the aeroplane nose and reduce the air speed;

(iv) note the air speed when maximum rudder deflection is being applied and when directional control can no longer be maintained;

(v) lower the aeroplane nose and reduce power until full directional control is regained;

(vi) the lowest air speed achieved before the loss of directional control will be the V_{mc} for the flight condition;

(vii) repeat the procedure closing the throttle of the other engine; the higher of these two air speeds will identify the most critical engine to fail.

Note.— *warning - in the above situations the recovery is to be initiated immediately before directional control is lost with full rudder applied, or when a safe margin above the stall remains, for example when the stall warning device operates, for the particular aeroplane configuration and flight conditions. On no account should the aeroplane be allowed to decelerate to a lower air speed.*

(27) establish the effect of using 5 ° of bank at V_{mc}:

(i) close the throttle of one engine;

(ii) increase to full power on the operating engine;

(iii) using 5 ° of bank towards the operating engine reduce speed to the V_{mc};

(iv) note lower V_{mc} when 5 ° of bank is used.

(28) 'in-flight' engine failure procedure;

(29) in cruise and other flight circumstances not including take-off and landing.

(30) identification and confirmation of failed engine;

(i) failure cause and fire check;

(ii) feathering decision and implementation;

(iii) reduction of any other drag, for example flaps, cowl flaps etc.;

(iv) retrim and maintain altitude.

(31) Subsequent actions:

(i) live engine:

(A) oil temperature, pressure, fuel flow and power;

(B) remaining services;

(C) electrical load: assess and reduce as necessary;

(D) effect on power source for air driven instruments;

(E) landing gear;

(F) flaps and other services.

(ii) re-plan flight:

(A) ATC and weather;

(B) terrain clearance;

(C) SE cruise speed;

(D) decision to divert or continue;

(iii) fuel management: best use of fuel;

(iv) dangers of re-starting damaged engine;

(v) action if unable to maintain altitude:

(A) adopt V_{yse};

(B) effect of altitude on power available.

(vi) effects on performance;

(vii) effects on power available and power required;

(viii) effects on various airframe configurations and propeller settings;

(ix) use of flight manual or equivalent document (for example owner's manual or pilot's operating handbook):

(A) cruising;

(B) climbing: ASI colour coding (blue line);

(C) descending;

(D) turning.

(x) 'live' engine limitations and handling;

(xi) take-off and approach: control and handling;

Note.—*to be done at a safe height away from the circuit;*

(xii) take-off case with landing gear down and take-off flap set (if applicable);

(xiii) significance of take-off at or above safety speed (at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb);

(xiv) significance of flight below safety speed (below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb);

(xv) significance of best SE climb speed (the ability to achieve the best rate of climb on one engine with minimum delay).

(32) Significance of asymmetric committal height:

(i) the ability to maintain or accelerate to the best SE rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away;

(ii) below this height, the aeroplane is committed to continue the approach to a landing.

(33) Engine failure during take-off run and below safety speed briefing only;

(34) Engine failure after take-off;

Note.—*to be initiated at a safe height and at not less than take-off safety speed with due regard to the problems of a prolonged SE climb in the prevailing conditions.*

(i) immediate actions:

(A) control of direction and use of bank;

(B) control of air speed and use of power;

(C) recognition of asymmetric condition;

(D) identification and confirmation of failed engine feathering and reduction of drag (procedure for type);

(E) re-trim;

(ii) subsequent actions: whilst carrying out an asymmetric power climb to the downwind position at SE best rate of climb speed:

(A) cause and fire check;

(B) live engine, handling considerations;

(C) drills and procedures applicable to aeroplane type and flight situation;

(D) ATC liaison;

(E) fuel management.

(35) Asymmetric circuit, approach and landing;

(i) downwind and base legs:

(A) use of standard pattern;

(B) normal procedures;

(C) landing gear and flap lowering considerations;

(D) position for base leg;

(E) live engine handling;

(F) air speed and power settings;

(G) maintenance of height.

(ii) final approach:

(A) asymmetric committal height drill;

(B) control of air speed and descent rate;

(C) flap considerations.

(iii) going round again on asymmetric power (missed approach):

(A) not below asymmetric committal height;

(B) speed and heading control;

(C) reduction of drag, landing gear retraction;

(D) maintaining V_{yse};

(E) establish positive rate of climb.

(36) Engine failure during all engines approach or missed approach:

Note.——to be started at not less than asymmetric committal height and speed and not more than part flap set:

(i) speed and heading control;

(ii) reduction of drag flap;

(iii) decision to attempt landing or go-around;

(iv) control of descent rate if approach is continued;

(v) if go-around is initiated, maintain V_{yse}, flaps and landing gear retracted and establish positive rate of climb.

Note. —— at least one demonstration and practice of engine failure in this situation should be performed during the course.

(37) Instrument flying on asymmetric power;

(38) Flight instrument checks and services available:

(i) straight and level flight;

(ii) climbing and descending;

(iii) standard rate turns;

(iv) level, climbing and descending turns including turns onto pre- selected headings.

EXERCISE 5: UPRT

Instructors should have the specific competence to provide UPRT during the type rating course, including the ability to demonstrate knowledge and understanding of the type-specific upset recovery procedures and of the recommendations that are developed by the OEMs. Therefore, during the CRI training course, the student instructor should:

(a) be able to apply the correct upset recovery techniques for the specific aeroplane type;

(b) understand the importance of applying type-specific OEM procedures for recovery manoeuvres;

(c) be able to distinguish between the applicable SOPs and OEM recommendations (if available);

(d) understand the capabilities and limitations of the FSTDs that are used for UPRT;

(e) ensure that the training remains within the FSTD training envelope to avoid the risk of negative transfer of training;

(f) understand and be able to use the IOS of the FSTD in the context of providing effective UPRT;

(g) understand and be able to use the available FSTD instructor tools to provide accurate feedback on pilot performance;

(h) understand the importance of adhering to the FSTD UPRT scenarios that are validated by the training programme developer; and

(i) understand the missing critical human factor aspects due to the limitations of the FSTD, and convey this to the student pilot(s) receiving the training.

FCL.940.CRI CRI — Revalidation and renewal

(a) For revalidation of a CRI certificate the applicant shall, within the 12 months preceding the expiry date of the CRI certificate, fulfil at least two of the following three requirements:

(1) conduct at least 10 hours of flight instruction in the role of a CRI. If the applicant has CRI privileges on both single-engine and multi-engine aeroplanes, the 10 hours of flight instruction shall be equally divided between single-engine and multi-engine aeroplanes;

(2) complete a refresher training as a CRI at an ATO;

(3) pass the assessment of competence in accordance with FCL.935 for multi-engine or single-engine aeroplanes, as relevant.

(b) For at least each alternate revalidation of a CRI certificate, the holder shall have to comply with the requirement of (a)(3).

(c) Renewal.

If the CRI certificate has lapsed, the applicant shall, within a period of 12 months before renewal:

(1) receive refresher training as a CRI at an ATO;

(2) have completed the assessment of competence established in FCL.935.

AMC1 FCL.940.CRI CRI — Revalidation and renewal

REFRESHER TRAINING

(a) Paragraph (c)(1) of FCL.940.CRI determine that an applicant for renewal of a CRI certificate shall complete refresher training as a CRI at an ATO. Paragraph (a)(2) also establishes that an applicant for revalidation of the CRI certificate that has not completed a minimum amount of instruction hours (established in paragraph (a)(1)) during the validity period of the certificate shall undertake refresher training at an ATO for the revalidation of the certificate. The amount of refresher training needed should be determined on a case by case basis by the ATO, taking into account the following factors:

(1) the experience of the applicant;

(2) whether the training is for revalidation or renewal;

(3) the amount of time lapsed since the last time the applicant has conducted training, in the case of revalidation, or since the certificate has lapsed, in the case of renewal. The amount of training needed to reach the desired level of competence should increase with the time lapsed.

(b) Once the ATO has determined the needs of the applicant, it should develop an individual training programme that should be based on the CRI training course and focus on the aspects where the applicant has shown the greatest needs.

(c) After successful completion of the refresher training, as applicable, the ATO or competent authority, should, in accordance with point (b), issue the applicant with a training completion certificate or another document specified by the competent authority, which describes the evaluation of the factors listed in point (a)(1) (the experience of the applicant) and the training received, as well as a statement that the training was successfully completed. The training completion certificate should be presented to the examiner prior to the assessment of competence.

Upon successful completion of the refresher training, as applicable, the ATO should submit the training completion certificate, or the other document specified by the competent authority, to the competent authority.

SECTION 6 — SPECIFIC REQUIREMENTS FOR THE INSTRUMENT RATING INSTRUCTOR — IRI

FCL.905.IRI IRI — Privileges and conditions

(a) The privileges of an IRI are to instruct for the issue, revalidation and renewal of an IR on the appropriate aircraft category.

(b) Specific requirements for the MPL course. To instruct for the basic phase of training on an MPL course, the IRI(A) shall:

(1) hold an IR for multi-engine aeroplanes; and

(2) have completed at least 1 500 hours of flight time in multi-crew operations.

(3) In the case of IRI already qualified to instruct on ATP(A) or CPL(A)/IR integrated courses, the requirement of (b)(2) may be replaced by the completion of the course provided for in paragraph FCL.905.FI(i)(3) .

FCL.915.IRI IRI — Pre-requisites

An applicant for an IRI certificate shall:

(a) for an IRI(A):

(1) have completed at least 800 hours of flight time under IFR, of which at least 400 hours shall be in aeroplanes; and

(2) in the case of applicants of an IRI(A) for multi-engine aeroplanes, meet the requirements of paragraph FCL.915.CRI(a), FCL930.CRI and FCL.935;

(b) for an IRI(H):

(1) have completed at least 500 hours of flight time under IFR, of which at least 250 hours shall be instrument flight time in helicopters; and

(2) in the case of applicants for an IR(H) for multi-pilot helicopters, meet the requirements of FCL.905.FI(f)(3)(ii).

FCL.930.IRI IRI — Training course

(a) The training course for the IRI shall include, at least:

(1) 25 hours of teaching and learning instruction;

(2) 10 hours of technical training, including revision of instrument theoretical knowledge, the preparation of lesson plans and the development of classroom instructional skills;

(3) (i) for the IRI(A), at least 10 hours of flight instruction on an aeroplane, FFS, FTD 2/3 or FPNT II. In the case of applicants holding an FI(A) certificate, these hours are reduced to 5;

(ii) for the IRI(H), at least 10 hours of flight instruction on a helicopter, FFS, FTD 2/3 or FNPT II/III;

(b) Flight instruction shall be given by an FI qualified in accordance with FCL.905.FI(g).

(c) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

AMC1 FCL.930.IRI IRI— Training course

GENERAL

(a) The aim of the IRI training course is to train aircraft licence holders to the level of competence defined in FCL.920, and adequate for an IRI.

(b) The IRI training course should give particular stress to the role of the individual in relation to the importance of human factors in the man- machine environment.

(c) Special attention should be paid to the applicant's levels of maturity and judgement including an understanding of adults, their behavioural attitudes and variable levels of education.

(d) With the exception of the section on 'teaching and learning', all the subject detail contained in the theoretical and flight training syllabus is complementary to the instrument rating pilot course syllabus which should already be known by the applicant. Therefore, the objective of the course is to:

(1) refresh and bring up to date the technical knowledge of the student instructor;

(2) train pilots in accordance with the requirements of the modular instrument flying training course;

(3) enable the applicant to develop the necessary instructional techniques required for teaching of instrument flying, radio navigation and instrument procedures to the level required for the issue of an instrument rating;

(4) ensure that the student instrument rating instructor's flying is of a sufficiently high standard.

(e) In part 3 some of the air exercises of the flight instruction syllabus of this AMC may be combined in the same flight.

(f) During the training course the applicants should be made aware of their own attitudes to the important aspects of flight safety. Improving safety awareness should be a fundamental objective throughout the training course. It will be of major importance for the training course to aim at giving applicants the knowledge, skills and attitudes relevant to an instructor's task. To achieve this, the course curriculum, in terms of objectives, should comprise at least the following areas.

(g) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(h) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

CONTENT

(i) The training course consists of three parts:

(1) Part 1: teaching and learning that should follow the content of AMC1 FCL.920.

(2) Part 2: instrument technical theoretical knowledge instruction (technical training).

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

(a) The instrument theoretical knowledge instruction should comprise not less than 10 hours training to include the revision of instrument theoretical knowledge, the preparation of lesson plans and the development of classroom instructional skills to enable the IRI to instruct the instrument theoretical knowledge syllabus.

(b) All the subject detail contained in the instrument theoretical knowledge instruction syllabus and flight instruction syllabus is complementary to the instrument rating pilot course syllabus which should already be known by the applicant. Therefore, the objective of the course is to:

(1) refresh and bring up to date the technical knowledge of the student instructor;

(2) train pilots in accordance with the requirements of the modular instrument flying training course;

(3) enable the applicant to develop the necessary instructional techniques required for teaching of instrument flying, radio navigation and instrument procedures to the level required for the issue of an instrument rating; and

(4) ensure that the student instrument rating instructor's flying is of a sufficiently high standard.

(c) The theoretical subjects covered below should be used to develop the instructor's teaching skills. The items selected should relate to the student's background and should be applied to training for an IR.

GENERAL SUBJECTS

(d) Physiological and psychological factors:

(1) the senses;

(2) spatial disorientation;

(3) sensory illusions;

(4) stress.

(e) Flight instruments:

(1) air speed indicator;

(2) altimeter;

(3) vertical speed indicator;

(4) attitude indicator;

(5) heading indicator;

(6) turn and slip indicator;

(7) magnetic compass;

(8) in relation to the above instruments the following items should be covered:

(i) principles of operation;

(ii) errors and in-flight serviceability checks;

(iii) system failures.

(f) Radio navigation aids:

(1) basic radio principles;

(2) use of VHF RTF channels;

(3) the Morse code;

(4) basic principles of radio aids;

(5) use of VOR;

(6) ground and aeroplane equipment;

(7) use of NDB/ADF;

(8) ground and aeroplane equipment;

(9) use of VHF/DF;

(10) radio detection and ranging (radar);

(11) ground equipment;

(12) primary radar;

(13) secondary surveillance radar;

(14) aeroplane equipment;

(15) transponders;

(16) precision approach system;

(17) other navigational systems (as applicable) in current operational use;

(18) ground and aeroplane equipment;

(19) use of DME;

(20) ground and aeroplane equipment;

(21) marker beacons;

(22) ground and aeroplane equipment;

(23) pre-flight serviceability checks;

(24) range, accuracy and limitations of equipment.

(g) Flight planning considerations;

(h) Aeronautical information publications:

(1) the training course should cover the items listed below, but the applicant's aptitude and previous aviation experience should be taken into account when determining the amount of instructional time allotted. Although a number of items contained under this heading are complementary to those contained in the PPL/CPL/IR syllabi, the instructor should ensure that they have been covered during the applicant's training and due allowance should be made for the time needed to revise these items as necessary.

(2) AIP

(3) NOTAM class 1 and 2;

(4) AIC;

(5) information of an operational nature;

(6) the rules of the air and ATS;

(7) visual flight rules and instrument flight rules;

(8) flight plans and ATS messages;

(9) use of radar in ATS;

(10) radio failure;

(11) classification of airspace;

(12) airspace restrictions and hazards;

(13) holding and approach to land procedures;

(14) precision approaches and non-precision approaches;

(15) radar approach procedures;

(16) missed approach procedures;

(17) visual manoeuvring after an instrument approach;

(18) conflict hazards in uncontrolled airspace;

(19) communications;

(20) types of services;

(21) extraction of AIP data relating to radio aids;

(22) charts available;

(23) en-route;

(24) departure and arrival;

(25) instrument approach and landing;

(26) amendments, corrections and revision service.

(i) flight planning general:

(1) the objectives of flight planning;

(2) factors affecting aeroplane and engine performance;

(3) selection of alternate(s);

(4) obtaining meteorological information;

(5) services available;

(6) meteorology briefing;

(7) telephone or electronic data processing;

(8) actual weather reports (TAFs, METARs and SIGMET messages);

(9) the route forecast;

(10) the operational significance of the meteorological information obtained (including icing, turbulence and visibility);

(11) altimeter considerations;

(12) definitions of:

(i) transition altitude;

(ii) transition level;

(iii) flight level;

(iv) QNH;

(v) regional QNH;

(vi) standard pressure setting;

(vii) QFE.

(13) altimeter setting procedures;

(14) pre-flight altimeter checks;

(15) take-off and climb;

(16) en-route;

(17) approach and landing;

(18) missed approach;

(19) terrain clearance;

(20) selection of a minimum safe en-route altitude;

(21) IFR;

(22) preparation of charts;

(23) choice of routes and flight levels;

(24) compilation of flight plan or log sheet;

(25) log sheet entries;

(26) navigation ground aids to be used;

(27) frequencies and identification;

(28) radials and bearings;

(29) tracks and fixes;

(30) safety altitude(s);

(31) fuel calculations;

(32) ATC frequencies (VHF);

(33) tower, approach, en-route, radar, FIS, ATIS, and weather reports;

(34) minimum sector altitudes at destination and alternate aerodromes;

(35) determination of minimum safe descent heights or altitudes (decision heights) at destination and alternate aerodromes.

(j) The privileges of the instrument rating:

(1) outside controlled airspace;

(2) within controlled airspace;

(3) period of validity and renewal procedures.

Part 3

FLIGHT INSTRUCTION SYLLABUS

(a) An approved IRI course should comprise of at least 10 hours of flight instruction, of which a maximum of 8 hours may be conducted in an FSTD. A similar number of hours should be used for the instruction and practice of pre-flight and post-flight briefing for each exercise.

(b) The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently.

A. AEROPLANES

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: INTRUMENT FLYING (Basic) (for revision, as deemed necessary by the instructor)
(a) Long briefing objectives:
(1) flight instruments;
(2) physiological considerations;
(3) instrument appreciation: (i) attitude instrument flight; (ii) pitch indications; (iii) bank indications; (iv) different instrument presentations; (v) introduction to the use of the attitude indicator; (vi) pitch attitude; (vii) bank attitude; (viii) maintenance of heading and balanced flight; (ix) instrument limitations (inclusive system failures).
(4) attitude, power and performance: (i) attitude instrument flight; (ii) control instruments; (iii) performance instruments; (iv) effect of changing power and configuration;

(v) cross-checking the instrument indications;

(vi) instrument interpretation;

(vii) direct and indirect indications (performance instruments);

(viii) instrument lag;

(ix) selective radial scan.

(5) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

(b) Air exercise:

(1) instrument flying (basic);

(i) physiological sensations;

(ii) instrument appreciation;

(iii) attitude instrument flight;

(iv) pitch attitude;

(v) bank attitude;

(vi) maintenance of heading and balanced flight;

(vii) attitude instrument flight;

(viii) effect of changing power and configuration;

(ix) cross-checking the instruments;

(x) selective radial scan;

(2) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

EXERCISE 2: INTRUMENT FLYING (ADVANCED)
(a) Long briefing objectives:
(1) full panel;
(2) 30 ° level turns;
(3) unusual attitudes: recoveries;
(4) transference to instruments after take-off;
(5) limited panel;
(6) basic flight manoeuvres;
(7) unusual attitudes: recoveries.
(b) Air exercise:
(1) full panel;
(2) 30 ° level turns;
(3) unusual attitudes: recoveries;
(4) limited panel
(5) repeat of the above exercises.

EXERCISE 3: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VOR
(a) Long briefing objectives:
(1) availability of VOR stations en-route;
(2) station frequencies and identification;

(3) signal reception range;

(4) effect of altitude;

(5) VOR radials;

(6) use of OBS;

(7) to or from indicator;

(8) orientation;

(9) selecting radials;

(10) intercepting a pre-selected radial;

(11) assessment of distance to interception;

(12) effects of wind;

(13) maintaining a radial;

(14) tracking to and from a VOR station;

(15) procedure turns;

(16) station passage;

(17) use of two stations for obtaining a fix;

(18) pre-selecting fixes along a track;

(19) assessment of ground speed and timing;

(20) holding procedures;

(21) various entries;

(22) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) station selection and identification;

(2) orientation;

(3) intercepting a pre-selected radial;

(4) R/T procedures and ATC liaison;

(5) maintaining a radial inbound;

(6) recognition of station passage;

(7) maintaining a radial outbound;

(8) procedure turn;

(9) use of two stations to obtain a fix along the track;

(10) assessment of ground speed and timing;

(11) holding procedures and entries;

(12) holding at a pre-selected fix;

(13) holding at a VOR station.

EXERCISE 4: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF NDB

(a) Long briefing objectives:

(1) availability of an NDB facilities en-route;

(2) location, frequencies, tuning (as applicable) and identification codes;

(3) signal reception range;

(4) static interference;

(5) night effect;

(6) station interference;

(7) mountain effect;

(8) coastal refraction;

(9) orientation in relation to an NDB;

(10) homing;

(11) intercepting a pre-selected magnetic bearing and tracking inbound;

(12) station passage;

(13) tracking outbound;

(14) time and distance checks;

(15) use of two NDBs to obtain a fix or alternatively use of one NDB and one other navaid;

(16) holding procedures and various approved entries;

(17) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) selecting, tuning and identifying an NDB;

(2) ADF orientation;

(3) communication (R/T procedures and ATC liaison);

(4) homing;

(5) tracking inbound;

(6) station passage;

(7) tracking outbound;

(8) time and distance checks;

(9) intercepting a pre-selected magnetic bearing;

(10) determining the aeroplane's position from two NDBs or alternatively from one NDB and one other navaid;

(11) ADF holding procedures and various approved entries.

EXERCISE 5: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VHF/DF

(a) Long briefing objectives:

(1) availability of VHF/DF facilities en-route;

(2) location, frequencies, station call signs and hours of operation;

(3) signal and reception range;

(4) effect of altitude;

(5) communication (R/T procedures and ATC liaison);

(6) obtaining and using types of bearings, for example QTE, QDM and QDR;

(7) homing to a station;

(8) effect of wind;

(9) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(10) assessment of groundspeed and timing.

(b) Air exercise:

(1) establishing contact with a VHF/DF station;

(2) R/T Procedures and ATC liaison;

(3) obtaining and using a QDR and QTE;

(4) homing to a station;

(5) effect of wind;

(6) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(7) assessment of groundspeed and timing.

EXERCISE 6: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF DME

(a) Long briefing objectives:

(1) availability of DME facilities;

(2) location, frequencies and identification codes;

(3) signal reception range;

(4) slant range;

(5) use of DME to obtain distance, groundspeed and timing;

(6) use of DME to obtain a fix.

(b) Air exercise:

(1) station selection and identification;

(2) use of equipment functions;

(3) distance;

(4) groundspeed;

(5) timing;

(6) DME arc approach;

(7) DME holding.

EXERCISE 7: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF TRANSPONDERS (SSR)

(a) Long briefing objectives:

(1) operation of transponders;

(2) code selection procedure;

(3) emergency codes;

(4) precautions when using airborne equipment.

(b) Air exercise:

(1) operation of transponders;

(2) types of transponders;

(3) code selection procedure;

(4) emergency codes;

(5) precautions when selecting the required code.

EXERCISE 8: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF EN-ROUTE RADAR

(a) Long briefing objectives:

(1) availability of radar services;

(2) location, station frequencies, call signs and hours of operation;

(3) AIP and NOTAMs;

(4) provision of service;

(5) communication (R/T, procedures and ATC liaison);

(6) airspace radar advisory service;

(7) emergency service;

(8) aircraft separation standards.

(b) Air exercise:

(1) communication (R/T procedures and ATC liaison);

(2) establishing the service required and position reporting;

(3) method of reporting conflicting traffic;

(4) terrain clearance.

EXERCISE 9: PRE-FLIGHT AND AERODROME DEPARTURE AND ARRIVAL PROCEDURES

(a) Long briefing objectives:

(1) determining the serviceability of the aeroplane radio;

(2) navigation equipment;

(3) obtaining the departure clearance;

(4) setting up radio navaids before take-off for example VOR frequencies, required radials, etc.;

(5) aerodrome departure procedures, frequency changes;

(6) altitude and position reporting as required;

(7) SID procedures;

(8) obstacle clearance considerations.

(b) Air exercise:

(1) radio equipment serviceability checks;

(2) departure clearance;

(3) navaid selection;

(4) frequencies, radials, etc.;

(5) aerodrome departure checks, frequency changes, altitude and position reports;

(6) SID procedures.

EXERCISE 10: INSTRUMENT APPORACH: ILS APPROACHES TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURE

(a) Long briefing objectives:

(1) precision approach charts;

(2) approach to the initial approach fix and minimum sector altitude;

(3) navaid requirements, for example radar, ADF, etc.;

(4) communication (ATC liaison and R/T phraseology);

(5) holding procedure;

(6) the final approach track;

(7) forming a mental picture of the approach;

(8) completion of aerodrome approach checks;

(9) initial approach procedure;

(10) selection of the ILS frequency and identification;

(11) obstacle clearance altitude or height;

(12) operating minima;

(13) achieving the horizontal and vertical patterns;

(14) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(15) use of DME (as applicable);

(16) go-around and missed approach procedure;

(17) review of the published instructions;

(18) transition from instrument to visual flight (sensory illusions);

(19) visual manoeuvring after an instrument approach:

(i) circling approach;

(ii) visual approach to landing.

(b) Air exercise:

(1) initial approach to the ILS;

(2) completion of approach planning;

(3) holding procedure;

(4) frequency selection and identification of ILS;

(5) review of the published procedure and minimum sector altitude;

(6) communication (ATC liaison and R/T phraseology);

(7) determination of operating minima and altimeter setting;

(8) weather consideration, for example cloud base and visibility;

(9) availability of runway lighting;

(10) ILS entry methods;

(11) radar vectors;

(12) procedural method;

(13) assessment of approach time from the final approach fix to the aerodrome;

(14) determination of:

- (i) the descent rate on final approach;
- (ii) the wind velocity at the surface and the length of the landing runway;
- (iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(15) circling approach;

(16) the approach:

- (i) at the final approach fix;
- (ii) use of DME (as applicable);
- (iii) ATC liaison;
- (iv) note time and establish air speed and descent rate;
- (v) maintaining the localiser and glide path;
- (vi) anticipation in change of wind velocity and its effect on drift;
- (vii) decision height;

(17) runway direction;

(18) overshoot and missed approach procedure;

(19) transition from instrument to visual flight;

(20) circling approach;

(21) visual approach to landing.

EXERCISE 11: INSTRUMENTS APPROACH: NDB APPROACHES TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURES

(a) Long briefing objectives:

(1) non-precision approach charts;

(2) initial approach to the initial approach fix and minimum sector altitude;

(3) ATC liaison;

(4) communication (ATC procedures and R/T phraseology);

(5) approach planning;

(6) holding procedure;

(7) the approach track;

(8) forming a mental picture of the approach;

(9) initial approach procedure;

(10) operating minima;

(11) completion of approach planning;

(12) achieving the horizontal and vertical patterns;

(13) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(14) use of DME (as applicable);

(15) go-around and missed approach procedure;

(16) review of the published instructions;

(17) transition from instrument to visual flight (sensory illusions);

(18) visual manoeuvring after an instrument approach;

(19) circling approach;

(20) visual approach to landing.

(b) Air exercise:

(1) completion of approach planning including determination of:

(i) descent rate from the final approach fix;

(ii) the wind velocity at the surface and length of the landing runway;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(2) circling approach;

(3) go-around and missed approach procedure;

(4) initial approach;

(5) frequency selection and identification;

(6) review of the published procedure and minimum safe sector altitude;

(7) ATC liaison and R/T phraseology;

(8) determination of decision height and altimeter setting;

(9) weather considerations, for example cloud base and visibility;

(10) availability of runway lighting;

(11) determination of inbound track;

(12) assessment of time from final approach fix to the missed approach point;

(13) ATC liaison;

(14) the outbound procedure (inclusive completion of pre-landing checks);

(15) the inbound procedure;

(16) re-check of identification code;

(17) altimeter setting re-checked;

(18) the final approach;

(19) note time and establish air speed and descent rate;

(20) maintaining the final approach track;

(21) anticipation of change in wind velocity and its effect on the drift;

(22) minimum descent altitude or height;

(23) runway direction;

(24) go-around and missed approach procedure;

(25) transition from instrument to visual flight (sensory illusions);

(26) visual approach.

EXERCISE 12: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF GNSS (TO BE DEVELOPED)

(a) Long briefing objectives: use of GNSS.

(b) Air exercise: use of GNSS.

B. HELICOPTERS

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: INTRUMENT FLYING (Basic)
(for revision, as deemed necessary by the instructor)

(a) Long briefing objectives:

(1) flight instruments;

(2) physiological considerations;

(3) instrument appreciation:

(i) attitude instrument flight;

(ii) pitch indications;

(iii) bank indications;

(iv) different instrument presentations;

(v) introduction to the use of the attitude indicator;

(vi) pitch attitude;

(vii) bank attitude;

(viii) maintenance of heading and balanced flight;

(ix) instrument limitations (inclusive system failures).

(4) attitude, power and performance:

(i) attitude instrument flight;

(ii) control instruments;

(iii) performance instruments;

(iv) effect of changing power;

(v) cross-checking the instrument indications;

(vi) instrument interpretation;

(vii) direct and indirect indications (performance instruments);

(viii) instrument lag;

(ix) selective radial scan.

(5) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

(b) Air exercise:

(1) physiological sensations;

(2) instrument appreciation;

(3) attitude instrument flight;

(4) pitch attitude;

(5) bank attitude;

(6) maintenance of heading and balanced flight;

(7) attitude instrument flight;

(8) effect of changing power;

(9) cross-checking the instruments;

(10) selective radial scan;

(11) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and helicopter configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings;

(vi) manoeuvring at minimum and maximum IMC speed.

EXERCISE 2: INSTRUMENT FLYING (ADVANCED)

(a) Long briefing objectives:

(1) full panel;

(2) 30° level turns;

(3) unusual attitudes: recoveries;

(4) transition to instruments after take-off;

(5) limited panel;

(6) basic flight manoeuvres;

(7) unusual attitudes: recoveries.

(b) Air exercise:

(1) full panel;

(2) 30° level turns;

(3) unusual attitudes: recoveries;

(4) identification and recovery from low pitch steep bank and high pitch steep bank attitudes (at low and high power settings);

(5) limited panel;

(6) repeat of the above exercises.

EXERCISE 3: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VOR

(a) Long briefing objectives:

(1) availability of VOR stations en-route;

(2) station frequencies and identification;

(3) signal reception range;

(4) effect of altitude;

(5) VOR radials;

(6) use of OBS;

(7) to and from indicator;

(8) orientation;

(9) selecting radials;

(10) intercepting a pre-selected radial;

(11) assessment of distance to interception;

(12) effects of wind;

(13) maintaining a radial;

(14) tracking to and from a VOR station;

(15) procedure turns;

(16) station passage;

(17) use of two stations for obtaining a fix;

(18) pre-selecting fixes along a track;

(19) assessment of ground speed and timing;

(20) holding procedures;

(21) various entries;

(22) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) station selection and identification;

(2) orientation;

(3) intercepting a pre-selected radial;

(4) R/T procedures and ATC liaison;

(5) maintaining a radial inbound;

(6) recognition of station passage;

(7) maintaining a radial outbound;

(8) procedure turns;

(9) use of two stations to obtain a fix along the track;

(10) assessment of ground speed and timing;

(11) holding procedures and entries;

(12) holding at a pre-selected fix;

(13) holding at a VOR station.

EXERCISE 4: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF NDB

(a) Long briefing objectives:

(1) availability of NDB facilities en-route;

(2) location, frequencies, tuning (as applicable) and identification codes;

(3) signal reception range;

(4) static interference;

(5) night effect;

(6) station interference;

(7) mountain effect;

(8) coastal refraction;

(9) orientation in relation to an NDB;

(10) homing;

(11) intercepting a pre-selected magnetic bearing and tracking inbound;

(12) station passage;

(13) tracking outbound;

(14) time and distance checks;

(15) use of two NDBs to obtain a fix or alternatively use of one NDB and one other navaid;

(16) holding procedures;

(17) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) selecting, tuning and identifying an NDB;

(2) ADF orientation;

(3) communication (R/T procedures and ATC liaison);

(4) homing;

(5) tracking inbound;

(6) station passage;

(7) tracking outbound;

(8) time and distance checks;

(9) intercepting a pre-selected magnetic bearing;

(10) determining the helicopter’s position from two NDBs or alternatively from one NDB and one other navaid;

(11) ADF holding procedures.

EXERCISE 5: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VHF/DF

(a) Long briefing objectives:

(1) availability of VHF/DF facilities en-route;

(2) location, frequencies, station call signs and hours of operation;

(3) signal and reception range;

(4) effect of altitude;

(5) communication (R/T procedures and ATC liaison);

(6) obtaining and using types of bearings, for example QTE, QDM, QDR;

(7) homing to a station;

(8) effect of wind;

(9) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(10) assessment of groundspeed and timing.

(b) Air exercise:

(1) establishing contact with a VHF/DF station;

(2) R/T procedures and ATC liaison;

(3) obtaining and using a QDR and QTE;

(4) homing to a station;

(5) effect of wind;

(6) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(7) assessment of groundspeed and timing.

EXERCISE 6: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF DME

(a) Long briefing objectives:

(1) availability of DME facilities;

(2) location, frequencies and identification codes;

(3) signal reception range;

(4) slant range;

(5) use of DME to obtain distance, groundspeed and timing;

(6) use of DME to obtain a fix;

(b) Air exercise:

(1) station selection and identification;

(2) use of equipment functions;

(3) distance;

(4) groundspeed;

(5) timing;

(6) DME arc approach;

(7) DME holding.

EXERCISE 7: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF TRANSPONDERS

(a) Long briefing objectives:

(1) operation of transponders;

(2) code selection procedure;

(3) emergency codes;

(4) precautions when using airborne equipment.

(b) Air exercise:

(1) operation of transponders;

(2) types of transponders;

(3) code selection procedure;

(4) emergency codes;

(5) precautions when selecting the required code.

EXERCISE 8: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF EN-ROUTE RADAR SERVICES

(a) Long briefing objectives:

(1) location, station frequencies, call signs and hours of operation;

(2) AIP and NOTAMS;

(3) provision of service;

(4) communication (R/T procedures and ATC liaison);

(5) availability of radar services;

(6) airspace radar advisory service;

(7) emergency service;

(8) aircraft separation standards.

(b) Air exercise:

(1) communication (R/T procedures and ATC liaison);

(2) establishing the service required and position reporting;

(3) method of reporting conflicting traffic;

(4) terrain clearance.

EXERCISE 9: PRE-FLIGHT AND AERODROME DEPARTURE AND ARRIVAL POOCEDURES

(a) Long briefing objectives:

(1) determining the serviceability of the radio equipment;

(2) navigation equipment;

(3) obtaining the departure clearance;

(4) setting up radio navaids before take-off for example VOR frequencies, required radials, etc.;

(5) aerodrome departure procedures, frequency changes;

(6) altitude and position reporting as required;

(7) SID procedures;

(8) obstacle clearance considerations.

(b) Air exercise:

(1) radio equipment serviceability checks;

(2) departure clearance;

(3) navaid selection;

(4) frequencies, radials, etc.;

(5) aerodrome departure checks, frequency changes, altitude and position reports;

(6) SID procedures.

EXERCISE 10: INSTRUMENT APPROACH: PRECISION APPROACH AID TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURES

(a) Long briefing objectives:

(1) precision approach charts;

(2) approach to the initial approach fix and minimum sector altitude;

(3) navaid requirements, for example radar, ADF, etc.;

(4) communication (ATC liaison and R/T phraseology);

(5) holding procedure;

(6) the final approach track;

(7) forming a mental picture of the approach;

(8) completion of aerodrome approach checks;

(9) initial approach procedure;

(10) selection of the ILS frequency and identification;

(11) obstacle clearance altitude or height;

(12) operating minima;

(13) achieving the horizontal and vertical patterns;

(14) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(15) use of DME (as applicable);

(16) go-around and missed approach procedure;

(17) review of the published instructions;

(18) transition from instrument to visual flight (sensory illusions);

(19) visual manoeuvring after an instrument approach;

(i) circling approach;

(ii) visual approach to landing.

(b) Air exercise:

(1) initial approach to the ILS;

(2) completion of approach planning;

(3) holding procedure;

(4) frequency selection and identification of ILS;

(5) review of the published procedure and minimum sector altitude;

(6) communication (ATC liaison and R/T phraseology);

(7) determination of operating minima and altimeter setting;

(8) weather consideration, for example cloud base and visibility;

(9) availability of landing site lighting;

(10) ILS entry methods;

(11) radar vectors;

(12) procedural method;

(13) assessment of approach time from the final approach fix to the aerodrome;

(14) determination of:

(i) the descent rate on final approach;

(ii) the wind velocity at the surface and the length of the landing site;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(15) circling approach;

(16) the approach:

(i) at the final approach fix;

(ii) use of DME (as applicable);

(iii) ATC liaison;

(iv) note time and establish air speed and descent rate;

(v) maintaining the localizer and glide path;

(vi) anticipation in change of wind velocity and its effect on drift;

(vii) decision height.

(17) landing direction;

(18) go-around and missed approach procedure;

(19) transition from instrument to visual flight;

(20) circling approach;

(21) visual approach to landing.

EXERCISE 11: INSTRUMENT APPROACH: NON-PRECISION APPROACH TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURES

(a) Long briefing objectives:

(1) non-precision approach charts;

(2) initial approach to the initial approach fix and minimum sector altitude;

(3) ATC liaison;

(4) communication (ATC procedures and R/T phraseology);

(5) approach planning;

(6) holding procedure;

(7) the approach track;

(8) forming a mental picture of the approach;

(9) initial approach procedure;

(10) operating minima;

(11) completion of approach planning;

(12) achieving the horizontal and vertical patterns;

(13) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(14) use of DME (as applicable);

(15) go-around and missed approach procedure;

(16) review of the published instructions;

(17) transition from instrument to visual flight (sensory illusions);

(18) visual manoeuvring after an instrument approach;

(19) circling approach;

(20) visual approach to landing.

(b) Air exercise:

(1) completion of approach planning, including determination of:

(i) descent rate from the final approach fix;

(ii) the wind velocity at the surface and length of the landing site;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach.

(2) circling approach;

(3) go-around and missed approach procedure;

(4) initial approach;

(5) frequency selection and identification;

(6) review of the published procedure and minimum safe sector altitude;

(7) ATC liaison and R/T phraseology;

(8) determination of decision height and altimeter setting;

(9) weather considerations, for example cloud base and visibility;

(10) availability of landing site lighting;

(11) determination of inbound track;

(12) assessment of time from final approach fix to the missed approach point;

(13) ATC liaison;

(14) the outbound procedure (incl. completion of pre-landing checks);

(15) the inbound procedure;

(16) re-check of identification code;

(17) altimeter setting re-checked;

(18) the final approach;

(19) note time and establish air speed and descent rate;

(20) maintaining the final approach track;

(21) anticipation of change in wind velocity and its effect on the drift;

(22) minimum descent altitude or height;

(23) landing site direction;

(24) go-around and missed approach procedure;

(25) transition from instrument to visual flight (sensory illusions);

(26) visual approach.

EXERCISE 12: USE OF GNSS (TO BE DEVELOPED)
(a) Long briefing objectives: use of GNSS.
(b) Air exercise: use of GNSS.

FCL.940.IRI IRI — Revalidation and renewal

For revalidation and renewal of an IRI certificate, the holder shall meet the requirements for revalidation and renewal of an FI certificate, in accordance with FCL.940.FI.

SECTION 7 — SPECIFIC REQUIREMENTS FOR THE SYNTHETIC FLIGHT INSTRUCTOR — SFI

FCL.905.SFI SFI — Privileges and conditions

(a) The privileges of an SFI are to carry out synthetic flight instruction, within the relevant aircraft category, for:

the issue, revalidation and renewal of an IR, provided that he/she holds or has held an IR in the relevant aircraft category and has completed an IRI training course.

(b) The privileges of SFIs for single-pilot aeroplanes are to carry out synthetic flight instruction for:

(1) the issue, revalidation and renewal of type ratings for single-pilot high performance complex aeroplanes, if the applicant seeks privileges to operate in single-pilot operations.

The privileges of the SFI single-pilot aeroplane may be extended to flight instruction for single-pilot high performance complex aeroplanes type ratings in multi-pilot operations, provided that he/she:

(i) holds an TRI certificate for multi-pilot aeroplane;

(ii) have at least 500 hours on aeroplanes in multi-pilot operations and have completed an MCCI training course in accordance with point FCL.930.MCCI;

(2) the MCC and the MPL training courses on the basic phase, provided that the privileges of SFIs(SPA) have been extended to multi-pilot operations in accordance with point (1).

(c) The privileges of SFIs for multi-pilot aeroplanes are to carry out synthetic flight instruction for: in the case of SFI for multi-pilot aeroplanes:

(1) the issue, revalidation and renewal of type ratings for multi-pilot aeroplanes and if the applicant seeks privileges to operate in multi-pilot operations, for single-pilot high-performance complex aeroplanes;

(2) the MCC training course;

(3) the MPL course on the basic, intermediate and advanced phases, provided that, for the basic phase, he/she holds or has held an FI(A) or an IRI(A) certificate;

(d) The privileges of SFIs for helicopters are to carry out synthetic flight instruction for:

(1) the issue, revalidation and renewal of helicopter type ratings;

(2) MCC training, when the TRI has privileges to instruct for multi-pilot helicopters.

FCL.910.SFI SFI — Restricted privileges

The privileges of the SFI shall be restricted to the FTD 2/3 or FFS of the aircraft type in which the SFI training course was taken.

The privileges may be extended to other FSTDs representing further types of the same category of aircraft when the holder has:

(a) satisfactorily completed the simulator content of the relevant type rating course;

(b) completed the relevant parts of the technical training and the FSTD content of the flight instruction syllabus of the applicable TRI course;

(c) conducted on a complete type rating course at least 3 hours of flight instruction related to the duties of an SFI on the applicable type under the supervision and to the satisfaction of a TRE qualified for this purpose.

FCL.915.SFI SFI — Pre-requisites

An applicant for an SFI certificate shall:

(a) hold or have held a CPL, MPL or ATPL in the appropriate aircraft category;

(b) have completed the proficiency check for the issue of the specific aircraft type rating in an FFS representing the applicable type, within the 12 months preceding the application; and

(c) additionally, for an SFI(A) for multi-pilot aeroplanes or SFI(PL), have:

(1) at least 1 500 hours flight time as a pilot on multi-pilot aeroplanes or powered-lift, as applicable;

(2) completed, as a pilot or as an observer, within the 12 months preceding the application, at least:

(i) 3 route sectors on the flight deck of the applicable aircraft type; or

(ii) 2 line-orientated flight training-based simulator sessions conducted by qualified flight crew on the flight deck of the applicable type. These simulator sessions shall include 2 flights of at least 2 hours each between 2 different aerodromes, and the associated pre-flight planning and de-briefing;

(d) additionally, for an SFI(A) for single-pilot high performance complex aeroplanes:

(1) have completed at least 500 hours of flight time as PIC on single-pilot aeroplanes;

(2) hold or have held a multi-engine IR(A) rating; and

(3) have met the requirements in (c)(2);

(e) additionally, for an SFI(H), have:

(1) completed, as a pilot or as an observer, at least 1 hour of flight time on the flight deck of the applicable type, within the 12 months preceding the application; and

(2) in the case of multi-pilot helicopters, at least 1 000 hours of flying experience as a pilot on helicopters, including at least 350 hours as a pilot on multi-pilot helicopters;

(3) in the case of single-pilot multi-engine helicopters, completed 500 hours as pilot of helicopters, including 100 hours as PIC on single-pilot multi-engine helicopters;

(4) in the case of single-pilot single-engine helicopters, completed 250 hours as a pilot on helicopters.

FCL.930.SFI SFI — Training course

(a) The training course for the SFI shall include:

(1) the FSTD content of the applicable type rating course;

(2) the content of the TRI training course.

(b) An applicant for an SFI certificate who holds a TRI certificate for the relevant type shall be fully credited towards the requirements of this paragraph.

FCL.940.SFI SFI — Revalidation and renewal

(a) Revalidation. For revalidation of an SFI certificate the applicant shall, within the validity period of the SFI certificate, fulfil at least 2 of the following 3 requirements:

(1) complete at least 50 hours as an instructor or an examiner in FSTDs, of which at least 15 hours shall be within the 12 months preceding the expiry date of the SFI certificate;

(2) complete instructor refresher training as an SFI at an ATO;

(3) pass the relevant sections of the assessment of competence in accordance with FCL.935.

(b) Additionally, the applicant shall have completed, on an FFS, the proficiency checks for the issue of the specific aircraft type ratings representing the types for which privileges are held.

(c) For at least each alternate revalidation of an SFI certificate, the holder shall have to comply with the requirement of (a)(3).

(d) Renewal.

To renew the SFI certificate, applicants shall, within the period of 12 months immediately

preceding the application for the renewal, comply with all of the following conditions:

(1) have completed instructor refresher training as SFI at an ATO;

(2) have passed the assessment of competence in accordance with point FCL.935;

(3) have completed, on an FSTD, the skill test for the issue of the specific aircraft type ratings representing the types for which privileges are to be renewed.

SECTION 8 — SPECIFIC REQUIREMENTS FOR THE MULTI-CREW COOPERATION INSTRUCTOR — MCCI

FCL.905.MCCI MCCI — Privileges and conditions

(a) The privileges of an MCCI are to carry out flight instruction during:

(1) the practical part of MCC courses when not combined with type rating training; and

(2) in the case of MCCI(A), the basic phase of the MPL integrated training course, provided he/she holds or has held an FI(A) or an IRI(A) certificate.

FCL.910.MCCI MCCI — Restricted privileges

The privileges of the holder of an MCCI certificate shall be restricted to the FNPT II/III MCC, FTD 2/3 or FFS in which the MCCI training course was taken.

The privileges may be extended to other FSTDs representing further types of aircraft when the holder has completed the practical training of the MCCI course on that type of FNPT II/III MCC, FTD 2/3 or FFS.

FCL.915.MCCI MCCI — Pre-requisites

An applicant for an MCCI certificate shall:

(a) hold or have held a CPL, MPL or ATPL in the appropriate aircraft category;

(b) have at least:

(1) the case of aeroplanes and powered-lift aircraft, 1 500 hours of flying experience as a pilot on multi- pilot operations;

(2) in the case of helicopters, 1 000 hours of flying experience as a pilot in multi-crew operations, of which at least 350 hours in multi-pilot helicopters.

FCL.930.MCCI MCCI — Training course

(a) The training course for the MCCI shall include, at least:

(1) 25 hours of teaching and learning instruction;

(2) technical training related to the type of FSTD where the applicant wishes to instruct;

(3) 3 hours of practical instruction, which may be flight instruction or MCC instruction on the relevant FNPT II/III MCC, FTD 2/3 or FFS, under the supervision of a TRI, SFI or MCCI nominated by the ATO for that purpose. These hours of flight instruction under supervision shall include the assessment of the applicant's competence as described in FCL.920.

(b) Applicants holding or having held an FI, TRI, CRI, IRI or SFI certificate shall be fully credited towards the requirement of (a)(1).

AMC1 FCL.930.MCCI MCCI — Training course

AEROPLANES

GENERAL

(a) The objective of the technical training is to apply the core instructor competencies acquired during the teaching and learning training to MCC training.

(b) During the practical training the applicant should demonstrate the ability to instruct a pilot in MCC.

(c) To supervise applicants for MCCI certificates, the adequate experience should include at least three type rating or MCC courses.

(d) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(e) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

COURSE OBJECTIVE

(f) The course should be designed to give adequate training to the applicant in theoretical knowledge instruction and FSTD instruction to instruct those aspects of MCC required by an applicant for a type rating on a first MP aeroplane.

(g) Confirmation of competency of the applicant to be authorised as an MCCI(A) will be determined by the applicant conducting at least 3 hours MCC instruction to a satisfactory standard on the relevant FNPT or FFS under the supervision of a TRI(A), SFI(A) or MCCI(A) nominated by the ATO for this purpose.

(h) The course consists of three parts:

(1) Part 1: teaching and learning that should follow the content of AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

TECHNICAL THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

(a) The FSTD training consists of the application of core instructor competencies to MCC training in a commercial air transport environment, including principles of threat and error management and CRM.

The content of the training programme should cover MCC course exercises in sufficient depth to meet the standard required for issue of the MCCI(A) certificate.

(b) The course should be related to the type of FSTD on which the applicant wishes to instruct. A training programme should give details of all theoretical knowledge instruction.

(c) Identification and application of human factors (as set in the ATPL syllabus 040) related to MCC aspects of the training.

Part 3

FLIGHT INSTRUCTION SYLLABUS

(a) The content of the instruction programme should cover training exercises as applicable to the MCC requirements of an applicant for a MP type rating.

(b) Training exercises:

The exercises should be accomplished as far as possible in a simulated commercial air transport environment. The instruction should cover the following areas:

(1) pre-flight preparation, including documentation, and computation of take-off performance data;

(2) pre-flight checks, including radio and navigation equipment checks and setting;

(3) before take-off checks, including powerplant checks, and take-off briefing by the PF;

(4) normal take-offs with different flap settings, tasks of PF and PNF, call-outs;

(5) rejected take-offs; crosswind take-offs; take-offs at maximum take- off mass; engine failure after V_1;

(6) normal and abnormal operation of aircraft systems, use of checklists;

(7) selected emergency procedures to include engine failure and fire, smoke control and removal, windshear during take-off and landing, emergency descent, incapacitation of a flight crew member;

(8) early recognition of and reaction on approaching stall in differing aircraft configurations;

(9) instrument flight procedures, including holding procedures; precision approaches using raw navigation data, flight director and automatic pilot, one engine simulated inoperative approaches, non-precision and circling approaches, approach briefing by the PF, setting of

navigation equipment, call-out procedures during approaches; computation of approach and landing data;

(10) go-arounds; normal and with one engine simulated inoperative, transition from instrument to visual flight on reaching decision height or minimum descent height or altitude;

(11) landings, normal, crosswind and with one engine simulated inoperative, transition from instrument to visual flight on reaching decision height or minimum descent height or altitude.

FCL.940.MCCI MCCI — Revalidation and renewal

(a) For revalidation of an MCCI certificate the applicant shall have completed the requirements of FCL.930.MCCI(a)(3) on the relevant type of FNPT II/III, FTD 2/3 or FFS, within the last 12 months of the validity period of the MCCI certificate.

(b) Renewal. If the MCCI certificate has lapsed, the applicant shall complete the requirements of FCL.930.MCCI(a)(2) and (3) on the relevant type of FNPT II/III MCC, FTD 2/3 or FFS.

SECTION 9 — SPECIFIC REQUIREMENTS FOR THE SYNTHETIC TRAINING INSTRUCTOR — STI

FCL.905.STI STI — Privileges and conditions

(a) The privileges of an STI are to carry out synthetic flight instruction in the appropriate aircraft category for:

(1) the issue of a licence;

(2) the issue, revalidation or renewal of an IR and a class or type rating for single-pilot aircraft, except for single-pilot high performance complex aeroplanes.

(b) Additional privileges for the STI(A). The privileges of an STI(A) shall include synthetic flight instruction during the core flying skills training of the MPL integrated training course.

FCL.910.STI STI — Restricted privileges

The privileges of an STI shall be restricted to the FNPT II/III, FTD 2/3 or FFS in which the STI training course was taken.

The privileges may be extended to other FSTDs representing further types of aircraft if in the period of 12 months immediately preceding the application the holders have when the holder has:

(a) completed the FFS content of the TRI course on the class or type of aircraft for which instructional privileges are sought;;

(b) passed the proficiency check on accordance with Appendix 9 to this Annex for the appropriate class or type of aircraft;.;

(c) conducted, on a CPL, an IR, a PPL or a class or type rating course, at least 3 hours of flight instruction under the supervision of an FI, a CRI(A), an IRI or a TRI nominated by the ATO for this purpose, including at least 1 hour of flight instruction that is supervised by an FIE in the appropriate aircraft category.

FCL.915.STI STI — Pre-requisites

(a) An applicant for an STI certificate shall:

(1) hold, or have held within the 3 years prior to the application, a pilot licence and instructional privileges appropriate to the courses on which instruction is intended;

(2) have completed in an FNPT the relevant proficiency check for the class or type rating, within a period of 12 months preceding the application.

An applicant for an STI(A) wishing to instruct on BITDs only, shall complete only the exercises appropriate for a skill test for the issue of a PPL(A) only;

(b) Additionally to the requirements laid down in point (a), applicants for the issue of an STI(H) certificate shall have completed at least 1 hour of flight time as an observer on the flight deck of the applicable type of helicopter, within the 12 months immediately preceding the application.

FCL.930.STI STI — Training course

(a) The training course for the STI shall comprise at least 3 hours of flight instruction related to the duties of an STI in an FFS, FTD 2/3 or FNPT II/III, under the supervision of an FIE. These hours of flight instruction under supervision shall include the assessment of the applicant's competence as described in FCL.920.

Applicants for an STI(A) wishing to instruct on a BITD only, shall complete the flight instruction on a BITD.

(b) For applicants for an STI(H), the course shall also include the FFS content of the applicable TRI course.

FCL.940.STI Revalidation and renewal of the STI certificate

(a) Revalidation.

For revalidation of an STI certificate the applicant shall have, within the last 12 months immediately preceding the expiry date of the STI certificate:

(1) conducted at least 3 hours of flight instruction in an FFS or FNPT II/III or BITD, as part of a complete CPL, IR, PPL or class or type rating course; and

(2) passed in the FFS, FTD 2/3 or FNPT II/III on which flight instruction is routinely conducted, the applicable sections of the proficiency check in accordance with Appendix 9 to this regulation for the appropriate class or type of aircraft. For an STI(A) instructing on BITDs only, the proficiency check shall include only the exercises appropriate for a skill test for the issue of a PPL(A).

(b) Renewal.

If the STI certificate has lapsed, the applicant shall:

(1) complete a refresher training as an STI at an ATO;

(2) pass in the FFS, FTD 2/3 or FNPT II/III on which flight instruction is routinely conducted, the applicable sections of the proficiency check in accordance with Appendix 9 to this regulation for the appropriate class or type of aircraft. For an STI(A) instructing on BITDs only, the proficiency check shall include only the exercises appropriate for a skill test for the issue of a PPL(A);

(3) conduct on a complete CPL, IR, PPL or class or type rating course, at least 3 hours of flight instruction under the supervision of an FI, CRI(A), IRI or TRI(H) nominated by the ATO for this purpose. At least 1 hour of flight instruction shall be supervised by an FIE(A).

SECTION 10 — MOUNTAIN RATING INSTRUCTOR — MI

FCL.905.MI MI — Privileges and conditions

The privileges of an MI are to carry out flight instruction for the issue of a mountain rating.

FCL.915.MI MI — Pre-requisites

An applicant for an MI certificate shall:

(a) hold a, FI, CRI, or TRI certificate, with privileges for single-pilot aeroplanes;

(b) hold a mountain rating.

FCL.930.MI MI — Training course

(a) The training course for the MI shall include the assessment of the applicant's competence as described in FCL.920.

(b) Before attending the course, applicants shall have passed a pre-entry flight test with an MI holding an FI certificate to assess their experience and ability to undertake the training course.

FCL.940.MI Validity of the MI certificate

The MI certificate is valid as long as the, FI, TRI or CRI certificate is valid.

SECTION 11 — SPECIFIC REQUIREMENTS FOR THE FLIGHT TEST INSTRUCTOR — FTI

FCL.905.FTI FTI — Privileges and conditions

(a) The privileges of a flight test instructor (FTI) are to instruct, within the appropriate aircraft category, for:

(1) the issue of category 1 or 2 flight test ratings, provided he/she holds the relevant category of flight test rating;

(2) the issue of an FTI certificate, within the relevant category of flight test rating, provided that the instructor has at least 2 years of experience instructing for the issue of flight test ratings.

(b) The privileges of an FTI holding a category 1 flight test rating include the provision of flight instruction also in relation to category 2 flight test ratings.

FCL.915.FTI FTI — Pre-requisites

An applicant for an FTI certificate shall:

(a) hold a flight test rating issued in accordance with FCL.820;

(b) have completed at least 200 hours of category 1 or 2 flight tests.

FCL.930.FTI FTI — Training course

(a) The training course for the FTI shall include, at least:

(1) 25 hours of teaching and learning;

(2) 10 hours of technical training, including revision of technical knowledge, the preparation of lesson plans and the development of classroom/simulator instructional skills;

(3) 5 hours of practical flight instruction under the supervision of an FTI qualified in accordance with FCL.905.FTI(b). These hours of flight instruction shall include the assessment of the applicant's competence as described in FCL.920.

(b) Crediting:

(1) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

(2) In addition, applicants holding or having held an FI or TRI certificate in the relevant aircraft category shall be fully credited towards the requirements of (a)(2).

FCL.940.FTI FTI — Revalidation and renewal

(a) Revalidation. For revalidation of an FTI certificate, the applicant shall, within the validity period of the FTI certificate, fulfil one of the following requirements:

(1) complete at least:

(i) 50 hours of flight tests, of which at least 15 hours shall be within the 12 months preceding the expiry date of the FTI certificate; and

(ii) 5 hours of flight test flight instruction within the 12 months preceding the expiry date of the FTI certificate; or

(2) receive refresher training as an FTI at an ATO. The refresher training shall be based on the practical flight instruction element of the FTI training course, in accordance with FCL.930.FTI(a)(3), and include at least 1 instruction flight under the supervision of an FTI qualified in accordance with FCL.905.FTI(b).

(b) Renewal. If the FTI certificate has lapsed, the applicant shall receive refresher training as an FTI at an ATO. The refresher training shall comply at least with the requirements of FCL.930.FTI(a)(3).

SUBPART K – EXAMINERS

SECTION 1 – COMMON REQUIREMENTS

FCL.1000 Examiner certificates

(a) General.

Holders of an examiner certificate shall:

(1) hold an equivalent licence, rating or certificate to the ones for which they are authorised to conduct skill tests, proficiency checks or assessments of competence and the privilege to instruct for them;

(2) be qualified to act as PIC on the aircraft during a skill test, proficiency check or assessment of competence when conducted on the aircraft.

(b) Special conditions:

(1) In the case of introduction of new aircraft in Aruba or in an operator's fleet, when compliance with the requirements in this Subpart is not possible, the Authority may issue a specific certificate giving privileges for the conduct of skill tests and proficiency checks. Such a certificate shall be limited to the skill tests and proficiency checks necessary for the introduction of the new type of aircraft and its validity shall not, in any case, exceed 1 year.

(2) Holders of a certificate issued in accordance with (b)(1) who wish to apply for an examiner certificate shall comply with the pre-requisites and revalidation requirements for that category of examiner.

(c) Examination outside the territory of Aruba:

(1) Notwithstanding paragraph (a), in the case of skill tests and proficiency checks provided in an ATO located outside Aruba, the Authority may issue an examiner certificate to an applicant holding a pilot licence issued by another country in accordance with Annex 1 to the Chicago Convention, provided that the applicant:

(i) holds at least an equivalent licence, rating, or certificate to the one for which they are authorised to conduct skill tests, proficiency checks or assessments of competence, and in any case at least a CPL;

(ii) complies with the requirements established in this Subpart for the issue of the relevant examiner certificate; and

(iii) demonstrates to the Authority an adequate level of knowledge of aviation safety rules to be able to exercise examiner privileges in accordance with this regulation.

(2) The certificate referred to in paragraph (1) shall be limited to providing skill tests and proficiency tests/checks:

(i) outside the territory of Aruba; and

(ii) to pilots who have sufficient knowledge of the language in which the test/check is given.

GM1 FCL.1000 Examiner certificates

SPECIAL CONDITIONS

When new aircraft are introduced, requirements such as to hold a licence and rating equivalent to the one for which the skill test is being conducted, or to have adequate flight experience, may not be possible to comply with. In this case, to allow for the first ratings for these aircraft to be issued to applicants, competent authorities need the possibility to issue a specific certificate that does not have to comply with the requirements established in this Subpart.

The Authority should only give these certificates to holders of other examiner certificates. As far as possible, preference should be given to persons with experience in similar types or classes of aircraft, for example, in aircraft having the same kind and number of engines or rotors and of the same order of mass or technology.

The certificate should ideally be limited in validity to the time needed to qualify the first examiners for the new aircraft in accordance with this Subpart, but in any case it should not exceed the 3 years established in the rule.

GM2 FCL.1000 Examiner certificates

When examiners conduct a skill test, proficiency check or assessment of competence, in addition to a licence for the relevant aircraft category, they are required to hold the rating or certificate equivalent to the one for which they conduct the skill test, proficiency check or assessment of competence.

For example, a candidate who holds a CPL(A) may make a class rating proficiency check on an SE piston aeroplane with an examiner who holds a PPL(A) with an SE piston class rating and related examiner privileges.

FCL.1005 Limitation of privileges in case of vested interests

Examiners shall not conduct:

(a) skill tests or assessments of competence of applicants for the issue of a licence, rating or certificate

to whom they have provided more than 25 % of the required flight instruction for the licence, rating or certificate for which the skill test or assessment of competence is being taken; or

(b) when they have been responsible for the recommendation for the skill test, in accordance with FCL.030(b);

(c) skill tests, proficiency checks or assessments of competence whenever they feel that their objectivity may be affected.

GM1 FCL.1005(b) Limitation of privileges in case of vested interests

Examples of a situation where the examiner should consider if his/her objectivity is affected are when the applicant is a relative or a friend of the examiner, or when they are linked by economic interests or political affiliations, etc.

FCL.1010 Pre-requisites for examiners

Applicants for an examiner certificate shall demonstrate:

(a) relevant knowledge, background and appropriate experience related to the privileges of an examiner;

(b) that they have not been subject to any sanctions, including the suspension, limitation or revocation of any of their licences, ratings or certificates issued in accordance with this regulation, or for non-compliance with regulations of the State of the Authority that issued the licence during the last 3 years.

AMC1 FCL.1010 Prerequisites for examiners

When evaluating the applicant's background, the Authority should evaluate the personality and character of the applicant, and his/her cooperation with the Authority.

The Authority may also take into account whether the applicant has been convicted of any relevant criminal or other offenses, taking into account national law and principles of non-discrimination.

FCL.1015 Examiner standardisation

(a) Applicants for an examiner certificate shall undertake a standardisation course provided by the Authority or by an ATO and approved by the Authority.

(b) The standardisation course shall consist of theoretical and practical instruction and shall include, at least:

(1) the conduct of 2 skill tests, proficiency checks or assessments of competences for the licences, ratings or certificates for which the applicant seeks the privilege to conduct tests and checks;

(2) instruction on the applicable requirements in this regulation and the applicable air operations requirements, the conduct of skill tests, proficiency checks and assessments of competence, and their documentation and reporting;

(3) a briefing on the national administrative procedures, requirements for protection of personal data, liability, accident insurance and fees.

(c) Holders of an examiner certificate shall not conduct skill tests, proficiency checks or assessments of competence of an applicant for which the Authority is not the same that issued the examiner's certificate, unless:

(1) they have informed the Authority of the applicant of their intention to conduct the skill test, proficiency check or assessment of competence and of the scope of their privileges as examiners;

(2) they have received a briefing from the Authority of the applicant on the elements mentioned in (b)(3).

AMC1 FCL.1015 Examiner standardisation

GENERAL

(a) The Authority may provide the course itself or through an arrangement with an ATO. This arrangement should clearly state that the ATO is acting under the management system of the Authority.

(b) The course should last:

(1) for the FE and FIE, at least 1 day, divided into theoretical and practical training;

(2) for other examiners, at least 3 days, divided into theoretical training (1 day) and practical training in an FFS conducting role played proficiency checks and skill tests (at least 2 days).

(c) The Authority or the ATO should determine any further training required before presenting the candidate for the examiner assessment of competence.

CONTENT

(d) The training should comprise:

(1) Theoretical training covering at least:

(i) the contents of AMC2 FCL.1015 and the FEM;

(ii) AUA-FCL and related AMCs and GM relevant to their duties;

(iii) operational requirements and related AMCs and GM relevant to their duties;

(iv) national requirements relevant to their examination duties;

(v) fundamentals of human performance and limitations relevant to flight examination;

(vi) fundamentals of evaluation relevant to applicant's performance;

(vii) management system of ATOs;

(viii) MCC, human performance and limitations, if applicable.

(2) Examiners should also be briefed on the protection requirements for personal data, liability, accident insurance and fees, as applicable.

(3) All items above are the core knowledge requirements for an examiner and are recommended as the core course material. This core course may be studied before recommended examiner training is commenced. The core course may utilise any suitable training format.

(4) Practical training consisting of at least:

(i) knowledge and management of the test for which the certificate is to be sought. These are described in the relevant modules in the FEM;

(ii) knowledge of the administrative procedures pertaining to that test or check.

(5) For an initial examiner certificate, practical training should include the examination of the test profile sought, consisting of the conduct of at least two test or check profiles in the role of examiner (these two tests or checks profiles can be performed in the same simulator session), including briefing, conduct of the skill test and proficiency check, assessment of the applicant to whom the test or check is given, debriefing and recording or documentation under the supervision of an examiner of the appropriate category on the applicable type. This training is conducted in the aircraft if approval for testing or checking in the aircraft is required. If examiner privileges in FSTD's are required, practical instruction in the use of FSTD(s) for testing or checking should also be completed.

(6) If examiner privileges are to include the conduct of proficiency checks for the revalidation or renewal of an instrument rating, practical instruction should include the conduct of at least four instrument check profiles in the role of examiner, including briefing, conduct of the skill test and proficiency check, assessment of the applicant to whom the test or check is given, debriefing and recording or documentation under the supervision of an examiner of the appropriate category on the applicable type. This training is conducted in the aircraft if approval for testing or checking in the aircraft is required. If examiner privileges in both FSTD and aircraft are required, at least one of the instrument check profiles should be conducted in an FSTD.

(7) For extension of an examiner certificate to further types (as required for TRE), further practical training on the new type may be required, consisting of the conduct of at least one test or check profile in the role of examiner on the new type, including briefing, conduct of the skill test and proficiency check, assessment of the applicant to whom the test or check is given, debriefing and recording or documentation under the supervision of an examiner of the appropriate category on the applicable type. A further examiner check on the new type may be required, which may be supervised by an inspector of the Authority or a suitably authorised senior examiner.

AMC2 FCL.1015 Examiner standardisation

STANDARDISATION ARRANGEMENTS FOR EXAMINERS LIMITATIONS

LIMITATIONS

(a) An examiner should allow an applicant adequate time to prepare for a test or check, normally not more than 1 hour.

(b) An examiner should plan a test or check flight so that all required exercises can be performed while allowing sufficient time for each of the exercises and with due regard to the weather conditions, traffic situation, ATC requirements and local procedures.

PURPOSE OF A TEST OR CHECK

(c) Determine through practical demonstration during a test or check that an applicant has acquired or maintained the required level of knowledge and skill or proficiency.

(d) Improve training and flight instruction in ATOs by feedback of information from examiners about items or sections of tests or checks that are most frequently failed.

(e) Assist in maintaining and, where possible, improving air safety standards by having examiners display good airmanship and flight discipline during tests or checks.

CONDUCT OF TEST OR CHECK

(f) An examiner will ensure that an applicant completes a test or check in accordance with AUA-FCL requirements and is assessed against the required test or check standards.

(g) Each item within a test or check section should be completed and assessed separately. The test or check schedule, as briefed, should not normally be altered by an examiner. A failed item is not always a failed section, for example type rating skill test where a failure of an item in a section does not fail the entire section, only the failed item is taken again.

(h) Marginal or questionable performance of a test or check item should not influence an examiner's assessment of any subsequent items.

(i) An examiner should verify the requirements and limitations of a test or check with an applicant during the pre-flight briefing.

(j) When a test or check is completed or discontinued, an examiner should debrief the applicant and give reasons for items or sections failed. In case of a failed or discontinued skill test and proficiency check, the examiner should provide appropriate advice to assist the applicant in re-tests or re-checks.

(k) Any comment on, or disagreement with, an examiner's test or check evaluation or assessment made during a debriefing will be recorded by the examiner on the test or check report, and will be signed by the examiner and countersigned by the applicant.

EXAMINER PREPARATION

(l) An examiner should supervise all aspects of the test or check flight preparation, including, where necessary, obtaining or assuring an ATC 'slot' time.

(m) An examiner will plan a test or check in accordance with AUA-FCL requirements. Only the manoeuvres and procedures set out in the appropriate test or check form will be undertaken. The same examiner should not re-examine a failed applicant without the agreement of the applicant.

EXAMINER APPROACH

(n) An examiner should encourage a friendly and relaxed atmosphere to develop both before and during a test or check flight. A negative or hostile approach should not be used. During the test or check flight, the examiner should avoid negative comments or criticisms and all assessments should be reserved for the debriefing.

ASSESSMENT SYSTEM

(o) Although test or checks may specify flight test tolerances, an applicant should not be expected to achieve these at the expense of smoothness or stable flight. An examiner should make due allowance for unavoidable deviations due to turbulence, ATC instructions, etc. An examiner should terminate a test or check only when it is clear that the applicant has not been able to demonstrate the required level of knowledge, skill or proficiency and that a full re-test will be necessary or for safety reasons. An examiner will use one of the following terms for assessment:

(1) a 'pass', provided that the applicant demonstrates the required level of knowledge, skill or proficiency and, where applicable, remains within the flight test tolerances for the licence or rating;

(2) a 'fail' provided that any of the following apply:

(i) the flight test tolerances have been exceeded after the examiner has made due allowance for turbulence or ATC instructions;

(ii) the aim of the test or check is not completed;

(iii) the aim of exercise is completed but at the expense of safe flight, violation of a rule or regulation, poor airmanship or rough handling;

(iv) an acceptable level of knowledge is not demonstrated;

(v) an acceptable level of flight management is not demonstrated;

(vi) the intervention of the examiner or safety pilot is required in the interest of safety.

(3) a 'partial pass' in accordance with the criteria shown in the relevant skill test appendix of AUA-FCL.

METHOD AND CONTENTS OF THE TEST OR CHECK

(p) Before undertaking a test or check an examiner will verify that the aircraft or FSTD intended to be used is suitable and appropriately equipped for the test or check.

(q) A test or check flight will be conducted in accordance with the AFM and, if applicable, the AOM.

(r) A test or check flight will be conducted within the limitations contained in the operations manual of an ATO.

(s) Contents:

(1) a test or check is comprised of:

(i) oral examination on the ground (where applicable);

(ii) pre-flight briefing;

(iii) in-flight exercises;

(iv) post-flight debriefing.

(2) oral examination on the ground should include:

(i) aircraft general knowledge and performance;

(ii) planning and operational procedures;

(iii) other relevant items or sections of the test or check.

(3) pre-flight briefing should include:

(i) test or check sequence;

(ii) power setting, speeds and approach minima, if applicable;

(iii) safety considerations.

(4) in-flight exercises will include each relevant item or section of the test or check;

(5) post-flight debriefing should include:

(i) assessment or evaluation of the applicant;

(ii) documentation of the test or check with the applicant's FI present, if possible.

(t) A test or check is intended to simulate a practical flight. Thus, an examiner may set practical scenarios for an applicant while ensuring that the applicant is not confused and air safety is not compromised.

(u) When manoeuvres are to be flown by sole reference to instruments, the examiner should ensure that a suitable method of screening is used to simulate IMC.

(v) An examiner should maintain a flight log and assessment record during the test or check for reference during the post or flight debriefing.

(w) An examiner should be flexible to the possibility of changes arising to pre- flight briefings due to ATC instructions, or other circumstances affecting the test or check.

(x) Where changes arise to a planned test or check an examiner should be satisfied that the applicant understands and accepts the changes. Otherwise, the test or check flight should be terminated.

(y) Should an applicant choose not to continue a test or check for reasons considered inadequate by an examiner, the applicant will be assessed as having failed those items or sections not attempted. If the test or check is terminated for reasons considered adequate by the examiner, only these items or sections not completed will be tested during a subsequent test or check.

(z) An examiner may terminate a test or check at any stage, if it is considered that the applicant's competency requires a complete re-test or re-check.

GM1 FCL.1015Examiner standardisation

(a) An examiner should plan per day not more than:

(1) three tests or checks relating to PPL, CPL, IR or class ratings;

(2) two tests or checks related to CPL, IR or ATPL;

(3) two assessments of competence related to instructor certificates;

(4) four tests or checks relating to SP type ratings.

(b) An examiner should plan at least 3 hours for a PPL, CPL, IR or class rating test or checks, and at least 4 hours for FI, CPL, IR, MPL, ATPL or MP type rating tests or checks, including pre- flight briefing and preparation, conduct of the test, check or assessment of competence, de-briefing, evaluation of the applicant and documentation.

(c) When planning the duration of a test, check or assessment of competence, the following values may be used as guidance:

(1) 90 minutes for PPL and CPL, including navigation section;

(2) 60 minutes for IR, FI and SP type or class ratings;

(3) 120 minutes for CPL, MPL, ATPL and MP type ratings.

FCL.1020 Examiners assessment of competence

Applicants for an examiner certificate shall demonstrate their competence to an inspector from the Authority or a senior examiner specifically authorised to do so by the Authority responsible for the examiner's certificate through the conduct of a skill test, proficiency check or assessment of competence in the examiner role for which privileges are sought, including briefing, conduct of the skill test, proficiency check or assessment of competence, and assessment of the person to whom the test, check or assessment is given, debriefing and recording documentation.

AMC1 FCL.1020 Examiners assessment of competence

GENERAL

(a) The Authority may nominate either one of its inspectors or a senior examiner to assess the competence of applicants for an examiner certificate.

DEFINITIONS

(b) Definitions:

(1) 'Inspector': the inspector of the Authority conducting the examiner competence assessment;

(2) 'Examiner applicant': the person seeking certification as an examiner;

(3) ‘Candidate’: the person being tested or checked by the examiner applicant. This person may be a pilot for whom the test or check would be required, or the inspector of the Authority who is conducting the examiner certification acceptance test.

CONDUCT OF THE ASSESSMENT

(c) An inspector of the Authority or a senior examiner will observe all examiner applicants conducting a test on a ‘candidate’ in an aircraft for which examiner certificate is sought. Items from the related training course and test or check schedule will be selected by the inspector for examination of the ‘candidate’ by the examiner applicant. Having agreed with the inspector the content of the test, the examiner applicant will be expected to manage the entire test. This will include briefing, the conduct of the flight, assessment and debriefing of the ‘candidate’. The inspector will discuss the assessment with the examiner applicant before the ‘candidate’ is debriefed and informed of the result.

BRIEFING THE ‘CANDIDATE’

(d) The ‘candidate’ should be given time and facilities to prepare for the test flight. The briefing should cover the following:

(1) the objective of the flight;

(2) licensing checks, as necessary;

(3) freedom for the ‘candidate’ to ask questions;

(4) operating procedures to be followed (for example operators manual);

(5) weather assessment;

(6) operating capacity of ‘candidate’ and examiner;

(7) aims to be identified by ‘candidate’;

(8) simulated weather assumptions (for example icing and cloud base);

(9) use of screens (if applicable);

(10) contents of exercise to be performed;

(11) agreed speed and handling parameters (for example V-speeds, bank angle, approach minima);

(12) use of R/T;

(13) respective roles of ‘candidate’ and examiner (for example during emergency);

(14) administrative procedures (for example submission of flight plan).

(e) The examiner applicant should maintain the necessary level of communication with the ‘candidate’. The following check details should be followed by the examiner applicant:

(1) involvement of examiner in a MP operating environment;

(2) the need to give the ‘candidate’ precise instructions;

(3) responsibility for safe conduct of the flight;

(4) intervention by examiner, when necessary;

(5) use of screens;

(6) liaison with ATC and the need for concise, easily understood intentions;

(7) prompting the 'candidate' about required sequence of events (for example following a go-around);

(8) keeping brief, factual and unobtrusive notes.

ASSESSMENT

(f) The examiner applicant should refer to the flight test tolerances given in the relevant skill test. Attention should be paid to the following points:

(1) questions from the 'candidate';

(2) give results of the test and any sections failed;

(3) give reasons for failure.

DEBRIEFING

(g) The examiner applicant should demonstrate to the inspector the ability to conduct a fair, unbiased debriefing of the 'candidate' based on identifiable factual items. A balance between friendliness and firmness should be evident. The following points should be discussed with the 'candidate', at the applicant's discretion:

(1) advise the candidate on how to avoid or correct mistakes;

(2) mention any other points of criticism noted;

(3) give any advice considered helpful.

RECORDING OR DOCUMENTATION

(h) The examiner applicant should demonstrate to the inspector the ability to complete the relevant records correctly. These records may be:

(1) the relevant test or check form;

(2) licence entry;

(3) notification of failure form;

(4) relevant company forms where the examiner has privileges of conducting operator proficiency checks.

DEMONSTRATION OF THEORETICAL KNOWLEDGE

(i) The examiner applicant should demonstrate to the inspector a satisfactory knowledge of the regulatory requirements associated with the function of an examiner.

AMC1 FCL.1020; FCL.1025

QUALIFICATION OF SENIOR EXAMINERS

(a) A senior examiner specifically tasked by the Authority to observe skill tests or proficiency checks for the revalidation of examiner certificates should:

(1) hold a valid or current examiner certificate appropriate to the privileges being given;

(2) have examiner experience level acceptable to the Authority;

(3) have conducted a number of skill tests or proficiency checks as a AUA-FCL examiner.

(b) The Authority may conduct a pre-assessment of the applicant or candidate carrying out a skill test and proficiency check under supervision of an inspector of the Authority.

(c) Applicants should be required to attend a senior examiner briefing, course or seminar arranged by the Authority. Content and duration will be determined by the Authority and should include:

(1) pre-course self-study;

(2) legislation;

(3) the role of the senior examiner;

(4) an examiner assessment;

(5) national administrative requirements.

(d) The validity of the authorisation should not exceed the validity of the examiners certificate, and in any case should not exceed 3 years. The authorisation may be revalidated in accordance with procedures established by the Authority.

FCL.1025 Validity, revalidation and renewal of examiner certificates

(a) Validity.

An examiner certificate shall be valid for 3 years.

(b) Revalidation.

An examiner certificate shall be revalidated when the holder has, during the validity period of the certificate:

(1) conducted at least 2 skill tests, proficiency checks or assessments of competence every year;

(2) in the period of 12 months immediately preceding the expiry date of the certificate, have completed an examiner refresher seminar provided by the Authority or by an ATO and approved by the Authority,;

(3) One of the skill tests or proficiency checks completed during the last year of the validity period in accordance with (1) shall have been assessed by an inspector from the Authority or by a senior examiner specifically authorised to do so by the Authority responsible for the examiner's certificate.

When the applicant for the revalidation holds privileges for more than one category of examiner, combined revalidation of all examiner privileges may be achieved when the applicant complies with the requirements in (b)(1) and (2) and FCL.1020 for one of the categories of examiner certificate held, in agreement with the Authority.

(c) Renewal.

If the certificate has expired, applicants shall comply with the requirements of (b)(2) and FCL.1020 before they can resume the exercise of the privileges.

(d) An examiner certificate shall only be revalidated or renewed if the applicant demonstrates continued compliance with the requirements in FCL.1010 and FCL.1030.

AMC1 FCL.1025 Validity, revalidation and renewal of examiner certificates

EXAMINER REFRESHER SEMINAR

The examiner refresher seminar should follow the content of the examiner standardisation course, included in AMC1 FCL.1015, and take into account specific contents adequate to the category of examiner affected.

FCL.1030 Conduct of skill tests, proficiency checks and assessments of competence

(a) When conducting skill tests, proficiency checks and assessments of competence, examiners shall:

(1) ensure that communication with the applicant can be established without language barriers;

(2) verify that the applicant complies with all the qualification, training and experience requirements in this regulation for the issue, revalidation or renewal of the licence, rating or certificate for which the skill test, proficiency check or assessment of competence is taken;

(3) make the applicant aware of the consequences of providing incomplete, inaccurate or false information related to their training and flight experience.

(b) After completion of the skill test or proficiency check, the examiner shall:

(1) inform the applicant of the result of the test. In the event of a partial pass or fail, the examiner shall inform the applicant that he/she may not exercise the privileges of the rating until a full pass has been obtained. The examiner shall detail any further training requirement and explain the applicant’s right of appeal;

(2) in the event of a pass in a proficiency check or assessment of competence for revalidation or renewal, endorse the applicant’s licence or certificate with the new expiry date of the rating or certificate, if specifically authorised for that purpose by the Authority responsible for the applicant’s licence;

(3) provide the applicant with a signed report of the skill test or proficiency check and submit without delay copies of the report to the Authority responsible for the applicant’s licence, and to the Authority that issued the examiner certificate. The report shall include:

(i) a declaration that the examiner has received information from the applicant regarding his/her experience and instruction, and found that experience and instruction complying with the applicable requirements in this regulation;

(ii) confirmation that all the required manoeuvres and exercises have been completed, as well as information on the verbal theoretical knowledge examination, when applicable. If an item has been failed, the examiner shall record the reasons for this assessment;

(iii) the result of the test, check or assessment of competence.

(c) Examiners shall maintain records for 5 years with details of all skill tests, proficiency checks and assessments of competence performed and their results.

(d) Upon request by the Authority responsible for the examiner certificate, or the Authority responsible for the applicant's licence, examiners shall submit all records and reports, and any other information, as required for oversight activities.

Note.— *Specific requirements for flight engineer examiners is contained in Subpart L – Flight Engineer Licence.*

AMC1 FCL.1030 (b) Conduct of skill tests, proficiency checks and assessments of competence

OBLIGATIONS FOR EXAMINERS APPLICATION AND REPORT FORMS

Common application and report forms can be found:

(a) For skill tests or proficiency checks for issue, revalidation or renewal of PPL, CPL and IR in AMC1 to Appendix 7;

(b) For training, skill tests or proficiency checks for ATPL, MPL or class and type ratings, in AMC1 to Appendix 9;

(c) For assessments of competence for instructors, in AMC5 FCL.935.

FCL.1035 Arrangements for testing

(a) Authorisation of examiners.

The Authority will designate and authorise as examiners suitably qualified persons of integrity to conduct on its behalf, skill tests and proficiency checks. Examiners' responsibilities and privileges will be notified to them individually in writing by the Authority.

(b) Number of examiners.

The Authority will determine the number of examiners it requires, taking account of the number and geographic distribution of its pilot population.

(c) Notification of examiners .

The Authority will maintain a list of all examiners it has authorised stating for which roles they are authorised. The list will be made available to ATOs. The Authority will determine by which means the examiners will be allocated to the skill test.

(d) The Authority designate the examiner(s) for the conduct of the skill test for the issue of a and an ATPL(A).

(e) Examiners shall not test applicants to whom flight instruction has been given by them for that licence or rating except with the expressed consent in writing of the Authority.

SECTION 2 — SPECIFIC REQUIREMENTS FOR FLIGHT EXAMINERS — FE

FCL.1005.FE FE — Privileges and conditions

(a) FE(A). The privileges of an FE for aeroplanes are to conduct:

(1) skill tests for the issue of the PPL(A) and skill tests and proficiency checks for associated single-pilot class and type ratings, except for single-pilot high performance complex aeroplanes, provided that the examiner has completed at least 1 000 hours of flight time as a pilot on aeroplanes, including at least 250 hours of flight instruction;

(2) skill tests for the issue of the CPL(A) and skill tests and proficiency checks for the associated single-pilot class and type ratings, except for single-pilot high performance complex aeroplanes, provided that the examiner has completed at least 2 000 hours of flight time as a pilot on aeroplanes, including at least 250 hours of flight instruction;

(3) skill tests for the issue of a mountain rating, provided that the examiner has completed at least 500 hours of flight time as a pilot on aeroplanes, including at least 500 take-offs and landings of flight instruction for the mountain rating.

(b) FE(H). The privileges of an FE for helicopters are to conduct:

(1) skill tests for the issue of the PPL(H) and skill tests and proficiency checks for single-pilot single-engine helicopter type ratings entered in a PPL(H), provided that the examiner has completed 1 000 hours of flight time as a pilot on helicopters, including at least 250 hours of flight instruction;

(2) skill tests for the issue of the CPL(H) and skill tests and proficiency checks for single-pilot single-engine helicopter type ratings entered in a CPL(H), provided the examiner has completed 2 000 hours of flight time as pilot on helicopters, including at least 250 hours of flight instruction;

(3) skill tests and proficiency checks for single-pilot multi-engine helicopter type ratings entered in a PPL(H) or a CPL(H), provided the examiner has completed the requirements in (1) or (2), as applicable, and holds a CPL(H) or ATPL(H) and, when applicable, an IR(H);

FCL.1010.FE FE — Pre-requisites

An applicant for an FE certificate shall hold an FI certificate in the appropriate aircraft category.

SECTION 3 — SPECIFIC REQUIREMENTS FOR TYPE RATING EXAMINERS — TRE

FCL.1005.TRE TRE — Privileges and conditions

(a) TRE(A) and TRE(PL).

The privileges of a TRE for aeroplanes or powered-lift aircraft are to conduct:

(1) skill tests for the initial issue of type ratings for aeroplanes or powered-lift aircraft, as applicable;

(2) proficiency checks for revalidation or renewal of type and IRs;

(3) skill tests for ATPL(A) issue;

(4) skill tests for MPL issue, provided that the examiner has complied with the requirements in FCL.925;

(5) assessments of competence for the issue, revalidation or renewal of a TRI or SFI certificate in the applicable aircraft category, provided that the examiner has completed at least 3 years as a TRE.

(b) TRE(H).

The privileges of a TRE(H) are to conduct:

(1) skill tests and proficiency checks for the issue, revalidation or renewal of helicopter type ratings;

(2) proficiency checks for the revalidation or renewal of IRs, or for the extension of the IR(H) from single-engine helicopters to multi-engine helicopters, provided the TRE(H) holds a valid IR(H);

(3) skill tests for ATPL(H) issue;

(4) assessments of competence for the issue, revalidation or renewal of a TRI(H) or SFI(H) certificate, provided that the examiner has completed at least 3 years as a TRE.

FCL.1010.TRE TRE — Pre-requisites

(a) TRE(A) and TRE(PL).

Applicants for a TRE certificate for aeroplanes and powered-lift aircraft shall:

(1) in the case of multi-pilot aeroplanes or powered-lift aircraft, have completed 1 500 hours of flight time as a pilot of multi-pilot aeroplanes or powered-lift aircraft, as applicable, of which at least 500 hours shall be as PIC;

(2) in the case of single-pilot high performance complex aeroplanes, have completed 500 hours of flight time as a pilot of single-pilot aeroplanes, of which at least 200 hours shall be as PIC;

(3) hold a CPL or ATPL and a TRI certificate for the applicable type;

(4) for the initial issue of an TRE certificate, have completed at least 50 hours of flight instruction as a TRI, FI or SFI in the applicable type or an FSTD representing that type.

(b) TRE(H).

Applicants for a TRE (H) certificate for helicopters shall:

(1) hold a TRI(H) certificate or, in the case of single-pilot single-engine helicopters, a valid FI(H) certificate, for the applicable type;

(2) for the initial issue of a TRE certificate, have completed 50 hours of flight instruction as a TRI, FI or SFI in the applicable type or an FSTD representing that type;

(3) in the case of multi-pilot helicopters, hold a CPL(H) or ATPL(H) and have completed 1 500 hours of flight as a pilot on multi-pilot helicopters, of which at least 500 hours shall be as PIC;

(4) in the case of single-pilot multi-engine helicopters:

  (i) have completed 1 000 hours of flight as pilot on helicopters, of which at least 500 hours shall be as PIC;

  (ii) hold a CPL(H) or ATPL(H) and, when applicable, a valid IR(H);

(5) in the case of single-pilot single-engine helicopters:

  (i) have completed 750 hours of flight as a pilot on helicopters, of which at least 500 hours shall be as PIC;

  (ii) hold a professional helicopter pilot licence.

(6) Before the privileges of a TRE(H) are extended from single-pilot multi-engine to multi-pilot multi-engine privileges on the same type of helicopter, the holder shall have at least 100 hours in multi-pilot operations on this type.

(7) In the case of applicants for the first multi-pilot multi-engine TRE certificate, the 1 500 hours of flight experience on multi-pilot helicopters required in (b)(3) may be considered to have been met if they have completed the 500 hours of flight time as PIC on a multi-pilot helicopter of the same type.

SECTION 4 — SPECIFIC REQUIREMENTS FOR CLASS RATING EXAMINER — CRE

FCL.1005.CRE CRE — Privileges

The privileges of a CRE are to conduct, for single-pilot aeroplanes, except for single-pilot high performance complex aeroplanes:

(a) skill tests for the issue of class and type ratings;

(b) proficiency checks for:

(1) revalidation or renewal of class and type ratings;

(2) revalidation and renewal of IRs, provided that the CRE complies with the requirements in FCL.1010.IRE(a).

FCL.1010.CRE CRE — Pre-requisites

Applicants for a CRE certificate shall:

(a) hold a CPL(A), MPL(A) or ATPL(A) with single-pilot privileges or have held it and hold a PPL(A);

(b) hold a CRI certificate for the applicable class or type;

(c) have completed 500 hours of flight time as a pilot on aeroplanes.

SECTION 5 — SPECIFIC REQUIREMENTS FOR INSTRUMENT RATING EXAMINER — IRE

FCL.1005.IRE IRE — Privileges

The privileges of the holder of an IRE certificate are to conduct skill tests for the issue, and proficiency checks for the revalidation or renewal of IRs.

FCL.1010.IRE IRE — Pre-requisites

(a) IRE(A).

Applicants for an IRE certificate for aeroplanes shall hold an IRI(A) and have completed:

(1) 2 000 hours of flight time as a pilot of aeroplanes; and

(2) 450 hours of flight time under IFR, of which 250 hours shall be as an instructor.

(b) IRE(H).

Applicants for an IRE certificate for helicopters shall hold an IRI(H) and have completed:

(1) 2 000 hours of flight time as a pilot on helicopters; and

(2) 300 hours of instrument flight time on helicopters, of which 200 hours shall be as an instructor.

SECTION 6 — SPECIFIC REQUIREMENTS FOR SYNTHETIC FLIGHT EXAMINER — SFE

FCL.1005.SFE SFE — Privileges and conditions

(a) SFE(A) and SFE(PL).

The privileges of an SFE on aeroplanes or powered-lift aircraft are to conduct in an FFS:

(1) skill tests and proficiency checks for the issue, revalidation or renewal of type ratings for multi-pilot aeroplanes or powered-lift aircraft, as applicable;

(2) proficiency checks for revalidation or renewal of IRs, provided that the SFE complies with the requirements in FCL.1010.IRE for the applicable aircraft category;

(3) skill tests for ATPL(A) issue;

(4) skill tests for MPL issue, provided that the examiner has complied with the requirements in FCL.925;

(5) assessments of competence for the issue, revalidation or renewal of an SFI certificate in the relevant aircraft category, provided that the examiner has completed at least 3 years as an SFE.

(b) SFE(H).

The privileges of an SFE for helicopters are to conduct in an FFS:

(1) skill tests and proficiency checks for the issue, revalidation and renewal of type ratings; and

(2) proficiency checks for the revalidation and renewal of IRs, provided that the SFE complies with the requirements in FCL.1010.IRE(b);

(3) skill tests for ATPL(H) issue;

(4) skill tests and proficiency checks for the issue, revalidation or renewal of an SFI(H) certificate, provided that the examiner has completed at least 3 years as an SFE.

FCL.1010.SFE SFE — Pre-requisites

(a) SFE(A).

Applicants for an SFE(A) certificate for aeroplanes shall:

(1) hold or have held an ATPL(A), a class or type rating and an SFI(A) certificate for the applicable type of aeroplane;

(2) have at least 1 500 hours of flight time as a pilot on multi-pilot aeroplanes;

(3) for the initial issue of an SFE certificate, have completed at least 50 hours of synthetic flight instruction as an SFI(A) on the applicable type.

(b) SFE(H).

Applicants for an SFE certificate for helicopters shall:

(1) hold or have held an ATPL(H), a type rating and an SFI(H) certificate for the applicable type of helicopter;

(2) have at least 1 000 hours of flight time as a pilot on multi-pilot helicopters;

(3) for the initial issue of an SFE certificate, have completed at least 50 hours of synthetic flight instruction as an SFI(H) on the applicable type.

SECTION 7 — SPECIFIC REQUIREMENTS FOR THE FLIGHT INSTRUCTOR EXAMINER — FIE

FCL.1005.FIE FIE — Privileges and conditions

(a) FIE(A).

The privileges of an FIE on aeroplanes are to conduct assessments of competence for the issue, revalidation or renewal of certificates for FI(A), CRI(A), IRI(A) and TRI(A) on single-pilot aeroplanes, provided that the relevant instructor certificate is held.

(b) FIE(H).

The privileges of an FIE on helicopters are to conduct assessments of competence for the issue, revalidation or renewal of certificates for FI(H), IRI(H) and TRI(H) on single-pilot helicopters, provided that the relevant instructor certificate is held.

FCL.1010.FIE FIE — Pre-requisites

(a) FIE(A).

Applicants for an FIE certificate for aeroplanes shall in case of applicants wishing to conduct assessments of competence:

(1) hold the relevant instructor certificate, as applicable;

(2) have completed 2 000 hours of flight time as a pilot on aeroplanes; and

(3) have at least 100 hours of flight time instructing applicants for an instructor certificate.

(b) FIE(H).

Applicants for an FIE certificate for helicopters shall:

(1) hold the relevant instructor certificate, as applicable;

(2) have completed 2 000 hours of flight time as pilot on helicopters;

(3) have at least 100 hours of flight time instructing applicants for an instructor certificate.

SUBPART L — FLIGHT ENGINEER LICENCE

FCL.1050 Requirements for the issue of the licence

(a) An applicant shall, before being issued with a flight engineer licence, meet such requirements in respect of age, knowledge, experience, skill and medical fitness as are specified for the licence.

(b) An applicant for a flight engineer licence shall demonstrate such requirements for knowledge and skill as are specified for the licence, in a manner determined by the Authority.

FCL.1055 General licence requirements

Requirements for the issue of the licence

(a) Age

The applicant shall be not less than 18 years of age.

(b) Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer licence, in at least the following subjects:

(1) Air law

rules and regulations relevant to the holder of a flight engineer licence; rules and regulations governing the operation of civil aircraft pertinent to the duties of a flight engineer;

(2) Aircraft general knowledge

(i) basic principles of engines, gas turbines and/or piston engines; characteristics of fuels, fuel systems including fuel control; lubricants and lubrication systems; afterburners and injection systems, function and operation of engine ignition and starter systems;

(ii) principles of operation, handling procedures and operating limitations of aircraft engines; effects of atmospheric conditions on engine performance;

(iii) airframes, flight controls, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life; identification of structural damage and defects;

(iv) ice and rain protection systems;

(v) pressurisation and air-conditioning systems, oxygen systems;

(vi) hydraulic and pneumatic systems;

(vii) basic electrical theory, electric systems (AC and DC), aircraft wiring systems, bonding and screening;

(viii) principles of operation of instruments, compasses, autopilots, radio communication equipment, radio and radar navigation aids, flight management systems, displays and avionics;

(ix) limitations of appropriate aircraft;

(x) fire protection, detection, suppression and extinguishing systems;

(xi) use and serviceability checks of equipment and systems of appropriate aircraft;

(3) Flight performance, planning and loading

(i) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;

(ii) use and practical application of performance data including procedures for cruise control;

(4) Human performance

(i) human performance relevant to the flight engineer including principles of threat and error management;

(5) Operational procedures

(i) principles of maintenance, procedures for the maintenance of airworthiness, defect reporting, pre-flight inspections, precautionary procedures for fuelling and use of external power; installed equipment and cabin systems;

(ii) normal, abnormal and emergency procedures;

(iii) operational procedures for carriage of freight and dangerous goods;

(6) Principles of flight

(i) fundamentals of aerodynamics;

(7) Radiotelephony

(i) communication procedures and phraseology.

FCL.1060 Experience

(a) The applicant shall have completed, under the supervision of a person accepted by the Authority for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer. The Authority shall determine whether experience as a flight engineer in a flight simulator, which it has approved, is acceptable as part of the total flight time of 100 hours. Credit for such experience shall be limited to a maximum of 50 hours.

(b) When the applicant has flight time as a pilot, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of sub-paragraph (a) above can be reduced accordingly.

(c) The applicant shall have operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer accepted by the Authority for that purpose, in at least the following areas:

(1) Normal procedures

- pre-flight inspections
- fuelling procedures, fuel management
- inspection of maintenance documents
- normal flight deck procedures during all phases of flight
- crew coordination and procedures in case of crew incapacitation
- defect reporting

(2) Abnormal and alternate (standby) procedures

- recognition of abnormal functioning of aircraft systems
- use of abnormal and alternate (standby) procedures

(3) Emergency procedures

- recognition of emergency conditions
- use of appropriate emergency procedures.

FCL.1065 Skill

(a) The applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in FCL.1060(c) with a degree of competency appropriate to the privileges granted to the holder of a flight engineer licence, and to:

(1) recognize and manage threats and errors;

(2) use aircraft systems within the aircraft's capabilities and limitations;

(3) exercise good judgement and airmanship;

(4) apply aeronautical knowledge;

(5) perform all the duties as part of an integrated crew with the successful outcome assured; and

(6) communicate effectively with the other flight crew members.

(b) The use of a flight simulation training device for performing any of the procedures required during the demonstration of skill described in sub-paragraph (a) above shall be approved by the Authority, which shall ensure that the flight simulation training device is appropriate to the task.

FCL.1070 Medical fitness

The applicant shall hold a current Medical Class 2 medical assessment issued in accordance with the provisions of AUA-MED.

FCL.1075 Privileges and conditions to be observed in exercising such privileges

(a) The privileges of the holder of a flight engineer licence shall be to act as flight engineer of any type of aircraft on which the holder has demonstrated a level of knowledge and skill, as determined by the Authority on the basis of those requirements specified in FCL.1055 and FCL.1065 which are applicable to the safe operation of that type of aircraft.

(b) The types of aircraft on which the holder of a flight engineer licence is authorised to exercise the privileges of that licence, shall be either entered on the licence or recorded elsewhere in a manner acceptable to the Authority.

FCL.1080 Examiners

In addition to the applicable requirements of AUA-FCL, Subpart K;

(a) Examiners shall hold a F/E licence and rating at least equal to the licence or rating for which they are authorised to conduct skill tests or proficiency checks and, unless specified otherwise, the privilege to instruct for this licence or rating.

(b) The applicant for an examiner authorisation shall have conducted at least one skill test in the role of an examiner for which the authorisation is sought, including briefing, conduct of the skill test, assessment of the applicant to whom the skill test is given, debriefing and recording/documentation. This "Examiner Authorisation Acceptance Test" will be supervised by an inspector of the Authority or by a senior examiner specifically authorised by the Authority for this purpose.

SUBPART M — APPROVED TRAINING AND APPROVED TRAINING ORGANISATION

FCL.1100 Issue of approval

(a) The issuance of an approval for a training organisation and the continued validity of the approval shall depend upon the training organisation being in compliance with the requirements of this Subpart.

(b) The approval document shall contain at least the following:

(1) organisation's name and location;

(2) date of issue and period of validity (where appropriate);

(3) terms of approval.

(c) Applicants for a certificate as Approved Training organisation (ATO), wishing to offer training for licences and associated ratings, will be granted approval when in compliance with this Subpart.

Note 1.—*Requirements for approval of ATOs are given in Appendix 11.*

Note 2.—*Additional requirements for the approval of foreign ATOs offering type rating training for professional pilot licence holders are given in Appendix 12.*

(d) Training organisations wishing to offer training for licences and associated ratings whose principal place of business and registered office is located outside of Aruba, may be granted approval in respect of any such location:

(1) if an arrangement has been agreed between the Authority and the State in which the ATO has its principal place of business and registered office, providing for the participation of that Authority in the approval process and provide regulatory oversight of the ATO; or

(2) adequate jurisdiction and supervision by the approving Authority can be assured; and

(3) the relevant additional requirements of Appendix 12 are satisfied.

GM1 FCL.1100Financial Evaluation of Training Organisations

OBJECTIVE

(a) The objective of this guidance material is to set out the means of compliance for the Authority to be satisfied that ATOs have sufficient funding available to conduct training to the approved standards of AUA-FCL. It is not intended to be a consumer protection provision. The grant and revalidation of an approval cannot therefore be construed as a guarantee of the underlying financial soundness of the organisation. It is an indication, on the basis of financial information provided, that the approved organisation can provide sufficient facilities and qualified staff such that flying training can be, or can continue to be, provided in accordance with relevant AUA-FCL training requirements and standards.

APPLICATION FOR APPROVAL OR REVALIDATION

(b) Any application for initial approval or revalidation is to be supported by a plan, covering the period of approval requested, which includes at least the following information:

(1) Training facilities and number of students

- Details, as appropriate, of:
- the number and types of training aircraft that will be used;
- the number of flight and ground instructors that will be employed;
- the number of classrooms and other types of training facilities (synthetic training devices, etc.) intended for use;
- the supporting infrastructure (staff offices, operations room, briefing rooms, rest rooms, hangars, etc.)
- planned number of students (by month and course)

(2) Financial Details

- capital expenditure necessary to provide the planned facilities;
- costs associated with running each of the courses for which approval is sought;
- income forecasts for the period of approval;
- a forecast financial operating statement for the business for which approval is sought;
- details of any other financial trading arrangement on which the viability of the approved organisation may be dependent.

(c) The plan submitted in support of an application for initial approval or revalidation is to be accompanied by a Financial Statement from the applicant's bankers or auditors, which certifies that the applicant has, or has recourse to, sufficient financial resources to meet the applicant's proposals as described in the plan to conduct AUA-FCL approved courses. An appropriately revised Financial Statement will be required whenever the applicants wish to expand their activities in addition to those described in the plan, in order to satisfy the requirements of FCL.

ONGOING FINANCIAL MONITORING

(d) After approval has been granted, if the Authority has reason to believe that the necessary standards of compliance with AUA-FCL are not being met or may not be met due to a lack or apparent lack of financial resources, the Authority may require the organisation to demonstrate in a written submission that sufficient funds can and will be made available to continue to meet the terms of approval, or such modifications to it as may have been agreed with the Authority. Any such submission is to be accompanied by a further Financial Statement signed by the approved organisation's bankers or auditors.

(e) The Authority may also require a Financial Statement if it appears to the Authority that operation of the approved course(s) is significantly at variance with the proposals contained in the business plan.

FCL.1110 Training and procedures manual

(a) The training organisation shall establish and maintain a training and procedures manual containing information and instructions to enable personnel to perform their duties and to give guidance to students on how to comply with the course requirements.. This manual may be issued in separate parts and shall contain at least the following information:

(1) a general description of the scope of training authorised under the organisation's terms of approval;

(2) the content of the training programmes offered including the courseware and equipment to be used;

(3) a description of the organisation's quality assurance system;

(4) a description of the organisation's facilities;

(5) the name, duties and qualification of the person designated as responsible for compliance with the requirements of the approval;

(6) a description of the duties and qualification of the personnel designated as responsible for planning, performing and supervising the training;

(7) a description of the procedures used to establish and maintain the competence of instructional personnel;

(8) a description of the method used for the completion and retention of the training records;

(9) a description, when applicable, of additional training needed to comply with an operator's procedures and requirements; and

(10) when the Authority has authorised an approved training organisation to conduct the testing required for the issuance of a licence or rating, a description of the selection, role and duties of the authorised personnel, as well as the applicable requirements established by the Authority.

(b) The training organisation shall ensure that the training and procedures manual is amended as necessary to keep the information contained therein up to date.

(c) Copies of all amendments to the training and procedures manual shall be furnished promptly to all organisations or persons to whom the manual has been issued.

GM1 FCL.1110Training and Operations Manual for ATOs (as applicable)

TRAINING MANUAL

Training Manuals for use at an ATO conducting approved integrated or modular flying training courses should include the following:

Part 1 – The Training Plan

The aim of the course (ATP(A),CPL/IR(A), CPL(A) as applicable)	A statement of what the student is expected to do as a result of the training, the level of performance, and the training constraints to be observed.
Pre-entry requirements	Minimum age, educational requirements (including language), medical requirements. Any individual State requirements.
Credits for previous experience	To be obtained from the Authority before training begins.
Training Syllabi	The flying syllabus (single-engine), the flying syllabus (multi-engine), the synthetic flight training syllabus and the theoretical knowledge training syllabus.
The time scale and scale, in weeks, for each syllabus	Arrangements of the course and the integration of syllabi time.
Training programme	The general arrangements of daily and weekly programmes for flying, ground and synthetic flight training. Bad weather constraints. Programme constraints in terms of maximum student training times, (flying, theoretical knowledge, synthetic) e.g. per day/week/month. Restrictions in respect of duty periods for students. Duration of dual and solo flights at various stages. Maximum flying hours in any day/night; maximum number of training flights in any day/night. Minimum rest period between duty periods.
Training records	Rules for security of records and documents. Attendance records. The form of training records to be kept. Persons responsible for checking records and students' log books.

	The nature and frequency of record checks. Standardisation of entries in training records. Rules concerning log book entries.
Safety training	Individual responsibilities. Essential exercises. Emergency drills (frequency). Dual checks (frequency at various stages). Requirement before first solo day/night/navigation etc.
Tests and examinations	Flying Progress checks Skill tests Theoretical Knowledge Progress tests Theoretical knowledge examinations Authorisation for test. Rules concerning refresher training before retest. Test reports and records. Procedures for examination paper preparation, type of question and assessment, standard required for ‘Pass’. Procedure for question analysis and review and for raising replacement papers. Examination resit procedures.
Training effectiveness	Individual responsibilities. General assessment. Liaison between departments. Identification of unsatisfactory progress (individual students). Actions to correct unsatisfactory progress. Procedure for changing instructors. Maximum number of instructor changes per student.

	Internal feedback system for detecting training deficiencies. Procedure for suspending a student from training. Discipline. Reporting and documentation.
Standards and Level of performance at various stages	Individual responsibilities. Standardisation. Standardisation requirements and procedures. Application of test criteria.

Part 2 – Briefing and Air Exercises

Air Exercise	A detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown with main and sub-titles. This should normally be the same as the air exercise specification for the flight instructor rating course.
Air exercise reference list	An abbreviated list of the above exercises giving only main and sub-titles for quick reference, and preferably in flip-card form to facilitate daily use by flight instructors.
Course structure – Phase of training	A statement of how the course will be divided into phases, indication of how the above air exercises will be divided between the phases and how they will be arranged to ensure that they are completed in the most suitable learning sequence and that essential (emergency) exercises are repeated at the correct frequency. Also, the syllabus hours for each phase and for groups of exercises within each phase shall be stated and when progress tests are to be conducted, etc.
Course structure integration of syllabi	The manner in which theoretical knowledge, synthetic flight training and flying training will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and synthetic flight training.

Student progress	The requirement for student progress and include a brief but specific statement of what a student is expected to be able to do and the standard of proficiency he must achieve before progressing from one phase of air exercise training to the next. Include minimum experience requirements in terms of hours, satisfactory exercise completion, etc. as necessary before significant exercises, e.g. night flying.
Instructional methods	The ATO requirements, particularly in respect of pre- and post-flying briefing, adherence to syllabi and training specifications, authorisation of solo flights, etc.
Progress tests	The instructions given to examining staff in respect of the conduct and documentation of all progress tests.
Glossary of terms	Definition of significant terms as necessary.
Appendices	Progress test report forms. Skill test report forms. ATO certificates of experience, competence, etc. as required.

Part 3 – Synthetic Flight Training

Structure generally as for Part 2.

Part 4 – Theoretical knowledge instruction

Structure of the theoretical knowledge course	A statement of the structure of the course, including the general sequence of the topics to be taught in each subject, the time allocated to each topic, the breakdown per subject and an example of a course schedule. Distance Learning courses should include instructions of the material to be studied for individual elements of the course.
Lesson Plans	A description of each lesson or group of lessons including teaching materials, training aids, progress test organisation and inter-connection of topics with other subjects.
Teaching materials	Specification of the training aids to be used (e.g. study materials, course manual references, exercises, self-study materials, demonstration equipment).
Student progress	The requirement for student progress, including a brief but specific statement of the standard that must be achieved and the mechanism for

	achieving this, before application for theoretical knowledge examinations.
Progress testing	The organisation of progress testing in each subject, including topics covered, evaluation methods and documentation.
Review procedure	The procedure to be followed if the standard required at any stage of the course is not achieved, including an agreed action plan with remedial training if required.

OPERATIONS MANUAL

Operations Manual for use at an ATO conducting approved integrated or modular flying training courses include the following:

(a) General

- A list and description of all volumes in the Operations Manual
- Administration (function and management)
- Responsibilities (all management and administrative staff)
- Student discipline and disciplinary action
- Approval/authorisation of flights
- Preparation of flying programme (restriction of numbers of aircraft in poor weather)
- Command of aeroplane
- Responsibilities of pilot-in-command
- Carriage of passengers
- Aeroplane documentation
- Retention of documents
- Flight crew qualification records (licences and ratings)
- Revalidation (medical certificates and ratings)
- Flying duty period and flight time limitations (flying instructors)
- Flying duty period and flight time limitations (students)
- Rest periods (flying instructors)
- Rest periods (students)
- Pilots’ log books
- Flight planning (general)

- Safety (general) – equipment, radio listening watch, hazards, accidents and incidents (including reports), safety pilots etc.

(b) Technical

- Aircraft descriptive notes
- Aircraft handling (including checklists, limitations, aeroplane maintenance and technical logs, in accordance with relevant AUAs, etc.)
- Emergency procedures
- Radio and radio navigation aids
- Allowable deficiencies (based on MMEL, if available)

(c) Route

- Performance (legislation, take-off, route, landing etc.)
- Flight planning (fuel, oil, minimum safe altitude, navigation equipment etc.)
- Loading (loadsheets, mass, balance, limitations)
- Weather minima (flying instructors)
- Weather minima (students – at various stages of training)
- Training routes/areas

(d) Staff Training

- Appointments of persons responsible for standards/competence of flying staff
- Initial training
- Refresher training
- Standardisation training
- Proficiency checks
- Upgrading training
- ATO staff standards evaluation

FCL.1120 Training programmes

(a) The Authority may approve a training programme for a private pilot licence, commercial pilot licence, an instrument rating that allows an alternative means of compliance with the experience requirements provided that the approved training organisation demonstrates to the satisfaction of the Authority that the training provides a level of competency at least equivalent to that provided by the minimum experience requirements for personnel not receiving such approved training.

Note.— *Procedures supporting the development of competency-based training and assessment for aeroplane pilots and aircraft maintenance personnel, including ICAO competency frameworks, are contained in the Procedures for Air Navigation Services —Training (Doc 9868, PANS-TRG).*

(b) When the Authority approves a training programme for a multi-crew pilot licence, the approved training organisation shall demonstrate to the satisfaction of the Authority that the training provides a level of competency in multi-crew operations at least equal to that met by holders of a commercial pilot licence, instrument rating and type rating for an aeroplane certificated for operation with a minimum crew of at least two pilots.

AMC FCL1.1120 Guidelines for Approval of an Aircraft Type Rating Course

TRAINING PROGRAMME

(a) Type ratings

(1) To obtain approval a type rating course should, as far as possible, provide for a continuous process of ground, FSTD and flight training to enable the student to assimilate the knowledge and skills required to operate a specific aircraft type safely and efficiently. The student's ability to do this will be determined by the demonstration of a satisfactory level of theoretical knowledge of the aircraft determined by progressive checking of knowledge and examination, progressive assessment by the ATO during flying training and the successful completion of a practical skill test with an authorised examiner. There should be no difference in the level of knowledge or competency required of the student, irrespective of the intended role of the student as pilot-in-command, co-pilot or flight engineer member of the flight crew.

(2) A type rating course should normally be conducted as a single, full-time course of study and training. However, in the situation where the course is intended to enable a pilot to fly a further aircraft type while continuing to fly a current type, such as to enable mixed fleet flying with the same operator acceptable under AUA OPS, some elements of the theoretical knowledge course conducted by self-study may be undertaken while the student continues to fly the current type. Any such arrangement should be acceptable to the approving Authority but combining flight training for a new type with continuing operation of another type will not normally be acceptable.

(b) Variants

(1) Familiarisation training: Where an aeroplane type rating also includes variants of the same aircraft type requiring Familiarisation training, the additional Familiarisation training may be included in the theoretical knowledge training of the initial type rating course. Flight training should be conducted on a single variant within the type.

(2) Differences training: Where an aeroplane type rating also includes variants of the same aircraft type for which difference training is required, the initial training course should be directed towards a single variant. Additional training to operate other variants within the same type rating should be completed after successful completion of the initial type rating course, although elements of this differences training may be undertaken at appropriate stages of the initial

course, with the agreement of the approving Authority. Differences training to operate variants within the same type rating will be subject to approval, either as a separate course or as part of the basic type rating training course.

(c) Programme of Theoretical Knowledge and Flight Training

(1) The training programme should specify the time allocated to theoretical knowledge training, FSTD training and if not approved for Zero Flight Time Training in accordance with FCL.730(A), the aeroplane. The training programme will be assessed and, for approval to be given, deemed to be adequate by the approving Authority. The initial type rating course should be programmed on the basis that the student has the minimum licensing and experience requirements for entry to the course, as required by AUA-FCL. For a first type rating on a multi-pilot aircraft, the course should also provide for consolidation and type-specific training in those elements of basic MCC training relevant to the type or variant.

(2) If an ATO wishes to provide a training course that includes credit for previous experience on similar types of aircraft, such as those with common systems or operating procedures with the new type, the entry requirements to such courses should be specified by the ATO and must define the minimum level of experience and qualification required of the flight crew member. The approving Authority will need to agree the proposed entry level and reduced training requirements of these courses.

(3) An ATO is permitted to sub-contract elements of training to a third party training provider. In such cases the sub-contracted organisation should normally be approved to conduct such training by the Authority. When the sub-contracted organisation is not approved, the approving Authority of the ATO should include the sub contracted organisation in the approval process and be satisfied that the standard of training intended to be given meets the equivalent requirements of an Aruban approved organisation. The other obligations of the ATO, such as student progress monitoring and an adequate form of quality system management, can be exercised by the ATO seeking approval, and which retains responsibility for the whole course.

GROUND TRAINING

(d) Syllabus

(1) The ground training syllabus should provide for the student to gain a thorough understanding of the operation, the function and, if appropriate, the abnormal and emergency operation of all aircraft systems. This training should also include those systems essential to the operation of the aircraft, such as ‘fly by wire’ flight control systems, even if the flight crew have little or no control of their normal or abnormal operation.

(e) Theoretical Knowledge Instruction

(1) The theoretical knowledge instruction training should meet the general objectives of (but is not limited to):

(i) giving the student a thorough knowledge of the aircraft structure, power plant and systems, and their associated limitations, including mass and balance, aircraft performance and flight planning considerations;

(ii) giving the student a knowledge of the positioning and operation of the flight deck controls and indicators for the aircraft and its systems;

(iii) giving the student an understanding of system malfunctions, their effect on aircraft operations and interaction with other systems;

(iv) giving the student the understanding of normal, abnormal and emergency procedures

(f) Facilities and Training Aids

(1) The ATO should provide adequate facilities for classroom instruction and have available appropriately qualified and experienced instructors. Training aids should enable students to gain practical experience of the operation of systems covered by the theoretical knowledge syllabus and, in the case of multi-pilot aircraft, enable such practical application of the knowledge to be carried out in a multi-crew environment. Facilities should be made available for student self- study outside the formal training programme.

(g) Computer Based Training (CBT)

(1) CBT provides a valuable source of theoretical instruction, enabling the student to progress at his own pace within specified time limits. Many such systems ensure that syllabus subjects are fully covered and progress can be denied until a satisfactory assimilation of knowledge has been demonstrated. Such systems may allow self-study or distance learning, if they incorporate adequate knowledge testing procedures. When CBT is used as part of the theoretical knowledge instruction phase, the student should also have access to a suitably qualified instructor able to assist with areas of difficulty for the student.

(h) Self-Study and Distance Learning

(1) Elements of the theoretical knowledge syllabus may be adequately addressed by distance learning, if approved see paragraph 1.2, or self-study, particularly when utilising CBT. Progress testing, either by self-assessed or instructor-evaluated means must be included in any self-study programme. If self-study or distance learning is included in the theoretical knowledge training, the course should also provide for an adequate period of supervised consolidation and knowledge testing prior to the commencement of flight training.

(i) Progress Tests and Final Theoretical Knowledge Examination

(1) The theoretical knowledge training programme should provide for progressive testing of the assimilation of the required knowledge. This testing process should also provide for retesting of syllabus items so that a thorough understanding of the required knowledge is assured. This should be achieved by intervention by a qualified instructor or, if using CBT with a self-testing facility, and by further testing during the supervised consolidation phase of the ground course.

(2) The final theoretical knowledge examination should cover all areas of the theoretical knowledge syllabus. The final examination should be conducted as a supervised written knowledge test without reference to course material. The pass mark of 75% assumes the achievement of satisfactory levels of knowledge during the progressive phase tests of the

course. The student should be advised of any areas of lack of knowledge displayed during the examination and, if necessary, given remedial instruction.

(3) A successful pass of the theoretical knowledge course and final examination should be a prerequisite for progression to the flight training phase of the type rating course.

FLIGHT TRAINING

(j) Flight Synthetic Training Devices (FSTD)

(1) FSTDs provide the most effective flight training, enabling realistic practice of all abnormal and emergency procedures in a safe and easily-controlled environment for both the student and instructor. For multi-pilot aircraft they also enable CRM and MCC concepts to be incorporated at all stages of training. Only in exceptional circumstances should an Authority approve a type rating course for a multi-pilot aeroplane which does not include FSTD training,

(2) The amount of training required when using FSTDs will depend on the complexity of the aeroplane concerned, and to some extent on the previous experience of the pilot. Except for those courses giving credit for previous experience (para 3.2) a minimum of 32 hours FSTD training should be programmed for a crew of a multi-pilot aeroplane, of which at least 16 hours should be in a Flight Simulator operating as a crew. Flight simulator time may be reduced at the discretion of the approving Authority if other qualified FSTDs used during the flight training programme accurately replicate the flight deck environment, operation and aeroplane response. Such FSTDs may typically include FMC training devices using hardware and computer programmes identical to those of the aeroplane, or type specific FNPT IIs.

(k) Aeroplane Training with Flight Simulator

(1) With the exception of courses approved for Zero Flight Time Training, certain training exercises normally involving take-off and landing in various configurations will need to be completed in the aeroplane rather than an approved Flight Simulator. For multi-pilot aeroplanes where the student pilot has more than 500 hours MPA experience in aeroplanes of similar size and performance, these should include at least 4 landings of which at least one should be a full stop landing. In all other cases the student should complete at least 6 landings. With the agreement of the approving Authority, this aeroplane training, provided it does not exceed 2 hours of the flight training course, may be completed after the student pilot has completed the FSTD training and has successfully undertaken the type rating skill test.

(2) For courses approved for Zero Flight Time Training,

(i) During the specific simulator session before Line Flying Under Supervision (LIFUS), consideration should be given to varying conditions, for example :

(A) runway surface conditions;

(B) runway length;

(C) flap setting;

(D) power setting;

(E) crosswind and turbulence conditions;

(F) MTOW and MLW.

The landings should be conducted as full-stop landings. The session should be flown in normal operation. Special attention should be given to the taxiing technique.

(i) A training methodology should be agreed with the Authority that ensures the trainee is fully competent with the exterior inspection of the aeroplane before conducting such an inspection unsupervised.

(ii) The LIFUS should be performed as soon as possible after the specific simulator session.

(iii) The licence endorsement should be entered on the licence after the skill test, but before the first 4 take-offs and landings in the aeroplane. At the discretion of the Authority, provisional or temporary endorsement and any restriction should be entered on the licence.

(iv) Where a specific arrangement exists between the Training Organisation and the AUA OPS 1 operator, the Operator Proficiency Check (OPC) and the ZFTT specific details should be conducted using the operator's standard operational procedures (SOPs).

(l) Aircraft without Flight Simulator

(1) Flight training conducted solely in an aircraft without the use of FSTDs cannot cover the CRM and MCC aspects of MPA flight training, and for safety reasons cannot cover all emergency and abnormal aircraft operation required for the training and skill test. In such cases, the ATO will need to satisfy the approving Authority that adequate training in these aspects can be achieved by other means. For training conducted solely on a multi-pilot aircraft where two pilots are trained together without the use of a flight simulator, a minimum of 8 hours flight training as PF for each pilot should normally be required. For training on a single pilot aeroplane or helicopter, 10 hours flight training should normally be required. It is accepted that for some relatively simple single or multi-engine aircraft without systems such as pressurisation, FMS or electronic flight deck displays, this minimum may be reduced at the discretion of the approving Authority. In the case of multi-engine aeroplanes or helicopters the minimum training required by AUA-FCL shall be included.

(2) It is widely accepted that aircraft training normally involves inherent delay in achieving an acceptable flight situation and configuration for training to be carried out in accordance with the agreed syllabus. These could include ATC or other traffic delay on the ground prior to take off, the necessity to climb to height or transit to suitable training areas and the unavoidable need to physically reposition the aircraft for subsequent or repeat manoeuvres or instrument approaches. In such cases the approving Authority will need to ensure that the training syllabus provides adequate flexibility to enable the minimum amount of required flight training to be carried out.

SKILL TEST

(m) Upon completion of the flight training the pilot will be required to undergo a skill test with an authorised examiner to demonstrate adequate competency of aircraft operation for issue of the type rating. The skill test is separate from the flight training syllabus, and provision for it cannot be included in the minimum requirements or training hours of the agreed flight training programme. The skill test may be conducted in a flight simulator, the aircraft or, in exceptional circumstances, a combination of both.

COURSE COMPLETION CERTIFICATE

(n) The Head of Training, or a nominated representative, is required to certify that all training has been carried out before an applicant undertakes a skill test for the type rating to be included in the pilot's licence. It is not uncommon for an ATO to be unable to provide, or have direct supervision over any training that is required to be carried out on an aircraft conducted by a third party such as the operator.

(o) In such cases, and with the agreement of the approving Authority, an ATO Course Completion Certificate may be issued confirming completion of ground and FSTD flight training. Confirmation of the completion of aircraft training should then be provided by the organisation undertaking this training, as a requirement for issue of the type rating. The period of time between any two phases of training should not exceed 60 days otherwise refresher training at the discretion of the Authority will be required.

AMC2 FCL.1120 Approval of Modular Theoretical Knowledge Distance Learning Courses

GENERAL

(a) Modular theoretical knowledge training may be conducted to meet licensing requirements for the issue of a PPL, CPL, IR and ATPL, or first single pilot high performance aeroplane class/type rating. Approved distance learning courses may be offered as part of modular theoretical knowledge training at the discretion of the Authority.

TRAINING ORGANISATION

(b) A variety of methods are open to ATOs to present course material. It is, however, necessary for ATOs to maintain comprehensive records in order to ensure that students make satisfactory academic progress and meet the time constraints laid down in AUA-FCL for the completion of modular courses.

(c) The following are given as planning guidelines for ATOs developing the distance learning element of modular courses:

(1) An assumption that a student will study for at least 15 hours per week.

(2) An indication throughout the course material of what constitutes a week's study.

(3) A recommended course structure and order of teaching acceptable to the Authority.

(4) One progress test for each subject for every 15 hours of study, which should be submitted to the ATO for assessment. Additional self-assessed progress tests should be completed at intervals of 5 to 10 study hours.

(5) Appropriate contact times throughout the course when a student can have access to an instructor by telephone, fax, e-mail or Internet.

(6) Measurement criteria to determine whether a student has satisfactorily completed the appropriate elements of the course to a standard that, in the judgement of the Head of Training, or CGI, will enable them to be entered for the AUA-FCL theoretical examinations with a good prospect of success.

(7) If the ATO provides the distance learning by help of I.T. solutions, for example the Internet, instructors should monitor student's progress by appropriate means.

FCL.1130 Quality assurance system

The training organisation shall establish a quality assurance system, acceptable to the Authority granting the approval, which ensures that training and instructional practices comply with all relevant requirements.

GM1 FCL.1130 Quality system for ATOs

(a) In accordance with FCL.1130, an ATO shall, as a condition for approval, establish and maintain a quality system. This AMC establishes the objectives of such a system, and offers a means of compliance as to which elements should be included and how the system can be integrated in the organisations.

(b) The rationale for the requirements of quality systems is the need to establish a distinct assignment of roles between Authority and training organisations by creating an evident division between the regulatory and surveillance responsibility on the one hand, and responsibility of the training activities in itself on the other.

(c) Therefore the training organisations must establish a system whereby they can monitor their activities, be able to detect deviations from set rules and standards, take the necessary corrective actions and thus ensure compliance with Authority regulations and own requirements. A well established and functioning quality system will make it possible for the supervising Authority to perform inspections and surveillance efficiently and with a reasonable amount of resources.

(d) It is obvious and well recognised that the scope and complexity of a quality system should reflect the size and complexity of the training organisation and its training activities. The objectives and the same principles apply, however, to any training organisation, irrespective of size and complexity. Thus, in small and relatively small training organisations, the quality system may be quite simple and integrated in the basic organisation, whereas larger organisations with more complex training activities will need to establish separate and independent quality organisations within the overall organisational set-up.

(e) In determining size and complexity in this context the following guidelines apply:

— training organisations with 5 or less instructors employed are considered very small;

— training organisations employing between 6 and 20 instructors are considered small.

In determining complexity, factors such as number of aircraft types used for training, range of training courses offered, geographical spread of training activities (e.g. the use of satellites), range of training arrangements with other training organisations, etc. will be considered.

(f) In a quality system of any ATO the following five elements should be clearly identifiable:

(1) determination of the organisation's training policy and training and flight safety standards;

(2) determination and establishment of assignment of responsibility, resources, organisation and operational processes, which will make allowance for policy and training and flight safety standards;

(3) follow up system to ensure that policy, training and flight safety standards are complied with;

(4) registration and documentation of deviations from policy, training and flight safety standards together with necessary analysis, evaluations and correction of such deviations;

(5) evaluation of experiences and trends concerning policy, training and flight safety standards.

(g) GM2 FCL.1130 describes in more detail objectives, the different elements of a quality system and offers guidance as to the set-up of quality systems in larger and/or more complex training organisations.

(h) The Quality System required in AUA-FCL and in other AUA regulations may be integrated.

GM2 FCL.1130 Quality system for ATOs

INTRODUCTION

A basis for quality should be established by every ATO and problem-solving techniques to run processes should be applied. Knowledge in how to measure, establish and ultimately achieve quality in training and education is considered to be essential.

The purpose of this IEM is to provide information and guidance to the training organisations on how to establish a Quality System that enables compliance with FCL.1130.

In order to show compliance with FCL.1130, an ATO should establish its Quality System in accordance with the instructions and information contained in the succeeding paragraphs.

THE QUALITY SYSTEM OF THE ATO

(a) Terminology

Accountable Manager

A person acceptable to the Authority who has authority for ensuring that all training activities can be financed and carried out to the standards required by the Authority, and additional requirements defined by the ATO.

Quality

The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

Quality Assurance

All those planned and systematic actions necessary to provide adequate confidence that all training activities satisfy given requirements, including the ones specified by the ATO in relevant manuals.

Quality Manager

The manager, acceptable to the Authority, responsible for the management of the Quality System, monitoring function and requesting corrective actions.

Quality Manual

The document containing the relevant information pertaining to the operator's quality system and quality assurance programme.

Quality Audit

A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

(b) Quality Policy and Strategy

It is of vital importance that the ATO describes how the organisation formulates, deploys, reviews its policy and strategy and turns it into plans and actions. A formal written Quality Policy Statement should be established that is a commitment by the Head of Training as to what the Quality System is intended to achieve. The Quality Policy should reflect the achievement and continued compliance with relevant parts of AUA-FCL together with any additional standards specified by the ATO.

The Accountable Manager will have overall responsibility for the Quality System including the frequency, format and structure of the internal management evaluation activities.

(c) Purpose of a Quality System

The implementation and employment of a Quality System will enable the ATO to monitor compliance with relevant parts of FCL, the Operations Manual, the Training Manual, and any other standards as established by that ATO, or the Authority, to ensure safe and efficient training.

(d) Quality Manager

(1) The primary role of the Quality Manager is to verify, by monitoring activities in the field of training, that the standards required by the Authority, and any additional requirements as established by the ATO, are being carried out properly under the supervision of the Head of Training, the Chief Flying Instructor and the Chief Theoretical Knowledge Instructor.

(2) The Quality Manager should be responsible for ensuring that the Quality Assurance Programme is properly implemented, maintained and continuously reviewed and improved. The Quality Manager should:

- have direct access to the Head of Training;
- have access to all parts of the ATO's organisation.

(3) In the case of small or very small ATOs, the posts of the Head of Training and the Quality Manager may be combined. However, in this event, quality audits should be conducted by independent personnel. In the case of a training organisation offering integrated training the Quality Manager should not hold the position of Head of Training, Chief Flying Instructor and Chief Theoretical Knowledge Instructor.

(e) Quality System

(1) The Quality System of the ATO should ensure compliance with and adequacy of training activities requirements, standards and procedures.

(2) The ATO should specify the basic structure of the Quality System applicable to all training activities conducted.

(3) The Quality System should be structured according to the size of the ATO and the complexity of the training to be monitored.

(f) Scope

A Quality System should address the following:

(1) Leadership

(2) Policy and Strategy

(3) Processes

(4) The provisions of FCL

(5) Additional standards and training procedures as stated by the ATO

(6) The organisational structure of the ATO

(7) Responsibility for the development, establishment and management of the Quality System

(8) Documentation, including manuals, reports and records

(9) Quality Assurance Programme

(10) The required financial, material, and human resources

(11) Training requirements

(12) Customer satisfaction

(g) Feedback System

The quality system should include a feedback system to ensure that corrective actions are both identified and promptly addressed. The feedback system should also specify who is required to rectify discrepancies and non-compliance in each particular case, and the procedure to be followed if corrective action is not completed within an appropriate timescale.

(h) Documentation

Relevant documentation includes the relevant part(s) of the Training and Operations Manual, which may be included in a separate Quality Manual.

(1) In addition relevant documentation should also include the following:

- Quality Policy;
- Terminology;
- Specified training standards;
- A description of the organisation;
- The allocation of duties and responsibilities;
- Training procedures to ensure regulatory compliance.

(2) The Quality Assurance Programme, reflecting:

- Schedule of the monitoring process;
- Audit procedures;
- Reporting procedures;
- Follow-up and corrective action procedures;
- Recording system;
- The training syllabus; and
- Document control.

(i) Quality Assurance Programme

The Quality Assurance Programme should include all planned and systematic actions necessary to provide confidence that all training are conducted in accordance with all applicable requirements, standards and procedures.

(j) Quality Inspection

The primary purpose of a quality inspection is to observe a particular event/action/document etc., in order to verify whether established training procedures and requirements are followed during the accomplishment of that event and whether the required standard is achieved.

Typical subject areas for quality inspections are:

— Actual flight and ground training;

— Maintenance;

— Technical Standards; and

— Training Standards.

(k) Audit

An audit is a systematic, and independent comparison of the way in which a training is being conducted against the way in which the published training procedures say it should be conducted. Audits should include at least the following quality procedures and processes:

— An explanation of the scope of the audit;

— Planning and preparation;

— Gathering and recording evidence; and

— Analysis of the evidence.

The various techniques that make up an effective audit are:

— Interviews or discussions with personnel;

— A review of published documents;

— The examination of an adequate sample of records;

— The witnessing of the activities which make up the training; and

— The preservation of documents and the recording of observations.

(l) Auditors

The ATO should decide, depending on the complexity of the training, whether to make use of a dedicated audit team or a single auditor. In any event, the auditor or audit team should have relevant training and/or operational experience.

The responsibilities of the auditors should be clearly defined in the relevant documentation.

(m) Auditor's Independence

Auditors should not have any day-to-day involvement in the area of the operation or maintenance activity which is to be audited. An ATO may, in addition to using the services of full-time dedicated personnel belonging to a separate quality department, undertake the monitoring of specific areas or activities by the use of part-time auditors.

An ATO whose structure and size does not justify the establishment of full-time auditors, may undertake the audit function by the use of part-time personnel from within his own organisation or from an external source under the terms of an agreement acceptable to the Authority.

In all cases the ATO should develop suitable procedures to ensure that persons directly responsible for the activities to be audited are not selected as part of the auditing team. Where external auditors are used, it is essential that any external specialist is familiar with the type of training conducted by the ATO.

The Quality Assurance Programme of the ATO should identify the persons within the company who have the experience, responsibility and authority to:

- Perform quality inspections and audits as part of ongoing Quality Assurance;
- Identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;
- Initiate or recommend solutions to concerns or findings through designated reporting channels;
- Verify the implementation of solutions within specific timescales;
- Report directly to the Quality Manager.

(n) Audit Scope

ATOs are required to monitor compliance with the training and Operations Manuals they have designed to ensure safe and efficient training. In doing so they should as a minimum, and where appropriate, monitor:

(1) Organisation;

(2) Plans and objectives;

(3) Training Procedures;

(4) Flight Safety;

(5) Manuals, Logs, and Records;

(6) Flight and Duty Time Limitations,

(7) Rest Requirements, and Scheduling;

(8) Aircraft Maintenance/Operations interface;

(9) Maintenance Programmes and Continued Airworthiness;

(10) Airworthiness Directives management;

(11) Maintenance Accomplishment.

(o) Audit Scheduling

A Quality Assurance Programme should include a defined audit schedule and a periodic review cycle. The schedule should be flexible, and allow unscheduled audits when trends are identified. Follow-up audits should be scheduled when necessary to verify that corrective action was carried out and that it was effective.

An ATO should establish a schedule of audits to be completed during a specific calendar period. All aspects of the training should be reviewed within a period of 12 months in accordance with the programme unless an extension to the audit period is accepted as explained below.

An ATO may increase the frequency of their audits at their discretion but should not decrease the frequency without the acceptance of the Authority. It is considered unlikely that a period of greater than 24 months would be acceptable for any audit topic.

When an ATO defines the audit schedule, significant changes to the management, organisation, training, or technologies should be considered, as well as changes to the regulatory requirements.

(p) Monitoring and Corrective Action

The aim of monitoring within the Quality System is primarily to investigate and judge its effectiveness and thereby to ensure that defined policy, training standards are continuously complied with. Monitoring activity is based upon quality inspections, audits, corrective action and follow-up. The ATO should establish and publish a quality procedure to monitor regulatory compliance on a continuing basis. This monitoring activity should be aimed at eliminating the causes of unsatisfactory performance.

Any non-compliance identified should be communicated to the manager responsible for taking corrective action or, if appropriate, the Accountable Manager. Such non-compliance should be recorded, for the purpose of further investigation, in order to determine the cause and to enable the recommendation of appropriate corrective action.

The Quality Assurance Programme should include procedures to ensure that corrective actions are developed in response to findings. These quality procedures should monitor such actions to verify their effectiveness and that they have been completed. Organisational responsibility and accountability for the implementation of corrective action resides with the department cited in the report identifying the finding. The Accountable Manager will have the ultimate responsibility for ensuring, through the Quality Manager(s), that corrective action has re-established compliance with the standard required by the Authority and any additional requirements established by the ATO.

(q) Corrective action

Subsequent to the quality inspection/audit, the ATO should establish:

(1) The seriousness of any findings and any need for immediate corrective action;

(2) The origin of the finding;

(3) What corrective actions are required to ensure that the non-compliance does not recur;

(4) A schedule for corrective action;

(5) The identification of individuals or departments responsible for implementing corrective action;

(6) Allocation of resources by the Accountable Manager where appropriate.

(7) The Quality Manager should:

   (i) Verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;

   (ii) Verify that corrective action includes the elements outlined in paragraph 16 above;

   (iii) Monitor the implementation and completion of corrective action;

   (iv) Provide management with an independent assessment of corrective action, implementation and completion;

(v) Evaluate the effectiveness of corrective action through the follow-up process.

(r) Management Evaluation

A management evaluation is a comprehensive, systematic documented review by the management of the quality system, training policies, and procedures, and should consider:

The results of quality inspections, audits and any other indicators; as well as the overall effectiveness of the management organisation in achieving stated objectives. A management evaluation should identify and correct trends, and prevent, where possible, future non-conformities. Conclusions and recommendations made as a result of an evaluation should be submitted in writing to the responsible manager for action. The responsible manager should be an individual who has the authority to resolve issues and take action. The Accountable Manager should decide upon the frequency, format, and structure of internal management evaluation activities.

(s) Recording

Accurate, complete, and readily accessible records documenting the results of the Quality Assurance Programme should be maintained by the ATO. Records are essential data to enable an ATO to analyse and determine the root causes of non-conformity, so that areas of non-compliance can be identified and subsequently addressed.

The following records should be retained for a period of 5 years:

- Audit Schedules;
- Quality inspection and Audit reports;
- Responses to findings;
- Corrective action reports;
- Management Evaluation reports.

(t) Quality Assurance Responsibility for Sub-Contractors

An ATO may decide to sub-contract out certain activities to external organisations subject to the approval of the Authority.

The ultimate responsibility for the training provided by the subcontractor always remains with the ATO. A written agreement should exist between the ATO and the sub- contractor clearly defining the safety related services and quality to be provided. The sub-contractor's safety related activities relevant to the agreement should be included in the ATO's Quality Assurance Programme.

The ATO should ensure that the sub-contractor has the necessary authorisation/approval when required, and commands the resources and competence to undertake the task. If the ATO requires the sub-contractor to conduct activity which exceeds the sub-contractor's authorisation/approval, the ATO is responsible for ensuring that the sub-contractor's quality assurance takes account of such additional requirements.

(u) Quality System Training

Correct and thorough training is essential to optimise quality in every organisation. In order to achieve significant outcomes of such training the ATO should ensure that all staff understand the objectives as laid down in the Quality Manual.

Those responsible for managing the Quality System should receive training covering:

- An introduction to the concept of Quality System;
- Quality management;
- Concept of Quality Assurance;
- Quality manuals;
- Audit techniques;
- Reporting and recording; and
- The way in which the Quality System will function in the ATO.

Time should be provided to train every individual involved in quality management and for briefing the remainder of the employees. The allocation of time and resources should be governed by the size and complexity of the operation concerned.

(v) Sources of Training

Quality management courses are available from the various National or International Standards Institutions, and an ATO should consider whether to offer such courses to those likely to be involved in the management of Quality Systems. Organisations with sufficient appropriately qualified staff should consider whether to carry out in-house training.

(w) Quality Systems for small/very small Organisations

The requirement to establish and document a Quality System, and to employ a Quality Manager applies to all ATOs.

Complex quality systems could be inappropriate for small or very small ATOs and the clerical effort required to draw up manuals and quality procedures for a complex system may stretch their resources. It is therefore accepted that such ATOs should tailor their quality systems to suit the size and complexity of their training and allocate resources accordingly.

For small and very small ATOs it may be appropriate to develop a Quality Assurance Programme that employs a checklist. The checklist should have a supporting schedule that requires completion of all checklist items within a specified timescale, together with a statement acknowledging completion of a periodic review by top management. An occasional independent overview of the checklist content and achievement of the Quality Assurance should be undertaken.

The small ATO may decide to use internal or external auditors or a combination of the two. In these circumstances it would be acceptable for external specialists and or qualified organisations to perform the quality audits on behalf of the Quality Manager.

If the independent quality audit function is being conducted by external auditors, the audit schedule should be shown in the relevant documentation.

Whatever arrangements are made, the ATO retains the ultimate responsibility for the quality system and especially the completion and follow-up of corrective actions.

FCL.1140 Facilities

(a) The facilities and working environment shall be appropriate for the task to be performed and be acceptable to the Authority.

(b) The training organisation shall have, or have access to, the necessary information, equipment, training devices and material to conduct the courses for which it is approved.

(c) Synthetic training devices shall be qualified according to requirements established by the State and their use shall be approved by the Authority to ensure that they are appropriate to the task.

FCL.1150 Personnel

(a) The training organisation shall nominate a person responsible for ensuring that it is in compliance with the requirements for an approved organisation.

(b) The organisation shall employ the necessary personnel to plan, perform and supervise the training to be conducted.

(c) The competence of instructional personnel shall be in accordance with procedures and to a level acceptable to the Authority.

(d) The training organisation shall ensure that all instructional personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. The training programme established by the training organisation shall include training in knowledge and skills related to human performance.

FCL.1160 Records

(a) The training organisation shall retain detailed student records to show that all requirements of the training course have been met as established by the Authority.

(b) The training organisation shall maintain a system for recording the qualifications and training of instructional and examining staff, where appropriate.

(c) The records shall be kept for a minimum period of three years after completion of the training. The records shall be retained for a minimum period of three years after the instructor or examiner ceases to perform a function for the training organisation.

FCL.1170 Oversight

The Authority shall maintain an effective oversight programme of the approved training organisation to ensure continuing compliance with the approval requirements.

FCL.1180 Evaluation and checking

When an approved training organisation is authorised to conduct the testing required for the issuance of a licence or rating, the testing shall be conducted by personnel authorised by the Authority or designated by the training organisation in accordance with criteria approved by the Authority.

FCL.1190 Safety Management System

(a) The organisation shall establish, implement and maintain a safety management system in accordance with the framework elements contained in Appendix 14 and made acceptable to the Authority.

(b) The safety management system shall contain a mandatory and voluntary reporting programme.

FCL.1200 Occurrence Reporting

(a) Training organisations having aircraft operations shall report to the Authority occurrence resulting from their training activity.

(b) Reports shall be made as soon as practicable, but in any case within 72 hours of the training organisation identifying the condition to which the report relates, unless exceptional circumstances prevent this. The reports shall be submitted electronically in the manner established by the authority.

(c) Where relevant, training organisations shall produce a follow-up report to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified.

(d) Occurrences that are part of the training exercise or those which are deemed as possible outcome of a training exercise are not required to be reported by the ATO.

AMC1 FCL.1200 Occurrence Reporting

The Approved Training Organisation's report should focus on occurrences relating to aircraft operations among others:

1. AIR OPERATIONS

1.1. Aircraft preparation

(1) Incorrect fuel type or contaminated fuel.

1.2. Take-off and landing

(1) Taxiway or runway excursion.

(2) Actual or potential taxiway or runway incursion.

(3) Final Approach and Take-off Area (FATO) incursion.

(4) Any rejected take-off.

(5) Tail, blade/wingtip or nacelle strike during take-off or landing.

(6) Precautionary or forced landing.

1.3. Any phase of flight

(1) Loss of control.

(2) Unintentional deviation from intended or assigned track of the lowest of twice the required navigation performance or 10 nautical miles.

(3) Exceedance of aircraft flight manual limitation.

(4) Operation with incorrect altimeter setting.

(5) Jet blast or rotor and prop wash occurrences which have or could have endangered the aircraft, its occupants or any other person.

(6) Misinterpretation of automation mode or of any flight deck information provided to the flight crew which has or could have endangered the aircraft, its occupants or any other person.

1.4. Other types of occurrences

(1) Any occurrence where the human performance has directly contributed to or could have contributed to an accident or a serious incident.

2. TECHNICAL OCCURRENCES

2.1. Structure and systems

(1) Loss of any part of the aircraft structure in flight.

(2) Loss of a system.

(3) Loss of redundancy of a system.

(4) Leakage of any fluid which resulted in a fire hazard or possible hazardous contamination of aircraft structure, systems or equipment, or which has or could have endangered the aircraft, its occupants or any other person.

(5) Fuel system malfunctions or defects, which had an effect on fuel supply and/or distribution.

(6) Malfunction or defect of any indication system when this results in misleading indications to the crew.

(7) Abnormal functioning of flight controls such as asymmetric or stuck/jammed flight controls (for example: lift (flaps/slats), drag (spoilers), attitude control (ailerons, elevators, rudder) devices).

2.2. Propulsion (including engines, propellers and rotor systems)

(1) Failure or significant malfunction of any part or controlling of a propeller, rotor or powerplant.

(2) Damage to or failure of main/tail rotor or transmission and/or equivalent systems.

(3) Engine operating limitation exceedance, including overspeed or inability to control the speed of any high-speed rotating component (for example: air turbine motor, propeller or rotor).

(4) Failure or malfunction of any part of an engine, powerplant, or transmission resulting in any one or more of the following:

(a) thrust-reversing system failing to operate as commanded;

(b) inability to control power, thrust or rpm (revolutions per minute);

(c) non-containment of components/debris.

3. INTERACTION WITH AIR NAVIGATION SERVICES (ANS) AND AIR TRAFFIC MANAGEMENT (ATM)

(1) Unsafe ATC (Air Traffic Control) clearance.

(2) Prolonged loss of communication with ATS (Air Traffic Service) or ATM Unit.

(3) Conflicting instructions from different ATS Units potentially leading to a loss of separation.

(4) Misinterpretation of radio-communication which has or could have endangered the aircraft, its occupants or any other person.

(5) Intentional deviation from ATC instruction which has or could have endangered the aircraft, its occupants or any other person.

4. EMERGENCIES AND OTHER CRITICAL SITUATIONS

(1) Any event leading to the declaration of an emergency (‘Mayday’ or ‘PAN call’).

(2) Any burning, melting, smoke, fumes, arcing, overheating, fire or explosion.

(3) Contaminated air in the cockpit or in the passenger compartment which has or could have endangered the aircraft, its occupants or any other person.

(4) Use of any emergency equipment or non-normal procedure affecting in-flight or landing performance.

(5) Failure of any emergency or rescue system or equipment which has or could have endangered the aircraft, its occupants or any other person.

(6) Uncontrollable cabin pressure.

(7) Any use of crew oxygen system by the crew.

(8) Critically low fuel quantity or fuel quantity at destination below required final reserve fuel.

5. EXTERNAL ENVIRONMENT AND METEOROLOGY

(1) A collision or a near collision on the ground or in the air, with another aircraft, terrain or obstacle .

(2) ACAS RA (Airborne Collision Avoidance System, Resolution Advisory).

(3) Wildlife strike including bird strike.

(4) Foreign object damage/debris (FOD).

(5) Unexpected encounter of poor runway surface conditions.

(6) Wake-turbulence encounters.

(7) Interference with the aircraft by firearms, fireworks, flying kites, laser illumination, high powered lights, lasers, Remotely Piloted Aircraft Systems, model aircraft or by similar means.

(8) A lightning strike which resulted in damage to the aircraft or loss or malfunction of any aircraft system.

(9) A hail encounter which resulted in damage to the aircraft or loss or malfunction of any aircraft system.

(10) Severe turbulence encounter or any encounter resulting in injury to occupants or deemed to require a ‘turbulence check’ of the aircraft.

(11) A significant wind shear or thunderstorm encounter which has or could have endangered the aircraft, its occupants or any other person.

(12) Icing encounter resulting in handling difficulties, damage to the aircraft or loss or malfunction of any aircraft system.

(13) Volcanic ash encounter.

6. SECURITY

(1) Bomb threat or hijack.

APPENDIX 1 – CREDITING OF THEORETICAL KNOWLEDGE

A. CREDITING OF THEORETICAL KNOWLEDGE FOR THE ISSUE OF A PILOT LICENCE IN ANOTHER CATEGORY OF AIRCRAFT — BRIDGE INSTRUCTION AND EXAMINATION REQUIREMENTS

A.1 PPL

A.1.1 For the issue of a PPL, the holder of a licence in another category of aircraft shall receive theoretical knowledge instruction and pass theoretical knowledge examinations to the appropriate level in the following subjects:

- Principles of Flight,
- Operational Procedures,
- Flight Performance and Planning,
- Aircraft General Knowledge, Navigation.

A.2 CPL

A.2.1 An applicant for a CPL holding a CPL in another category of aircraft shall have received theoretical knowledge bridge instruction on an approved course according to the differences identified between the CPL syllabi for different aircraft categories

A.2.2 The applicant shall pass theoretical knowledge examinations as defined in this regulation for the following subjects in the appropriate aircraft category:

- 021 — Aircraft General Knowledge: Airframe and Systems, Electrics, Powerplant, Emergency Equipment;
- 022 — Aircraft General Knowledge: Instrumentation;
- 032/034 — Performance Aeroplanes or Helicopters, as applicable;
- 070 — Operational Procedures, and
- 080 — Principles of Flight.

A.2.3 An applicant for a CPL having passed the relevant theoretical examinations for an IR in the same category of aircraft is credited towards the theoretical knowledge requirements in the following subjects:

A.2.3.1 Human Performance;

A.2.3.2 Meteorology.

A.3 ATPL

A.3.1 An applicant for an ATPL holding an ATPL in another category of aircraft shall have received theoretical knowledge bridge instruction at an ATO according to the differences identified between the ATPL syllabi for different aircraft categories.

A.3.2 The applicant shall pass theoretical knowledge examinations as defined in this regulation for the following subjects in the appropriate aircraft category:

- 021 — Aircraft General Knowledge: Airframe and Systems, Electrics, Powerplant, Emergency Equipment;
- 022 — Aircraft General Knowledge: Instrumentation;
- 032/034 — Performance Aeroplanes or Helicopters, as applicable;
- 070 — Operational Procedures, and
- 080 — Principles of Flight.

A.3.3 An applicant for an ATPL(A) having passed the relevant theoretical examination for a CPL(A) is credited towards the theoretical knowledge requirements in subject VFR Communications.

A.3.4 An applicant for an ATPL(H), having passed the relevant theoretical examinations for a CPL(H) is credited towards the theoretical knowledge requirements in the following subjects:

- Air Law;
- Principles of Flight (Helicopter);
- VFR Communications.

A.3.5 An applicant for an ATPL(A) having passed the relevant theoretical examination for an IR(A) is credited towards the theoretical knowledge requirements in subject IFR Communications.

A.3.6 An applicant for an ATPL(H) with an IR(H), having passed the relevant theoretical examinations for a CPL(H) is credited towards the theoretical knowledge requirements in the following subjects:

- Principles of Flight (Helicopter);
- VFR Communications.

A.4 IR

A.4.1 An applicant for an IR having passed the relevant theoretical examinations for a CPL in the same aircraft category is credited towards the theoretical knowledge requirements in the following subjects:

- Human Performance;
- Meteorology;
- Communication.

A.4.2 An applicant for an IR(H) having passed the relevant theoretical examinations for an ATPL(H) VFR is required to pass the following examination subjects:

- Air Law;
- Flight Planning and Flight Monitoring;
- Radio Navigation;
- IFR Communications.

APPENDIX 2 - LANGUAGE PROFICIENCY RATING SCALE — EXPERT, EXTENDED AND OPERATIONAL LEVEL

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert (Level 6)	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasise a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Extended (Level 5)	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Para- phrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Operational (Level 4)	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary particularly in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous inter- action, but this does not prevent effective communication. Can make limited use of discourse markers and connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an inter- national community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.

APPENDIX 3 — TRAINING COURSES FOR THE ISSUE OF A CPL AND AN ATPL

This Appendix describes the requirements for the different types of training courses for the issue of a CPL and an ATPL, with and without an IR.

An applicant wishing to transfer to another ATO during a training course shall apply to the Authority for a formal assessment of the further hours of training required.

A. ATP integrated course — Aeroplanes

A.1 GENERAL

A.1.1 The aim of the ATP(A) integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot on multi-pilot multi-engine aeroplanes in commercial air transport and to obtain the CPL(A)/IR.

A.1.2 An applicant wishing to undertake an ATP(A) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

A.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(A) or PPL(H) entrant, 50 % of the hours flown prior to the course shall be credited, up to a maximum of 40 hours flying experience, or 45 hours if an aeroplane night rating has been obtained, of which up to 20 hours may count towards the requirement for dual instruction flight time.

A.1.4 The course shall comprise:

A.1.4.1 theoretical knowledge instruction to the ATPL(A) knowledge level;

A.1.4.2 visual and instrument flying training; and

A.1.4.3 training in MCC for the operation of multi-pilot aeroplanes.

A.1.5 UPRT in accordance with FCL745.A unless applicants have already completed this training course before starting the ATP integrated course.

A.1.6 An applicant failing or unable to complete the entire ATP(A) course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR if the applicable requirements are met.

A.2 THEORETICAL KNOWLEDGE

A.2.1 An ATP(A) theoretical knowledge course shall comprise at least 750 hours of instruction.

A.2.1.1 The MCC course shall comprise at least 25 hours of theoretical knowledge instruction and exercises.

A.2.1.2 The theoretical knowledge instruction in UPRT shall be conducted in accordance with FCL.745.A.

A.3 THEORETICAL KNOWLEDGE EXAMINATION

A.3.1 An applicant shall demonstrate the level of knowledge appropriate to the privileges granted to the holder of an ATPL(A).

A.4 FLYING TRAINING

A.4.1 The flying training, not including type rating training, shall comprise a total of at least 195 hours, including all progress tests, of which up to 55 hours for the entire course may be instrument ground time. Within the total of 195 hours, applicants shall complete at least:

A.4.1.1 95 hours of dual instruction, of which up to 55 hours may be instrument ground time;

A.4.1.2 70 hours as PIC, including VFR flight and instrument flight time as student pilot-in-command (SPIC). The instrument flight time as SPIC shall only be counted as PIC flight time up to a maximum of 20 hours;

A.4.1.3 50 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

A.4.1.4 5 hours flight time shall be completed at night, comprising 3 hours of dual instruction, which will include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings; and

A.4.1.5 UPRT flight instruction in accordance with FCL.745.A.

A.4.1.6 115 hours of instrument time comprising, at least:

A.4.1.6.1 20 hours as SPIC;

A.4.1.6.2 15 hours MCC, for which an FFS or FNPT II may be used;

A.4.1.6.3 50 hours of instrument flight instruction, of which up to:

(i) 25 hours may be instrument ground time in a FNPT I; or

(ii) 40 hours may be instrument ground time in a FNPT II, FTD 2 or FFS, of which up to 10 hours may be conducted in an FNPT I.

An applicant holding a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited;

A.4.1.7 5 hours to be carried out in an aeroplane certificated for the carriage of at least 4 persons that has a variable pitch propeller and retractable landing gear.

A.5 SKILL TEST

A.5.1 Upon completion of the related flying training, the applicant shall take the CPL(A) skill test on either a single-engine or a multi-engine aeroplane and the IR skill test on a multi-engine aeroplane.

B. ATP modular course — Aeroplanes

B.1 Applicants for an ATPL(A) who complete their theoretical knowledge instruction at a modular course shall:

B.1.1 hold at least a PPL(A) issued in accordance with Annex 1 to the Chicago Convention; and complete at least the following hours of theoretical knowledge instruction:

B.1.1.1 for applicants holding a PPL(A): 650 hours;

B.1.1.2 for applicants holding a CPL(A): 400 hours;

B.1.1.3 for applicants holding an IR(A): 500 hours;

B.1.1.4 for applicants holding a CPL(A) and an IR(A): 250 hours.

B.1.2 The theoretical knowledge instruction shall be completed before the skill test for the ATPL(A) is taken.

C. CPL/IR integrated course — Aeroplanes

C.1 GENERAL

C.1.1 The aim of the CPL(A) and IR(A) integrated course is to train pilots to the level of proficiency necessary to operate single-pilot single-engine or multi-engine aeroplanes in commercial air transport and to obtain the CPL(A)/IR.

C.1.2 An applicant wishing to undertake a CPL(A)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

C.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention.

In the case of a PPL(A) or PPL(H) entrant, 50 % of the hours flown prior to the course shall be credited, up to a maximum of 40 hours flying experience, or 45 hours if an aeroplane night rating has been obtained, of which up to 20 hours may count towards the requirement for dual instruction flight time.

C.1.4 The course shall comprise:

(i) theoretical knowledge instruction to CPL(A) and IR knowledge level; and

(ii) visual and instrument flying training.

C.1.5 An applicant failing or unable to complete the entire CPL/IR(A) course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR if the applicable requirements are met.

C.2 THEORETICAL KNOWLEDGE

C.2.1 A CPL(A)/IR theoretical knowledge course shall comprise at least 500 hours of instruction.

C.3 THEORETICAL KNOWLEDGE EXAMINATION

C.3.1 An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(A) and an IR.

C.4 FLYING TRAINING

C.4.1 The flying training, not including type rating training, shall comprise a total of at least 180 hours, to include all progress tests, of which up to 40 hours for the entire course may be instrument ground time. Within the total of 180 hours, applicants shall complete at least:

(i) 80 hours of dual instruction, of which up to 40 hours may be instrument ground time;

(ii) 70 hours as PIC, including VFR flight and instrument flight time which may be flown as SPIC. The instrument flight time as SPIC shall only be counted as PIC flight time up to a maximum of 20 hours;

(iii) 50 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

(iv) 5 hours flight time shall be completed at night, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings; and

(v) 100 hours of instrument time comprising, at least:

(a) 20 hours as SPIC; and

(b) 50 hours of instrument flight instruction, of which up to:

A. 25 hours may be instrument ground time in an FNPT I; or

B. 40 hours may be instrument ground time in an FNPT II, FTD 2 or FFS, of which up to 10 hours may be conducted in an FNPT I.

(vi) An applicant holding a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited;

(vii) 5 hours to be carried out in an aeroplane certificated for the carriage of at least 4 persons that has a variable pitch propeller and retractable landing gear.

C.5 SKILL TESTS

C.5.1 Upon completion of the related flying training the applicant shall take the CPL(A) skill test and the IR skill test on either a multi-engine aeroplane or a single-engine aeroplane.

D. CPL integrated course — Aeroplanes

D.1 GENERAL

D.1.1 The aim of the CPL(A) integrated course is to train pilots to the level of proficiency necessary for the issue of a CPL(A).

D.1.2 An applicant wishing to undertake a CPL(A) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

D.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(A) or PPL(H) entrant, 50 % of the hours flown prior to the course shall be credited, up to a maximum of 40 hours flying experience, or 45 hours if an aeroplane night rating has been obtained, of which up to 20 hours may count towards the requirement for dual instruction flight time.

D.1.4 The course shall comprise:

(i) theoretical knowledge instruction to CPL(A) knowledge level; and

(ii) visual and instrument flying training.

D.1.5 An applicant failing or unable to complete the entire CPL(A) course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

D.2 THEORETICAL KNOWLEDGE

D.2.1 A CPL(A) theoretical knowledge course shall comprise at least 350 hours of instruction.

D.3 THEORETICAL KNOWLEDGE EXAMINATION

D.3.1 An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(A).

D.4 FLYING TRAINING

D.4.1 The flying training, not including type rating training, shall comprise a total of at least 150 hours, to include all progress tests, of which up to 5 hours for the entire course may be instrument ground time. Within the total of 150 hours, applicants shall complete at least:

(i) 80 hours of dual instruction, of which up to 5 hours may be instrument ground time;

(ii) 70 hours as PIC;

(iii) 20 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

(iv) 5 hours flight time shall be completed at night, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings;

(v) 10 hours of instrument flight instruction, of which up to 5 hours may be instrument ground time in an FNPT I, FTD 2, FNPT II or FFS. An applicant holding a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited;

(vi) 5 hours to be carried out in an aeroplane certificated for the carriage of at least four persons that has a variable pitch propeller and retractable landing gear.

D.5 SKILL TEST

D.5.1 Upon completion of the flying training the applicant shall take the CPL(A) skill test on a single-engine or a multi- engine aeroplane.

E. CPL modular course — Aeroplanes

E.1 GENERAL

E.1.1 The aim of the CPL(A) modular course is to train PPL(A) holders to the level of proficiency necessary for the issue of a CPL(A).

E.1.2 Before commencing a CPL(A) modular course an applicant shall be the holder of a PPL(A) issued in accordance with Annex 1 to the Chicago Convention.

E.1.3 Before commencing the flight training the applicant shall:

(i) have completed 150 hours flight time;

(ii) have complied with the pre-requisites for the issue of a class or type rating for multi-engine aeroplanes in accordance with Subpart H, if a multi-engine aeroplane is to be used on the skill test.

E.1.4 An applicant wishing to undertake a modular CPL(A) course shall complete all the flight instructional stages in one continuous course of training as arranged by an ATO. The theoretical knowledge instruction may be given at an ATO conducting theoretical knowledge instruction only.

E.1.5 The course shall comprise:

(i) theoretical knowledge instruction to CPL(A) knowledge level; and

(ii) visual and instrument flying training.

E.2 THEORETICAL KNOWLEDGE

E.2.1 An approved CPL(A) theoretical knowledge course shall comprise at least 250 hours of instruction.

E.3 THEORETICAL KNOWLEDGE EXAMINATION

E.3.1 An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(A).

E.4 FLYING TRAINING

E.4.1 Applicants without an IR shall be given at least 25 hours dual flight instruction, including 10 hours of instrument instruction of which up to 5 hours may be instrument ground time in a BITD, an FNPT I or II, an FTD 2 or an FFS.

E.4.2 Applicants holding a valid IR(A) shall be fully credited towards the dual instrument instruction time. Applicants holding a valid IR(H) shall be credited up to 5 hours of the dual instrument instruction time, in which case at least 5 hours dual instrument instruction time shall be given in an aeroplane. An applicant holding a Course Completion Certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time.

E.4.3 Applicants with a valid IR shall be given at least 15 hours dual visual flight instruction.

E.4.4 Applicants without a night rating aeroplane shall be given additionally at least 5 hours night flight instruction, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings.

E.4.5 At least 5 hours of the flight instruction shall be carried out in an aeroplane certificated for the carriage of at least 4 persons and have a variable pitch propeller and retractable landing gear.

E.5 EXPERIENCE

E.5.1 The applicant for a CPL(A) shall have completed at least 200 hours flight time, including at least:

E.5.1.1 100 hours as PIC, of which 20 hours of cross-country flight as PIC, which shall include a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

E.5.1.2 5 hours of flight time shall be completed at night, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings; and

E.5.1.3 10 hours of instrument flight instruction, of which up to 5 hours may be instrument ground time in an FNPT I, or FNPT II or FFS. An applicant holding a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited;

E.5.1.4 6 hours of flight time shall be completed in a multi-engine aeroplane.

E.5.1.5 Hours as PIC of other categories of aircraft may count towards the 200 hours flight time, in the following cases:

(i) 30 hours in helicopter, if the applicant holds a PPL(H); or

(ii) 100 hours in helicopters, if the applicant holds a CPL(H);

E.6 SKILL TEST

E.6.1 Upon completion of the flying training and relevant experience requirements the applicant shall take the CPL(A) skill test on either a single-engine or a multi-engine aeroplane.

F. ATP/IR integrated course — Helicopters

F.1 GENERAL

F.1.1 The aim of the ATP(H)/IR integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot on multi-pilot multi-engine helicopters in commercial air transport and to obtain the CPL(H)/IR.

F.1.2 An applicant wishing to undertake an ATP(H)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

F.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(H) entrant, 50 % of the relevant experience shall be credited, up to a maximum of:

(i) 40 hours, of which up to 20 hours may be dual instruction; or

(ii) 50 hours, of which up to 25 hours may be dual instruction, if a helicopter night rating has been obtained.

F.1.4 The course shall comprise:

(i) theoretical knowledge instruction to the ATPL(H) and IR knowledge level;

(ii) visual and instrument flying training; and

(iii) training in MCC for the operation of multi-pilot helicopters.

F.1.5 An applicant failing or unable to complete the entire ATP(H)/IR course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

F.2 THEORETICAL KNOWLEDGE

F.2.1 An ATP(H)/IR theoretical knowledge course shall comprise at least 750 hours of instruction.

F.2.2 The MCC course shall comprise at least 25 hours of theoretical knowledge instruction exercises.

F.3 THEORETICAL KNOWLEDGE EXAMINATION

F.3.1 An applicant shall demonstrate the level of knowledge appropriate to the privileges granted to the holder of an ATPL(H) and an IR.

F.4 FLYING TRAINING

F.4.1 The flying training shall comprise a total of at least 195 hours, to include all progress tests. Within the total of 195 hours, applicants shall complete at least:

F.4.1.1 140 hours of dual instruction, of which:

(i) 75 hours visual instruction may include:

(a) 30 hours in a helicopter FFS, level C/D; or

(b) 25 hours in a FTD 2, 3; or

(c) 20 hours in a helicopter FNPT II/III.

(i) 50 hours instrument instruction may include:

(a) up to 20 hours in a helicopter FFS or FTD 2,3 or FNPT II/III; or

(b) 10 hours in at least a helicopter FNPT 1 or an aeroplane;

(ii) 15 hours MCC, for which a helicopter FFS or helicopter FTD 2, 3(MCC) or FNPT II/III(MCC) may be used.

If the helicopter used for the flying training is of a different type from the helicopter FFS used for the visual training, the maximum credit shall be limited to that allocated for the helicopter FNPT II/III;

F.4.1.1 55 hours as PIC, of which 40 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

F.4.1.2 50 hours of cross-country flight, including at least 10 hours of cross-country flight as SPIC including a VFR cross-country flight of at least 185 km (100 NM) in the course of which landings at two different aerodromes from the aerodrome of departure shall be made;

F.4.1.3 5 hours flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing;

F.4.1.4 50 hours of dual instrument time comprising:

(i) 10 hours basic instrument instruction time; and

(ii) 40 hours IR Training, which shall include at least 10 hours in a multi-engine IFR-certificated helicopter.

F.5 SKILL TESTS

F.5.1 Upon completion of the related flying training, the applicant shall take the CPL(H) skill test on a multi-engine helicopter and the IR skill test on an IFR certificated multi-engine helicopter and shall comply with the requirements for MCC training.

G. ATP integrated course — Helicopters

G.1 GENERAL

G.1.1 The aim of the ATP(H) integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot on multi-pilot multi-engine helicopters limited to VFR privileges in commercial air transport and to obtain the CPL(H).

G.1.2 An applicant wishing to undertake an ATP(H) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

G.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(H) entrant, 50 % of the relevant experience shall be credited, up to a maximum of:

(i) 40 hours, of which up to 20 hours may be dual instruction; or

(ii) 50 hours, of which up to 25 hours may be dual instruction, if a helicopter night rating has been obtained.

G.1.4 The course shall comprise:

(i) theoretical knowledge instruction to the ATPL(H) knowledge level;

(ii) Visual and basic instrument flying training; and

(iii) training in MCC for the operation of multi-pilot helicopters.

G.1.5 An applicant failing or unable to complete the entire ATP(H) course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

G.2 THEORETICAL KNOWLEDGE

G.2.1 An ATP(H) theoretical knowledge course shall comprise at least 650 hours of instruction.

G.2.2 The MCC course shall comprise at least 20 hours of theoretical knowledge instruction exercises.

G.3 THEORETICAL KNOWLEDGE EXAMINATION

G.3.1 An applicant shall demonstrate the level of knowledge appropriate to the privileges granted to the holder of an ATPL (H).

G.4 FLYING TRAINING

G.4.1 The flying training shall comprise a total of at least 150 hours, to include all progress tests. Within the total of 150 hours, applicants shall complete at least:

(i) 95 hours of dual instruction, of which:

(a) 75 hours visual instruction may include:

A. 30 hours in a helicopter FFS level C/D; or

B. 25 hours in a helicopter FTD 2,3; or

C. 20 hours in a helicopter FNPT II/III.

(b) 10 hours basic instrument instruction may include 5 hours in at least a helicopter FNPT I or an aeroplane;

(c) 10 hours MCC, for which a helicopter: helicopter FFS or FTD 2,3(MCC) or FNPT II/III(MCC) may be used.

If the helicopter used for the flying training is of a different type from the helicopter FFS used for the visual training, the maximum credit shall be limited to that allocated for the helicopter FNPT II/III;

(i) 55 hours as PIC, of which 40 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

(ii) 50 hours of cross-country flight, including at least 10 hours of cross-country flight as SPIC, including a VFR cross-country flight of at least 185 km (100 NM) in the course of which landings at two different aerodromes from the aerodrome of departure shall be made;

(iii) 5 hours flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing.

G.5 SKILL TESTS

G.5.1 Upon completion of the related flying training the applicant shall take the CPL(H) skill test on a multi-engine helicopter and comply with MCC requirements.

H. ATP modular course — Helicopters

H.1 Applicants for an ATPL(H) who complete their theoretical knowledge instruction at a modular course shall hold at least a PPL(H) and complete at least the following hours of instruction within a period of 18 months:

H.1.1 for applicants holding a PPL(H) issued in accordance with Annex 1 to the Chicago Convention: 550 hours;

H.1.2 for applicants holding a CPL(H): 300 hours.

H.2 Applicants for an ATPL(H)/IR who complete their theoretical knowledge instruction at a modular course shall hold at least a PPL(H) and complete at least the following hours of instruction:

H.2.1 for applicants holding a PPL(H): 650 hours;

H.2.2 for applicants holding a CPL(H): 400 hours;

H.2.3 for applicants holding an IR(H): 500 hours;

H.2.4 for applicants holding a CPL(H) and an IR(H): 250 hours.

I. CPL/IR integrated course — Helicopters

I.1 GENERAL

I.1.1 The aim of the CPL(H)/IR integrated course is to train pilots to the level of proficiency necessary to operate single- pilot multi-engine helicopters and to obtain the CPL(H)/IR multi-engine helicopter.

I.1.2 An applicant wishing to undertake a CPL(H)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

I.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of an entrant holding a PPL(H), 50 % of the relevant experience shall be credited, up to a maximum of:

(i) 40 hours, of which up to 20 hours may be dual instruction; or

(ii) 50 hours, of which up to 25 hours may be dual instruction, if a helicopter night rating has been obtained.

I.1.4 The course shall comprise:

(i) theoretical knowledge instruction to CPL(H) and IR knowledge level, and the initial multi-engine helicopter type rating; and

(ii) visual and instrument flying training.

I.1.5 An applicant failing or unable to complete the entire CPL(H)/IR course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

I.2 THEORETICAL KNOWLEDGE

I.2.1 A CPL(H)/IR theoretical knowledge course shall comprise at least 500 hours of instruction.

I.3 THEORETICAL KNOWLEDGE EXAMINATION

I.3.1 An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(H) and an IR.

I.4 FLYING TRAINING

I.4.1 The flying training shall comprise a total of at least 180 hours including all progress tests. Within the 180 hours, applicants shall complete at least:

I.4.1.1 125 hours of dual instruction, of which:

(i) 75 hours visual instruction, which may include:

(ii) 30 hours in a helicopter FFS level C/D; or

(iii) 25 hours in a helicopter FTD 2, 3; or

(iv) 20 hours in a helicopter FNPT II/III.

I.4.1.2 50 hours instrument instruction which may include:

(i) up to 20 hours in a helicopter FFS or FTD 2, 3, or FNPT II, III; or

(ii) 10 hours in at least a helicopter FNPT I or an aeroplane.

If the helicopter used for the flying training is of a different type from the FFS used for the visual training, the maximum credit shall be limited to that allocated for the FNPT II/III;

I.4.1.3 55 hours as PIC, of which 40 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

I.4.1.4 10 hours dual cross-country flying;

I.4.1.5 10 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 185 km (100 NM) in the course of which full stop landings at two different aerodromes from the aerodrome of departure shall be made;

I.4.1.6 5 hours of flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing;

I.4.1.7 50 hours of dual instrument time comprising:

(i) 10 hours basic instrument instruction time; and

(ii) 40 hours IR Training, which shall include at least 10 hours in a multi-engine IFR-certificated helicopter.

I.5 SKILL TEST

I.5.1 Upon completion of the related flying training, the applicant shall take the CPL(H) skill test on either a multi-engine or a single-engine helicopter and the IR skill test on an IFR-certificated multi-engine helicopter.

J. CPL integrated course — Helicopters

J.1 GENERAL

J.1.1 The aim of the CPL(H) integrated course is to train pilots to the level of proficiency necessary for the issue of a CPL(H).

J.1.2 An applicant wishing to undertake a CPL(H) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

J.1.3 An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of an entrant holding a PPL(H), 50 % of the relevant experience shall be credited, up to a maximum of:

J.1.3.1 40 hours, of which up to 20 hours may be dual instruction; or

J.1.3.2 50 hours, of which up to 25 hours may be dual instruction if a helicopter night rating has been obtained.

J.1.4 The course shall comprise:

J.1.5 theoretical knowledge instruction to CPL(H) knowledge level; and

J.1.5.1 visual and instrument flying training.

J.1.5.2 An applicant failing or unable to complete the entire CPL(H) course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

J.2 THEORETICAL KNOWLEDGE

J.2.1 An approved CPL(H) theoretical knowledge course shall comprise at least 350 hours of instruction or 200 hours if the applicant is the holder of a PPL.

J.3 THEORETICAL KNOWLEDGE EXAMINATION

J.3.1 An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(H).

J.4 FLYING TRAINING

J.4.1 The flying training shall comprise a total of at least 135 hours, to include all progress tests, of which up to 5 hours may be instrument ground time. Within the 135 hours total, applicants shall complete at least:

J.4.1.1 85 hours of dual instruction, of which:

(i) up to 75 hours may be visual instruction, and may include:

(ii) 30 hours in a helicopter FFS level C/D; or

(iii) 25 hours in a helicopter FTD 2, 3; or

(iv) 20 hours in a helicopter FNPT II/III.

J.4.1.2 up to 10 hours may be instrument instruction, and may include 5 hours in at least a helicopter FNPT I or an aeroplane.

J.4.1.3 If the helicopter used for the flying training is of a different type from the FFS used for the visual training, the maximum credit shall be limited to that allocated for the FNPT II/III;

J.4.1.4 50 hours as PIC, of which 35 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

J.4.1.5 10 hours dual cross-country flying;

J.4.1.6 10 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 185 km (100 NM) in the course of which full stop landings at two different aerodromes from the aerodrome of departure shall be made;

J.4.1.7 5 hours flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing;

J.4.1.8 10 hours of instrument dual instruction time, including at least 5 hours in a helicopter.

J.5 SKILL TEST

J.5.1 Upon completion of the related flying training, the applicant shall take the CPL(H) skill test.

K. CPL modular course — Helicopters

K.1 GENERAL

K.1.1 The aim of the CPL(H) modular course is to train PPL(H) holders to the level of proficiency necessary for the issue of a CPL(H).

K.1.2 Before commencing a CPL(H) modular course an applicant shall be the holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention.

K.1.3 Before commencing the flight training the applicant shall:

K.1.3.1 have completed 155 hours flight time as a pilot in helicopters, including 50 hours as PIC of which 10 hours shall be cross-country;

K.1.3.2 have complied with FCL.725 and FCL.720.H if a multi-engine helicopter is to be used on the skill test.

K.1.4 An applicant wishing to undertake a modular CPL(H) course shall complete all the flight instructional stages in one continuous course of training as arranged by an ATO. The theoretical knowledge instruction may be given at an ATO that conducts theoretical knowledge instruction only.

K.1.5 The course shall comprise:

K.1.5.1 theoretical knowledge instruction to CPL(H) knowledge level; and

K.1.5.2 visual and instrument flying training.

K.2 THEORETICAL KNOWLEDGE

K.2.1 An approved CPL(H) theoretical knowledge course shall comprise at least 250 hours of instruction.

K.3 THEORETICAL KNOWLEDGE EXAMINATION

K.3.1 An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(H).

K.4 FLYING TRAINING

K.4.1 Applicants without an IR shall be given at least 30 hours dual flight instruction, of which:

K.4.1.1 20 hours visual instruction, which may include 5 hours in a helicopter FFS or FTD 2,3 or FNPT II, III; and

K.4.1.2 10 hours instrument instruction, which may include 5 hours in at least a helicopter FTD 1 or FNPT I or aeroplane.

K.4.2 Applicants holding a valid IR(H) shall be fully credited towards the dual instrument instruction time. Applicants holding a valid IR(A) shall complete at least 5 hours of the dual instrument instruction time in a helicopter.

K.4.3 Applicants without a night rating helicopter shall be given additionally at least 5 hours night flight instruction comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing.

K.5 EXPERIENCE

K.5.1 The applicant for a CPL(H) shall have completed at least 185 hours flight time, including 50 hours as PIC, of which 10 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 185 km (100 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made.

K.5.2 Hours as pilot-in-command of other categories of aircraft may count towards the 185 hours flight time, in the following cases:

K.5.1.1 20 hours in aeroplanes, if the applicant holds a PPL(A); or

K.5.1.2 50 hours in aeroplanes, if the applicant holds a CPL(A).

K.6 SKILL TEST

K.6.1 Upon completion of the related flying training and relevant experience, the applicant shall take the CPL(H) skill test.

AMC1 to Appendix 3 Training courses for the issue of a CPL and an ATPL

GENERAL

(a) When ensuring that the applicant complies with the prerequisites for the course, the ATO should check that the applicant has enough knowledge of mathematics, physics and English to facilitate the understanding of the theoretical knowledge instruction content of the course.

(b) Whenever reference is made to a certain amount of hours of training, this means a full hour. Time not directly assigned to training (such as breaks, etc.) is not to be counted towards the total amount of time that is required.

(c) The UPRT elements and components specified in AMC2 to Appendix 3; AMC1 to Appendix 5 point (a) should be integrated into the flying training phases or modules.

A. ATP integrated course: aeroplanes

(a) The ATP integrated course should last between 12 and 36 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for previous experience given to an applicant who already holds a PPL should be entered into the applicant's training record. In the case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in a helicopter up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 750 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

The 750 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	35 hours
(2)	Aircraft general knowledge	100 hours
(3)	Flight performance and planning	120 hours
(4)	Human performance and limitations	35 hours
(5)	Meteorology	60 hours
(6)	Navigation	90 hours
(7)	Operational procedures	25 hours

(8) Principles of flight 55 hours

(9) Communications 20 hours

Other subdivision of hours may be agreed upon between the Authority and the ATO.

FLYING TRAINING

(d) The flying instruction is divided into five phases:

(1) phase 1:

Exercises up to the first solo flight comprise a total of at least 10 hours dual flight instruction on an SE aeroplane including:

(i) pre-flight operations, mass and balance determination, aeroplane inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and precautions;

(iii) control of the aeroplane by external visual references;

(iv) normal take-offs and landings;

(v) the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) unusual attitudes and simulated engine failure.

(2) phase 2:

Exercises up to the first solo cross-country flight comprise a total of at least 10 hours of dual flight instruction and at least 10 hours solo flight including:

(i) maximum performance (short field and obstacle clearance) take- offs and short-field landings;

(ii) flight by reference solely to instruments, including the completion of a 180 ° turn;

(iii) dual cross-country flying using external visual references, DR and radio navigation aids, diversion procedures;

(iv) aerodrome and traffic pattern operations at different aerodromes;

(v) crosswind take-offs and landings;

(vi) abnormal and emergency procedures and manoeuvres, including simulated aeroplane equipment malfunctions;

(vii) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(viii) knowledge of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS.

(3) phase 3:

Exercises up to the VFR navigation progress test comprise a total of at least 5 hours of dual instruction and at least 40 hours as PIC. The dual instruction and testing up to the VFR navigation progress test should comprise:

(i) repetition of exercises of phases 1 and 2;

(ii) VFR flight at relatively critical high air speeds, recognition of and recovery from spiral dives;

(iii) VFR navigation progress test conducted by an FI not connected with the applicant's training;

(iv) night flight time including take-offs and landings as PIC.

(4) phase 4:

Exercises up to the instrument rating skill test comprise:

(i) at least 55 hours instrument flight, which may contain up to 25 hours of instrument ground time in an FNPT I or up to 40 hours in an FNPT II or FFS which should be conducted by an FI or an authorised SFI;

(ii) 20 hours instrument time flown as SPIC;

(iii) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(iv) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedures;

(G) landings from instrument approaches, including circling.

(v) in-flight manoeuvres and specific flight characteristics and the basic UPRT exercises as specified in Sections A, B, C and D of Table 2 in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) operation of an ME aeroplane in the exercises of (iv), including operation of the aeroplane solely by reference to instruments with one engine simulated inoperative, and engine shut-down and restart (the latter training should be at a safe altitude unless carried out in an FSTD).

(5) phase 5: Advanced UPRT in accordance with point FCL.745.A;

(6) phase 6:

(i) instruction and testing in MCC comprise the relevant training requirements;

(ii) if a type rating for MP aeroplanes is not required on completion of this regulation, the applicant will be provided with a certificate of course completion for MCC training.

B. ATP modular theoretical knowledge course: aeroplanes

(a) The aim of this course is to train pilots who have not received the theoretical knowledge instruction during an integrated course to the level of theoretical knowledge required for the ATPL.

(b) An approved course should include formal classroom work and may include the use of such facilities as interactive video, slide or tape presentation, learning carrels and computer-based training and other media distance learning (correspondence) courses as approved by the Authority. Approved distance learning (correspondence) courses may also be offered as part of the course.

(c) The ATP modular course should last 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

C. CPL/IR integrated course: aeroplanes

(a) The CPL/IR integrated course should last between 9 and 30 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for previous experience given to an applicant who already holds a PPL should be entered into the applicant's training record. In the case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in a helicopter up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 500 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

The 500 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	25 hours
(2)	Aircraft general knowledge	75 hours
(3)	Flight performance and planning	80 hours
(4)	Human performance and limitations	20 hours
(5)	Meteorology	40 hours
(6)	Navigation	55 hours
(7)	Operational procedures	15 hours
(8)	Principles of flight	35 hours
(9)	Communications	15 hours

Other subdivisions of hours may be agreed upon between the Authority and the ATO.

FLYING TRAINING

(d) The flying instruction is divided into four phases:

(1) Phase 1:

Exercises up to the first solo flight comprise a total of at least 10 hours dual flight instruction on an SE aeroplane, including:

(i) pre-flight operations, mass and balance determination, aeroplane inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and precautions;

(iii) control of the aeroplane by external visual references; normal take-offs and landings;

(iv) the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(v) unusual attitudes and simulated engine failure.

(2) phase 2:

Exercises up to the first solo cross-country flight comprise a total of at least 10 hours of dual flight instruction and at least 10 hours solo flight including:

(i) maximum performance (short field and obstacle clearance) take- offs and short-field landings;

(ii) flight by reference solely to instruments, including the completion of a 180 ° turn;

(iii) dual cross-country flying using external visual references, DR and radio navigation aids, diversion procedures;

(iv) aerodrome and traffic pattern operations at different aerodromes;

(v) crosswind take-offs and landings;

(vi) abnormal and emergency operations and manoeuvres, including simulated aeroplane equipment malfunctions;

(vii) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(viii) knowledge of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS.

(3) Phase 3:

Exercises up to the VFR navigation progress test comprise a total of at least 5 hours of instruction and at least 40 hours as PIC. The dual instruction and testing up to the VFR navigation progress test and the skill test should contain the following:

(i) repetition of exercises of phases 1 and 2;

(ii) VFR flight at relatively critical high air speeds, recognition of and recovery from spiral dives;

(iii) VFR navigation progress test conducted by an FI not connected with the applicant’s training;

(iv) night flight time including take-offs and landings as PIC.

(4) phase 4:

Exercises up to the instrument rating skill test comprise:

(i) at least 55 hours instrument time, which may contain up to 25 hours of instrument ground time in an FNPT I or up to 40 hours in an FNPT II or FFS which should be conducted by an FI or an authorised SFI;

(ii) 20 hours instrument time flown as SPIC;

(iii) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(iv) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedures;

(G) landings from instrument approaches, including circling.

(v) in-flight manoeuvres and particular flight characteristics and the basic UPRT exercises as specified in Sections A, B, C and D of Table 2 in paragraph (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) operation of either an SE or an ME aeroplane in the exercises of (iv), including in the case of an ME aeroplane operation of the aeroplane solely by reference to instruments with one engine simulated inoperative and engine shut-down and restart. The latter exercise is to be conducted at a safe altitude unless carried out in an FSTD.

D. CPL integrated course: aeroplanes

(a) The CPL integrated course should last between 9 and 24 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In the case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in a helicopter up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 350 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

FLYING TRAINING

(d) The flying instruction is divided into four phases:

(1) phase 1:

Exercises up to the first solo flight comprise a total of at least 10 hours dual flight instruction on an SE aeroplane, including:

(i) pre-flight operations, mass and balance determination, aeroplane inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and precautions;

(iii) control of the aeroplane by external visual references;

(iv) normal take-offs and landings;

(v) the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) unusual attitudes and simulated engine failure.

(2) phase 2:

Exercises up to the first solo cross-country flight comprise a total of at least 10 hours of dual flight instruction and at least 10 hours solo flight including:

(i) maximum performance (short field and obstacle clearance) take- offs and short-field landings;

(ii) flight by reference solely to instruments, including the completion of a 180 ° turn;

(iii) dual cross-country flying using external visual references, DR and radio navigation aids, diversion procedures;

(iv) aerodrome and traffic pattern operations at different aerodromes; crosswind take-offs and landings;

(v) abnormal and emergency procedures and manoeuvres, including simulated aeroplane equipment malfunctions;

(vi) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(vii) knowledge of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS.

(3) phase 3:

Exercises up to the VFR navigation progress test comprise a total of at least 30 hours instruction and at least 58 hours as PIC, including:

(i) at least 10 hours instrument time, which may contain 5 hours of instrument ground time in an FNPT or an FFS and should be conducted by an FI or an authorised SFI;

(ii) repetition of exercises of phases 1 and 2, which should include at least 5 hours in an aeroplane certificated for the carriage of at least four persons and have a variable pitch propeller and retractable landing gear;

(iii) VFR flight at relatively critical high air speeds, recognition of and recovery from spiral dives;

(iv) night flight time including take-offs and landings as PIC.

(4) phase 4:

The dual instruction and testing up to the CPL(A) skill test contain the following:

(i) up to 30 hours instruction which may be allocated to specialised aerial work training;

(ii) repetition of exercises in phase 3, as required;

(iii) in-flight manoeuvres and particular flight characteristics including the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(iv) ME training.

If required, operation of an ME aeroplane including operation of the aeroplane with one engine simulated inoperative, and engine shutdown and restart (the latter exercise at a safe altitude unless carried out in an FSTD).

E. CPL modular course: aeroplanes

(a) The CPL modular course should last 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

(b) An approved course should include formal classroom work and may include the use of such facilities as interactive video, slide or tape presentation, learning carrels and computer-based training and other media distance learning (correspondence) courses as approved by the Authority. Approved distance learning (correspondence) courses may also be offered as part of the course.

THEORETICAL KNOWLEDGE

(c) The 250 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

FLYING TRAINING

(d) The following flight time is suggested for the flying training:

(1) visual flight training:

Exercise:	Suggested flight time

(i) Exercise 1: pre-flight operations: mass and balance determination, aeroplane inspection and servicing.	
(ii) Exercise 2: take-off, traffic pattern, approach and landing, use of checklist, collision avoidance and checking procedures.	0:45 hours
(iii) Exercise 3: traffic patterns: simulated engine failure during and after take-off.	0:45 hours
(iv) Exercise 4: maximum performance (short field and obstacle clearance) take-offs and short-field landings.	1:00 hours
(v) Exercise 5: crosswind take-offs, landings and go-arounds.	1:00 hours
(vi) Exercise 6: Arresting divergence of the aeroplane from intended flight path, Preventing flight at airspeeds inappropriate for the (intended flight) conditions, High airspeed (including flight at relatively high airspeed), Steep turns Nose-low attitudes at various bank angles (including spiral dive).	0:45 hours
(vii) Exercise 7: Arresting divergence of the aeroplane from intended flight path, Preventing flight at airspeeds inappropriate for the (intended flight) conditions, slow flight, nose-high attitudes at various bank angles, spin avoidance, stall events in the following configurations: — take-off configuration, — clean configuration, and — landing configuration.	0:45 hours
(viii) Exercise 8:	10:00 hours

cross-country flying using DR and radio navigation aids; flight planning by the applicant; filing of ATC flight plan; evaluation of weather briefing documentation, NOTAM, etc.; R/T procedures and phraseology; positioning by radio navigation aids; operation to, from and transiting controlled aerodromes, compliance with ATS procedures for VFR flights, simulated radio communication failure, weather deterioration, diversion procedures; simulated engine failure during cruise flight; selection of an emergency landing strip.	

(2) instrument flight training:

(i) This module is identical to the 10 hours basic instrument flight module as set out in AMC2 to Appendix 6. This module is focused on the basics of flying by sole reference to instruments, including limited panel and unusual attitudes.

(ii) All exercises may be performed in an FNPT I or II or an FFS. If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used.

(iii) A BITD may be used for the following exercises: (9), (10), (11), (12), (14) and (16).

(iv) The use of the BITD is subject to the following:

(A) the training is complemented by exercises on an aeroplane;

(B) the record of the parameters of the flight is available;

(C) an FI(A) or IRI(A) conducts the instruction.

Exercise:	Suggested flight time
(v) Exercise 9: Basic instrument flying without external visual cues; Horizontal flight; power changes for acceleration or deceleration, maintaining straight and level flight; turns in level flight with 15 ° and 25 ° bank, left and right; roll-out onto predetermined headings.	0:30 hours
(vi) Exercise 10: Repetition of exercise 9; additionally climbing and descending, maintaining heading and speed, transition to horizontal flight; climbing and descending turns	0:45 hours

(vii) Exercise 11: Instrument pattern: (1) start exercise, decelerate to approach speed, flaps into approach configuration; (2) initiate standard turn (left or right); (3) roll out on opposite heading, maintain new heading for 1 minute; (4) standard turn, gear down, descend 500 ft/min; (5) roll out on initial heading, maintain descent (500 ft/min) and new heading for 1 minute; (6) transition to horizontal flight, 1.000 ft below initial flight level; (7) initiate go-around; (8) climb at best rate of climb speed.	0:45 hours
(viii) Exercise 12: Repetition of exercise 9 and steep turns with 45° bank; recovery from unusual attitudes	0:45 hours
(ix) Exercise 13: Repetition of exercise 12	0:45 hours
(x) Exercise 14: Radio navigation using VOR, NDB or, if available, VDF; interception of predetermined QDM and QDR.	0:45 hours
(xi) Exercise 15: Repetition of exercise 9 and recovery from unusual attitudes	0:45 hours
(xii) Exercise 16: Repetition of exercise 9, turns and level change and recovery from unusual attitudes with simulated failure of the artificial horizon or directional gyro.	0:45 hours
(xiii) Exercise 17:	0:45 hours

Basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5, excluding those manoeuvres which have already been completed during exercises 15 and 16.	
(xiv) Exercise 18: Repetition of exercises (14), (16) and (17).	3:30 hours

(3) ME training

If required, operation of an ME aeroplane in the exercises 1 through 18, including operation of the aeroplane with one engine simulated inoperative, and engine shutdown and restart. Before commencing training, the applicant should have complied with the type and class ratings requirements as appropriate to the aeroplane used for the test.

F. ATP/IR integrated course: helicopters

(a) The ATP/IR integrated course should last between 12 and 36 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in an aeroplane up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 750 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

The 750 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1) Air law	35 hours
(2) Aircraft general knowledge	100 hours
(3) Flight performance and planning	120 hours
(4) Human performance and limitations	35 hours
(5) Meteorology	60 hours

(6) Navigation 90 hours

(7) Operational procedures 25 hours

(8) Principles of flight 55 hours

(9) Communications 20 hours

Other subdivision of hours may be agreed upon between the Authority and the ATO.

(d) The flight instruction is divided into four phases:

(1) phase 1:

Flight exercises up to the first solo flight comprise a total of not less than 12 hours dual flight instruction on a helicopter, including:

(i) pre-flight operations, mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic auto-rotations, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress check, and basic instrument flying progress check. This phase comprises a total flight time of not less than 128 hours including 73 hours of dual flight instruction flight time and including at least 5 hours VFR conversion training on an ME helicopter, 15 hours of solo flight and 40 hours flown as student PIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) advanced/touchdown auto-rotations, simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including low level operations to and from unprepared sites;

(vii) flight by sole reference to basic flight instruments, including completion of a 180 ° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids, diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes; Compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to this regulation, conducted by an FI not connected with the applicant's training.

(3) phase 3:

Flight exercises up to IR skill test. This regulations comprises a total of 40 hours dual instrument flight time, including 10 hours of an ME IFR certificated helicopter. The instruction and testing should contain the following:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(ii) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedure;

(G) landings from instrument approaches;

(H) in-flight manoeuvres and particular flight characteristics;

(I) instrument exercises with one engine simulated inoperative.

(4) phase 4:

Instruction in MCC should comprise the relevant training set out in FCL.735.H and AMC1 FCL.735.A and FCL.735.H. If a type rating for MP helicopter is not required on completion of this regulation, the applicant should be provided with a certificate of course completion for MCC training.

G. ATP integrated course: helicopters

(a) The ATP integrated course should last between 12 and 36 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in an aeroplane up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 650 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

The 650 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1) Air law	30 hours
(2) Aircraft general knowledge	90 hours
(3) Flight performance and planning	90 hours
(4) Human performance and limitations	30 hours
(5) Meteorology	50 hours
(6) Navigation	70 hours
(7) Operational procedures	20 hours
(8) Principles of flight	45 hours
(9) Communications	15 hours

Other subdivision of hours may be agreed upon between the Authority and the ATO.

(d) The flight instruction is divided into three phases:

(1) phase 1:

Flight exercises up to the first solo flight comprise a total of not less than 12 hours dual flight instruction on a helicopter, including:

(i) pre-flight operations, mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic auto-rotations, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress and basic instrument flying progress check conducted by an FI not connected with the applicant's training. This phase comprises a total flight time of not less than 128 hours, including 73 hours of dual instruction flight time and including at least 5 hours VFR conversion training on an ME helicopter, 15 hours of solo flight and 40 hours flown as student PIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) touchdown or advanced auto-rotations, simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including low level operations to and from unprepared sites;

(vii) 10 hours flight by sole reference to basic flight instruments, including completion of a 180 ° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids, diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes, Compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to this regulation, conducted by an FI not connected with the applicant's training.

(3) phase 3:

Instruction in MCC comprises the relevant training set out in FCL.735.H and AMC1 FCL.735.A and FCL.735.H. If a type rating for MP helicopter is not required on completion of this regulation, the applicant should be provided with a certificate of course completion for MCC training.

H. ATP modular theoretical knowledge course: helicopters

(a) The aim of this course is to train pilots who have not received the theoretical knowledge instruction during an integrated course to the level of theoretical knowledge required for the ATPL.

(b) An approved course should include formal classroom work and may include the use of such facilities as interactive video, slide or tape presentation, learning carrels and computer-based training and other media distance learning (correspondence) courses as approved by the Authority. Approved distance learning (correspondence) courses may also be offered as part of the course.

(c) The ATP modular course should last 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

I. CPL/IR integrated course: helicopters

(a) The CPL/IR integrated course should last between 9 and 30 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in an aeroplane up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 500 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

The 500 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	25 hours
(2)	Aircraft general knowledge	75 hours
(3)	Flight performance and planning	80 hours
(4)	Human performance and limitations	20 hours
(5)	Meteorology	40 hours

(6) Navigation 55 hours

(7) Operational procedures 15 hours

(8) Principles of flight 35 hours

(9) Communications 15 hours

Other subdivision of hours may be agreed upon between the Authority and the ATO.

FLYING TRAINING

(d) The flight instruction is divided into three phases:

(1) phase 1:

Flight exercises up to the first solo flight. This regulation comprises a total of at least 12 hours dual flight instruction on a helicopter including:

(i) pre-flight operations: mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic auto-rotation, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress check conducted by an FI not connected with the applicant's training, and basic instrument progress check. This regulation comprises a total flight time of not less than 128 hours, including 73 hours of dual instruction flight time and including at least 5 hours VFR conversion training on an ME helicopter, 15 hours of solo flight and 40 hours flown as SPIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) touchdown or advanced auto-rotation and simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including selection of and low level operations to and from unprepared sites;

(vii) flight by sole reference to basic flight instruments, including completion of 180 degree turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids and diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to this regulation, conducted by an FI not connected with the applicant's training.

(3) phase 3:

Flight exercises up to IR skill test. This regulation comprises a total of 40 hours dual instrument flight time, including 10 hours of an ME IFR certificated helicopter. The instruction and testing should contain the following:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(ii) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedure;

(G) landings from instrument approaches;

(H) in-flight manoeuvres and particular flight characteristics;

(I) instrument exercises with one engine simulated inoperative.

J. CPL integrated course: helicopters

(a) The CPL integrated course should last between 9 and 24 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the Authority, an ATO may designate certain dual exercises to be flown in an aeroplane up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 350 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions. The 350 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	15 hours
(2)	Aircraft general knowledge	40 hours
(3)	Flight performance and planning	35 hours
(4)	Human performance and limitations	10 hours
(5)	Meteorology	30 hours
(6)	Navigation	35 hours
(7)	Operational procedures	10 hours
(8)	Principles of flight	30 hours
(9)	Communications	10 hours

Other subdivision of hours may be agreed upon between the Authority and the ATO.

FLYING TRAINING

(d) The flight instruction is divided into two phases:

(1) phase 1:

Flight exercises up to the first solo flight. This regulation comprises a total of not less than 12 hours dual flight instruction on a helicopter, including:

(i) pre-flight operations: mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic auto-rotations, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress check conducted by an FI not connected with the applicant's training, and basic instrument progress check. This regulation comprises a total flight time of not less than 123 hours, including 73 hours of dual instruction flight time, 15 hours of solo flight and 35 hours flown as SPIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) touchdown or advanced auto-rotations and simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including selection of and low level operations to and from unprepared sites;

(vii) flight by sole reference to basic flight instruments, including completion of a 180° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids, diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes, Compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to this regulation, conducted by an FI not connected with the applicant's training.

K. CPL modular course: helicopters

(a) The CPL modular course should last 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

An approved course should include formal classroom work and may include the use of facilities such as interactive video, slide or tape presentation, learning carrels and computer-based training and other media distance learning (correspondence) courses as approved by the competent authority. Approved distance learning (correspondence) courses may also be offered as part of the course.

THEORETICAL KNOWLEDGE

(b) The 250 hours of instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

FLYING TRAINING

(c) The flying instruction comprises the following items. The flight time allocated to each exercise is at the discretion of the FI, provided that at least 5 hours flight time is allocated to cross-country flying.

VISUAL INSTRUCTION

(d) Within the total of dual flight instruction time, the applicant may have completed during the visual phase up to 5 hours in a helicopter FFS or FTD 2, 3 or FNPT II, III.

(1) pre-flight operations: mass and balance calculations, helicopter inspection and servicing;

(2) level flight speed changes, climbing, descending, turns, basic auto- rotations, use of checklist, collision avoidance and checking procedures;

(3) take-offs and landings, traffic pattern, approach, simulated engine failures in the traffic pattern. Sideways and backwards flight and spot turns in the hover;

(4) recovery from incipient vortex ring condition;

(5) advanced auto-rotations covering the speed range from low speed to maximum range and manoeuvre in auto-rotations (180 °, 360 ° and 'S' turns) and simulated engine-off landings;

(6) selection of emergency landing areas, auto-rotations following simulated emergencies to given areas and steep turns at 30 ° and 45 ° bank;

(7) manoeuvres at low level and quick-stops;

(8) landings, take-offs and transitions to and from the hover when heading out of wind;

(9) landings and take-offs from sloping or uneven ground;

(10) landings and take-offs with limited power;

(11) low level operations into and out of confined landing sites;

(12) cross-country flying using dead reckoning and radio navigation aids, flight planning by the applicant, filing of ATC flight plan, evaluation of weather briefing documentation, NOTAM, etc., R/T procedures and phraseology, positioning by radio navigation aids; operation to, from and transiting controlled aerodromes, compliance with ATS procedures for VFR flights, simulated radio communication failure, weather deterioration, diversion procedures; location of an off airfield landing site and simulated approach.

BASIC INSTRUMENT INSTRUCTION

(e) A maximum of 5 hours of the following exercises may be performed in an FFS or FTD or FNPT. Flight training should be carried out in VMC using a suitable means of simulating IMC for the student.

(1) Exercise 1:

Instrument flying without external visual cues. Level flight performing speed changes, maintaining flight altitude (level, heading) turns in level flight at rate 1 and 30° bank, left and right; roll-out on predetermined headings;

(2) Exercise 2:

repetition of exercise 1; additionally climbing and descending, maintaining heading and speed, transition to horizontal flight; climbing and descending turns;

(3) Exercise 3:

repetition of exercise 1; and recovery from unusual attitudes;

(4) Exercise 4:

radio navigation;

(5) Exercise 5:

repetition of exercise 1; and turns using standby magnetic compass and standby artificial horizon (if fitted).

AMC2 to Appendix 3; AMC1 to Appendix 5

BASIC UPRT FOR AEROPLANE ATP INTEGRATED, CPL/IR INTEGRATED, CPL INTEGRATED AND CPL MODULAR COURSES AS WELL AS MPL COURSE PHASES 1 TO 3

(a) BASIC UPRT ELEMENTS AND COMPONENTS

In order for student pilots to develop the competencies to prevent and recover from aeroplane upsets, the basic UPRT elements and respective components in the following Table 1 should be integrated into the flying training modules and phases, such that all the elements are covered

Table 1: Basic UPRT elements and components	Pre-flight briefing	Flying training

A.	Aerodynamics		
(1)	General aerodynamic characteristics	•	•
(2)	Aeroplane certification and limitations	•	•
(4)	Aerodynamics (high and low altitude)	•	
(5)	Aeroplane performance (high and low altitude)	•	
(6)	AoA and stall awareness	•	•
(7)	Aeroplane stability	•	•
(8)	Control surface fundamentals	•	•
(9)	Use of trim	•	•
(10)	Icing and contamination effects	•	•
(11)	Propeller slipstream (as applicable)	•	•
B.	Causes of and contributing factors to upsets		
(1)	Environmental	•	
(2)	Pilot-induced	•	
(3)	Mechanical (aeroplane systems)	•	
C.	Safety review of accidents and incidents relating to aeroplane upsets		
(1)	Safety review of accidents and incidents relating to aeroplane upsets	•	
D.	G-load awareness and management		
(1)	Positive/negative/increasing/decreasing G-loads	•	•
(2)	Lateral G awareness (sideslip)	•	•

(3)	G-load management	•	•
E.	Energy management		
(1)	Kinetic energy vs potential energy vs chemical energy (power)	•	•
F.	Flight path management		
(1)	Relationship between pitch, power and performance	•	•
(2)	Performance and effects of differing power plants	•	•
(3)	Manual and automation inputs for guidance and control (if applicable)	•	•
(4)	Class-specific characteristics of flight path management	•	•
(5)	Management of go-arounds from various stages during the approach	•	•
(6)	Automation management (if applicable)	•	•
(7)	Proper use of rudder	•	•
G.	Recognition		
(1)	Class-specific examples of physiological, visual and instrument clues during developing and developed upset	•	•
(2)	Pitch/power/roll/yaw	•	•
(3)	Effective scanning (effective monitoring)	•	•
(4)	Stall protection systems and cues	•	•
(5)	Criteria for identifying stalls and upsets	•	•

H.	System malfunction (including immediate handling and subsequent operational considerations, as applicable)		
(1)	Flight control defects	•	•
(2)	Engine failure (partial or full)	•	•
(3)	Instrument failures	•	•
(4)	Loss of reliable airspeed	•	•
(5)	Automation failures	•	•
(6)	Stall protection system failures, including icing alerting systems	•	•

(b) MANOEUVRE-BASED UPRT EXERCISES

The following Table 2 contains manoeuvre-based basic UPRT exercises.

Table 2: Manoeuvre- based Basic UPRT exercise		Pre-flight briefing	Flying training
A.	Timely and appropriate intervention		
(1)	Arresting divergence of the aeroplane from intended flight path	•	•
(2)	Preventing flight at airspeeds inappropriate for the (intended flight) condition	•	•
(3)	Avoiding spins	•	•
B.	Flight path management		
(1)	Steep turns	•	•
(2)	Slow flight (including flight at critically low airspeed)	•	•

(3)	High airspeed (including flight at relatively high airspeed)	•	•
C.	Application of OEM recommendations (if applicable) during developing upsets		
(1)	Nose-high attitudes at various bank angles	•	•
(2)	Nose-low attitudes at various bank angles (including spiral dive)	•	•
D.	Stall events in the following configurations		
(1)	Take-off configuration	•	•
(2)	Clean configuration	•	•
(3)	Landing configuration	•	•

(c) INTEGRATION OF TEM, PILOT CORE COMPETENCIES, AND HUMAN FACTORS

Threat and Error Management (TEM), pilot competencies and human factors, as shown in the following Table 3 below, should be integrated into the flying training modules and phases as appropriate.

Table 3: Core elements and components of TEM, pilot competencies and human factors		Pre-flight briefing	Flying training
A.	TEM		
(1)	TEM framework	•	•
(2)	Recognition of threats and errors	•	•
(3)	Management of threats and errors	•	•
(4)	Countermeasures against threats and errors to prevent undesired aircraft states, including early intervention and, when necessary to prevent upsets, timely	•	•

	application of countermeasures to manage undesired aircraft states		
B.	Pilot Competencies, including CRM		
(1)	All elements listed in Table 1 of GM2 FCL.735.A	•	•
C.	Human factors		
(1)	Instrument interpretation, active monitoring, checking	•	•
(2)	Distraction, inattention, fixation, fatigue	•	•
(3)	Human information processing, cognitive effects	•	•
(4)	Perceptual illusions (visual or physiological) and spatial disorientation, effects of G-loads	•	•
(5)	Stress, startle and surprise effect	•	•
(6)	Intuitive and counter-intuitive behaviour	•	•

GM1 to Appendix 3; Appendix 5

BASIC UPRT EXERCISES

(a) GENERAL

The training objective of the basic UPRT exercises is for the student to achieve competence in applying prevention and recovery techniques. In order to meet the training objectives, some UPRT exercises will involve operation at altitudes, speeds and g-loadings that are not required for other parts of the training course. When designing training courses, ATOs should ensure that the aircraft used for these exercises will allow the training objectives to be achieved while maintaining a margin of safety to aircraft limitations in accordance with the training envelope, as determined by the ATO (see GM1 ORA.ATO.125 point (f)).

(b) UPRT WITH REFERENCE TO INSTRUMENTS

Basic UPRT exercises completed by reference to instruments (i.e. in simulated instrument meteorological conditions (IMC)) should involve only moderate excursions from the speeds and attitudes used in normal instrument flight. Exercises conducted in IMC should not be planned to involve 'unusual attitudes'.

(c) INSTRUCTORS DELIVERING BASIC UPRT

Instructors conducting basic UPRT training during the CPL or ATP course do not require any additional qualifications. It is the responsibility of the ATO to ensure that instructors are competent to deliver effective training on all parts of the course and that they are competent to recover the aircraft in the event that a student erroneously conducts any UPRT exercise.

(d) APPLICATION OF OEM RECOMMENDATIONS DURING DEVELOPING UPSETS

Stall recovery training exercises as well as nose-high and nose-low prevention training exercises use the recovery strategies recommended by the OEMs contained in Tables 1, 2 and 3 below.

Note.—*As OEM procedures always take precedence over the general strategies as recommended by the OEMs, ATOs should consult the OEM on whether any approved specific procedures are available prior to using the templates.*

Table 1: Stall event recovery template	
Pilot Flying (PF) Immediately do the following at first indication of a stall (aerodynamic buffeting, reduced roll stability and aileron effectiveness, visual or aural cues and warnings, reduced elevator (pitch) authority, inability to maintain altitude or arrest rate of descent, stick shaker activation (if installed)) during any flight phases except at lift-off.	
1.	**AUTOPILOT — DISCONNECT (if applicable)** (A large out-of-trim condition could be encountered when the autopilot is disconnected)
2.	**AUTOTHROTTLE — OFF (if applicable)**
3.	**(a) NOSE-DOWN PITCH CONTROL** apply until stall warning is eliminated **(b) NOSE-DOWN PITCH TRIM (as needed)** (Reduce the AoA whilst accepting the resulting altitude loss.)
4.	**BANK — WINGS LEVEL**
5.	**POWER — ADJUST (as needed)** (Thrust reduction for aeroplanes with underwing-mounted engines may be needed)
6.	**SPEEDBRAKES/SPOILERS — RETRACT**
7.	**When airspeed is sufficiently increasing — RECOVER to level flight** (Avoid the secondary stall)

Table 2: Nose-high recovery strategy template	
Recognise and confirm the developing situation by announcing **'nose high'**	
Pilot Flying (PF)	
1.	**AUTOPILOT — DISCONNECT (if applicable)** (A large out-of-trim condition could be encountered when the autopilot is disconnected)
2.	**AUTOTHROTTLE — OFF** (if applicable)
3.	**APPLY as much nose-down control input as required to obtain a nose-down pitch rate**
4.	**POWER — ADJUST** (if required)
5.	**ROLL — ADJUST** (if required) (Avoid exceeding 60-degree bank)
6.	When airspeed is sufficiently increasing **— RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)
NOTES.— *(1) Recovery to level flight may require use of pitch trim.* *(2) WARNING: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.*	

Table 3: Nose-low recovery strategy template	
Recognise and confirm the developing situation by announcing **'nose low'** (If the autopilot or autothrottle is responding correctly, it may not be appropriate to decrease the level of automation while assessing if the divergence is being stopped)	
Pilot Flying (PF)	
1.	**AUTOPILOT — DISCONNECT (if applicable)** (A large out-of-trim condition could be encountered when the autopilot is disconnected)
2.	**AUTOTHROTTLE — OFF (if applicable)**
3.	**RECOVERY from stall (if required)**

4.	**ROLL in the shortest direction to wings level** **(It may be necessary to reduce the G-loading by applying forward control pressure to improve roll effectiveness)**
5.	**POWER and DRAG — ADJUST (if required)**
6.	**RECOVER to level flight** (Avoid the secondary stall due to premature recovery or excessive G-loading)

NOTES.—

(1) Recovery to level flight may require use of pitch trim.

(2) WARNING: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.

ADDITIONAL GUIDANCE

Specific guidance on UPRT is available in the latest revision of ICAO Doc 10011 'Manual on Aeroplane Upset Prevention and Recovery Training'.

GM1 to Appendix 3; Appendix 6; FCL.735.H

OVERVIEW OF FSTD TRAINING CREDITS FOR DUAL INSTRUCTION IN HELICOPTER FLYING TRAINING COURSES

		ATPL(H)/IR integrated			FSTD credits
	Dual	**Solo**	**SPIC**	**Total**	**FFS; FTD; FNPT**
Visual, including ME T/R training	75 hrs	15 hrs	40 hrs	130 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	20 hrs FFS or FTD 2, 3 or FNPT II/III or 10 hrs in at least an FNPT I
Instrument rating training	40 hrs	-		40 hrs	
MCC	15 hrs	-	-	15 hrs	15 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)

Total	140 hrs	55 hrs	195 hrs	Note 2.

		ATPL(H)/VFR integrated			FSTD credits
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual including ME T/R training	75 hrs	15 hrs	40 hrs	130 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	5 hrs in at least an FNPT I
MCC / VFR	10 hrs	-	-	10 hrs	10 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
Total	95 hrs	55 hrs		150 hrs	Note 2.

		CPL(H)/IR integrated			FSTD credits
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual including ME T/R training	75 hrs	15 hrs	40hrs	130 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	20 hrs FFS or FTD 2, 3 or FNPT II/III or 10 hrs in at least an FNPT I
Instrument rating training	40 hrs	-		40 hrs	
Total	125 hrs	55 hrs		180 hrs	Note 2

		CPL(H) Integrated			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual	75 hrs	15 hrs	35 hrs	125 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	5 hrs in at least an FNPT I
Total	85 hrs	50 hrs		135 hrs	Note 2

		CPL(H) modular			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual	20 hrs	-	-	20 hrs	5 hrs FFS or FTD 2, 3 or FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	5 hrs in at least an FNPT I
Total	30 hrs	-	-	30 hrs	Note 2.

		IR(H) modular			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
SE	50 hrs	-	-	50 hrs	35 hrs FFS or FTD 2, 3 or FNPT II/III or 20 hrs FNPT I (H) or (A)

ME	55 hrs	-	-	55 hrs	40 hrs FFS; FTD 2, 3 FNPT II/III or 20 hrs FNPT I (H) or (A)

		MCC(H)			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
MCC / IR	20 hrs	-	-	20 hrs	20 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
MCC / VFR	15 hrs	-	-	15 hrs	15 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
MCC / IR for MCC/VFR holders	5 hrs	-	-	5 hrs	5 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)

Note1.— *In this matrix FSTD credits refer to helicopter FSTDs if not mentioned otherwise.*

Note 2.—*Total credits for the FSTDs used in the course are not provided in the tables as the FSTDs may be used in various combinations. The FSTD credits provided in the tables for the separate phases of the course are the maximum FSTD credits available for each phase.*

APPENDIX 4 – SKILL TEST FOR THE ISSUE OF A CPL

A. General

(1) An applicant for a skill test for the CPL shall have received instruction on the same class or type of aircraft to be used in the test.

(2) An applicant shall pass all the relevant sections of the skill test. If any item in a section is failed, that section is failed. Failure in more than one section will require the applicant to take the entire test again. An applicant failing only in one section shall only repeat the failed section. Failure in any section of the retest, including those sections that have been passed on a previous attempt, will require the applicant to take the entire test again. All relevant sections of the skill test shall be completed within 6 months. Failure to achieve a pass in all relevant sections of the test in two attempts will require further training.

(3) Further training may be required following any failed skill test. There is no limit to the number of skill tests that may be attempted.

CONDUCT OF THE TEST

(4) Should the applicant choose to terminate a skill test for reasons considered inadequate by the Flight Examiner (FE), the applicant shall retake the entire skill test. If the test is terminated for reasons considered adequate by the FE, only those sections not completed shall be tested in a further flight.

(5) At the discretion of the FE, any manoeuvre or procedure of the test may be repeated once by the applicant. The FE may stop the test at any stage if it is considered that the applicant's demonstration of flying skills requires a complete re-test.

(6) An applicant shall be required to fly the aircraft from a position where the PIC functions can be performed and to carry out the test as if no other crew member is present. Responsibility for the flight shall be allocated in accordance with national regulations.

(7) An applicant shall indicate to the FE the checks and duties carried out, including the identification of radio facilities. Checks shall be completed in accordance with the checklist for the aircraft on which the test is being taken. During pre-flight preparation for the test, the applicant is required to determine power settings and speeds. Performance data for take-off, approach and landing shall be calculated by the applicant in compliance with the operations manual or flight manual for the aircraft used.

(8) The FE shall take no part in the operation of the aircraft except where intervention is necessary in the interests of safety or to avoid unacceptable delay to other traffic.

B. Content of the skill test for the issue of a CPL — Aeroplanes

(1) The aeroplane used for the skill test shall meet the requirements for training aeroplanes, and shall be certificated for the carriage of at least four persons, have a variable pitch propeller and retractable landing gear.

(2) The route to be flown shall be chosen by the FE and the destination shall be a controlled aerodrome. The applicant shall be responsible for the flight planning and shall ensure that all equipment and documentation for the execution of the flight are on board. The duration of the flight shall be at least 90 minutes.

(3) The applicant shall demonstrate the ability to:

(a) operate the aeroplane within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge; and

(e) maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

FLIGHT TEST TOLERANCES

(4) The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aeroplane used.

Height	
normal flight	± 100 feet
with simulated engine failure	± 150 feet
Tracking on radio aids	± 5°

Heading	
normal flight	± 10°
with simulated engine failure	± 15°

Speed	
take-off and approach	± 5 knots
all other flight regimes	± 10 knots

CONTENT OF THE TEST

(5) Items in section 2(c) and (e)(iv), and the whole of sections 5 and 6 may be performed in an FNPT II or an FFS.

Use of the aeroplane checklists, airmanship, control of the aeroplane by external visual reference, anti-icing/de-icing procedures and principles of threat and error management apply in all sections.

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE	
a	Pre-flight, including: Flight planning, Documentation, Mass and balance determination, Weather brief, NOTAMS
b	Aeroplane inspection and servicing
c	Taxiing and take-off
d	Performance considerations and trim
e	Aerodrome and traffic pattern operations
f	Departure procedure, altimeter setting, collision avoidance (lookout)
g	ATC liaison — compliance, R/T procedures
SECTION 2 — GENERAL AIRWORK	
a	Control of the aeroplane by external visual reference, including straight and level, climb, descent, lookout
b	Flight at critically low airspeeds including recognition of and recovery from incipient and full stalls

c	Turns, including turns in landing configuration. Steep turns 45°
d	Flight at critically high airspeeds, including recognition of and recovery from spiral dives
e	Flight by reference solely to instruments, including: i. level flight, cruise configuration, control of heading, altitude and airspeed ii. climbing and descending turns with 10°-30° bank iii. recoveries from unusual attitudes iv. limited panel instruments
f	ATC liaison — compliance, R/T procedures
SECTION 3 — EN-ROUTE PROCEDURES	
a	Control of aeroplane by external visual reference, including cruise configuration Range/Endurance considerations
b	Orientation, map reading
c	Altitude, speed, heading control, lookout
d	Altimeter setting. ATC liaison — compliance, R/T procedures
e	Monitoring of flight progress, flight log, fuel usage, assessment of track error and re-establishment of correct tracking
f	Observation of weather conditions, assessment of trends, diversion planning
g	Tracking, positioning (NDB or VOR), identification of facilities (instrument flight). Implementation of diversion plan to alternate aerodrome (visual flight)
SECTION 4 — APPROACH AND LANDING PROCEDURES	
a	Arrival procedures, altimeter setting, checks, lookout
b	ATC liaison — compliance, R/T procedures
c	Go-around action from low height
d	Normal landing, crosswind landing (if suitable conditions)

e	Short field landing
f	Approach and landing with idle power (single-engine only)
g	Landing without use of flaps
h	Post-flight actions
SECTION 5 — ABNORMAL AND EMERGENCY PROCEDURES	
This section may be combined with sections 1 through 4	
a	Simulated engine failure after take-off (at a safe altitude), fire drill
b	Equipment malfunctions including alternative landing gear extension, electrical and brake failure
c	Forced landing (simulated)
d	ATC liaison — compliance, R/T procedures
e	Oral questions
SECTION 6 — SIMULATED ASYMMETRIC FLIGHT AND RELEVANT CLASS OR TYPE ITEMS	
This section may be combined with sections 1 through 5	
a	Simulated engine failure during take-off (at a safe altitude unless carried out in an FFS)
b	Asymmetric approach and go-around
c	Asymmetric approach and full stop landing
d	Engine shutdown and restart
e	ATC liaison — compliance, R/T procedures, Airmanship
f	As determined by the FE — any relevant items of the class or type rating skill test to include, if applicable: i. aeroplane systems including handling of autopilot ii. operation of pressurisation system

	iii. use of de-icing and anti-icing system
g	Oral questions

C. Content of the skill test for the issue of the CPL — Helicopters

(1) The helicopter used for the skill test shall meet the requirements for training helicopters.

(2) The area and route to be flown shall be chosen by the FE and all low level and hover work shall be at an approved aerodrome/site. Routes used for section 3 may end at the aerodrome of departure or at another aerodrome and one destination shall be a controlled aerodrome. The skill test may be conducted in 2 flights. The total duration of the flight(s) shall be at least 90 minutes.

(3) The applicant shall demonstrate the ability to:

(a) operate the helicopter within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge; and

(e) maintain control of the helicopter at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

FLIGHT TEST TOLERANCES

(4) The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the helicopter used

Height	
normal flight	± 100 feet
with simulated engine failure	± 150 feet
Tracking on radio aids	± 10°

Heading	
normal flight	± 10°

simulated major emergency	± 15°

Speed	
take-off and approach multi-engine	± 5 knots
all other flight regimes	± 10 knots

Ground drift	
T.O. hover	± 3 feet
landing no sideways or backwards movement	

CONTENT OF THE TEST

(5) Items in section 4 may be performed in a helicopter FNPT or a helicopter FFS. Use of helicopter checklists, airmanship, control of helicopter by external visual reference, anti-icing procedures, and principles of threat and error management apply in all sections.

SECTION 1 — PRE-FLIGHT/POST-FLIGHT CHECKS AND PROCEDURES	
a	Helicopter knowledge (e.g. technical log, fuel, mass and balance, performance), flight planning, documentation, NOTAMS, weather
b	Pre-flight inspection/action, location of parts and purpose
c	Cockpit inspection, starting procedure
d	Communication and navigation equipment checks, selecting and setting frequencies
e	Pre-take-off procedure, R/T procedure, ATC liaison-compliance
f	Parking, shutdown and post-flight procedure
SECTION 2 — HOVER MANOEUVRES, ADVANCED HANDLING AND CONFINED AREAS	
a	Take-off and landing (lift-off and touchdown)

b	Taxi, hover taxi
c	Stationary hover with head/cross/tail wind
d	Stationary hover turns, 360° left and right (spot turns)
e	Forward, sideways and backwards hover manoeuvring
f	Simulated engine failure from the hover
g	Quick stops into and downwind
h	Sloping ground/unprepared sites landings and take-offs
i	Take-offs (various profiles)
j	Crosswind, downwind take-off (if practicable)
k	Take-off at maximum take-off mass (actual or simulated)
l	Approaches (various profiles)
m	Limited power take-off and landing
n	Autorotations (FE to select two items from — Basic, range, low speed, and 360° turns)
o	Autorotative landing
p	Practice forced landing with power recovery
q	Power checks, reconnaissance technique, approach and departure technique
SECTION 3 — NAVIGATION — EN-ROUTE PROCEDURES	
a	Navigation and orientation at various altitudes/heights, map reading
b	Altitude/height, speed, heading control, observation of airspace, altimeter setting
c	Monitoring of flight progress, flight log, fuel usage, endurance, ETA, assessment of track error and re- establishment of correct track, instrument monitoring
d	Observation of weather conditions, diversion planning

e	Tracking, positioning (NDB and/or VOR), identification of facilities
f	ATC liaison and observance of regulations, etc.
SECTION 4 — FLIGHT PROCEDURES AND MANOEUVRES BY SOLE REFERENCE TO INSTRUMENTS	
a	Level flight, control of heading, altitude/height and speed
b	Rate 1 level turns onto specified headings, 180° to 360° left and right
c	Climbing and descending, including turns at rate 1 onto specified headings
d	Recovery from unusual attitudes
e	Turns with 30° bank, turning up to 90° left and right
SECTION 5 — ABNORMAL AND EMERGENCY PROCEDURES (SIMULATED WHERE APPROPRIATE)	
Note 1. *—Where the test is conducted on a multi-engine helicopter a simulated engine failure dril including a single- engine approach and landing, shall be included in the test.*	
Note 2. *—The FE shall select four items from the following:*	
a	Engine malfunctions, including governor failure, carburettor/engine icing, oil system, as appropri
b	Fuel system malfunction
c	Electrical system malfunction
d	Hydraulic system malfunction, including approach and landing without hydraulics, as applicable
e	Main rotor and/or anti-torque system malfunction (FFS or discussion only)
f	Fire drills, including smoke control and removal, as applicable
g	Other abnormal and emergency procedures as outlined in appropriate flight manual, including fo multi- engine helicopters: Simulated engine failure at take-off: rejected take-off at or before TDP or safe forced landing at or before DPATO, shortly after TDP or DPATO.

	Landing with simulated engine failure: landing or go-around following engine failure before LDP or DPBL, following engine failure after L or safe forced landing after DPBL.

APPENDIX 5 – INTEGRATED MPL TRAINING COURSE

GENERAL

1. The aim of the MPL integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot of a multi-engine multi-pilot turbine-powered air transport aeroplane under VFR and IFR and to obtain an MPL.
2. Approval for an MPL training course shall only be given to an ATO that is part of a commercial air transport operator and the applicable air operations requirements or having a specific arrangement with such an operator. The licence shall be restricted to that specific operator until completion of the airline operator's conversion course.
3. An applicant wishing to undertake an MPL integrated course shall complete all the instructional stages in one continuous course of training at an ATO. The training shall be competency based and conducted in a multi-crew operational environment. [Training in the underpinning knowledge requirements shall be fully integrated with the training of the underpinning skill requirements.
4. Only ab-initio applicants shall be admitted to the course.
5. The course shall comprise:
   (a) theoretical knowledge instruction to the ATPL(A) knowledge level appropriate to the aeroplane category as well as the additional requirements underpinning the approved adapted competency model;
   (b) visual and instrument flying training;
   (c) training in MCC for the operation of multi-pilot turbine powered aeroplanes; and]
   (d) type rating training.
6. An applicant failing or unable to complete the entire MPL course may apply to the Authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

7. An approved MPL theoretical knowledge course shall comprise at least 750 hours of instruction for the ATPL(A) knowledge level, as well as the hours required for:
   a) theoretical knowledge instruction for the relevant type rating, in accordance with Subpart H.
   b) UPRT theoretical knowledge instruction in accordance with FCL.745.A.

FLYING TRAINING

8. The flying training shall comprise a total of at least 240 hours, composed of hours as PF and PNF, in actual and simulated flight, and covering the following 4 phases of training:

   (a) Phase 1 — Core flying skills

   Specific basic single-pilot training in an aeroplane.

   (b) Phase 2 — Basic

   Introduction of multi-crew operations and instrument flight.

   (c) Phase 3 — Intermediate

   Application of multi-crew operations to a multi-engine turbine aeroplane certified as a high performance aeroplane by the Authority.

   (d) Phase 4 — Advanced

   Type rating training within an airline oriented environment.

   Flight experience in actual flight shall include all the experience requirements of Subpart H, upset recovery training, night flying, flight solely by reference to instruments and the experience required to achieve the relevant airmanship and the final competency standard of the approved adapted competency model.

   MCC requirements shall be incorporated into the relevant phases above. Training in asymmetric flight shall be given either in an aeroplane or an FFS.

8a. Flight experience in actual flight shall include:

   a) all the experience requirements of Subpart H;
   b) UPRT flight instruction in accordance with FCL.745.A;
   c) aeroplane UPRT exercises related to the specificities of the relevant type in accordance with FCL.725.A(c) [taking into account that an MPL programme includes learning the core set of flying abilities as well as achieving a type rating on an airline's commercial air transport aeroplane.];
   d) night flying;
   e) flight solely by reference to instruments; and
   f) the experience required to achieve the relevant airmanship.

9. Each phase of training in the flight instruction syllabus shall be composed of both instruction in the underpinning knowledge and in practical training segments in order to achieve the final competency standard in all the competencies of the approved adapted competency model.

10. The training course shall include a continuous evaluation process of the training syllabus and a continuous assessment of the students following the syllabus. Evaluation shall ensure that:
    a) the competencies and related assessment are relevant to the task of a co-pilot of a multi-pilot aeroplane; and
    b) the students acquire the necessary competencies in a progressive and satisfactory manner.
11. The training course shall include at least 12 take-offs and landings to ensure competency. These take-offs and landings shall be performed under the supervision of an instructor in an aeroplane for which the type rating shall be issued.

ASSESSMENT LEVEL

12. The applicant for the MPL shall have achieved the final competency standard of the approved adapted competency model to demonstrate competency required to operate and interact as a co-pilot in a turbine-powered multi- pilot aeroplane, under visual and instrument conditions. Assessment shall confirm that control of the aeroplane or situation is maintained at all times, to ensure the successful outcome of a procedure or manoeuvre. The applicant shall consistently demonstrate the knowledge, skills and attitudes required for the safe operation of the applicable aeroplane type, in accordance with the MPL competency based performance criteria.

COMPETENCY UNITS

13. The applicant shall demonstrate competency in the following 9 competency units:
    1) apply human performance principles, including principles of threat and error management;
    2) perform aeroplane ground operations;
    3) perform take-off;
    4) perform climb;
    5) perform cruise;
    6) perform descent;
    7) perform approach;
    8) perform landing; and
    9) perform after landing and aeroplane post-flight operations.

SIMULATED FLIGHT

14. Minimum requirements for FSTDs:
    a) Phase 1 — Core flying skills

E-training and part tasking devices approved by the Authority that have the following characteristics:

- involve accessories beyond those normally associated with desktop computers, such as functional replicas of a throttle quadrant, a side-stick controller, or an FMS keypad, and
- involve psychomotor activity with appropriate application of force and timing of responses.

b) Phase 2 — Basic

An FNPT II MCC that represents a generic multi-engine turbine-powered aeroplane.

c) Phase 3 — Intermediate

An FSTD that represents a multi-engine turbine-powered aeroplane required to be operated with a co-pilot and qualified to an equivalent standard to level B, additionally including:

- a daylight/twilight/night visual system continuous cross-cockpit minimum collimated visual field of view providing each pilot with 180° horizontal and 40° vertical field of view, and
- ATC environment simulation.

d) Phase 4 — Advanced

An FFS which is fully equivalent to level D or level C with an enhanced daylight visual system, including ATC environment simulation.

GM1 to Appendix 5 Integrated MPL training course

GENERAL

(a) In broad terms, the MPL holder is expected to be able to complete the airline operators' conversion course with a high probability of success and within the time frame normally allowed for this phase. The standard is equivalent to what is currently expected from graduates of the ATP(A) integrated course who have completed type rating training.

(b) The general approach is to use the existing ATP(A) integrated training course as a reference and to implement progressively the MPL integrated training course and specifically the transfer from actual flight to simulated flight.

(c) This transfer should be organised in a way that is similar to the approach used for ETOPS. Successive evolutions of the training syllabus introduce progressively a higher level of simulated flight and a reduction of actual flight. Change from one version to the next should only take place after enough experience has been gained and once its results, including those of airline operator conversion courses, have been analysed and taken into account.

MPL TRAINING SCHEME

(d) The following scheme should be applied:

MPL Training Scheme

Adapted competency model	Phases of training	Training items	Flight and simulated flight training media - Minimum level requirement -		Ground training media
	Phase 4 — advanced Type rating training covering the training content of Appendix 9 to Part-FCL within an airline-oriented environment	• TEM and CRM • Landing training • All weather • LOFT • Abnormal procedures • Normal procedures • Type-specific UPRT	Aeroplane: ME Multi-crew certified FSTD FS level D or C + ATC simulation	6 to 12 take-offs and landings as PF (in accordance with point 11 of Appendix 5) One go-around with all engines operating (refer to GM1 to Appendix 9 (d). PF / PM	• E-learning • Part-task trainer • Class-room
	Phase 3 — intermediate Application of multi-crew operations in a high-performance ME turbine aeroplane	• TEM and CRM • LOFT • Abnormal procedures • Normal procedures • Multi-crew • Instrument flight • Non-type-specific UPRT	FSTD: *representing an ME turbine-powered aeroplane to be operated with a co-pilot and qualified to an equivalent standard to level B + ATC simulation*	PF / PM	
	Phase 2 — basic Introduction of multi-crew operations and instrument flight	• TEM and CRM • PF / PM complement • IFR cross-country • Instrument flight • Night flight	Aeroplane: SE or ME FSTD: FNPT II + MCC	PF / PM	
	Phase 1 — core flying skills Specific basic SP training	• TEM and CRM • VFR cross-country • Solo flight • Basic instrument flight • Principles of flight • Cockpit procedures • Upset recovery in an aeroplane • Night flight	Aeroplane: SE or ME FSTD: FNPT I / BITD	PF	

THEORETICAL KNOWLEDGE INSTRUCTION

(e) The 750 hours of theoretical knowledge instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions.

COMPETENCY UNITS, COMPETENCY ELEMENTS AND PERFORMANCE CRITERIA

(f) Apply human performance principles, including principles of threat and error management:

(1) cooperation;

(2) leadership and managerial skills;

(3) situation awareness;

(4) decision making.

These behaviour categories are intended to help in the effective utilisation of all available resources to achieve safe and efficient operations.

These behaviour categories may be adapted and extended to incorporate issues like communication and use of automation if it is considered to be relevant to the development of the curriculum.

(g) Perform Aircraft Ground and Pre-Flight Operations

List of competency elements and performance criteria:

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;		
		Duty Observation and assessment Satisfactory (S) Unsatisfactory (U)	
(2)	perform dispatch duties:		(S) or (U)
	(i) verifies technical condition of the a/c, including adequate use of MEL;	PF/PNF	
	(ii) checks technical bulletins and notices	PF/PNF	
	(iii) determines operational environment and pertinent weather	PF/PNF	
	(iv) determines impact of weather on aircraft performance	PF/PNF	
	(v) applies flight planning and load procedures	PF/PNF	
	(vi) determines fuel requirement	PF/PNF	
	(vii) files an ATS flight plan (if required)	PF/PNF	
(3)	provide flight crew and cabin crew briefings		(S) or (U)
	(i) briefed flight crew in all relevant matters	PF	
	(ii) briefed cabin crew in all relevant matters	PF	
(4)	perform pre-flight checks and cockpit preparation:		(S) or (U)
	(i) ensures the airworthiness of the aircraft;	PF	
	(ii) performs the cockpit preparation and briefings;	PF/PNF	
	(iii) performs FMS initialisation, data insertion and confirmation	PF/PNF	
	(iv) optimises and checks take-off performance and take-off data calculation	PF/PNF	

(5)	perform engine start:		(S) or (U)
(i)	asks for, receives acknowledges and checks ATC clearance	PNF	
(ii)	performs engine start procedure	PF/PNF	
(iii)	uses standard communication procedures with ground crew and ATC	PF/PNF	
(6)	perform taxi out:		(S) or (U)
(i)	receives, checks, and adheres to taxi clearance	PNF	
(ii)	taxies the aircraft, including use of exterior lighting	PF	
(iii)	complies to taxi clearance	PF/PNF	
(iv)	maintains look-out for conflicting traffic and obstacles	PF/PNF	
(v)	operates thrust, brakes, and steering	PF	
(vi)	conducts relevant briefings	PF	
(vii)	uses standard communication procedures with crew and ATC	PNF	
(viii)	completes standard operating procedures and checklists	PF/PNF	
(ix)	updates and confirms FMS data;	PF/PNF	
(x)	manages changes in performance and departure route	PF/PNF	
(xi)	completes de or anti-ice procedures	PF/PNF	
(7)	manage abnormal and emergency situations:		(S) or (U)
(i)	identifies the abnormal condition	PF/PNF	
(ii)	interprets the abnormal condition	PF/PNF	
(iii)	performs the procedure for the abnormal condition	PF/PNF	
(8)	communicate with cabin crew, passengers, and company		(S) or (U)

(i) communicates relevant information with cabin crew	PF	
(ii) communicates relevant information with company	PF/PNF	
(iii) makes passenger announcement when appropriate.	PF/PNF	

(h) Perform take-off

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors.		
(2) perform pre-take-off and pre-departure preparation:		(S) or (U)
(i) checks and acknowledges line up clearance;	PF/PNF	
(ii) checks correct runway selection	PF/PNF	
(iii) confirms validity of performance data	PF/PNF	
(iv) checks approach sector and runway are clear	PF/PNF	
(v) confirms all checklists and take-off preparations completed	PF/PNF	
(vi) lines up the aircraft on centreline without losing distance	PF	
(vii) checks weather on departure sector	PF/PNF	
(viii) checks runway status and wind	PF/PNF	
(3) perform take-off roll		(S) or (U)
(i) applies take-off thrust	PF	
(ii) checks engine parameters	PF/PNF	
(iii) checks air speed indicators;	PF/PNF	

	(iv) stays on runway centreline	PF	
(4)	perform transition to instrument flight rules		(S) or (U)
	(i) applies v1 procedures	PF / PNF	
	(ii) rotates at vr to initial pitch attitude	PF	
	(iii) establishes initial wings level attitude	PF	
	(iv) retracts landing gear	PNF	
	(v) maintains climb out speed	PF	
(5)	perform initial climb to flap retraction altitude		(S) or (U)
	(i) sets climb power	PF	
	(ii) adjusts attitude for acceleration	PF	
	(iii) selects flaps according to flap speed schedule	PF/PNF	
	(iv) observes speed restrictions	PF	
	(v) completes relevant checklists	PF/PNF	
(6)	perform rejected take-off		(S) or (U)
	(i) recognises the requirement to abort the take-off	PF	
	(ii) applies the rejected take-off procedure	PF	
	(iii) assesses the need to evacuate the aircraft	PF/PNF	
(7)	perform navigation:		(S) or (U)
	(i) complies to departure clearance	PF	
	(ii) complies with published departure procedures for example speeds	PF	
	(iii) monitors navigation accuracy	PF/PNF	

	(iv) communicates and coordinates with ATC	PNF	
(8)	manage abnormal and emergency situations:		(S) or (U)
	(i) identifies the abnormal condition	PF/PNF	
	(ii) interprets the abnormal condition	PF/PNF	
	(iii) performs the procedure for the abnormal condition	PF/PNF	

(i) Perform climb

List of competency elements and performance criteria:

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors		
(2)	perform SID or en-route navigation		(S) or (U)
	(i) complies with departure clearance and procedures;	PF	
	(ii) demonstrates terrain awareness;	PF/PNF	
	(iii) monitors navigation accuracy;	PF/PNF	
	(iv) adjusts flight to weather and traffic conditions;	PF	
	(v) communicates and coordinates with ATC;	PNF	
	(vi) observes minimum altitudes;	PF/PNF	
	(vii) selects appropriate level of automation;	PF	
	(viii) complies with altimeter setting procedures	PF/PNF	
(3)	complete climb procedures and checklists:		(S) or (U)
	(i) performs the after take-off items	PF/PNF	
	(ii) confirms and checks according checklists	PF/PNF	

(4)	modify climb speeds, rate of climb and cruise altitude:		(S) or (U)
	(i) recognises the need to change speed, rate of climb or cruise altitude;	PF	
	(ii) selects and maintains the appropriate climb speed or rate of climb;	PF	
	(iii) selects optimum cruise flight level.	PF/PNF	
(5)	perform systems operations and procedures:		(S) or (U)
	(i) monitors operation of all systems;	PF/PNF	
	(ii) operates systems as required	PF/PNF	
(6)	manage abnormal and emergency situations		(S) or (U)
	(i) identifies the abnormal condition	PF/PNF	
	(ii) interprets the abnormal condition	PF/PNF	
	(iii) performs the procedure for the abnormal condition	PF/PNF	
(7)	communicate with cabin crew, passengers and company:		(S) or (U)
	(i) communicates relevant information with cabin crew	PF	
	(ii) communicates relevant information with company	PF/PNF	
	(iii) makes passenger announcements when appropriate	PF	

(j) Perform cruise

List of competency elements and performance criteria.

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors		
(2)	monitor navigation accuracy:		(S) or (U)

	(i) demonstrates adequate area knowledge	PF/PNF	
	(ii) demonstrates adequate route knowledge	PF/PNF	
	(iii) navigates according to flight plan and clearance	PF	
	(iv) adjusts flight to weather and traffic conditions	PF	
	(v) communicates and coordinates with ATC	PNF	
	(vi) observes minimum altitudes	PF/PNF	
	(vii) uses all means of automation	PF	
(3)	monitor flight progress:		(S) or (U)
	(i) selects optimum speed	PF	
	(ii) selects optimum cruise flight level	PF	
	(iii) monitors and controls fuel status	PF/PNF	
	(iv) recognises the need for a possible diversion	PF/PNF	
	(v) creates a diversion contingency plan if required	PF/PNF	
(4)	perform descent and approach planning:		(S) or (U)
	(i) checks weather of destination and alternate airport;	PF/PNF	
	(ii) checks runway in use and approach procedure	PF/PNF	
	(iii) sets the FMS accordingly	PNF	
	(iv) checks landing weight and landing distance required;	PNF	
	(v) checks MEA, MGA and MSA	PF/PNF	
	(vi) identifies top of descent point	PF	
(5)	perform systems operations and procedures:		(S) or (U)

(i) monitors operation of all systems	PF/PNF	
(ii) operates systems as required	PNF	
(6) manage abnormal and emergency situations:		(S) or (U)
(i) identifies the abnormal condition	PF/PNF	
(ii) interprets the abnormal condition	PF/PNF	
(iii) performs the procedure for the abnormal condition	PF/PNF	
(7) communicate with cabin crew, passengers and company:		(S) or (U)
(i) communicates relevant information with cabin crew	PF	
(ii) Communicates relevant information with company	PF/PNF	
(iii) makes passenger announcements when appropriate	PF	

(k) Perform descent

List of competency elements and performance criteria:

(1) Demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;		
(2) initiate and manage descent:		(S) or (U)
(i) starts descent according to ATC clearance or optimum descent point	PF	
(ii) selects optimum speed and descent rate	PF	
(iii) Adjusts speed to existing environmental conditions	PF	
(iv) recognises the need to adjust the descent path	PF	
(v) adjusts the flight path as required	PF	
(vi) utilises all means of FMS descent information	PF	
(3) monitor and perform en route and descent navigation:		(S) or (U)

	(i) complies with arrival clearance and procedures;	PF	
	(ii) demonstrates terrain awareness;	PF/PNF	
	(iii) monitors navigation accuracy;	PF/PNF	
	(iv) adjusts flight to weather and traffic conditions;	PF	
	(v) communicates and coordinates with ATC;	PNF	
	(vi) observes minimum altitudes;	PF/PNF	
	(vii) selects appropriate level or mode of automation;	PF	
	(viii) complies with altimeter setting procedures.	PF/PNF	
(4)	re-planning and update of approach briefing:		(S) or (U)
	(i) re-checks destination weather and runway in use	PNF	
	(ii) briefs or re-briefs about instrument approach and landing as required	PF	
	(iii) reprograms the FMS as required	PNF	
	(iv) re-checks fuel status	PF/PNF	
(5)	perform holding:		(S) or (U)
	(i) identifies holding requirement;	PF/PNF	
	(ii) programs FMS for holding pattern;	PNF	
	(iii) enters and monitors holding pattern;	PF	
	(iv) assesses fuel requirements and determines max holding time;	PF/PNF	
	(v) reviews the need for a diversion;	PF/PNF	
	(vi) initiates diversion	PF	
(6)	perform systems operations and procedures:		(S) or (U)
	(i) monitors operation of all systems;	PF/PNF	

	(ii) operates systems as required	PF/PNF	
(7)	manage abnormal and emergency situations:		(S) or (U)
	(i) identifies the abnormal condition	PF/PNF	
	(ii) interprets the abnormal condition	PF/PNF	
	(iii) performs the procedure for the abnormal condition	PF/PNF	
(8)	communicate with cabin crew, passengers and company:		(S) or (U)
	(i) communicates relevant information with cabin crew	PF	
	(ii) communicates relevant information with company	PF/PNF	
	(iii) makes passenger announcements when appropriate	PF	

(l) Perform approach

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;		
(2) perform approach in general:		(S) or (U)
(i) executes approach according to procedures and situation;	PF	
(ii) selects appropriate level or mode of automation;	PF	
(iii) selects optimum approach path;	PF	
(iv) operates controls smooth and coordinated;	PF	
(v) performs speed reduction and flap extension;	PF/PNF	
(vi) performs relevant checklists;	PF/PNF	
(vii) initiates final descent;	PF	

(viii) achieves stabilised approach criteria;	PF	
(ix) ensures adherence to minima;	PF/PNF	
(x) initiates go-around if required;	PF	
(xi) masters transition to visual segment.	PF	
(3) perform precision approach:		(S) or (U)
(i) performs ILS approach	PF	
(ii) performs MLS approach	PF	
(4) perform non-precision approach:		(S) or (U)
(i) performs VOR approach	PF	
(ii) performs NDB approach	PF	
(iii) performs SRE approach	PF	
(iv) performs GNSS approach	PF	
(v) performs ILS loc approach	PF	
(vi) performs ILS back beam approach	PF	
(5) perform approach with visual reference to ground:		(S) or (U)
(i) performs standard visual approach;	PF	
(ii) performs circling approach	PF	
(6) monitor the flight progress:		(S) or (U)
(i) insures navigation accuracy	PF/PNF	
(ii) communicates with ATC and crew members	PNF	
(iii) monitors fuel status		PF/PNF

(7) perform systems operations and procedures:		(S) or (U)
(i) monitors operation of all systems	PF	
(ii) operates systems as required	PF	
(8) manage abnormal and emergency situations:		(S) or (U)
(i) identifies the abnormal condition	PF/PNF	
(ii) interprets the abnormal condition	PF/PNF	
(iii) performs the procedure for the abnormal condition	PF/PNF	
(9) perform missed approach and go-around:		(S) or (U)
(i) initiates go-around procedure;	PF	
(ii) navigates according to missed approach procedure;	PF	
(iii) completes the relevant checklists;	PF/PNF	
(iv) initiates approach or diversion after the go-around;	PF	
(v) communicates with ATC and crew members.	PNF	
(10) communicate with cabin crew, passengers and company:		(S) or (U)
(i) communicates relevant information with cabin crew	PF	
(ii) communicates relevant information with company	PF/PNF	
(iii) makes passenger announcements when appropriate	PF	
(iv) initiates go-around procedure	PF	

(m) Perform landing

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors		
(2) land the aircraft		(S) or (U)
(i) maintains a stabilised approach path during visual segment;	PF	
(ii) recognises and acts on changing conditions for windshift or wind shear segment;	PF	
(iii) initiates flare;	PF	
(iv) controls thrust	PF	
(v) achieves touchdown in touchdown zone on centreline;	PF	
(vi) lowers nose wheel;	PF	
(vii) maintains centreline	PF	
(viii) performs after-touchdown procedures;	PF	
(ix) makes use of appropriate braking and reverse thrust;	PF	
(x) vacates runway with taxi speed.	PF	
(3) perform systems operations and procedures:		(S) or (U)
(i) monitors operation of all systems	PF	
(ii) operates systems as required	PF	
(4) manage abnormal and emergency situations:		(S) or (U)
(i) identifies the abnormal condition	PF/PNF	
(ii) interprets the abnormal condition;	PF/PNF	
(iii) performs the procedure for the abnormal condition	PF/PNF	

(n) Perform after landing and post flight operations

List of competency elements and performance criteria:

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors		
(2)	perform taxiing and parking		(S) or (U)
	(i) receives, checks and adheres to taxi clearance	PNF	
	(ii) taxies the aircraft including use of exterior lighting	PF	
(3)	controls taxi speed		
	(i) maintains centreline	PF	
	(ii) maintains look-out for conflicting traffic and obstacles	PF	
	(iii) identifies parking position	PF/PNF	
	(iv) complies with marshalling or stand guidance	PF/PNF	
	(v) applies parking and engine shut down procedures	PF	
	(vi) completes with relevant checklists	PF/PNF	
(4)	perform aircraft post-flight operations:		(S) or (U)
	(i) communicates to ground personnel and crew	PF	
	(ii) completes all required flight documentation	PF/PNF	
	(iii) ensures securing of the aircraft	PF	
	(iv) conducts the debriefings	PF	
(5)	perform systems operations and procedures:		(S) or (U)
	(i) monitors operation of all systems	PF/PNF	
	(ii) operates systems as required	PF/PNF	

(6) manage abnormal and emergency situations:		(S) or (U)
(i) identifies the abnormal condition	PF/PNF	
(ii) interprets the abnormal condition	PF/PNF	
(iii) performs the procedure for the abnormal condition	PF/PNF	
communicate with cabin crew, passengers and company:		(S) or (U)
(i) communicates relevant information with cabin crew	PF	
(ii) communicates relevant information with company	PF/PNF	
(iii) makes passenger announcements when appropriate	PF	

PRINCIPLES OF THREAT AND ERROR MANAGEMENT

(o) One model that explains the principles of threat and error management is the TEM model.

(1) The components of the TEM model:

There are three basic components in the TEM model, from the perspective of flight crews: threats, errors and undesired aircraft states. The model proposes that threats and errors are part of everyday aviation operations that must be managed by flight crews, since both threats and errors carry the potential to generate undesired aircraft states. Flight crews must also manage undesired aircraft states, since they carry the potential for unsafe outcomes. Undesired state management is an essential component of the TEM model, as important as threat and error management. Undesired aircraft state management largely represents the last opportunity to avoid an unsafe outcome and thus maintain safety margins in flight operations.

(2) Threats:

(i) Threats are defined as events or errors that occur beyond the influence of the flight crew, increase operational complexity, and which must be managed to maintain the margins of safety. During typical flight operations, flight crews have to manage various contextual complexities. Such complexities would include, for example, dealing with adverse meteorological conditions, airports surrounded by high mountains, congested airspace, aircraft malfunctions, errors committed by other people outside of the cockpit, such as air traffic controllers, cabin crew members or maintenance workers, and so forth. The TEM model considers these complexities as threats because they all have the potential to negatively affect flight operations by reducing margins of safety;

(ii) Some threats can be anticipated, since they are expected or known to the flight crew. For example, flight crews can anticipate the consequences of a thunderstorm by briefing their response in advance, or prepare for a congested airport by making sure they keep a watchful eye on other aircraft as they execute the approach;

(iii) Some threats can occur unexpectedly, such as an in-flight aircraft malfunction that happens suddenly and without warning. In this case, flight crews must apply skills and knowledge acquired through training and operational experience;

(iv) Lastly, some threats may not be directly obvious to, or observable by, flight crews immersed in the operational context, and may need to be uncovered by safety analysis. These are considered latent threats. Examples of latent threats include equipment design issues, optical illusions, or shortened turn-around schedules;

(v) Regardless of whether threats are expected, unexpected, or latent, one measure of the effectiveness of a flight crew's ability to manage threats is whether threats are detected with the necessary anticipation to enable the flight crew to respond to them through deployment of appropriate countermeasures;

(vi) Threat management is a building block to error management and undesired aircraft state management. Although the threat- error linkage is not necessarily straightforward, and although it may not be always possible to establish a linear relationship, or one-to-one mapping between threats, errors and undesired states, archival data demonstrates that mismanaged threats are normally linked to flight crew errors, which in turn are often linked to undesired aircraft states. Threat management provides the most proactive option to maintain margins of safety in flight operations, by voiding safety-compromising situations at their roots. As threat managers, flight crews are the last line of defence to keep threats from impacting flight operations;

(vii) Table 1 presents examples of threats, grouped under two basic categories derived from the TEM Model. Environmental threats occur due to the environment in which flight operations take place. Some environmental threats can be planned for and some will arise spontaneously, but they all have to be managed by flight crews in real time. Organisational threats, on the other hand, can be controlled (for example removed or, at least, minimised) at source by aviation organisations. Organisational threats are usually latent in nature. Flight crews still remain the last line of defence, but there are earlier opportunities for these threats to be mitigated by aviation organisations themselves.

Table 1. Examples of threats (list is not exhaustive)	
Environmental threats	**Organisational threats**

A) weather: thunderstorms, turbulence, icing, wind shear, cross or tailwind, very low or high temperatures; (B) ATC: traffic congestion, ACAS RA/TA, ATC command, ATC error, ATC language difficulty, ATC non-standard phraseology, ATC runway change, ATIS communication or units of measurement (QFE/meters); (C) airport: contaminated or short runway; contaminated taxiway, lack of, confusing, faded signage, markings, birds, aids unserviceable, complex surface navigation procedures or airport constructions; (D) terrain: high ground, slope, lack of references or 'black hole'; (E) other: similar call-signs.	(A) operational pressure: delays, late arrivals or equipment changes; (B) aircraft: aircraft malfunction, automation event or anomaly, MEL/CDL; (C) cabin: flight attendant error, cabin event distraction, interruption, cabin door security; (D) maintenance: maintenance event or error; (E) ground: ground-handling event, de-icing or ground crew error; (F) dispatch: dispatch paperwork event or error; (G) documentation: manual error or chart error; (H) other: crew scheduling event.

(3) Errors:

(i) Errors are defined actions or inactions by the flight crew that lead to deviations from organisational or flight crew intentions or expectations. Unmanaged or mismanaged errors frequently lead to undesired aircraft states. Errors in the operational context thus tend to reduce the margins of safety and increase the probability of adverse events;

(ii) Errors can be spontaneous (for example without direct linkage to specific, obvious threats), linked to threats, or part of an error chain. Examples of errors would include the inability to maintain stabilised approach parameters, executing a wrong automation mode, failing to give a required callout, or misinterpreting an ATC clearance;

(iii) Regardless of the type of error, an error's effect on safety depends on whether the flight crew detects and responds to the error before it leads to an undesired aircraft state and to a potential unsafe outcome. This is why one of the objectives of TEM is to understand error management (for example detection and response), rather than to solely focuson error causality (for example causation and commission). From the safety perspective, operational errors that are timely detected and promptly responded to (for example properly managed), errors that do not lead to undesired aircraft states, do not reduce margins of safety in flight operations, and thus become operationally inconsequential. In addition to its safety value, proper error management represents an example of successful human performance, presenting both learning and training value;

(iv) Capturing how errors are managed is then as important, if not more, as capturing the prevalence of different types of error. It is of interest to capture if and when errors are detected and by whom, the response(s) upon detecting errors, and the outcome of errors. Some errors are quickly detected and resolved, thus becoming operationally inconsequential, while others go undetected or are mismanaged. A mismanaged error is defined as an error that is linked to or induces an additional error or undesired aircraft state;

(v) Table 2 presents examples of errors, grouped under three basic categories derived from the TEM model. In the TEM concept, errors have to be 'observable' and therefore, the TEM model uses the 'primary interaction' as the point of reference for defining the error categories;

(vi) The TEM model classifies errors based upon the primary interaction of the pilot or flight crew at the moment the error is committed. Thus, in order to be classified as aircraft handling error, the pilot or flight crew must be interacting with the aircraft (for example through its controls, automation or systems). In order to be classified as procedural error, the pilot or flight crew must be interacting with a procedure (for example checklists; SOPs; etc.). In order to be classified as communication error, the pilot or flight crew must be interacting with people (ATC, ground crew, other crew members, etc.);

(vii) Aircraft handling errors, procedural errors and communication errors may be unintentional or involve intentional non-compliance. Similarly, proficiency considerations (for example skill or knowledge deficiencies, training system deficiencies) may underlie all three categories of error. In order to keep the approach simple and avoid confusion, the TEM model does not consider intentional non-compliance and proficiency as separate categories of error, but rather as sub-sets of the three major categories of error.

Table 2. Examples of errors (list is not exhaustive)	
Aircraft handling errors	(A) manual handling, flight controls: vertical, lateral or speed deviations, incorrect flaps or speed brakes, thrust reverser or power settings; (B) automation: incorrect altitude, speed, heading, auto throttle settings, incorrect mode executed or incorrect entries; (C) systems, radio, instruments: incorrect packs, incorrect anti-icing, incorrect altimeter, incorrect fuel switches settings, incorrect speed bug or incorrect radio frequency dialled; (D) ground navigation: attempting to turn down wrong taxiway or runway, taxi too fast, failure to hold short or missed taxiway or runway.

Procedural errors	(A) SOPs: failure to cross-verify automation inputs; (B) checklists: wrong challenge and response; items missed, checklist performed late or at the wrong time; (C) callouts: omitted or incorrect callouts; (D) briefings: omitted briefings; items missed; (E) documentation: wrong weight and balance, fuel information, ATIS, or clearance information recorded, misinterpreted items on paperwork; incorrect logbook entries or incorrect application of MEL procedures.
Communication errors	(A) crew to external: missed calls, misinterpretations of instructions, incorrect read-back, wrong clearance, taxiway, gate or runway communicated; (B) pilot to pilot: within crew miscommunication or mis-interpretation.

(4) Undesired aircraft states:

(i) Undesired aircraft states are flight crew-induced aircraft position or speed deviations, misapplication of flight controls, or incorrect systems configuration, associated with a reduction in margins of safety. Undesired aircraft states that result from ineffective threat or error management may lead to compromising situations and reduce margins of safety in flight operations. Often considered at the cusp of becoming an incident or accident, undesired aircraft states must be managed by flight crews;

(ii) Examples of undesired aircraft states would include lining up for the incorrect runway during approach to landing, exceeding ATC speed restrictions during an approach, or landing long on a short runway requiring maximum braking. Events such as equipment malfunctions or ATC controller errors can also reduce margins of safety in flight operations, but these would be considered threats;

(iii) Undesired states can be managed effectively, restoring margins of safety, or flight crew response(s) can induce an additional error, incident, or accident;

(iv) Table 3 presents examples of undesired aircraft states, grouped under three basic categories derived from the TEM model;

Table 3. Examples of undesired aircraft states (list is not exhaustive)	
Aircraft handling	(A) aircraft control (attitude); (B) vertical, lateral or speed deviations; (C) unnecessary weather penetration; (D) unauthorised airspace penetration; (E) operation outside aircraft limitations; (F) unstable approach; (G) continued landing after unstable approach; (H) long, floated, firm or off- centreline landing.
Ground navigation	(A) proceeding towards wrong taxiway or runway; (B) Wrong taxiway, ramp, gate or hold spot.
Incorrect aircraft configurations	(A) incorrect systems configuration; (B) incorrect flight controls configuration; (C) incorrect automation configuration; (D) incorrect engine configuration; (E) incorrect weight and balance configuration.

(i) An important learning and training point for flight crews is the timely switching from error management to undesired aircraft state management. An example would be as follows: a flight crew selects a wrong approach in the FMC. The flight crew subsequently identifies the error during a cross-check prior to the FAF. However, instead of using a basic mode (for example heading) or manually flying the desired track, both flight crew members become involved in attempting to reprogram the correct approach prior to reaching the FAF. As a result, the aircraft 'stitches' through the localiser, descends late, and goes into an unstable approach. This would be an example of the flight crew getting 'locked in' to error management, rather than switching to undesired aircraft state management. The use of the TEM model assists in educating flight crews that, when the aircraft is in an undesired state, the basic task of the flight crew is undesired aircraft state management instead of error management. It also illustrates how easy it is to get locked in to the error management phase;

(ii) Also from a learning and training perspective, it is important to establish a clear differentiation between undesired aircraft states and outcomes. Undesired aircraft states are transitional states between a normal operational state (for example a stabilised approach) and an outcome. Outcomes, on the other hand, are end states, most notably, reportable occurrences (for example incidents and accidents). An example would be as follows: a stabilized Approach (normal operational state) turns into an unstabilised approach (undesired aircraft state) that results in a runway excursion (outcome);

(iii) The training and remedial implications of this differentiation are of significance. While at the undesired aircraft state stage, the flight crew has the possibility, through appropriate TEM, of recovering the situation, returning to a normal operational state, thus restoring margins of safety. Once the undesired aircraft state becomes an outcome, recovery of the situation, return to a normal operational state, and restoration of margins of safety is not possible.

(5) Countermeasures:

(i) Flight crews must, as part of the normal discharge of their operational duties, employ countermeasures to keep threats, errors and undesired aircraft states from reducing margins of safety in flight operations. Examples of countermeasures would include checklists, briefings, call-outs and SOPs, as well as personal strategies and tactics. Flight crews dedicate significant amounts of time and energies to the application of countermeasures to ensure margins of safety during flight operations. Empirical observations during training and checking suggest that as much as 70 % of flight crew activities may be countermeasures-related activities.

(ii) All countermeasures are necessarily flight crew actions. However, some countermeasures to threats, errors and undesired aircraft states that flight crews employ build upon 'hard' resources provided by the aviation system. These resources are already in place in the system before flight crews report for duty, and are therefore considered as systemic-based countermeasures. The following would be examples of 'hard' resources that flight crews employ as systemic-based countermeasures:

1. ACAS;
2. TAWS;
3. SOPs;
4. checklists;
5. briefings;
6. training;
7. etc.

(iii) Other countermeasures are more directly related to the human contribution to the safety of flight operations. These are personal strategies and tactics, individual and team countermeasures that typically include canvassed skills, knowledge and attitudes developed by human performance training, most notably, by CRM training. There are basically three categories of individual and team countermeasures:

(1) planning countermeasures: essential for managing anticipated and unexpected threats;

(2) execution countermeasures: essential for error detection and error response;

(3) review countermeasures: essential for managing the changing conditions of a flight.

(iv) Enhanced TEM is the product of the combined use of systemic- based and individual and team countermeasures. Table 4 presents detailed examples of individual and team countermeasures. Further guidance on countermeasures can be found in the sample assessment guides for terminal training objectives (PANS-TRG, Chapter 3, Attachment B) as well as in the ICAO manual, Line Operations Safety Audit (LOSA) (Doc 9803).

Table 4. Examples of individual and team countermeasures

Planning countermeasures		
SOP briefing	The required briefing was interactive and operationally thorough	(A) Concise, not rushed, and met SOP requirements; (B) Bottom lines were established
Plans stated	Operational plans and decisions were communicated and acknowledged	Shared understanding about plans: 'Everybody on the same page'
Workload assignment	Roles and responsibilities were defined for normal and non-normal situations	Workload assignments were communicated and acknowledged
Contingency management	Crew members developed effective strategies to manage threats to safety	(A) Threats and their consequences were anticipated; (B) Used all available resources to manage threats
Execution countermeasures		
Monitor and cross-check	Crew members actively monitored and cross-checked systems and other crew members	Aircraft position, settings, and crew actions were verified
Workload management	Operational tasks were prioritised and properly managed to handle primary flight duties	(A) Avoided task fixation; (B) Did not allow work overload
Automation management	Automation was properly managed to balance situational and workload requirements	(A) Automation setup was briefed to other members (B) Effective recovery techniques from automation anomalies
Review countermeasures		
Evaluation and modification of plans	Existing plans were reviewed and modified when necessary	Crew decisions and actions were openly analysed to make sure the existing plan was the best plan
Inquiry	Crew members asked questions to investigate and/or clarify current plans of action	Crew members not afraid to express a lack of knowledge: 'Nothing taken for granted' attitude

Assertiveness	Crew members stated critical information or solutions with appropriate persistence	Crew members spoke up without hesitation

GM2 to Appendix 5 Assessment of student competency during take-off and landing training

The required level of competency of a student pilot is assessed by observing the following:

(e) application of knowledge;
(f) application of regulations and procedures;
(g) communication;
(h) aeroplane flight path management – automation;
(i) aeroplane flight path management – manual control;
(j) leadership and teamwork;
(k) problem-solving and decision-making;
(l) situational awareness (SA) and information management; and
(m) workload management.

The competencies referred to in points (b) and (e) are particularly relevant during the training. This means that the focus is on observing the student pilot performing take-offs and landings in accordance with the standard operating procedures (SOPs) and recommended techniques of the original equipment manufacturer (OEM).

The competency elements and sub-elements stipulated in GM1 to Appendix 5 for take-off and landing provide additional guidance for instructors and student pilots.

Consistency and repeatability of all the competencies above is achieved if the student pilot is able to perform at least three successive take-offs and landings demonstrating the required observable behaviours.

The take-off and landing training in an aeroplane should include at least one go-around. Due consideration should be given to environmental conditions when evaluating competency.

APPENDIX 6 – MODULAR TRAINING COURSES FOR THE IR

A. IR(A) — Modular flying training course

GENERAL

1. The aim of the IR(A) modular flying training course is to train pilots to the level of proficiency necessary to operate aeroplanes under IFR and in IMC. The course consists of two modules, which may be taken separately or combined:

   (a) Basic Instrument Flight Module

   This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in a BITD, FNPT I or II, or an FFS. Upon completion of the Basic Instrument Flight Module, the candidate shall be issued a Course Completion Certificate.

   (b) Procedural Instrument Flight Module

   This comprises the remainder of the training syllabus for the IR(A), 40 hours single-engine or 45 hours multi- engine instrument time under instruction, and the theoretical knowledge course for the IR(A).

2. An applicant for a modular IR(A) course shall be the holder of a PPL(A) or a CPL(A), including the privileges to fly at night. An applicant for the Procedural Instrument Flight Module, who does not hold a CPL(A), shall be holder of a Course Completion Certificate for the Basic Instrument Flight Module.

   The ATO shall ensure that the applicant for a multi-engine IR(A) course who has not held a multi-engine aeroplane class or type rating has received the multi-engine training specified in Subpart H prior to commencing the flight training for the IR(A) course.

3. An applicant wishing to undertake the Procedural Instrument Flight Module of a modular IR(A) course shall be required to complete all the instructional stages in one continuous approved course of training. Prior to commencing the Procedural Instrument Flight Module, the ATO shall ensure the competence of the applicant in basic instrument flying skills. Refresher training shall be given as required.

4. The course of theoretical instruction shall be completed within 18 months. The Procedural Instrument Flight Module and the skill test shall be completed within the period of validity of the pass in theoretical examinations.

5. The course shall comprise:
   (a) theoretical knowledge instruction to the IR knowledge level;
   (b) instrument flight instruction.

THEORETICAL KNOWLEDGE

6. An approved modular IR(A) course shall comprise at least 150 hours of theoretical knowledge instruction.

FLYING TRAINING

7. A single-engine IR(A) course shall comprise at least 50 hours instrument time under instruction of which up to 20 hours may be instrument ground time in an FNPT I, or up to 35 hours in an FFS or FNPT II. A maximum of 10 hours of FNPT II or an FFS instrument ground time may be conducted in an FNPT I.

8. A multi-engine IR(A) course shall comprise at least 55 hours instrument time under instruction, of which up to 25 hours may be instrument ground time in an FNPT I, or up to 40 hours in an FFS or FNPT II. A maximum of 10 hours of FNPT II or an FFS instrument ground time may be conducted in an FNPT I. The remaining instrument flight instruction shall include at least 15 hours in multi-engine aeroplanes.

9. The holder of a single-engine IR(A) who also holds a multi-engine class or type rating wishing to obtain a multi- engine IR(A) for the first time shall complete a course at an ATO comprising at least 5 hours instruction in instrument flying in multi-engine aeroplanes, of which 3 hours may be in an FFS or FNPT II.

IR Special Considerations:

10.1 The holder of a CPL(A) or of a Course Completion Certificate for the Basic Instrument Flight Module may have the total amount of training required in paragraphs 7 or 8 above reduced by 10 hours.

10.2 The holder of an IR(H) may have the total amount of training required in paragraphs 7 or 8 above reduced by 10 hours.

10.3 The total instrument flight instruction in aeroplane shall comply with paragraph 7 or 8, as appropriate.

11. The flying exercises up to the IR(A) skill test shall comprise:

(a) Basic Instrument Flight Module:

Procedure and manoeuvre for basic instrument flight covering at least:

basic instrument flight without external visual cues:

- horizontal flight,
- climbing,

- descent,
- turns in level flight, climbing, descent;

instrument pattern;

steep turn;

radio-navigation;

recovery from unusual attitudes;

limited panel;

recognition and recovery from incipient and full stalls;

(b) Procedural Instrument Flight Module:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents in the preparation of an IFR flight plan;

(ii) procedure and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

— transition from visual to instrument flight on take-off,

— standard instrument departures and arrivals,

— en-route IFR procedures,

— holding procedures,

— instrument approaches to specified minima,

— missed approach procedures,

— landings from instrument approaches, including circling;

(iii) in-flight manoeuvres and particular flight characteristics;

(iv) if required, operation of a multi-engine aeroplane in the above exercises, including operation of the aeroplane solely by reference to instruments with one engine simulated inoperative and engine shutdown and restart (the latter exercise to be carried out at a safe altitude unless carried out in an FFS or FNPT II).

Aa. IR(A) — Competency-based modular flying training course

GENERAL

1. The aim of the competency-based modular flying training course is to train PPL or CPL holders for the instrument rating, taking into account prior instrument flight instruction and experience. It is designed to provide the level of proficiency needed to operate aeroplanes under IFR and in IMC. The course shall be taken within an ATO or consist of a combination of instrument flight instruction provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR and flight instruction within an ATO.
2. An applicant for such a competency-based modular IR(A) shall be the holder of a PPL(A) or CPL(A).
3. The course of theoretical instruction shall be completed within 18 months. The instrument flight instruction and the skill test shall be completed within the period of validity of the pass of the theoretical knowledge examinations.
4. The course shall comprise:
   (a) theoretical knowledge instruction to the IR(A) knowledge level;
   (b) instrument flight instruction.

THEORETICAL KNOWLEDGE

5. An approved competency-based modular IR(A) course shall comprise at least 80 hours of theoretical knowledge instruction. The theoretical knowledge course may contain computer-based training and e- learning elements. A minimum amount of classroom teaching as required by the Authority

FLYING TRAINING

6. The method of attaining an IR(A) following this modular course is competency-based. However, the minimum requirements below shall be completed by the applicant. Additional training may be required to reach required competencies.
   (a) A single-engine competency-based modular IR(A) course shall include at least 40 hours of instrument time under instruction, of which up to 10 hours may be instrument ground time in an FNPT I, or up to 25 hours in an FFS or FNPT II. A maximum of 5 hours of FNPT II or FFS instrument ground time may be conducted in an FNPT I.
      (i) When the applicant has:
         (A) completed instrument flight instruction provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR; or
         (B) prior experience of instrument flight time as PIC on aeroplanes, under a rating providing the privileges to fly under IFR and in IMC, these hours may be credited towards the 40 hours above up to maximum of 30 hours,

(ii) When the applicant has prior instrument flight time under instruction other than specified in point (a)(i), these hours may be credited towards the required 40 hours up to a maximum of 15 hours.

(iii) In any case, the flying training shall include at least 10 hours of instrument flight time under instruction in an aeroplane at an ATO.

(iv) The total amount of dual instrument instruction shall not be less than 25 hours.

(b) A multi-engine competency-based modular IR(A) course shall include at least 45 hours instrument time under instruction, of which up to 10 hours may be instrument ground time in an FNPT I, or up to 30 hours in an FFS or FNPT II. A maximum of 5 hours of FNPT II or FFS instrument ground time may be conducted in an FNPT I.

(i) When the applicant has:

(A) completed instrument flight instruction provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR; or

(B) prior experience of instrument flight time as PIC on aeroplanes, under a rating giving the privileges to fly under IFR and in IMC,

these hours may be credited towards the 45 hours above up to a maximum of 35 hours.

(ii) When the applicant has prior instrument flight time under instruction other than specified in point (b)(i), these hours may be credited towards the required 45 hours up to a maximum of 15 hours.

(iii) In any case, the flying training shall include at least 10 hours of instrument flight time under instruction in a multi-engine aeroplane at an ATO.

(iv) The total amount of dual instrument instruction shall not be less than 25 hours, of which at least 15 hours shall be completed in a multi-engine aeroplane.

(c) To determine the amount of hours credited and to establish the training needs, the applicant shall complete a pre-entry assessment at an ATO.

(d) The completion of the instrument flight instruction provided by an IRI(A) or FI(A) in accordance with point (a)or (b)shall be documented in a specific training record and signed by the instructor.

7. The flight instruction for the competency-based modular IR(A) shall comprise:

(a) procedures and manoeuvres for basic instrument flight covering at least:

(i) basic instrument flight without external visual cues;

(ii) horizontal flight;

(iii) climbing;

(iv) descent;

(v) turns in level flight, climbing and descent;

(vi) instrument pattern;

(vii) steep turn;

(viii) radio navigation;

(ix) recovery from unusual attitudes;

(x) limited panel; and

(xi) recognition and recovery from incipient and full stall;

(b) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents for the preparation of an IFR flight plan;

(c) procedure and manoeuvres for IFR operation under normal, abnormal, and emergency conditions covering at least:

(i) transition from visual to instrument flight on take-off;

(ii) standard instrument departures and arrivals;

(iii) en route IFR procedures;

(iv) holding procedures;

(v) instrument approaches to specified minima;

(vi) missed approach procedures; and

(viii) landings from instrument approaches, including circling;

(d) in-flight manoeuvres and particular flight characteristics;

(e) if required, operation of a multi-engine aeroplane in the above exercises, including:

(i) operation of the aeroplane solely by reference to instruments with one engine simulated inoperative;

(ii) engine shutdown and restart (to be carried out at a safe altitude unless carried out in an FFS or FNPT II).

8. Applicants for the competency-based modular IR(A) holding a AUA-FCL PPL or CPL and a valid IR(A) issued in compliance with the requirements of Annex 1 to the Chicago Convention by a third country may be credited in full towards the training course mentioned in paragraph 4. In order to be issued the IR(A), the applicant shall:
   (a) successfully complete the skill test for the IR(A) in accordance with Appendix 7;

   (b) demonstrate to the examiner during the skill test that he/she has acquired an adequate level of theoretical knowledge of air law, meteorology and flight planning and performance (IR); and

   (c) have a minimum experience of at least 50 hours of flight time under IFR as PIC on aeroplanes.

PRE-ENTRY ASSESSMENT

9. The content and duration of the pre-entry assessment shall be determined by the ATO based on the prior instrument experience of the applicant.

MULTI-ENGINE

10. The holder of a single-engine IR(A) who also holds a multi-engine class or type rating wishing to obtain a multi-engine IR(A) for the first time shall complete a course at an ATO comprising at least 5 hours instrument time under instruction in multi-engine aeroplanes, of which 3 hours may be in an FFS or FNPT II and shall pass a skill test.

B. IR(H) — Modular flying training course

GENERAL

1. The aim of the IR(H) modular flying training course is to train pilots to the level of proficiency necessary to operate helicopters under IFR and in IMC.
2. An applicant for a modular IR(H) course shall be the holder of a PPL(H) with night rating, or a CPL(H) or an ATPL(H). Prior to commencing the aircraft instruction phase of the IR(H) course, the applicant shall be the holder of the helicopter type rating used for the IR(H) skill test, or have completed approved type rating training on that type. The applicant shall hold a certificate of satisfactory completion of MCC if the skill test is to be conducted in Multi- Pilot conditions.

3. An applicant wishing to undertake a modular IR(H) course shall be required to complete all the instructional stages in one continuous approved course of training.
4. The course of theoretical instruction shall be completed within 18 months. The flight instruction and the skill test shall be completed within the period of validity of the pass in the theoretical examinations.
5. The course shall comprise:
   (a) theoretical knowledge instruction to the IR knowledge level;
   (b) instrument flight instruction.

THEORETICAL KNOWLEDGE

6. An approved modular IR(H) course shall comprise at least 150 hours of instruction.

FLYING TRAINING

7. A single-engine IR(H) course shall comprise at least 50 hours instrument time under instruction, of which:
   (a) up to 20 hours may be instrument ground time in an FNPT I(H) or (A). These 20 hours instruction time in FNPT I (H) or (A) may be substituted by 20 hours instruction time for IR(H) in an aeroplane, approved for this course; or
   (b) up to 35 hours may be instrument ground time in a helicopter FTD 2/3, FNPT II/III or FFS.

The instrument flight instruction shall include at least 10 hours in an IFR-certificated helicopter.

8. A multi-engine IR(H) course shall comprise at least 55 hours instrument time under instruction of which;
   (a) up to 20 hours may be instrument ground time in an FNPT I (H) or (A). These 20 hours instruction time in FNPT I (H) or (A) may be substituted by 20 hours instruction time for IR(H) in an aeroplane, approved for this course; or
   (b) up to 40 hours may be instrument ground time in a helicopter FTD 2/3, FNPT II/III or FFS.

   The instrument flight instruction shall include at least 10 hours in an IFR-certificated multi-engine helicopter.

9.1 Holders of an ATPL(H) shall have the theoretical knowledge instruction hours reduced by 50 hours.

9.2 The holder of an IR(A) may have the amount of training required reduced by 10 hours.

10. The flying exercises up to the IR(H) skill test shall comprise:

(a) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents in the preparation of an IFR flight plan;

(b) procedure and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

— transition from visual to instrument flight on take-off,

— standard instrument departures and arrivals,

— en-route IFR procedures,

— holding procedures,

— instrument approaches to specified minima,

— missed approach procedures,

— landings from instrument approaches, including circling;

(c) in-flight manoeuvres and particular flight characteristics;

(d) if required, operation of a multi-engine helicopter in the above exercises, including operation of the helicopter solely by reference to instruments with one engine simulated inoperative and engine shutdown and restart (the latter exercise to be carried out in an FFS or FNPT II or FTD 2/3).

AMC1 to Appendix 6 Modular training course for the IR

ALL MODULAR FLYING TRAINING COURSES FOR THE IR, EXCEPT COMPETENCYBASED MODULAR FLYING TRAINING COURSE

(a) The theoretical knowledge instruction may be given at an ATO conducting theoretical knowledge instruction only, in which case the HT of that organisation should supervise that part of the course.

(b) The 150 hours of theoretical knowledge instruction, which includes the application of threat and error management, can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the Authority, in suitable proportions. Approved distance learning (correspondence) courses may also be offered as part of the course.

AMC2 to Appendix 6 Modular training course for the IR

AEROPLANES

BASIC INSTRUMENT FLIGHT MODULE TRAINING COURSE

(a) This 10 hours module is focused on the basics of flying by sole reference to instruments, including limited panel and unusual attitude recovery.

(b) All exercises may be performed in an FNPT I or II or an FFS, for a maximum of 5 hours. If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used.

(c) A BITD may be used for the exercises 1, 2, 3, 4, 6, and 8.

(d) The use of the BITD is subject to the following:

(1) he training should be complemented by exercises on an aeroplane;

(2) the record of the parameters of the flight must be available;

(3) an FI(A) or IRI(A) should conduct the instruction.

EXERCISES

(e) Exercise 1:

(1) basic instrument flying without hours external visual cues; 0:30 hours

(2) horizontal flight; power changes for acceleration or deceleration;

(3) maintaining straight and level flight;

(4) turns in level flight with 15 °and 25 ° bank, left and right;

(5) roll-out onto predetermined headings.

(f) Exercise 2:

(1) repetition of exercise 1; 0:45 hours

(2) additionally climbing, descending, maintaining heading and speed, transition to horizontal flight;

(3) climbing and descending turns.

(g) Exercise 3:

Instrument pattern: 0:45 hours

(1) start exercise, decelerate to approach speed, flaps into approach configuration;

(2) initiate standard turn (left or right);

(3) roll out on opposite heading, maintain new heading for 1 minute;

(4) standard turn, gear down, descend 500 ft/min;

(5) roll out on initial heading, maintain descent (500 ft/min) and new heading for 1 minute;

(6) transition to horizontal flight, 1000 ft below initial flight level;

(7) initiate go-around; (7) climb at best rate of climb speed.

(h) Exercise 4:

Repetition of exercise 1 and steep turns with 45° bank; 0:45 hours

recovery from unusual attitudes.

(i) Exercise 5:

Repetition of exercise 4 0:45 hours

(j) Exercise 6:

(1) radio navigation using VOR, NDB or, if available, VDF; 0:45 hours

(2) interception of predetermined QDM, QDR.

(k) Exercise 7:

(1) Repetition of exercise 1 and 0.45 hours

(2) recovery from unusual attitudes

(l) Exercise 8:

(1) Repetition of exercise 1; 0:45 hours

(2) turns, level change and recovery from unusual attitudes with simulated failure of the artificial horizon or directional gyro.

(m) Exercise 9:

Recognition of, and recovery from incipient and full stalls. 0:45 hours

(n) Exercise 10:

Repetition of exercises 6, 8 and 9 — 3:30 hours

CERTIFICATE OF COMPLETION OF BASIC INSTRUMENT FLIGHT MODULE

CERTIFCATE OF COMPLETION OF BASIC INTRSUMENT FLIGHT MODULE				
Pilot’s last name(s):			Frist name(s):	
Type of licence:			Number:	State
Flight training hours performed on SE aeroplane:		OR	Flight training hours performed on ME aeroplane:	
Flight training hours performed in an FSTD (maximum 5 hours):				
	Signature of applicant:			

The satisfactory completion of basic instrument flight module according to requirements is certified below:

TRAINING			
Basic instrument flight module training received during period:			
From:	To:	At:	ATO
Location and date:		Signature of head of training:	
Type and number of licence and state of issue:		Name(s) in capital letters of authorised instructor:	

APPENDIX 7 – IR SKILL TEST

1. An applicant for an IR shall have received instruction on the same class or type of aircraft to be used in the test.
2. An applicant shall pass all the relevant sections of the skill test. If any item in a section is failed, that section is failed. Failure in more than one section will require the applicant to take the entire test again. An applicant failing only one section shall only repeat the failed section. Failure in any section of the retest, including those sections that have been passed on a previous attempt, will require the applicant to take the entire test again. All relevant sections of the skill test shall be completed within 6 months. Failure to achieve a pass in all relevant sections of the test in two attempts will require further training.
3. Further training may be required following a failed skill test. There is no limit to the number of skill tests that may be attempted.

CONDUCT OF THE TEST

4. The test is intended to simulate a practical flight. The route to be flown shall be chosen by the examiner. An essential element is the ability of the applicant to plan and conduct the flight from routine briefing material. The applicant shall undertake the flight planning and shall ensure that all equipment and documentation for the execution of the flight are on board. The duration of the flight shall be at least 1 hour.
5. Should the applicant choose to terminate a skill test for reasons considered inadequate by the examiner, the applicant shall retake the entire skill test. If the test is terminated for reasons considered adequate by the examiner, only those sections not completed shall be tested in a further flight.
6. At the discretion of the examiner, any manoeuvre or procedure of the test may be repeated once by the applicant. The examiner may stop the test at any stage if it is considered that the applicant's demonstration of flying skill requires a complete retest.
7. An applicant shall fly the aircraft from a position where the PIC functions can be performed and to carry out the test as if there is no other crew member. The examiner shall take no part in the operation of the aircraft, except when intervention is necessary in the interests of safety or to avoid unacceptable delay to other traffic. Responsibility for the flight shall be allocated in accordance with national regulations.
8. Decision heights/altitude, minimum descent heights/altitudes and missed approach point shall be determined by the applicant and agreed by the examiner.

9. An applicant for an IR shall indicate to the examiner the checks and duties carried out, including the identification of radio facilities. Checks shall be completed in accordance with the authorised checklist

for the aircraft on which the test is being taken. During pre-flight preparation for the test the applicant is required to determine power settings and speeds. Performance data for take-off, approach and landing shall be calculated by the applicant in compliance with the operations manual or flight manual for the aircraft used.

FLIGHT TEST TOLERANCES

10. The applicant shall demonstrate the ability to:

operate the aircraft within its limitations;

complete all manoeuvres with smoothness and accuracy;

exercise good judgment and airmanship;

apply aeronautical knowledge; and

maintain control of the aircraft at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

11. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aircraft used.

Height

Generally	± 100 feet
Starting a go-around at decision height/altitude	+ 50 feet/– 0 feet
Minimum descent height/MAP/altitude	+ 50 feet/– 0 feet

Tracking

On radio aids	± 5°
Precision approach	half scale deflection, azimuth and glide path (e.g. LPV, ILS,MLS, GLS)
2D (LNAV) and 3D (LNAV/VNAV) "linear" lateral deviations	cross-track error/deviation shall normally be limited to ± ½ the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of 1 time the RNP value are allowable.

3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 feet below the vertical profile at any time, and not more than + 75 feet above the vertical profile at or below 1 000 feet above aerodrome level.

Heading

all engines operating	± 5°
with simulated engine failure	± 10°

Speed

all engines operating	± 5 knots
with simulated engine failure	+ 10 knots/– 5 knots

CONTENT OF THE TEST

Aeroplanes

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE Use of checklist, airmanship, anti-icing/de-icing procedures, etc., apply in all sections	
a	Use of flight manual (or equivalent) especially a/c performance calculation, mass and balance
b	Use of Air Traffic Services document, weather document
c	Preparation of ATC flight plan, IFR flight plan/log
d	Identification of the required navaids for departure, arrival and approach procedures
e	Pre-flight inspection
f	Weather Minima
g	Taxiing
h	PBN departure (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the departure chart.
i	Pre-take-off briefing, Take-off

j (º)	Transition to instrument flight
k (º)	Instrument departure procedures, including PBN departures, and altimeter setting
l (º)	ATC liaison — compliance, R/T procedures
SECTION 2 — GENERAL HANDLING (o)	
a	Control of the aeroplane by reference solely to instruments, including: level flight at various speeds, trim
b	Climbing and descending turns with sustained Rate 1 turn
c	Recoveries from unusual attitudes, including sustained 45° bank turns and steep descending turns
d (*)	Recovery from approach to stall in level flight, climbing/descending turns and in landing configuration — only applicable to aeroplanes
e	Limited panel: stabilised climb or descent, level turns at Rate 1 onto given headings, recovery from unusual attitudes — only applicable to aeroplanes
SECTION 3 — EN-ROUTE IFR PROCEDURES (º)	
a	Tracking, including interception, e.g. NDB, VOR, RNAV
b	Use of navigation system and radio aids
c	Level flight, control of heading, altitude and airspeed, power setting, trim technique
d	Altimeter settings
e	Timing and revision of ETAs (en-route hold, if required)
f	Monitoring of flight progress, flight log, fuel usage, systems' management
g	Ice protection procedures, simulated if necessary
h	ATC liaison — compliance, R/T procedures
SECTION 3a — ARRIVAL PROCEDURES	
a	Setting and checking of navigational aids, if applicable
b	Arrival procedures, altimeter checks
c	Altitude and speed constraints, if applicable
d	PBN arrival (if applicable): — Check that the correct procedure has been loaded in the navigation system; and

	— Cross-check between the navigation system display and the arrival chart.
SECTION 4 — 3D OPERATIONS (++)	
a	Setting and checking of navigational aids, identification of facilities Check Vertical Path angle For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Arrival procedures, altimeter checks
c	Approach and landing briefing, including descent/approach/landing checks including identification of facilities
d (+)	Holding procedure
e	Compliance with published approach procedure
f	Approach timing
g	Altitude, speed heading control (stabilised approach)
h (+)	Go-around action
i (+)	Missed approach procedure/landing
j	ATC liaison — compliance, R/T procedures
SECTION 5 — 2D OPERATIONS (++)	
a	Setting and checking of navigational aids, identification of facilities For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Arrival procedures, altimeter settings
c	Approach and landing briefing, including descent/approach/landing checks, including identification of facilities
d (+)	Holding procedure
e	Compliance with published approach procedure
f	Approach timing

g	Altitude/distance to MAPT, speed, heading control (stabilised approach),Stop Down Fixes (SDF(s)), if applicable
h (+)	Go-around action
i (+)	Missed approach procedure/landing
j	ATC liaison — compliance, R/T procedures
SECTION 6 — FLIGHT WITH ONE ENGINE INOPERATIVE (multi-engine aeroplanes only) (o)	
a	Simulated engine failure after take-off or on go-around
b	Approach, go-around and procedural missed approach with one engine inoperative
c	Approach and landing with one engine inoperative
d	ATC liaison — compliance, R/T procedures

(*) May be performed in an FFS, FTD 2/3 or FNPT II.

(+) May be performed in either section 4 or section 5.

(o) Must be performed by sole reference to instruments.

(++) To establish or maintain PBN privileges one approach in either Section 4 or Section 5 shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

Helicopters

SECTION 1 — DEPARTURE **Use of checklist, airmanship, anti-icing/de-icing procedures, etc., apply in all sections**	
a	Use of flight manual (or equivalent) especially aircraft performance calculation; mass and balance
b	Use of Air Traffic Services document, weather document
c	Preparation of ATC flight plan, IFR flight plan/log
d	Identification of the required navaids for departure, arrival and approach procedures
e	Pre-flight inspection
f	Weather minima
g	Taxiing/Air taxy in compliance with ATC or instructions of instructor
h	PBN departure (if applicable):

	— Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the departure chart.
i	Pre-take-off briefing, procedures and checks
j	Transition to instrument flight
k	Instrument departure procedures, including PBN procedures
SECTION 2 — GENERAL HANDLING	
a	Control of the helicopter by reference solely to instruments, including:
b	Climbing and descending turns with sustained Rate 1 turn
c	Recoveries from unusual attitudes, including sustained 30° bank turns and steep descending turns
SECTION 3 — EN-ROUTE IFR PROCEDURES	
a	Tracking, including interception, e.g. NDB, VOR, RNAV
b	Use of radio aids
c	Level flight, control of heading, altitude and airspeed, power setting
d	Altimeter settings
e	Timing and revision of ETAs
f	Monitoring of flight progress, flight log, fuel usage, systems management
g	Ice protection procedures, simulated if necessary and if applicable
h	ATC liaison — compliance, R/T procedures
SECTION 3a — ARRIVAL PROCEDURES	
a	Setting and checking of navigational aids, if applicable
b	Arrival procedures, altimeter checks
c	Altitude and speed constraints, if applicable
d	PBN arrival (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the arrival chart.
SECTION 4 — 3D OPERTIONS (+)	
a	Setting and checking of navigational aids, identification of facilities

	Check Vertical Path angle For RNP APCH: (a) Check that the correct procedure has been loaded in the navigation system; and (b) Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks
c(*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed, heading control (stabilised approach)
g (*)	Go-around action
h (*)	Missed approach procedure/landing
i	ATC liaison — compliance, R/T procedures
SECTION 5 — 2D OPERATIONS (+)	
a	Setting and checking of navigational aids, For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks and identification of facilities
c (*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed, heading control (stabilised approach)
g (*)	Go-around action
h (*)	Missed approach procedure (*)/landing
i	ATC liaison — compliance, R/T procedures
SECTION 6 — ABNORMAL AND EMERGENCY PROCEDURES **This section may be combined with sections 1 through 5. The test shall have regard to control of the helicopter, identification of the failed engine, immediate actions (touch drills), follow-up actions and checks and flying accuracy, in the following situations:**	

a	Simulated engine failure after take-off and on/during approach (**) (at a safe altitude unless carried out in an FFS or FNPT II/III, FTD 2,3)
b	Failure of stability augmentation devices/hydraulic system (if applicable)
c	Limited panel
d	Autorotation and recovery to a pre-set altitude
e	3D operations manually without flight director (***) 3D operations manually with flight director (***)

(+) To establish or maintain PBN privileges one approach in either Section 4 or Section 5 shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD

(*) To be performed in section 4 or section 5.

(**) Multi-engine helicopter only.

(***) Only one item to be tested.

GM1 to Appendix 7 IR skill test

To the skill test, an ME centreline thrust aeroplane is considered an SE aeroplane.

AMC1 to Appendix 7 IR skill test

PPL, CPL, IR SKILL TEST AND PROFICIENCY CHECK APPLICATION AND REPORT FORM

APPLICATION AND REPORT FORM **PPL, CPL, IR SKILL TEST AND PROFICIENCY CHECK**			
Applicant's last name(s):			
Applicant's first name(s):		LAPL: A ☐ H ☐	
Signature of applicant:			
Type of licence*:		PPL: A ☐ ☐	
Licence number*:		CPL: A ☐ ☐	
State		IR: A ☐ ☐	
1	**Details of the flight**		
Group, class, type of aircraft:		Registration:	
Aerodrome or site:	Take-off time:	Landing time:	Flight time:
			Total flight time:
2	**Result of the test**		
Skill test details:			
Pass ☐	Fail ☐	Partial pass ☐	
3	**Remarks**		
Location and date:			
Examiner's certificate number *:		Type and number of licence:	
Signature of examiner:		Name(s) in capital letters:	

** if applicable*

APPENDIX 8 – CROSS-CREDITING OF THE IR PART OF A CLASS OR TYPE RATING PROFICIENCY CHECK

A. Aeroplanes

Credits shall be granted only when the holder is revalidating IR privileges for single-engine and single-pilot multi-engine aeroplanes, as appropriate.

When a proficiency check including IR is performed, and the holder has a valid:	Credit is valid towards the IR part in a proficiency check for:
MP type rating; High performance complex aeroplane type rating	SE class (*) and SE type rating (*), and SP ME class, and SP ME non-high performance complex aeroplane type rating, only credits for section 3B of the skill test for single pilot non-high performance complex aeroplane of Appendix 9 (*)
SP ME non-high performance complex aeroplane type rating, operated as single-pilot	SP ME class (*), and SP ME non-high performance complex aeroplane type rating, and SE class and type rating (*)
SP ME non-high performance complex aeroplane type rating, restricted to MP operation	SP ME class (*), and SP ME non-high performance complex aeroplane type rating (*), and c. SE class and type rating (*)
SP ME class rating, operated as single-pilot	SE class and type rating, and SP ME class, and SP ME non-high performance complex aeroplane type rating
SP ME class rating, restricted to MP operation	SE class and type rating (*), and SP ME class (*), and SP ME non-high performance complex aeroplane type rating (*)

SP SE class rating	SE class and type rating
SP SE type rating	SE class and type rating

(*) Provided that within the preceding 12 months the applicant has flown at least three IFR departures and approaches on an SP class or type of aeroplane in single pilot operations, or, for multi-engine non-high performance non-complex aeroplanes, the applicant has passed section 6 of the skill test for single-pilot non-high performance non-complex aeroplanes flown solely by reference to instruments in single-pilot operation.

B. Helicopters

Credits shall be granted only when the holder is revalidating IR privileges for single-engine and single-pilot multi-engine helicopters as appropriate.

When a proficiency check, including IR, is performed and the holder has a valid:	Credit is valid towards the IR part in a proficiency check for:
MPH type rating	SE type rating (*), and SP ME type rating (*).
SP ME type rating, operated as single-pilot	SE type rating, SP ME type rating.
SP ME type rating, restricted to multi-pilot operation	SE type rating, (*) SP ME type rating (*).
SP SE type rating, operated as single-pilot	SP SE type rating, operated as single-pilot

(*) Provided that within the preceding 12 months at least 3 IFR departures and approaches have been performed on an SP type of helicopter in an SP operation.

APPENDIX 9 – TRAINING, SKILL TEST AND PROFICIENCY CHECK FOR MPL, ATPL, TYPE AND CLASS RATINGS, AND PROFICIENCY CHECK FOR IRS

A. General

1. An applicant for a skill test shall have received instruction on the same class or type of aircraft to be used in the test.
2. Failure to achieve a pass in all sections of the test in two attempts will require further training.
3. There is no limit to the number of skill tests that may be attempted.

CONTENT OF THE TRAINING, SKILL TEST/PROFICIENCY CHECK

4. Unless otherwise determined by the Authority, the syllabus of flight instruction shall comply with this Appendix. The syllabus may be reduced to give credit for previous experience on similar aircraft types, as determined by the Authority.
5. Except in the case of skill tests for the issue of an ATPL, when so defined by the Authority for the specific type, credit may be given for skill test items common to other types or variants where the pilot is qualified.

CONDUCT OF THE TEST/CHECK

6. The examiner may choose between different skill test or proficiency check scenarios containing simulated relevant operations developed and approved by the Authority. Full flight simulators and other training devices, when available, shall be used, as established in thise regulations.
7. During the proficiency check, the examiner shall verify that the holder of the class or type rating maintains an adequate level of theoretical knowledge.
8. Should the applicant choose to terminate a skill test for reasons considered inadequate by the examiner, the applicant shall retake the entire skill test. If the test is terminated for reasons considered adequate by the examiner, only those sections not completed shall be tested in a further flight.
9. At the discretion of the examiner, any manoeuvre or procedure of the test may be repeated once by the applicant. The examiner may stop the test at any stage if it is considered that the applicant's demonstration of flying skill requires a complete re-test.
10. An applicant shall be required to fly the aircraft from a position where the PIC or co-pilot functions, as relevant, can be performed and to carry out the test as if there is no other crew member if taking the test/check under single-pilot conditions. Responsibility for the flight shall be allocated in accordance with national regulations.

11. During pre-flight preparation for the test the applicant is required to determine power settings and speeds. The applicant shall indicate to the examiner the checks and duties carried out, including the identification of radio facilities. Checks shall be completed in accordance with the check-list for the aircraft on which the test is being taken and, if applicable, with the MCC concept.

    Performance data for take-off, approach and landing shall be calculated by the applicant in compliance with the operations manual or flight manual for the aircraft used. Decision heights/altitude, minimum descent heights/altitudes and missed approach point shall be agreed upon with the examiner.

12. The examiner shall take no part in the operation of the aircraft except where intervention is necessary in the interests of safety or to avoid unacceptable delay to other traffic.

SPECIFIC REQUIREMENTS FOR THE SKILL TEST/PROFICIENCY CHECK FOR MULTI-PILOT AIRCRAFT TYPE RATINGS, FOR SINGLE-PILOT AEROPLANE TYPE RATINGS, WHEN OPERATED IN MULTI-PILOT OPERATIONS, FOR MPL AND ATPL

13. The skill test for a multi-pilot aircraft or a single-pilot aeroplane when operated in multi-pilot operations shall be performed in a multi-crew environment. Another applicant or another type rated qualified pilot may function as second pilot. If an aircraft is used, the second pilot shall be the examiner or an instructor.

14. The applicant shall operate as PF during all sections of the skill test, except for abnormal and emergency procedures, which may be conducted as PF or PNF in accordance with MCC. The applicant for the initial issue of a multi-pilot aircraft type rating or ATPL shall also demonstrate the ability to act as PNF. The applicant may choose either the left hand or the right hand seat for the skill test if all items can be executed from the selected seat.

15. The following matters shall be specifically checked by the examiner for applicants for the ATPL or a type rating for multi-pilot aircraft or for multi-pilot operations in a single-pilot aeroplane extending to the duties of a PIC, irrespective of whether the applicant acts as PF or PNF:

    a) management of crew cooperation;

    b) maintaining a general survey of the aircraft operation by appropriate supervision; and

    c) setting priorities and making decisions in accordance with safety aspects and relevant rules and regulations appropriate to the operational situation, including emergencies.

16. The test/check should be accomplished under IFR, if the IR rating is included, and as far as possible be accomplished in a simulated commercial air transport environment. An essential element to be checked is the ability to plan and conduct the flight from routine briefing material.

17. When the type rating course has included less than 2 hours flight training on the aircraft, the skill test may be conducted in an FFS and may be completed before the flight training on the aircraft. In that

case, a certificate of completion of the type rating course including the flight training on the aircraft shall be forwarded to the Authority before the new type rating is entered in the applicant's licence.

18. For the upset recovery training, 'stall event' means either an approach-to-stall or a stall. An FFS can be used by the ATO to either train recovery from a stall or demonstrate the type-specific characteristics of a stall, or both, provided that:
    a) the FFS has been qualified in accordance with the special evaluation requirements in CS-FSTD(A); and
    b) the ATO has successfully demonstrated to the competent authority that any negative transfer of training is mitigated.

B. Specific requirements for the aeroplane category

PASS MARKS

1. In the case of single-pilot aeroplanes, with the exception of for single-pilot high performance complex aeroplanes, the applicant shall pass all sections of the skill test or proficiency check. If any item in a section is failed, that section is failed. Failure in more than one section will require the applicant to take the entire test or check again. Any applicant failing only one section shall take the failed section again.

   Failure in any section of the re-test or re-check including those sections that have been passed at a previous attempt will require the applicant to take the entire test or check again. For single-pilot multi-engine aeroplanes, section 6 of the relevant test or check, addressing asymmetric flight, shall be passed.

2. In the case of multi-pilot and single-pilot high performance complex aeroplanes, the applicant shall pass all sections of the skill test or proficiency check. Failure of more than five items will require the applicant to take the entire test or check again. Any applicant failing five or less items shall take the failed test again. Failure in any item on the re-test or re-check including those items that have been passed at a previous attempt will require the applicant to take the entire check or test again.

   Section 6 is not part of the ATPL or MPL skill test. If the applicant only fails or does not take section 6, the type rating will be issued without CAT II or CAT III privileges. To extend the type rating privileges to CAT II or CAT III, the applicant shall pass the section 6 on the appropriate type of aircraft.

FLIGHT TEST TOLERANCE

3. The applicant shall demonstrate the ability to:
   a) operate the aeroplane within its limitations;
   b) complete all manoeuvres with smoothness and accuracy;

c) exercise good judgement and airmanship;

d) apply aeronautical knowledge;

e) maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is always assured;

f) understand and apply crew coordination and incapacitation procedures, if applicable; and

g) communicate effectively with the other crew members, if applicable.

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aeroplane used:

Height

Generally	± 100 feet
Starting a go-around at decision height	+ 50 feet/– 0 feet
Minimum descent height/altitude	+ 50 feet/– 0 feet

Tracking

on radio aids	± 5°
Precision approach	half scale deflection, azimuth and glide path (e.g. LPV,ILS,MLS,GLS)
2D (LNAV) and 3D (LNAV/VNAV) 'linear' lateral deviations	cross-track error/deviation shall normally be limited to ± ½ of the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of one time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	time, and not more than + 75 ft above the vertical profile at or below 1 000 ft above aerodrome level.

Heading	
all engines operating	± 5°
with simulated engine failure	± 10°

Speed	
all engines operating	± 5 knots
with simulated engine failure	+ 10 knots/– 5 knots

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

5. Single-pilot aeroplanes, except for high performance complex aeroplanes:

(a) The following symbols mean:

P = Trained as PIC or Co-pilot and as Pilot Flying (PF) and Pilot Not Flying (PNF)

X = Flight simulators shall be used for this exercise, if available, otherwise an aeroplane shall be used if appropriate for the manoeuvre or procedure

P# = The training shall be complemented by supervised aeroplane inspection

(b) The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted on any higher level of equipment shown by the arrow (——>)

The following abbreviations are used to indicate the training equipment used:

A = Aeroplane

FFS = Full Flight Simulator

FTD = Flight Training Device (including FNPT II for ME class rating)

(c) The starred (*) items of section 3B and, for multi-engine, section 6, shall be flown solely by reference to instruments if revalidation/renewal of an IR is included in the skill test or proficiency check. If the starred (*) items are not flown solely by reference to instruments during the skill test or proficiency check, and when there is no crediting of IR privileges, the class or type rating will be restricted to VFR only.

(d) Section 3A shall be completed to revalidate a type or multi-engine class rating, VFR only, where the required experience of 10 route sectors within the previous 12 months has not been completed. Section 3A is not required if section 3B is completed.

(e) Where the letter 'M' appears in the skill test or proficiency check column this will indicate the mandatory exercise or a choice where more than one exercise appears.

(f) An FFS or an FNPT II shall be used for practical training for type or multi-engine class ratings if they form part of an approved class or type rating course. The following considerations will apply to the approval of the course:

i. the qualification of the FFS or FNPT II;

ii. the qualifications of the instructors;

iii. the amount of FFS or FNPT II training provided on the course; and

iv. the qualifications and previous experience on similar types of the pilot under training.

(g) If privileges for multi-pilot operation are sought for the first time, pilots holding privileges for single-pilot operations shall:

1) complete a bridge course containing manoeuvres and procedures including MCC as well as the exercises of Section 7 using threat and error management (TEM), CRM and human factors at an ATO; and

2) pass a proficiency check in multi-pilot operations.

(h) If privileges for single-pilot operations are sought for the first time, pilots holding privileges for multi-pilot operations shall be trained at an ATO and checked for the following additional manoeuvres and procedures in single-pilot operations:

1) for SE aeroplanes, 1.6, 4.5, 4.6, 5.2 and, if applicable, one approach from Section 3.B;and

2) for ME aeroplanes, 1.6, Section 6 and, if applicable, one approach from Section 3.B.

(i) Pilots holding privileges for both single-pilot and multi-pilot operations in accordance with points (g) and (h) may revalidate privileges for both types of operations by completing a proficiency check in multi-pilot operations in addition to the exercises referred to in points (h)(1) or (h)(2), as applicable, in single-pilot operations.

(j) When a skill test or proficiency check is performed in multi-pilot operations, the type rating shall be restricted to multi-pilot operations.

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
SECTION 1							
1. 1.1	Departure Pre-flight including: — Documentation — Mass and Balance — Weather briefing — NOTAM						
1.2	Pre-start checks						
1.2.1	External	P#		P			
1.2.2	Internal			P		M	
1.3	Engine starting: Normal Malfunctions	P——>	——>	——>		M	
1.4	Taxiing		P——>	——>		M	
1.5	Pre-departure checks: Engine run-up (if applicable)	P——>	——>	——>		M	
1.6	Take-off procedure: — Normal with Flight Manual flap settings — Crosswind (if conditions available)		P——>	——>			
1.7	Climbing: Vx/Vy — Turns onto headings		P——>	——>		M	

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	— Level off						
1.8	ATC liaison — Compliance, R/T procedure						
	SECTION 2						
2. 2.1	Airwork (visual meteorological conditions (VMC)) Straight and level flight at various airspeeds including flight at critically low airspeed with and without flaps (including approach to VMCA when applicable)		P——>	——>			
2.2	Steep turns (360° left and right at 45° bank)		P——>	——>		M	
2.3	Stalls and recovery: (i) Clean stall (ii) Approach to stall in descending turn with bank with approach configuration and power (iii) Approach to stall in landing configuration and power (iv) Approach to stall, climbing turn with take-off flap and climb power (single engine aeroplane only)		P——>	——>		M	

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
2.4	Handling using autopilot and flight director (may be conducted in section 3) if applicable		P——>	——>		M	
2.5	ATC liaison — Compliance, R/T procedure						
SECTION 3A							
3A	En-route procedures VFR (see B.5(c) and (d))						
3A.1	Flight plan, dead reckoning and map reading						
3A.2	Maintenance of altitude, heading and speed						
3A.3	Orientation, timing and revision of ETAs						
3A.4	Use of radio navigation aids (if applicable)						
3A.5	Flight management (flight log, routine checks including fuel, systems and icing)						
3A.6	ATC liaison — Compliance, R/T procedure						
SECTION 3B							
3B	Instrument flight		P——>	——>		M	
3B.1*	Departure IFR						

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
3B.2*	En-route IFR		P——>	——>		M	
3B.3*	Holding procedures		P——>	——>		M	
3B.4*	ILS to DH/A of 200 ft (60 m) or to procedure minima (autopilot may be used to glideslope intercept)		P——>	——>		M	
3B.5*	Non-precision approach to MDH/A and MAP		P——>	——>		M	
3B.6*	Flight exercises including simulated failure of the compass and attitude indicator: — rate 1 turns, — recoveries from unusual attitudes	P——>	——>	——>		M	
3B.7*	Failure of localiser or glideslope						
3B.8*	ATC liaison — Compliance, R/T procedure	P——>	——>	——>			
	Intentionally left blank						
SECTION 4							
4 4.1	Arrival and landings Aerodrome arrival procedure		P——>	——>		M	
4.2	Normal landing		P——>	——>		M	
4.3	Flapless landing		P——>	——>		M	

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
4.4	Crosswind landing (if suitable conditions)		P——>	——>			
4.5	Approach and landing with idle power from up to 2 000' above the runway (single-engine aeroplane only)		P——>	——>			
4.6	Go-around from minimum height		P——>	——>		M	
4.7	Night go-around and landing (if applicable)	P——>	——>	——>			
4.8	ATC liaison — Compliance, R/T procedure						
SECTION 5							
5	Abnormal and emergency procedures (This section may be combined with sections 1 through 4)						
5.1	Rejected take-off at a reasonable speed		P——>	——>		M	
5.2	Simulated engine failure after take- off (single-engine aeroplanes only)			P		M	
5.3	Simulated forced landing without power (single-engine aeroplanes only)			P		M	
5.4	Simulated emergencies:	P——>	——>	——>			

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	(i) fire or smoke in flight; (ii) systems' malfunctions as appropriate						
5.5	Engine shutdown and restart (ME skill test only) (at a safe altitude if performed in the aircraft)	P——>	——>	——>			
5.6	ATC liaison — Compliance, R/T procedure						
SECTION 6							
6 6.1*	Simulated asymmetric flight (This section may be combined with sections 1 through 5) Simulated engine failure during take-off (at a safe altitude unless carried out in FFS or FNPT II)	P——>	——>	—>X		M	
6.2*	Asymmetric approach and go-around	P——>	——>	——>		M	
6.3*	Asymmetric approach and full stop landing	P——>	——>	——>		M	
6.4	ATC liaison — Compliance, R/T procedure						
SECTION 7							
7	UPRT						

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
7.1	Flight Manoeuvres and procedures						
7.1.1	Manual flight with and without flight directors (no autopilot, no autothrust/ autothrottle, and at different control laws, where applicable)	P——>	——>	——>			
7.1.1.1	At different speeds (including slow flight) and altitudes within the FSTD training envelope.	P——>	——>	——>			
7.1.1.2	Steep turns using 45° bank, 180° to 360° left and right	P——>	——>	——>			
7.1.1.3	Turns with and without spoilers	P——>	——>	——>			
7.1.1.4	Procedural instrument flying and manoeuvring including instrument departure and arrival, and visual approach	P——>	——>	——>			
7.2 7.2.1	Upset recovery training Recovery from stall events in: — take-off configuration; — clean configuration at low altitude; — clean configuration near maximum operating altitude; and — landing configuration	P——>	——>	——>			

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILLTEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
7.2.2	The following upset exercises: — recovery from nose-high at various bank angles; and — recovery from nose-low at various bank angles.	P FFS qualified for the training task only	P FFS qualified for the training task only	X An aero-plane shall not be used for this exercise		FFS only	
7.3	Go-around with all engines operating* from various stages during an instrument approach	P——>	——>				
7.4	Rejected landing with all engines operating: – from various heights below DH/MDH 15 m (50 ft) above the runway threshold – after touchdown (baulked landing) – In aeroplanes which are not certificated as transport category aeroplanes (JAR/FAR 25) or as commuter category aeroplanes (SFAR 23), the rejected landing with all engines operating shall be initiated below MDH/A or after touchdown.	P——>	——>	——>			

6. Multi-pilot aeroplanes and single-pilot high performance complex aeroplanes:

(a) The following symbols mean:

P = Trained as PIC or Co-pilot and as PF and PNF for the issue of a type rating as applicable.

X = Simulators shall be used for this exercise, if available; otherwise an aircraft shall be used if appropriate for the manoeuvre or procedure.

P# = The training shall be complemented by supervised aeroplane inspection.

(b) The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (———>).

The following abbreviations are used to indicate the training equipment used:

A = Aeroplane

FFS = Full Flight Simulator

FTD = Flight Training Device

OTD = Other Training Devices

(c) The starred items (*) shall be flown solely by reference to instruments. If this condition is not met during the skill test or proficiency check, the type rating will be restricted to VFR only.

(d) Where the letter 'M' appears in the skill test or proficiency check column this will indicate the mandatory exercise.

(e) An FFS shall be used for practical training and testing if the FFS forms part of an approved type rating course. The following considerations will apply to the approval of the course:

(i) the qualification of the FFS or FNPT II;

(ii) the qualifications of the instructors;

(iii) the amount of FFS or FNPT II training provided on the course; and

(iv) the qualifications and previous experience on similar types of the pilot under training.

(f) Manoeuvres and procedures shall include MCC for multi-pilot aeroplane and for single-pilot high performance complex aeroplanes in multi-pilot operations.

(g) Manoeuvres and procedures shall be conducted in single-pilot role for single-pilot high performance complex aeroplanes in single-pilot operations.

(h) In the case of single-pilot high performance complex aeroplanes, when a skill test or proficiency check is performed in multi-pilot operations, the type rating shall be restricted to multi-pilot operations. If privileges of single-pilot are sought, the manoeuvres/procedures in 2.5, 3.9.3.4, 4.3, 5.5 and at least one manoeuvre/procedure from section 3.4 have to be completed in addition as single-pilot.

(i) In case of a restricted type rating issued in accordance with FCL.720.A(e), the applicants shall fulfil the same requirements as other applicants for the type rating except for the practical exercises relating to the take-off and landing phases.

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
SECTION 1								
1 1.1	Flight preparation Performance calculation	P						
1.2	Aeroplane external visual inspection; location of each item and purpose of inspection	P#			P			
1.3	Cockpit inspection	P——>	——>	——>				
1.4	Use of checklist prior to starting engines, starting procedures, radio and navigation equipment check, selection and setting of navigation and communication frequencies	P——>	——>	——>	——>		M	
1.5	Taxiing in compliance with air traffic control or instructions of instructor			P——>	——>			
1.6	Before take-off checks		P——>	——>	——>		M	
SECTION 2								
2	Take-offs			P——>	——>			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
2.1	Normal take-offs with different flap settings, including expedited take-off							
2.2*	Instrument take- off; transition to instrument flight is required during rotation or immediately after becoming airborne			P——>	——>			
2.3	Crosswind take-off			P——>	——>			
2.4	Take-off at maximum take-off mass (actual or simulated maximum take-off mass)			P——>	——>			
2.5 2.5.1*	Take-offs with simulated engine failure: *shortly after reaching V2 (In aeroplanes which are not certificated as transport category or commuter category aeroplanes, the engine failure shall not be simulated until reaching a minimum height of 500 ft above runway end. In aeroplanes having the same performance as a transport category aeroplane regarding take-off mass and density altitude, the instructor may			P——>	——>			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	simulate the engine failure shortly after reaching V2)							
2.5.2*	between V1 and V2			p	X		M FFS Only	
2.6	Rejected take-off at a reasonable speed before reaching V_1			P——>	——>X		M	
SECTION 3								
3 3.1	Flight Manoeuvres and Procedures Manual flight with and without flight directors (no autopilot, no autothrust/ autothrottle, and at different control laws, where applicable)		P——>	——>				
3.1.1	At different speeds (including slow flight) and altitudes within the FSTD training envelope		P——>	——>				
3.1.2	Steep turns using 45° bank, 180° to 360° left and right			P——>	——>			
3.1.3	Turns with and without spoilers			P——>	——>			
3.1.4	Procedural instrument flying and manoeuvring including instrument departure and arrival, and visual approach			P——>	——>			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
3.2	Tuck under and Mach buffets after reaching the critical Mach number, and other specific flight characteristics of the aeroplane (e.g. Dutch Roll)			P——>	——>X An aircraft may not be used for this exercise		FFS Only	
3.3	Normal operation of systems and controls engineer's panel	P——>	——>	——>	——>			
3.4	Normal and abnormal operations of following systems:						M	A mandatory minimum of 3 abnormal shall be selected from 3.4.0 to 3.4.14 inclusive
3.4.0	Engine (if necessary propeller)	P——>	——>	——>	——>			
3.4.1	Pressurisation and air-conditioning	P——>	——>	——>	——>			
3.4.2	Pitot/static system	P——>	——>	——>	——>			
3.4.3	Fuel system	P——>	——>	——>	——>			
3.4.4	Electrical system	P——>	——>	——>	——>			
3.4.5	Hydraulic system	P——>	——>	——>	——>			
3.4.6	Flight control and Trim-system	P——>	——>	——>	——>			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
3.4.7	Anti-icing/de-icing system, Glare shield heating	P——>	——>	——>	——>			
3.4.8	Autopilot/Flight director	P——>	——>	——>	——>		M (single pilot Only)	
3.4.9	Stall warning devices or stall avoidance devices, and stability augmentation devices	P——>	——>	——>	——>			
3.4.10	Ground proximity warning system, weather radar, radio altimeter, transponder		P——>	——>	——>			
3.4.11	Radios, navigation equipment, instruments, flight management system	P——>	——>	——>	——>			
3.4.12	Landing gear and brake	P——>	——>	——>	——>			
3.4.13	Slat and flap system	P——>	——>	——>	——>			
3.4.14	Auxiliary power unit	P——>	——>	——>	——>			
	Intentionally left blank							
3.6	Abnormal and emergency procedures:						M	A mandatory minimum of three items shall be selected from 3.6.1

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
								to 3.6.9 inclusive
3.6.1	Fire drills, e.g. engine, APU, cabin, cargo compartment, flight deck, wing and electrical fires including evacuation		P——>	——>	——>			
3.6.2	Smoke control and removal		P——>	——>	——>			
3.6.3	Engine failures, shutdown and restart at a safe height		P——>	——>	——>			
3.6.4	Fuel dumping (simulated)		P——>	——>	——>			
3.6.5	Wind shear at take-off/landing			p	X		FFS Only	
3.6.6	Simulated cabin pressure failure/emergency descent			P——>	——>			
3.6.7	Incapacitation of flight crew member		P——>	——>	——>			
3.6.8	Other emergency procedures as outlined in the appropriate Aeroplane Flight Manual		P——>	——>	——>			
3.6.9	ACAS event	P——>	——>	——>	An aircraft may not be used		FFS Only	
3.7 3.7.1	Upset recovery training Recovery from stall events in: — take-off configuration;			P FFS qualified	X An aero-plane			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	— clean configuration at low altitude; — clean configuration near maximum operating altitude; and — landing configuration.			for the training task only	shall not be used for this exercise			
3.7.2	The following upset exercises: — recovery from nose-high at various bank angles; and — recovery from nose-low at various bank angles			P FFS qualified for the training task only			FFS only	
3.8	Instrument flight procedures							
3.8.1*	Adherence to departure and arrival routes and ATC instructions		P——>	——>	——>		M	
3.8.2*	Holding procedures		P——>	——>	——>			
3.8.3*	3D Operations down to a decision height (DH/A) not less than 60 m (200 ft)							
Note: According to the AFM, RNP APCH procedures may require the use of autopilot or flight director. The procedure to be flown manually shall be chosen taking into account such limitations (for example, choose an ILS for 3.9.3.1 in the case of such AFM limitation).								
3.8.3.1*	manually, without flight director			P——>	——>		M	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
							(skill test only)	
3.8.3.2*	manually, with flight director			P——>	——>			
3.8.3.3*	with autopilot			P——>	——>			
3.8.3.4*	manually, with one engine simulated inoperative; engine failure has to be simulated during final approach before passing 1000 ft above aerodrome level until touchdown or through the complete missed approach procedure In aeroplanes which are not certificated as transport category aeroplanes (EASA/FAR 25) or as commuter category aeroplanes (SFAR 23), the approach with simulated engine failure and the ensuing go- around shall be initiated in conjunction with the non-precision approach as described in 3.8.4. The go-around shall be initiated when reaching the published obstacle clearance height (OCH/A), however not later than reaching a minimum descent height/altitude (MDH/A) of 500 ft above runway threshold elevation.			P——>	——>		M	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	In aeroplanes having the same performance as a transport category aeroplane regarding take-off mass and density altitude, the instructor may simulate the engine failure in accordance with3.8.3.4.							
3.8.4*	2D operations down to the MDH/A			P——>	——>		M	
3.8.5	Circling approach under following conditions: (a)* approach to the authorised minimum circling approach altitude at the aerodrome in question in accordance with the local instrument approach facilities in simulated instrument flight conditions; followed by: (b) circling approach to another runway at least 90° off centreline from final approach used in item (a), at the authorised minimum circling approach altitude. Remark: if (3.8.5.1) and (3.8.5.2) are not possible due to ATC reasons, a simulated low visibility pattern may be performed.		P*——>	——>				

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
3.8.6	Visual approaches		P——>	——>				
SECTION 4								
4	Missed Approach Procedures							
4.1	Go-around with all engines operating* 3D operation on reaching decision height		P*——>	——>				
4.2	Go-around with all engines operating* from various stages during an instrument approach							
4.3	Other missed approach procedures			P*——>	——>			
4.4*	Manual go-around with the critical engine simulated inoperative after an instrument approach on reaching DH, MDH or MAPt			P*——>	——>		M	
4.5	Rejected landing with all engines operating - from various heights below DH.MDH -after touchdown (baulked landing) In aeroplanes which are not certificated as transport category aeroplanes (JAR/FAR 25) or as commuter category aeroplanes (SFAR 23), the rejected landing with			P*——>	——>			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	all engines operating shall be initiated below MDH/A or after touchdown.							
SECTION 5								
5	Landings			P				
5.1	Normal landings* with visual reference established when reaching DA/H following an instrument approach operation							
5.2	Landing with simulated jammed horizontal stabiliser in any out-of-trim position			P——>	An aircraft may not be used for this exercise			
5.3	Crosswind landings (a/c, if practicable)			P——>	——>			
5.4	Traffic pattern and landing without extended or with partly extended flaps and slats			P——>	——>			
5.5	Landing with critical engine simulated inoperative			P——>	——>		M	
5.6	Landing with two engines inoperative: — aeroplanes with 3 engines: the centre engine and 1 outboard engine as far as			P	X		M FFS only	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
	practicable according to data of the AFM, — aeroplanes with 4 engines: 2 engines at one side						(skill test only)	
General remarks: Special requirements for extension of a type rating for instrument approaches down to a decision height of less than 200 feet (60 m), i.e. Cat II/III operations.								
SECTION 6								
	Additional authorisation on a type rating for instrument approaches down to a decision height of less than 60 m (200 ft) (CAT II/III). The following manoeuvres and procedures are the minimum training requirements to permit instrument approaches down to a DH of less than 60 m (200 ft). During the following instrument approaches and missed approach procedures all aeroplane equipment required for type certification of instrument approaches down to a DH of less than 60 m (200 ft) shall be used.							
6.1*	Rejected take-off at minimum authorised RVR			P*——>	——>X		M*	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
					An aircraft may not be used for this exercise			
6.2*	CAT II/CATII approaches: in simulated instrument flight conditions down to the applicable DH, using flight guidance system. Standard procedures of crew coordination (task sharing, call out procedures, mutual surveillance, information exchange and support) shall be observed			P*——>	——>X		M	
6.3*	Go-around: after approaches as indicated in 6.2 on reaching DH. The training shall also include a go-around due to (simulated) insufficient RVR, wind shear, aeroplane deviation in excess of approach limits for a successful approach, and ground/airborne equipment failure prior to reaching DH and, go-around with simulated airborne equipment failure.			P*——>	——>X		M	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING					ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test or check completed
6.4*	Landing(s): with visual reference established at DH following an instrument approach. Depending on the specific flight guidance system, an automatic landing shall be performed			P——>	——>X		M	

Note.—*CAT II/III operations shall be accomplished in accordance with the applicable air operations requirements.*

7. Class ratings — sea

Section 6 shall be completed to revalidate a multi-engine class rating sea, VFR only, where the required experience of 10 route sectors within the previous 12 months has not been completed.

CLASS RATING SEA	PRACTICAL TRAINING	
Manoeuvres/Procedures	Instructor's initials when training completed	Examiner's initials when test completed
SECTION 1		
1. Departure Pre-flight including: —Documentation —Mass and Balance		

CLASS RATING SEA	PRACTICAL TRAINING	
Manoeuvres/Procedures	Instructor's initials when training completed	Examiner's initials when test completed
—Weather briefing —NOTAM		
1.2 Pre-start checks External/internal		
1.3 Engine start-up and shutdown Normal malfunctions		
1.4 Taxiing		
1.5 Step taxiing		
1.6 Mooring: Beach Jetty pier Buoy		
1.7 Engine-off sailing		
1.8 Pre-departure checks: Engine run-up (if applicable)		
1.9 Take-off procedure: — Normal with Flight Manual flap settings — Crosswind (if conditions available)		
1.10 Climbing — Turns onto headings — Level off		
1.11 ATC liaison — Compliance, R/T procedure		
SECTION 2		
2. Airwork (VFR)		

CLASS RATING SEA	PRACTICAL TRAINING	
Manoeuvres/Procedures	**Instructor's initials when training completed**	**Examiner's initials when test completed**
2.1 Straight and level flight at various airspeeds including flight at critically low airspeed with and without flaps (including approach to VMCA when applicable)		
2.2 Steep turns (360° left and right at 45° bank)		
2.3 Stalls and recovery: (i) clean stall; (ii) approach to stall in descending turn with bank with approach configuration and power; (iii) approach to stall in landing configuration and power; (iv) approach to stall, climbing turn with take-off flap and climb power (single-engine aeroplane only)		
2.4 ATC liaison — Compliance, R/T procedure		
SECTION 3		
3. En-route procedures VFR 3.1 Flight plan, dead reckoning and map reading		
3.2 Maintenance of altitude, heading and speed		
3.3 Orientation, timing and revision of ETAs		
3.4 Use of radio navigation aids (if applicable)		

CLASS RATING SEA	PRACTICAL TRAINING	
Manoeuvres/Procedures	Instructor's initials when training completed	Examiner's initials when test completed
3.5 Flight management (flight log, routine checks including fuel, systems and icing)		
3.6 ATC liaison — Compliance, R/T procedure		
SECTION 4		
4. Arrivals and landings 4.1 Aerodrome arrival procedure (amphibians only)		
4.2 Normal landing		
4.3 Flapless landing		
4.4 Crosswind landing (if suitable conditions)		
4.5 Approach and landing with idle power from up to 2 000' above the water (single-engine aeroplane only)		
4.6 Go-around from minimum height		
Landings: Glassy water landing Rough water landing		
4.8 ATC liaison — Compliance, R/T procedure		
SECTION 5		
5 Abnormal and emergency procedures (This section may be combined with sections 1 through 4)		

CLASS RATING SEA	PRACTICAL TRAINING	
Manoeuvres/Procedures	Instructor's initials when training completed	Examiner's initials when test completed
5.1 Rejected take-off at a reasonable speed		
5.2 Simulated engine failure after take-off (single-engine aeroplane only)		
5.3 Simulated forced landing without power (single-engine aeroplane only)		
5.4 Simulated emergencies: (i) fire or smoke in flight; (ii) systems' malfunctions as appropriate		
5.5 ATC liaison — Compliance, R/T procedure		
SECTION 6		
6 Simulated asymmetric flight (This section may be combined with sections 1 through 5) 6.1 Simulated engine failure during take-off (at a safe altitude unless carried out in FFS and FNPT II)		
6.2 Engine shutdown and restart (ME skill test only)		
6.3 Asymmetric approach and go-around		
6.4 Asymmetric approach and full stop landing		
6.5 ATC liaison — Compliance, R/T Procedure		

C. Specific requirements for the helicopter category

1. In case of skill test or proficiency check for type ratings and the ATPL the applicant shall pass sections 1 to 4 and 6 (as applicable) of the skill test or proficiency check. Failure in more than five items will require the applicant to take the entire test or check again. An applicant failing not more than five items shall take the failed items again. Failure in any item of the re-test or re-check or failure in any other items already passed will require the applicant to take the entire test or check again. All sections of the skill test or proficiency check shall be completed within 6 months.
2. In case of proficiency check for an IR the applicant shall pass section 5 of the proficiency check. Failure in more than three items will require the applicant to take the entire section 5 again. An applicant failing not more than three items shall take the failed items again. Failure in any item of the re-check or failure in any other items of section 5 already passed will require the applicant to take the entire check again.

FLIGHT TEST TOLERANCE

3. The applicant shall demonstrate the ability to:
   (a) operate the helicopter within its limitations;
   (b) complete all manoeuvres with smoothness and accuracy;
   (c) exercise good judgement and airmanship;
   (d) apply aeronautical knowledge;
   (e) maintain control of the helicopter at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt;
   (f) understand and apply crew coordination and incapacitation procedures, if applicable; and
   (g) communicate effectively with the other crew members, if applicable.

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the helicopter used.
   (a) IFR flight limits

Height:

Generally	± 100 feet
Starting a go-around at decision height/altitude	+ 50 feet/– 0 feet

Minimum descent height/altitude	+ 50 feet/– 0 feet

Tracking:

On radio aids	± 5°
Precision approach “angular” deviations	half scale deflection, azimuth and glide path
2D (LNAV) and 3D (LNAV/VNAV) “linear” lateral deviations	cross-track error/deviation shall normally be limited to ± ½ of the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of one time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 ft below the vertical profile at any time, and not more than + 75 ft above the vertical profile at or below 1 000 ft above aerodrome level.

Heading:

Normal operations	± 5°
Abnormal operations/emergencies	± 10°

Speed:

Generally	± 10 knots
With simulated engine failure	+ 10 knots/– 5 knots

(b)VFR flight limits

Height:

Generally	± 100 feet

Heading:

Normal operations	± 5°
Abnormal operations/emergencies	± 10°

Speed:

Generally	± 10 knots
With simulated engine failure	+ 10 knots/– 5 knots

Ground drift:

T.O. hover	± 3 feet
Landing	± 2 feet (with 0 feet rearward or lateral flight)

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK GENERAL

5. The following symbols mean:

   P = Trained as PIC for the issue of a type rating for SPH or trained as PIC or Co-pilot and as PF and PNF for the issue of a type rating for MPH.

6. The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (——>).

   The following abbreviations are used to indicate the training equipment used:

   FFS = Full Flight Simulator

   FTD = Flight Training Device

   H = Helicopter

7. The starred items (*) shall be flown in actual or simulated IMC, only by applicants wishing to renew or revalidate an IR(H), or extend the privileges of that rating to another type.

8. Instrument flight procedures (section 5) shall be performed only by applicants wishing to renew or revalidate an IR(H) or extend the privileges of that rating to another type. An FFS or FTD 2/3 may be used for this purpose.
9. Where the letter 'M' appears in the skill test or proficiency check column this will indicate the mandatory exercise.
10. An FSTD shall be used for practical training and testing if the FSTD forms part of a type rating course. The following considerations will apply to the course:
    (a) the qualification of the FSTD;
    (b) the qualifications of the instructor and examiner;
    (c) the amount of FSTD training provided on the course;
    (d) the qualifications and previous experience in similar types of the pilot under training; and
    (e) the amount of supervised flying experience provided after the issue of the new type rating.

MULTI-PILOT HELICOPTERS

11. Applicants for the skill test for the issue of the multi-pilot helicopter type rating and ATPL(H) shall take only sections 1 to 4 and, if applicable, section 6.
12. Applicants for the revalidation or renewal of the multi-pilot helicopter type rating proficiency check shall take only sections 1 to 4 and, if applicable, section 6.

SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING				CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		FTD	FFS	A	Instructor initials when training completed	Chkd in FFS A	Examiner initials when test completed
SESSION 1 - Pre-flight preparations and checks							
1.1	Helicopter exterior visual inspection; location of each item			P		M (if performed	

	and purpose of inspection					in the helicopter)	
1.2	Cockpit inspection		P	——>		M	
1.3	Starting procedures, radio and navigation equipment check, selection and setting of navi-gation and communication frequencies	P	——>	——>		M	
1.4	Taxiing/air taxiing in compliance with air traffic control instructions or with instructions of an instructor		P	——>		M	
1.5	Pre-take-off procedures and checks	P	——>	——>		M	
SECTION 2 - Flight manoeuvres and procedures							
2.1	Take-offs (various profiles)		P	——>		M	
2.2	Sloping ground or crosswind take-offs & landings		P	——>			
2.3	Take-off at maximum take-off mass (actual or simulated maximum take-off mass)	P	——>	——>			
2.4	Take-off with simulated engine failure shortly before reaching TDP or DPATO		P	——>		M	
2.4.1	Take-off with simulated engine failure shortly after reaching TDP or DPATO		P	——>		M	

2.5	Climbing and descending turns to specified headings	P	——>	——>		M	
2.5.1	Turns with 30° bank, 180° to 360° left and right, by sole reference to instruments	P	——>	——>		M	
2.6	Autorotative descent	P	——>	——>		M	
2.6.1	Autorotative landing (SEH only) or power recovery		P	——>		M	
2.7	Landings, various profiles		P	——>		M	
2.7.1	Go-around or landing following simulated engine failure before LDP or DPBL		P	——>		M	
2.7.2	Landing following simulated engine failure after LDP or DPBL		P	——>		M	
SECTION 3 - Normal and abnormal operations of the following systems and procedures							
3.	Normal and abnormal operations of the following systems and procedures					M	A mandatory minimum of three items shall be selected from this section
3.1	Engine	P	——>	——>			
3.2	Air conditioning (heating, ventilation)	P	——>	——>			
3.3	Pitot/static system	P	——>	——>			
3.4	Fuel System	P	——>	——>			

3.5	Electrical system	P	——>	——>			
3.6	Hydraulic system	P	——>	——>			
3.7	Flight control and Trim system	P	——>	——>			
3.8	Anti-icing and de-icing system	P	——>	——>			
3.9	Autopilot/Flight director	P	——>	——>			
3.10	Stability augmentation devices	P	——>	——>			
3.11	Weather radar, radio altimeter, transponder	P	——>	——>			
3.12	Area Navigation System	P	——>	——>			
3.13	Landing gear system	P	——>	——>			
3.14	Auxiliary power unit	P	——>	——>			
3.15	Radio, navigation equipment, instruments flight management system	P	——>	——>			
SECTION 4 - Abnormal and emergency procedures							
4	Abnormal and emergency procedures					M	A mandatory minimum of three items shall be selected from this section
4.1	Fire drills (including evacuation if applicable)	P	——>	——>			
4.2	Smoke control and removal	P	——>	——>			

4.3	Engine failures, shutdown and restart at a safe height	P	——>	——>			
4.4	Fuel dumping (simulated)	P	——>	——>			
4.5	Tail rotor control failure (if applicable)	P	——>	——>			
4.5.1	Tail rotor loss (if applicable)	P	——>	Helicopter may not be used for this exercise			
4.6	Incapacitation of crew member — MPH only	P	——>	——>			
4.7	Transmission malfunctions	P	——>	——>			
4.8	Other emergency procedures as outlined in the appropriate Flight Manual	P	——>	——>			
SECTION 5 - Instrument flight procedures (to be performed in IMC or simulated IMC)							
5.1	Instrument flight procedures (to be performed in IMC or simulated IMC) Instrument take-off: transition to instrument flight is required as soon as possible after becoming airborne	P*	——>*	——>*			
5.1.1	Simulated engine failure during departure	P*	——>*	——>*		M*	
5.2	Adherence to departure and arrival routes and ATC instructions	P*	——>*	——>*		M*	
5.3	Holding procedures	P*	——>*	——>*			

5.4	3D operations to DH/A of 200 ft (60m) or higher if required by the approaches procedure	P*	——>*	——>*			
5.4.1	Manually, without flight director Note: According to the AFM, RNP APCH procedures may require the use of autopilot or flight director. The procedure to be flown manually shall be chosen taken into account such limitations (for example, choose an ILS for 5.4.1 in the case of such AFM limitation).	P*	——>*	——>*		M*	
5.4.2	Precision approach manually, with flight director	P*	——>*	——>*		M*	
5.4.3	With coupled autopilot	P*	——>*	——>*			
5.4.4	Manually, with one engine simulated inoperative. (Engine failure has to be simulated during final approach before passing 1000ft above aerodrome level until touchdown or until completion of the missed approach procedure)	P*	——>*	——>*		M*	

5.5	2D Operation down to the minimum descent altitude MDA/H	P*	——>*	——>*		M*	
5.6	Go-around with all engines operating on reaching DA/DH or MDA/MDH	P*	——>*	——>*			
5.6.1	Other missed approach procedures	P*	——>*	——>*			
5.6.2	Go-around with one engine simulated inoperative on reaching DA/DH or MDA/MDH	P*				M*	
5.7	IMC autorotation with power recovery	P*	——>*	——>*		M*	
5.8	Recovery from unusual attitudes	P*	——>*	——>*		M*	
SECTION 6 - Use of optional equipment							
6	Use of optional equipment	P	——>	——>			

D. Specific requirements for the powered-lift aircraft category

1. In the case of skill tests or proficiency checks for powered-lift aircraft type ratings, the applicant shall pass sections 1 to 5 and 6 (as applicable) of the skill test or proficiency check. Failure in more than five items will require the applicant to take the entire test or check again. An applicant failing not more than five items shall take the failed items again. Failure in any item of the re-test or re-check or failure in any other items already passed will require the applicant to take the entire test or check again. All sections of the skill test or proficiency check shall be completed within 6 months.

FLIGHT TEST TOLERANCE

2. The applicant shall demonstrate the ability to:

   (a) operate the powered-lift aircraft within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge;

(e) maintain control of the powered-lift aircraft at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt;

(f) understand and apply crew coordination and incapacitation procedures; and

(g) communicate effectively with the other crew members.

3. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the powered-lift aircraft used.

(a) IFR flight limits:

Height:

Generally	± 100 feet
Starting a go-around at decision height/altitude	+ 50 feet/– 0 feet
Minimum descent height/altitude	+ 50 feet/– 0 feet

Tracking:

On radio aids	± 5°
Precision approach	half scale deflection, azimuth and glide path

Heading:

Normal operations	± 5°
Abnormal operations/emergencies	± 10°

Speed:

Generally	± 10 knots

With simulated engine failure	+10 knots/– 5 knots

(b) VFR flight limits:

Height:

Generally	± 100 feet

Heading:

Normal operations	± 5°
Abnormal operations/emergencies	± 10°

Speed:

Generally	± 10 knots
With simulated engine failure	+10 knots/– 5 knots

Ground drift:

T.O. hover	± 3 feet
Landing	± 2 feet (with 0 feet rearward or lateral flight)

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

4. The following symbols mean:

   P = Trained as PIC or Co-pilot and as PF and PNF for the issue of a type rating as applicable.

5. The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (——>).

6. The following abbreviations are used to indicate the training equipment used:

FFS	=	Full Flight Simulator
FTD	=	Flight Training Device
OTD	=	Other Training Device
PL	=	Powered-lift aircraft

(a) Applicants for the skill test for the issue of the powered-lift aircraft type rating shall take sections 1 to 5 and, if applicable, section 6.

(b) Applicants for the revalidation or renewal of the powered-lift aircraft type rating proficiency check shall take sections 1 to 5 and, if applicable section 6 and/or 7.

(c) The starred items (*) shall be flown solely by reference to instruments. If this condition is not met during the skill test or proficiency check, the type rating will be restricted to VFR only.

7. Where the letter 'M' appears in the skill test or proficiency check column this will indicate the mandatory exercise.

8. Flight Simulation Training Devices shall be used for practical training and testing if they form part of an approved type rating course. The following considerations will apply to the approval of the course:

(a) the qualification of the flight simulation training devices;

(b) the qualifications of the instructor.

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
SECTION 1 - Pre-flight preparations and checks								
1.1	Powered-lift aircraft exterior visual inspection; location of each item and purpose of inspection				P			
1.2	Cockpit inspection	P	——>	——>	——>			
1.3	Starting procedures, radio and navigation equipment check, selection and setting of navigation and communication frequencies	P	——>	——>	——>		M	
1.4	Taxiing in compliance with air traffic control instructions or with instructions of an instructor		P	——>	——>			
1.5	Pre-take-off procedures and checks including Power Check	P	——>	——>	——>		M	
SECTION 2 – Flight manoeuvres and procedures								

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
2.1	Normal VFR take-off profiles: Runway operations (STOL and VTOL) including crosswind Elevated heliports Ground level heliports		P	——>	——>		M	
2.2	Take-off at maximum take-off mass (actual or simulated maximum take-off mass)		P	——>				
2.3	Rejected take-off Phases: during runway operations during elevated heliport operations during ground level operations		P	——>			M	
2.3.1	Take-off with simulated engine failure after passing decision point: — during runway operations		P	——>			M	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
	— during elevated heliport operations — during ground level operations							
2.4	Autorotative descent in helicopter mode to ground (an aircraft shall not be used for this exercise)	P	——>	——>			M FFS only	
2.4.1	Windmill descent in aeroplane mode (an aircraft shall not be used for this exercise)		P	——>			M FFS only	
2.5	Normal VFR landing profiles; runway operations (STOL and VTOL) elevated heliports ground level heliports		P	——>	——>		M	
2.5.1	Landing with simulated engine failure after reaching decision point:							

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
	— during runway operations — during elevated heliport operations — during ground level operations							
2.6	Go-around or landing following simulated engine failure before decision point		P	——>			M	
SECTION 3 – Normal and abnormal operations of the following systems and procedures:								
3	Normal and abnormal operations of the following systems and procedures (may be completed in an FSTD if qualified for the exercise):						M	A mandatory minimum of three items shall be selected from this section
3.1	Engine	P	——>	——>				
3.2	Pressurisation and air conditioning (heating, ventilation)	P	——>	——>				
3.3	Pitot/static system	P	——>	——>				
3.4	Fuel System	P	——>	——>				
3.5	Electrical system	P	——>	——>				

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
3.6	Hydraulic system	P	——>	——>				
3.7	Flight control and Trim-system	P	——>	——>				
3.8	Anti-icing and de-icing system, glare shield heating (if fitted)	P	——>	——>				
3.9	Autopilot/Flight director	P	——>	——>				
3.10	Stall warning devices or stall avoidance devices and stability augmentation devices	P	——>	——>				
3.11	Weather radar, radio altimeter, transponder, ground proximity warning system (if fitted)	P	——>	——>				
3.12	Landing gear system	P	——>	——>				
3.13	Auxiliary power unit	P	——>	——>				
3.14	Radio, navigation equipment, instruments and flight management system	P	——>	——>				
3.15	Flap system	P	——>	——>				
SECTION 4 – Abnormal and **emergency** procedures								

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
4	Abnormal and emergency procedures (may be completed in an FSTD if qualified for the exercise)						M	A mandatory minimum of three items shall be selected from this section
4.1	Fire drills, engine, APU, cargo compartment, flight deck and electrical fires including evacuation if applicable	P	——>	——>				
4.2	Smoke control and removal	P	——>	——>				
4.3	Engine failures, shutdown and restart (an aircraft shall not be used for this exercise) including OEI conversion from helicopter to aeroplane modes and vice versa	P	——>	——>			FFS only	
4.4	Fuel dumping (simulated, if fitted)	P	——>	——>			FFS only	
4.5	Wind shear at take-off and landing (an aircraft shall not be used for this exercise)			P				

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
4.6	Simulated cabin pressure failure/emergency descent (an aircraft shall not be used for this exercise)	P	——>	——>			FFS only	
4.7	ACAS event (an aircraft shall not be used for this exercise)	P	——>	——>			FFS only	
4.8	Incapacitation of crew member	P	——>	——>				
4.9	Transmission malfunctions	P	——>	——>			FFS only	
4.10	Recovery from a full stall (power on and off) or after activation of stall warning devices in climb, cruise and approach configurations (an aircraft shall not be used for this exercise)	P	——>	——>			FFS only	
4.11	Other emergency procedures as detailed in the appropriate Flight Manual	P	——>	——>				
SECTION 5 — Instrument flight procedures (to be performed in IMC or simulated IMC)								

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
5.1	Instrument take-off: transition to instrument flight is required as soon as possible after becoming airborne	P*	——>*	——>*				
5.1.1	Simulated engine failure during departure after decision point	P*	——>*	——>*			M*	
5.2	Adherence to departure and arrival routes and ATC instructions	P*	——>*	——>*			M*	
5.3	Holding procedures	P*	——>*	——>*				
5.4	Precision approach down to a decision height not less than 60 m (200 ft)	P*	——>*	——>*				
5.4.1	Manually, without flight director	P*	——>*	——>*			M* (Skill test only)	
5.4.2	Manually, with flight director	P*	——>*	——>*				
5.4.3	With use of autopilot	P*	——>*	——>*				

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
5.4.4	Manually, with one engine simulated inoperative; engine failure has to be simulated during final approach before passing the outer marker (OM) and continued either to touchdown, or through to the completion of the missed approach procedure)	P*	——>*	——>*			M*	
5.5	Non-precision approach down to the minimum descent altitude MDA/H	P*	——>*	——>*			M*	
5.6	Go-around with all engines operating on reaching DA/DH or MDA/MDH	P*	——>*	——>*				
5.6.1	Other missed approach procedures	P*	——>*	——>*				
5.6.2	Go-around with one engine simulated inoperative on reaching DA/DH or MDA/MDH	P*					M*	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
5.7	IMC autorotation with power recovery to land on runway in helicopter mode only (an aircraft shall not be used for this exercise)	P*	——>*	——>*			M* FFS Only	
5.8	Recovery from unusual attitudes (this one depends on the quality of the FFS)	P*	——>*	——>*			M*	
SECTION 6 – Additional authorisation on a type rating for instrument approaches down to a decision height of less than 60 m (200 ft) (CAT II/III)								
6	Additional authorisation on a type rating for instrument approaches down to a decision height of less than 60 m (CAT II/III). The following manoeuvres and procedures are the minimum training requirements to permit instrument approaches down to a DH of less than 60 m (200 ft). During the following instrument							

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
	approaches and missed approach procedures all powered-lift aircraft equipment required for the type certification of instrument approaches down to a DH of less than 60 m (200 ft) shall be used							
6.1	Rejected take-off at minimum authorised RVR		P	——>			M*	
6.2	ILS approaches in simulated instrument flight conditions down to the applicable DH, using flight guidance system. Standard procedures of crew coordination (SOPs) shall be observed		P	——>	——>		M*	
6.3	Go-around after approaches as indicated in 6.2 on reaching DH. The training shall also include a go-around due to (simulated) insufficient RVR, wind shear, aircraft		P	——>	——>		M*	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Chkd in FFS PL	Examiner's initials when test completed
	deviation in excess of approach limits for a successful approach, ground/airborne equipment failure prior to reaching DH, and go-around with simulated airborne equipment failure							
6.4	Landing(s) with visual reference established at DH following an instrument approach. Depending on the specific flight guidance system, an automatic landing shall be performed		P	——>			M*	
SECTION 7 — Optional equipment								
7	Use of optional equipment		P	——>	——>			

AMC1 to Appendix 9 Training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency check for IRs

APPLICATION AND REPORT FORM

If applicable, this form is also the certificate of completion of the type rating course for ZFTT.

APPLICATION AND REPORT FORM **ATPL, MPL, TYPE RATING, TRAINING, SKILL TEST AND PROFICIENCY CHECK** **AEROPLANES (A) AND HELICOPTERS (H)**				
Applicant's last name(s):	Aircraft:	SE-MP: A☐ H ☐	SE-MP: A☐ H☐	
Applicant's first name(s):		SE-MP: A☐ H ☐	SE-MP: A☐ H ☐	
Signature of applicant:	Operations:	SP☐ MP ☐		
Type of licence held:	Checklist:	Training record:☐	Type rating:☐	
Licence number:		Skill test:☐	Class rating:☐	
		IR: ☐		
State of licence issue:		Proficiency check:☐	ATPL:☐	MPL:☐

1	**Theoretical training for the issue of a type or class rating performed during period**	
From:	**To**	**At:**
Mark obtained:	**% (Pass mark 75%):**	**Type and number of licence:**
Signature of HT:	**Name(s) in capital letters:**	
2	**FSTD**	
FSTD (aircraft type):	**Three or more axes:** **Yes☐** **No☐**	**Ready for service and used:**

FSTD manufacturer:	Motion or system:	Visual aid: Yes ☐ No☐			
FSTD operator:		FSTD ID code:			
Total training time at the controls:	Instrument approaches at aerodromes to a decision altitude or height of:				
Location, date and time:	Type and number of licence:				
Type rating instructor☐	Class rating instructor ☐…………………………	instructor☐			
Signature of instructor:	Name(s) in capital letters:				
3	Flight training: in the aircraft		in the FSTD (for ZFTT)		
Type of aircraft:	Registration:	Flight time at the controls:			
Take-offs:		Training aerodromes or sites (take-offs, approaches and landings):			
Take-off time:	Landing time:				
Location and date:	Type and number of licence held:				
Type rating instructor ☐	Class rating instructor☐				
Signature of instructor:		Name(s) in capital letters:			
4	Skill test		Proficiency check		
Skill test and proficiency check details:					
Aerodrome or site:		Total flight time:			
Take-off time:		Landing time:			
Pass☐	Fail☐		Reason(s) why, if failed:		
Location and date:		SIM or aircraft registration:			
Examiner’s certificate number (if applicable):		Type and number of licence:			
Signature of examiner:		Name(s) in capital letters:			

AMC2 to Appendix 9 Training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency check for IRs

TRAINING, SKILL TEST AND PROFICIENCY CHECK: SP AEROPLANES

Section 3.B of the training and skill test and proficiency check content for SP aeroplanes included in Appendix 9. B should include training on a circling approach, after an IFR approach.

GM1 to Appendix 9 Training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency checks for IRs

TYPE SPECIFIC UPRT AND GO-AROUND TRAINING IN FSTD

(a) General

1. The upset recovery training exercises should be mainly manoeuvre-based but may include some scenario-based training elements. The manoeuvre-based training enables type rating applicants to apply their handling skills and recovery strategy whilst leveraging CRM principles to return the aeroplane from an upset condition to a stabilised flight path.

2. If training is conducted in an FSTD, it is important that applicants understand the limitations of the FSTD in replicating the physiological and psychological aspects of upset recovery exercises.

   Note. *—In order to avoid negative training and negative transfer of training, the ATO should ensure that the selected upset recovery exercises take into consideration the limitations of the FFS.*

(b) Stall event recovery in FSTD (Appendix 9, Section B(5) exercise 7.2.1; Section B(6) exercise 3.7.1)

1. It is of utmost importance that stall event recovery training takes into account the capabilities of the FFS used. To deliver stall event recovery training, the FFS should be qualified against the relevant UPRT elements of CS-FSTD Issue 2. Stall event recovery training should include training up to the stall (approach-to-stall). Post-stall training may be delivered provided the device has been qualified against the relevant optional elements of CS-FSTD Issue 2 and the operator demonstrates that negative training or negative transfer of training is avoided. A 'stall event' is defined as an occurrence whereby the aeroplane experiences one or more conditions associated with an approach-to-stall or a post stall.

2. Stall event recovery training should emphasise the requirement to reduce the AoA whilst accepting the resulting altitude loss. High-altitude stall event training should be included so that flight crew experience the aeroplane control response, the significant altitude loss during the recovery, and the increased time required to recover. The training should also emphasise the risk of triggering a secondary stall event during the recovery.

3. Recovery from a stall event should always be conducted in accordance with the stall event recovery procedures of the OEMs.

Note.— *If an OEM-approved recovery procedure does not exist, ATOs should develop and train the aeroplane-specific stall recovery procedure based on the template in Table 1 below.*

Table 1: Recommended stall event recovery template		
Stall event recovery template		
Pilot Flying (PF) Immediately do the following at first indication of a stall (aerodynamic buffeting, reduced roll stability and aileron effectiveness, visual or aural cues and warnings, reduced elevator (pitch) authority, inability to maintain altitude or arrest rate of descent, stick shaker activation (if installed)) during any flight phases except at lift-off.		**Pilot Monitoring (PM)**
1.	**AUTOPILOT — DISCONNECT** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	**MONITOR** Airspeed and attitude throughout the recovery and **ANNOUNCE** Any continued divergence
2.	**AUTOTHRUST/AUTOTHROTTLE — OFF**	
3.	**a) NOSE-DOWN PITCH CONTROL** apply until stall warning is eliminated **(b) NOSE-DOWN PITCH TRIM (as needed)** (Reduce the AoA whilst accepting the resulting altitude loss.)	
4.	**BANK — WINGS LEVEL**	
5.	**THRUST — ADJUST (as needed)** (Thrust reduction for aeroplanes with underwing-mounted engines may be needed)	
6.	**SPEEDBRAKES/SPOILERS — RETRACT**	
7.	**When airspeed is sufficiently increasing — RECOVER to level flight** (Avoid the secondary stall due to premature recovery or excessive G-loading)	

(c) Nose-high and nose-low recovery exercises (Appendix 9, Section B(5) exercise 7.2.2; B(6) exercise 3.7.2)

Nose-high and nose-low recovery exercises should be conducted in accordance with the strategies recommended by the OEMs contained in Tables 2 and 3 below.

Note.— *As the OEM procedures always take precedence over the recommendations, ATOs should consult the OEM on whether any approved type-specific recovery procedures are available prior to using the templates.*

Refer to Revision 3 of the Airplane Upset Prevention and Recovery Training Aid (AUPRTA) for a detailed explanation and rationale of nose-high and nose-low recovery strategies as recommended by the OEMs.

Table 2: Recommended nose-high recovery strategy template		
Nose-high recovery strategy template		
Either pilot — Recognise and confirm the developing situation by announcing **'nose high'**		
PF		**PM**
1.	**AUTOPILOT — DISCONNECT** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	**MONITOR** airspeed and attitude throughout the recovery and **ANNOUNCE** any continued divergence
2.	**AUTOTHRUST/AUTOTHROTTLE — OFF**	
3.	APPLY as much nose-down control input as required to obtain a nose-down pitch rate	
4.	**THRUST — ADJUST** (if required) (Thrust reduction for aeroplanes with underwing-mounted engines may be needed)	
5.	**ROLL — ADJUST** (if required) (Avoid exceeding 60-degree bank)	
6.	When airspeed is sufficiently increasing — **RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)	
Notes:		

(1) Recovery to level flight may require use of pitch trim.

(2) If necessary, consider reducing thrust in aeroplanes with underwing-mounted engines to aid in achieving nose-down pitch rate.

*(3) **WARNING**: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.*

Table 3: Recommended nose-low recovery strategy template

Nose-low recovery strategy template		
Either pilot — Recognise and confirm the developing situation by announcing **'nose high'**		
PF		**PM**
1.	**AUTOPILOT — DISCONNECT** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	**MONITOR** airspeed and attitude throughout the recovery and **ANNOUNCE** any continued divergence
2.	**AUTOTHRUST/AUTOTHROTTLE — OFF**	
3.	**RECOVERY** from stall if required	
4.	**ROLL** in the shortest direction to wings level (It may be necessary to reduce the G-loading by applying forward control pressure to improve roll effectiveness)	
5.	**THRUST and DRAG — ADJUST** (if required)	
6.	**RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading.)	
	Note: *(1) Recovery to level flight may require use of pitch trim.* *(2) **WARNING**: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.*	

(d) Go-around with all engines operating from various stages during an instrument approach (Appendix 9, Section B(5) exercise 7.3; B(6) exercise 4.1.)

(1) The objective of the go-around exercises is to expose the student pilot to the physiological effects caused by a go-around. The instructor should ensure that student pilots understand the objective of the exercises and provide students with appropriate coping strategies, including TEM. Due consideration should be given to environmental conditions when evaluating the demonstration of task proficiency and related criteria.

(2) A go-around may be commenced at any time during an approach, including before the aeroplane is in the landing configuration. Historically, most go-around training has been conducted when the aeroplane is in the landing configuration prior to commencing the go-around. Students must be prepared to adapt the go-around manoeuvre if the go-around is commenced prior to the point where the aeroplane is fully configured for landing. Situation awareness in relation to flap and gear configuration, aeroplane speed and missed approach altitude is important.

(3) Unanticipated go-arounds may startle the students (e.g. unexpected ATC constraints, automation malfunction, adverse weather, etc.). Students may find themselves faced with a situation where they have to perform a large number of critical actions under a high workload (e.g. setting thrust, landing gear retraction, flight path management). The instructor should explain that there is also a possibility of disorientation during a go-around because of the somatogravic effect produced by large longitudinal acceleration felt by the inner-ear as the aeroplane speed increases. This effect cannot be reproduced in an FSTD.

(4) It is vital that the correct pitch attitude is selected and maintained, while the aeroplane is kept in trim as it accelerates (depending on the aeroplane type). On some aeroplane types with under-slung engines the pitch response with all engines functioning may be amplified due to the relatively low gross weight towards the end of a flight and the high thrust available from modern aeroplane engines. It is particularly important that trim changes are anticipated on such aeroplanes.

(5) ATOs should develop scenarios for go-around training containing different take-off and approach stall situations that also involve surprise and startle effects and include:

(i) a go-around from the non-landing configuration;

(ii) a go-around at low gross weight using maximum go-around thrust;

(iii) a go-around from the outer marker or equivalent point;

(iv) a go-around below 500 ft using, as applicable/permitted, reduced go-around thrust;

(v) a go-around initiated above the published missed approach altitude; and

(vi) a normal go-around from the landing configuration using reduced go-around thrust (if available / type-specific).

(6) Training should also incorporate topics such as flight path management (manual and automatic), application of procedures, startle factors, communication, workload management and situation awareness. The objective of this training is to highlight:

(i) differences to procedures when the aircraft is in the non-landing configuration;

(ii) differences in handling characteristics at low gross weights and high thrust settings;

(iii) the threat associated with go-arounds close to the published missed approach altitudes;

(iv) startle and surprise associated with an unplanned go-around (ATC, blocked runway, etc.);

(v) the importance of effective communication between flight crew;

(vi) the requirement to be aware of the aircraft energy state during a go-around; and

(vii) the importance of engaging the autopilot or flight director in the correct modes during a go-around.

(7) Go-around training should not be limited to addressing the somatogravic effects caused by a go-around. Training should also cover topics such as flight path management (manual and automatic), application of procedures, startle factor, communication, workload management and situation awareness. Flight path management training should address:

(i) the handling differences of a lighter than normal aircraft which may differ to handling experienced during take-off when the aircraft is much heavier;

(ii) the different reaction of the aeroplane (pitch and vertical speed) comparing a go-around performed with reduced G/A thrust (if the function is available) and a go-around performed with full G/A thrust (a different weight).

(8) The importance of correct selection of TO/GA modes by the PF should also be emphasised (pushing TO/GA, selected the correct thrust lever detent, etc.)

(9) The importance of the PM role in the go-around manoeuvre should also be highlighted. The PM usually has higher workload as they need to reconfigure the aircraft, engage FMA modes, communicate with ATC and monitor the actions of the PF. This excessive workload for the PM may lead him or her to prioritise actions to the detriment of monitoring activities. The phenomenon of attentional tunnelling may also need to be addressed. This happens when one pilot, or both, focus exclusively on a problem at the expense of general monitoring of the flight parameters.

APPENDIX 10 – CONDITIONS FOR THE CONVERSION OF EXISTING NATIONAL LICENCES AND RATINGS

SECTION 1 - GENERAL REQUIREMENTS

A. AEROPLANES

Pilot licences

Note.—*Conversion of PPL licences is not permitted.*

1.1 A pilot licence (A) issued by an EASA Member State in accordance with EASA Part FCL, or a pilot licence (aeroplane) issued by the UK CAA[†] may be converted into a licence with all included ratings/certificates provided the applicant complies with the following:

(a) is employed by an Aruban AOC holder;

(b) has successfully completed the licence/operator proficiency check;

(c) has demonstrated knowledge of the relevant parts of Aruba Aviation Regulations (see Appendix 10, Section 2);

(d) has demonstrated residency in Aruba including a work permit;

(e) comply with the requirements set out in the table 1 of this appendix.

1.2 A pilot licence (A) issued by the competent authority of the United States of America or a pilot licence (A) issued by the competent authority of Canada may be converted into a licence provided that the applicant complies with the following requirements:

(a) is employed by an Aruban AOC holder;

(b) for ATPL(A) and CPL(A), complete as a licence/operator proficiency check, the revalidation requirements for type/class and instrument rating, relevant to the privileges of the licence held;

(c) demonstrate knowledge of the relevant parts of AUA-OPS, AUA-FCL, AUA-MED and Aruba Aviation Regulations. (see Appendix 10, Section 2);

(d) demonstrate, or hold, language proficiency in accordance with FCL.055;

(e) hold a valid AUA-MED Class 1 medical certificate;

(f) has demonstrated residency in Aruba including a work permit;

(g) comply with the requirements set out in the table 1 of this appendix.

[†] Applicable as of 01 January, 2021

Note 1. —*Exemptions for the point 1.1 (d) or point 1.2 (f) residency/work permit requirement, is possible strictly for pilots flying for Aruban AOC holders Category F.*

Note 2. — *ATOs and TREs may require DCA inspection and approval.*

Note 3. — *Applicants for a licence conversion that are employed by an Aruban operator performing aerial work may be exempted from the requirement of being employed by an Aruban AOC holder.*

Table 1 of appendix 10:

National licence held	Total flying hours experience	Any further requirements	AUA-FCL licence and conditions (where applicable)	Removal of conditions
(1)	(2)	(3)	(4)	(5)
ATPL(A)	> 1500 total time plus 1000 MPA of which 500 as PIC on multi-pilot aeroplanes	None	ATPL(A)	Not applicable
ATPL(A)	> 1 000 on multi-pilot aeroplanes	None	ATPL(A), with type rating restricted to co-pilot	Demonstrate ability to act as PIC as required by Appendix 9
ATPL(A)	<1000 on multi-pilot aeroplanes	Demonstrate knowledge of flight planning and performance as required by FCL.515	ATPL(A), with type rating restricted to co-pilot	Demonstrate ability to act as PIC as required by Appendix 9
MPL	> 250 total time	i) demonstrate knowledge of flight planning and performance as required by FCL.410.A	MPL	Not applicable
CPL/IR(A) and passed an ICAO ATPL theory		demonstrate knowledge of flight planning and	CPL/IR(A) with ATPL theory credit	Not applicable

		performance as required by FCL.310 and FCL.615(b) meet remaining requirements of FCL.720.A(c)		
CPL/IR(A)	> 500 on multi-pilot aeroplanes, or in multi-pilot operations on single-pilot aeroplanes CS-23 commuter category or equivalent in accordance with the requirements of AUA-OPS for commercial air transport	pass an examination for ATPL(A) knowledge (*) meet remaining requirements of FCL.720.A(c)	CPL/IR(A) with ATPL theory credit	Not applicable
CPL/IR(A)	> 500 as PIC on single-pilot aeroplanes	None	CPL/IR(A) with type/class ratings restricted to single- pilot aeroplanes	
CPL/IR(A)	< 500 as PIC on single-pilot aeroplanes	Demonstrate knowledge of flight planning and flight performance for CPL/IR level	CPL/IR(A) with type/class ratings restricted to single- pilot aeroplanes	Obtain multi-pilot type rating in accordance with AUA FCL
CPL(A)	> 500 as PIC on single-pilot aeroplanes	Night rating, if applicable	CPL(A), with type/class ratings restricted to single- pilot aeroplanes	
CPL(A)	< 500 as PIC on single-pilot aeroplanes	demonstrate knowledge of flight performance and planning as required by FCL.310	CPL(A), with type/class ratings restricted to single- pilot aeroplanes	

(*) *CPL holders already holding a type rating for a multi-pilot aeroplane are not required to have passed an examination for ATPL(A) theoretical knowledge whilst they continue to operate that same aeroplane type, but will not be given ATPL(A) theory credit for a licence. If they require another type rating for a different multi-pilot aeroplane, they must pass an examination for ATPL(A) knowledge.*

1. Instructor certificates

An instructor certificate issued in accordance with the national requirements by the following ICAO Contracting States

(a) EASA Member States;

(b) issued by the UK CAA†

(c) United States of America;

(d) Canada;

shall be converted into a AUA-FCL certificate provided that the applicant complies with the following requirements:

National certificate or privileges held	Experience	Any further requirements	AUA-FCL certificate
(1)	**(2)**	**(3)**	**(4)**
FI(A)/IRI(A)/TRI(A)/ CRI(A)	as required under AUA-FCL for the relevant certificate	N/A	FI(A)/IRI(A)/TRI(A)/ CRI(A)

2. SFI certificate

A SFI certificate issued in accordance with the national requirements by the following ICAO Contracting States

(a) EASA Member States;

(b) issued by the UK CAA;†

(c) United States of America;

(d) Canada;

† Applicable as of 01 January, 2021

shall be converted into a AUA-FCL certificate provided that the applicant complies with the following requirements:

National certificate held	Experience	Any further requirements	AUA-FCL certificate
(1)	(2)	(3)	(4)
SFI(A)	> 1 500 hours as pilot of MPA	hold or have held a CPL, MPL or ATPL for aeroplanes; have completed the flight simulator content of the applicable type rating course including MCC.	SFI(A)
SFI(A)	3 years' recent experience as an SFI	have completed the flight simulator content of the applicable type rating course including MCC	SFI(A)

The conversion shall be valid for a maximum period of 3 years. Revalidation shall be subject to the completion of the relevant requirements set out in AUA-FCL.

3. STI certificate

An STI issued in accordance with the national requirements by the following ICAO Contracting States

(a) EASA Member States;

(b) issued by the UK CAA†;

(c) United States of America;

(d) Canada;

shall be converted into a AUA-FCL certificate provided that the applicant complies with the following requirements:

National certificate held	**Experience**	**Any further requirements**	**AUA-FCL certificate**
(1)	**(2)**	**(3)**	**(4)**

† Applicable as of 01 January, 2021

STI(A)	> 500 hours as pilot on SPA	(i) hold or have held a pilot licence; (ii) have completed a proficiency check in accordance with Appendix 9 in an FSTD appropriate to the instruction intended	STI(A)
STI(A)	3 years' recent experience as an STI	have completed a proficiency check in accordance with Appendix 9 in an FSTD appropriate to the instruction intended	STI(A)

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in AUA-FCL.

B. HELICOPTERS

Pilot licences

Note.—*Conversion of PPL licences is not permitted.*

1.1. A pilot licence (H) issued by an EASA Member State in accordance with EASA Part FCL or a licence issued by the UK CAA[†] shall be converted into a licence with all included ratings/certificates and

- (a) be employed by an Aruban AOC holder
- (b) has successfully completed the licence/operator proficiency check;
- (c) has demonstrated knowledge of the relevant parts of Aruba Aviation Regulations (see Appendix 10, Section 2);
- (d) has demonstrated residency in Aruba including a work permit;
- (e) comply with the requirements set out in the table 2 of this appendix

1.2. A pilot licence (H) issued by the competent authority of the United States of America or a pilot licence (H) issued by the competent authority of Canada shall be converted into a licence provided that the applicant complies with the following requirements:

- (a) for ATPL(H) and CPL(H), complete as a proficiency check the revalidation requirements for type/class and instrument rating, relevant to the privileges of the licence held;
- (b) demonstrate knowledge of the relevant parts of AUA-OPS and AUA-FCL;
- (c) demonstrate, or hold, language proficiency in accordance with FCL.055;
- (d) hold a valid AUA-MED Class 1 medical certificate;
- (e) be employed by an Aruban AOC holder;
- (f) comply with the requirements set out in the table 1 of this appendix.

Note 1.—*ATOs and TREs may require DCA inspection and approval.*

Note 2.—*Exemptions for the point 1.1 (d) or point 1.2 (e) residency/work permit requirement, is possible strictly for pilots flying for Aruban AOC holders Category F.*

[†] Applicable as of 01 January, 2021

National licence held	Total flying hours experience	Any further requirements	AUA-FCL licence and conditions (where applicable)	Removal of conditions
(1)	(2)	(3)	(4)	(5)
ATPL(H) valid IR(H)	> 2000 total time plus 500 as PIC on multi-pilot helicopters	none	ATPL(H) and IR	Not applicable
ATPL(H) no IR(H) privileges	> 500 as PIC on multi-pilot helicopters	none	ATPL(H)	
ATPL(H) valid IR(H)	> 500 on multi- pilot helicopters	None	ATPL(H), and IR with type rating restricted to co-pilot	demonstrate ability to act as PIC as required by Appendix 9
ATPL(H) no IR(H) privileges	> 500 on multi- pilot helicopters	None	ATPL(H) type rating restricted to co-pilot	demonstrate ability to act as PIC as required by Appendix 9
ATPL(H) valid IR(H)	< 500 on multi- pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.515 and FCL.615(b)	ATPL(H), and IR with type rating restricted to co-pilot	demonstrate ability to act as PIC as required by Appendix 9
ATPL(H) no IR(H) privileges	< 500 on multi- pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.515 and FCL.615(b)	ATPL(H) type rating restricted to co- pilot	demonstrate ability to act as PIC as required by Appendix 9
CPL/IR(H) and passed an ICAO ATPL(H) theory		demonstrate knowledge of flight planning and flight performance as	CPL/IR(H) with ATPL(H) theory credit, provided that the ICAO	Not applicable

test in State of licence issue		required by FCL.310 and FCL.615(b); meet remaining requirements of FCL.720.H(b)	ATPL(H) theory test is assessed as being at AUA-FCL ATPL level	
CPL/IR(H)	> 500 hrs on multi-pilot helicopters	(i) to pass an examination for AUA-FCL ATPL(H) theoretical knowledge (*) (ii) to meet remaining requirements of FCL.720.H(b)	CPL/IR(H) with AUA-FCL ATPL(H) theory credit	Not applicable
CPL/IR(H)	> 500 as PIC on single-pilot helicopters	None	CPL/IR(H) with type ratings restricted to single- pilot helicopters	obtain multi-pilot type rating as required by AUA-FCL
CPL/IR(H)	< 500 as PIC on single-pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.310 and FCL.615(b)	CPL/IR(H) with type ratings restricted to single- pilot helicopters	
CPL(H)	> 500 as PIC on single-pilot helicopters	night rating	CPL(H), with type ratings restricted to single-pilot helicopters	
CPL(H)	< 500 as PIC on single-pilot helicopters	night rating demonstrate knowledge of flight performance and planning as required by FCL.310	CPL(H), with type ratings restricted to single-pilot helicopters	
CPL(H) Without night rating	> 500 as PIC on single-pilot helicopters		CPL(H), with type ratings restricted to single-pilot helicopters and restricted to day VFR operations	Obtain multi-pilot type rating as required by AUA-FCL and a night rating

CPL(H) Without night rating	< 500 as PIC on single-pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.310	CPL(H), with type ratings restricted to single-pilot helicopters and restricted to day VFR operations	

(*) CPL holders already holding a type rating for a multi-pilot helicopter are not required to have passed an examination for ATPL(H) theoretical knowledge whilst they continue to operate that same helicopter type, but will not be given ATPL(H) theory credit for a AUA-FCL licence. If they require another type rating for a different multi-pilot helicopter, they must pass an examination for AUA-FCL ATPL(H) theoretical knowledge.

2. Instructor certificates

An instructor certificate issued in accordance with the national requirements by the following ICAO Contracting States

(a) EASA Member States;

(b) issued by the UK CAA†

(c) United States of America;

(d) Canada;

shall be converted into a AUA-FCL certificate provided that the applicant complies with the following requirements:

National certificate or privileges held	**Experience**	**Any further requirements**	**AUA-FCL certificate**
(1)	**(2)**	**(3)**	**(4)**
National certificate or privileges held	Experience	Any further requirements	AUA-FCL certificate
(1)	(2)	(3)	(4)
FI(H)/IRI(H)/TRI(H)	as required under AUA-FCL for the relevant certificate		FI(H)/IRI(H)/TRI(H) (*)

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in AUA-FCL.

3. SFI certificate

An STI issued in accordance with the national requirements by the following ICAO Contracting States

(a) EASA Member States;

(b) issued by the UK CAA[†];

(c) United States of America;

(d) Canada;

shall be converted into a AUA-FCL certificate provided that the applicant complies with the following requirements:

National certificate or privileges held	Experience	Any further requirements	AUA-FCL certificate
(1)	(2)	(3)	(4)
National certificate held	Experience	Any further requirements	AUA-FCL certificate
(1)	(2)	(3)	(4)
SFI(H)	> 1 000 hours as pilot of MPH	hold or have held a CPL, MPL or ATPL; have completed the flight simulator content of the applicable type rating course including MCC	SFI(H)
SFI(H)	3 years' recent experience as an SFI	have completed the simulator content of the applicable type rating course including MCC	SFI(H)

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in AUA-FCL.

[†] Applicable as of 01 January, 2021

4. STI certificate

An STI issued in accordance with the national requirements by the following ICAO Contracting States

(a) EASA Member States;

(b) issued by the UK CAA†;

(c) United States of America;

(d) Canada;

shall be converted into a AUA-FCL certificate provided that the applicant complies with the following requirements:

National certificate or privileges held	Experience	Any further requirements	AUA-FCL certificate
(1)	(2)	(3)	(4)
National certificate held	Experience	Any further requirements	Replacement certificate
(1)	(2)	(3)	(4)
STI(H)	> 500 hours as pilot on SPH	hold or have held a pilot licence; have completed a proficiency check in accordance with Appendix 9 in an FSTD appropriate to the instruction intended	STI(H)
STI(H)	3 years' recent experience as an STI	have completed a proficiency check in accordance with Appendix 9 in an FSTD appropriate to the instruction intended	STI(H)

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in AUA-FCL.

† Applicable as of 01 January, 2021

C. FLIGHT ENGINEER

Flight engineer licence

1. A flight engineer licence issued by an EASA Member State in accordance with EASA Part FCL/JAR FCL 4 shall be converted into a licence with all included ratings.

2. A flight engineer licence previously issued by the Authority of a ICAO Contracting State shall be converted into a licence provided that the applicant complies with the following requirements:
   (a) complete as a proficiency check the revalidation requirements for type/class and instrument rating, relevant to the privileges of the licence held;
   (b) demonstrate knowledge of the relevant parts of AUA-OPS and AUA-FCL;
   (c) demonstrate, or hold, language proficiency in accordance with FCL.055;
   (d) hold a valid AUA-MED Class 2 medical certificate;
   (e) be employed by an Aruban AOC holder

Note.—*ATOs and TREs may require DCA inspection and approval.*

SECTION 2 - KNOWLEDGE REQUIREMENTS

Issue of Aruba Licence on the basis of Foreign Licence

(1) Knowledge requirements for the issue of Aruba Licence on the basis of a national licence issued by EASA member state, the UK CAA[†] competent authority of the United States of America or of Canada.

(2) Training of the knowledge requirements shall be completed during the Basic Indoctrination Course of the employing AOC holder referenced in Appendix 10, Section 1 , and shall include the following subjects.

ARUBA AVIATION REGULATIONS
• Aruban Aviation Decree (Luchtvaartverordening)
• State Decree Licencing (Landsbesluit Bewijzen van Bevoegdheid)
• Ministerial Decree Aeromedical Examinations with AUA-MED as appendix (Regeling Medische Keuringen)

[†] Applicable as of 01 January, 2021

Specific AUA-MED provisions:	
AUA-MED Subpar A – General Requirements	
MED.A.003	Recognition of medical assessments performed abroad
MED.A.008	Classes of medical assessment
MED.A.023	Designation of medical examiners
MED.A.030	Medical certificates
MED.A.035	Application for a medical certificate
MED.A.040	Issue, revalidation and renewal of medical certificates
MED.A.045	Validity, revalidation and renewal of medical certificates
MED.A.046	Suspension or revocation of medical certificates

- **Ministerial Decree, with AUA-FCL as appendix (Regeling Bewijzen van bevoegheid Luchtvarenden)**

Specific AUA-FCL provisions:	
AUA-FCL Subpar A – General Requirements	
FCL.008	Requirements to hold a flight crew licence
FCL.015	Application and issue of licences, ratings and certificates
FCL.020	Use of psychoactive substances
FCL.027	Validity of licences and ratings
FCL.040	Exercise of the privileges of licences
FCL.045	Obligation to carry and present documents
FCL.065	Curtailment of privileges of licence holders aged 60 years or more in commercial air transport
FCL.095	Crediting of flight time
Appendix 10 Requirements	
AUA-FCL Subpar D – Commercial Pilot	
FCL.300	CPL — Minimum age
FCL.305	CPL — Privileges and conditions
AUA-FCL Subpar F – Airline Transport Pilot	

FCL.500	ATPL — Minimum age
FCL.505	ATPL — Privileges
FCL.510.A	ATPL(A) — Pre-requisites, experience and crediting
FCL.510.H	ATPL(H) — Pre-requisites, experience and crediting
AUA-FCL Subpar G – Instrument Rating	
FCL.600	IR — General
FCL.605	IR — Privileges
FCL.625	IR — Validity, revalidation and renewal
FCL.625.A	IR(A) — Revalidation
FCL.625.H	IR(H) — Revalidation
AUA-FCL Subpar H – Class and Type Ratings	
FCL.700	Circumstances in which class or type ratings are required
FCL.703	Class and type ratings – general
FCL.705	Privileges of the holder of a class or type rating
FCL.710	Class and type ratings — variants
FCL.725	Requirements for the issue of class and type ratings
FCL.740	Validity and renewal of class and type ratings
FCL.720.A	Experience requirements and pre-requisites for the issue of class or type ratings— aeroplanes
FCL.740.A	Revalidation of class and type ratings — aeroplanes
FCL.750.A	Type ratings for aeroplanes where two pilots are required
FCL.720.H	Experience requirements and pre-requisites for the issue of type ratings— helicopters
FCL.740.H	Revalidation of type ratings — helicopters
• Ministerial decree Flight-operations with AUA-OPS1 as appendix (Regeling Vluchtuivoering)	
Specific AUA-OPS1 provisions	
AUA-OPS 1 Subpart A – Applicability	

AUA-OPS 1.001	Applicability
AUA-OPS 1 Subpart B – General	
AUA-OPS 1.005	General
AUA-OPS 1.010	Exemptions
AUA-OPS 1.025	Common Language
AUA-OPS 1.030	Minimum Equipment Lists – Operator's Responsibilities
AUA-OPS 1.040	Crew Members
AUA-OPS 1.060	Ditching
AUA-OPS 1.065	Carriage of Weapons of War and Munitions of War
AUA-OPS 1.070	Carriage of Sporting Weapons and Ammunition
AUA-OPS 1.075	Method of Carriage of Persons
AUA-OPS 1.085	Crew Responsibilities
AUA-OPS 1.090	Authority of the Commander
AUA-OPS 1.100	Admission to Flight Deck
AUA-OPS 1.105	Unauthorised Carriage
AUA-OPS 1.110	Portable Electronic Devices
AUA-OPS 1.115	Alcohol and Drugs
AUA-OPS 1.120	Endangering Safety
AUA-OPS 1.125	Documents to be Carried
AUA-OPS 1.130	Manuals to be Carried
AUA-OPS 1.135	Additional Information and Forms to be Carried
AUA-OPS 1.140	Information Retained on the Ground
AUA-OPS 1.145	Power to Inspect
AUA-OPS 1.150	Production of Documentation and Records
AUA-OPS 1.160	Preservation, Production & Use of Flight Recorder Recordings
AUA-OPS 1 Subpart D – Operational procedures	
AUA-OPS 1.200	Operations Manual

AUA-OPS 1.210	Establishment of Procedures
AUA-OPS 1.225	Aerodrome Operating Minima
AUA-OPS 1.260	Carriage of Persons with Reduced Mobility
AUA-OPS 1.265	Carriage of Inadmissible Passengers, Deportees or Persons in Custody
AUA-OPS 1.270	Stowage of Baggage and Cargo
AUA-OPS 1.280	Passenger Seating
AUA-OPS 1.285	Passenger Briefing
AUA-OPS 1.290	Flight Preparation
AUA-OPS 1.295	Selection of Aerodromes
AUA-OPS 1.300	Submission of ATS Flight Plan
AUA-OPS 1.305	Refuelling/Defueling with Passengers Embarking,, on Board or Disembarking
AUA-OPS 1.310	Crew Members at Stations
AUA-OPS 1.315	Assisting Means for Emergency Evacuation
AUA-OPS 1.320	Seats, Safety Belts and Harnesses
AUA-OPS 1.325	Securing of Passenger Cabin and Galley(s)
AUA-OPS 1.330	Accessibility of Emergency Equipment
AUA-OPS 1.335	Smoking on Board
AUA-OPS 1.340	Meteorological Conditions
AUA-OPS 1.345	Ice and other Contaminants - Ground Procedures
AUA-OPS 1.346	Ice and other Contaminants – Flight Procedures
AUA-OPS 1.350	Fuel and Oil Supply
AUA-OPS 1.355	Take-off Conditions
AUA-OPS 1.360	Application of Take-off Minima
AUA-OPS 1.365	Minimum Flight Altitudes
AUA-OPS 1.370	Simulated Abnormal Situations in Flight
AUA-OPS 1.375	In-flight Fuel Management
AUA-OPS 1.385	Use of Supplemental Oxygen

AUA-OPS 1.390	Cosmic Radiation
AUA-OPS 1.395	Ground Proximity Detection
AUA-OPS 1.400	Approach and Landing Conditions
AUA-OPS 1.405	Commencement and Continuation of Approach
AUA-OPS 1.410	Operating procedures – Threshold Crossing Height
AUA-OPS 1.415	Journey Log
AUA-OPS 1.420	Occurrence Reporting
Appendices of Subpart D	
AUA-OPS 1 Subpart E – All weather operations	
All	
AUA-OPS 1 Subpart J – Mass and Balance	
AUA-OPS 1.625	Mass and Balance Documentation and Appendix 1 to AUA-OPS 1.625
AUA-OPS 1 Subpart K	
AUA-OPS 1.630	General Introduction
AUA-OPS 1.640	Aeroplane Operating Lights
AUA-OPS 1.650	Day VFR operations – Flight and Navigational Instruments and Associated Equipment
AUA-OPS 1.652	IFR or Night Operations – Flight and Navigational Instruments and Associated Equipment
AUA-OPS 1.655	Additional Equipment for Single-pilot Operation under IFR or at night
AUA-OPS 1.660	Altitude Alerting System
AUA-OPS 1.665	Ground Proximity Warning System
AUA-OPS 1.668	Airborne Collision Avoidance System
AUA-OPS 1.670	Airborne Weather Radar Equipment
AUA-OPS 1.675	Equipment for Operations in Icing Conditions
AUA-OPS 1.680	Cosmic Radiation Detection Equipment
AUA-OPS 1.690	Crew Member Interphone System
AUA-OPS 1.695	Public Address System

All Cockpit Voice Recorder articles	
All Flight Data Recorder articles	
AUA-OPS 1.770	Supplemental Oxygen – Pressurised Aeroplanes
AUA-OPS 1.775	Supplemental oxygen – Non-pressurised Aeroplanes
AUA-OPS 1.780	Crew Protective Breathing Equipment
AUA-OPS 1.820	Emergency Locator Transmitter
AUA-OPS 1 Subpart N	
AUA-OPS 1.940	Composition of Flight Crew
AUA-OPS 1.945	Conversion Training and Checking
AUA-OPS 1.950	Differences Training and Familiarisation Training
AUA-OPS 1.955	Nomination as Commander
AUA-OPS 1.965	Recurrent Training and Checking
AUA-OPS 1.970	Recent Experience
AUA-OPS 1.975	Route and Aerodrome Competence Qualification
AUA-OPS 1.980	Operation on More than One Type or Variant
AUA-OPS 1.985	Training Records
Appendix 1 to 1.940 In-flight Relief of Flight Crew Members	
Appendix 2 to 1.940 Single-pilot Operations under IFR or at Night	
Appendix 1 to 1.96Recurrent Training and Checking – Pilots	
AUA-OPS 1 Subpart P	
AUA-OPS 1.1040	General Rules for Operations Manuals
AUA-OPS 1.1045	Operations Manual – Structure and Contents
AUA-OPS 1.1050	Aeroplane Flight Manual
AUA-OPS 1.1055	Journey Log
AUA-OPS 1.1060	Operational Flight Plan
Appendix 1 to AUA-OPS1045, section A (8) Operating Procedures	
AUA-OPS 1 Subpart Q	

All	
AUA-OPS 1 Subpart S	
All	

APPENDIX 11 - TRAINING ORGANISATIONS FOR FLIGHT CREW LICENCES AND RATINGS

(See FCL Subpart M)

SECTION 1 – GENERAL

A. INTRODUCTION

A.1 A Training Organisation is an organisation staffed, equipped and operated in a suitable environment offering flying training, and/or synthetic flight instruction and/or theoretical knowledge instruction for specific training programmes.

A.2 A training organisation wishing to offer approved training to meet AUA-FCL requirements shall obtain the approval of the Authority as an Approved Training Organisation (ATO). No such approval will be granted by the Authority unless:

A.2.1 the Authority can enforce the AUA-FCL requirements; and

A.2.2 the ATO meets all requirements of AUA-FCL.

This Appendix gives the requirements for the issue, revalidation and variation of the approval of a ATO. An ATO needs only to meet the requirements to the instruction it is providing.

B. APPLICATION

B.1 Applicants for the issue of a certificate as an approved training organisation (ATO) shall provide the competent authority with the following information:

B.1.1 name and address of the training organisation;

B.1.1.1 date of intended commencement of activity;

B.1.1.2 personal details and qualifications of the head of training (HT), the flight instructor(s), flight simulation training instructors and the theoretical knowledge instructor(s);

B.1.1.3 name(s) and address(es) of the aerodromes(s) and/or operating site(s) at which the training is to be conducted;

B.1.1.4 list of aircraft to be operated for training, including their group, class or type, registration, owners and category of the certificate of airworthiness, if applicable;

B.1.1.5 list of flight simulation training devices (FSTDs) that the training organisation intends to use, if applicable;

B.1.1.6 the type of training that the training organisation wishes to provide and the corresponding training programme; and

B.1.2 the operations and training manuals.

B.2 After consideration of the application the training organisation will be inspected to ensure that it meets the requirements set out in this Appendix. Subject to satisfactory inspection, approval of the ATO will be granted for a period of up to three years, revalidation of the approval may be granted for further periods of up to three years.

B.3 In the case of a change to the certificate, applicants shall provide the competent authority with the relevant parts of the information and documentation referred to in B.1.1.

C. PERSONNEL REQUIREMENTS

C.1 An HT shall be nominated. The HT shall have extensive experience as an instructor in the areas relevant for the training provided by the ATO and shall possess sound managerial capability.

C.2 The HT's responsibilities shall include:

C.2.1 ensuring that the training provided is in compliance with AUA-FCL and, the training programme have been established;

C.2.2 ensuring the satisfactory integration of flight training in an aircraft or a flight simulation training device (FSTD) and theoretical knowledge instruction; and

C.2.3 supervising the progress of individual students.

C.3 Theoretical knowledge instructors shall have:

C.3.1 practical background in aviation in the areas relevant for the training provided and have undergone a course of training in instructional techniques; or

C.3.2 previous experience in giving theoretical knowledge instruction and an appropriate theoretical background in the subject on which they will provide theoretical knowledge instruction.

C.4 Flight instructors and flight simulation training instructors shall hold the qualifications required by AUA-FCL for the type of training that they are providing.

C.5 The management structure shall ensure supervision of all grades of staff by persons having the experience and qualities necessary to ensure the maintenance of high standards. Details of the management structure, indicating individual responsibilities, shall be included in the training organisation's Operations Manual.

C.6 The training organisation shall satisfy the Authority that an adequate number of qualified, competent staff are employed. For ATO's providing integrated courses and associated ratings and certificates, three persons on the staff should be employed full time or part time in the following positions depending upon the scope of training offered:

C.6.1 Head of Training (HT);

C.6.2 Chief Flying Instructor (CFI);

C.6.3 Chief Theoretical Knowledge Instructor (CTKI).

In the case the ATO is offering either only modular training courses, or type-rating courses, these positions may be combined and filled by one or two persons, full time or part time, depending upon the scope of training offered. At least one person on the staff must be full time. At ATO's conducting theoretical knowledge instruction only, the positions of HT and CTKI may be combined.

C.7 The ratio of all students to flight instructors, excluding the HT, shall not normally exceed 6:1. Class numbers in ground subjects involving a high degree of supervision or practical work shall not normally exceed 28 students.

D. RECORD KEEPING

The following records shall be kept throughout the course and for a period of five years after the completion of the training:

D.1 details of ground, flight, and simulated flight training given to individual students;

D.2 detailed and regular progress reports from instructors including assessments, and regular progress flight tests and ground examinations; and

D.3 information on the licences and associated ratings and certificates of the students, including the expiry dates of medical certificates and ratings.

D.4 The format of the student training records shall be specified in the Training Manual.

D.5 The ATO shall submit training records and reports as required by the Authority.

E. TRAINING PROGRAMME

E.1 A training programme shall be developed for each type of course offered and shall be approved.

E.2 The training programme shall comply with the requirements of AUA-FCL (see GM1 FLC.1110).

F. TRAINING MANUAL AND OPERATIONS MANUAL

F.1 The ATO shall establish and maintain a training manual and operations manual containing information and instructions to enable personnel to perform their duties and to give guidance to students on how to comply with course requirements.

F.2 The ATO shall make available to staff and, where appropriate, to students the information contained in the training manual, the operations manual and the ATO's approval documentation. The amendment procedure shall be stated and amendments properly controlled.

F.3 The operations manual shall establish flight time limitation schemes for flight instructors, including the maximum flying hours, maximum flying duty hours and minimum rest time between instructional duties

G. TRAINING AIRCRAFT AND FSTDS

G.1 The ATO shall use an adequate fleet of training aircraft or FSTDs appropriately equipped for the training courses provided.

G.1.1 Only aircraft approved by the Authority for training purposes shall be used.

G.1.2 Each aircraft shall be fitted with duplicated primary flight controls for use by the instructor and the student. Swing-over flight controls shall not be acceptable. The fleet shall include, as appropriate to the courses of training, aeroplane(s) suitable for demonstrating stalling and spin avoidance and aeroplane(s) suitably equipped to simulate instrument meteorological conditions and suitably equipped for the instrument flight training required.

G.2 The ATO shall only provide training in FSTDs when it demonstrates to the competent authority:

G.2.1 the adequacy between the FSTD specifications and the related training programme;

G.2.2 that the FSTDs used comply with the relevant requirements of AUA-FCL;

G.2.3 in the case of full flight simulators (FFSs), that the FFS adequately represents the relevant type of aircraft; and

G.2.4 that it has put in place a system to adequately monitor changes to the FSTD and to ensure that those changes do not affect the adequacy of the training programme.

G.3 If the aircraft used for the skill test is of a different type to the FFS used for the visual flight training, the maximum credit shall be limited to that allocated for flight and navigation procedures trainer II (FNPT II) for aeroplanes and FNPT II/III for helicopters in the relevant flight training programme.

H. AERODROMES

H.1 When providing flight training on an aircraft, the ATO shall use aerodromes or operating sites that have the appropriate facilities and characteristics to allow training of the manoeuvres relevant, taking into account the training provided and the category and type of aircraft used. The base aerodrome, and any alternative base aerodrome, at which flying training is being conducted shall have at least the following facilities:

H.1.1 at least one runway or take-off area that allows training aircraft to make a normal take-off or landing at the maximum take-off or maximum landing mass authorised, as appropriate,

H.1.1.1 clearing all obstacles in the take-off flight path by at least 50 feet,

H.1.1.2 with the powerplant operation and the landing gear and flap operation (if applicable) recommended by the manufacturer, and

H.1.1.3 with a smooth transition from lift-off to the best rate of climb speed without exceptional piloting skills or techniques;

H.1.2 a wind direction indicator that is visible at ground level from the ends of each runway;

H.1.3 adequate runway electrical lighting if used for night training; and

H.1.4 an air traffic control service except where, with the approval of the Authority, the training requirements may be satisfied safely by another means of air/ground communications.

I. PRE-REQUISITES TRAINING

I.1 The ATO shall ensure that the students meet all the pre-requisites for training established in AUA-MED and AUA-FCL and shall meet the entrance requirements set by the ATO, as approved by the Authority.

I.2 The ATOs shall be responsible for ensuring that trainees meet at least the pre-requisite conditions for type rating training as set out in AUA-FCL.

J. FINANCIAL RESOURCES

J.1 A training organisation shall satisfy the Authority that sufficient funding is available to conduct training to the approved standards (see GM 1 to AUA-FCL 1100).

J.2 A training organisation shall nominate a person acceptable to the Authority who shall satisfy the Authority that sufficient funding is available to conduct training to the approved standard. Such person shall be known as the accountable manager.

K. FLIGHT OPERATIONS ACCOMMODATION FOR ATO's

K.1 The following accommodation shall be available for ATO's

K.1.1 An operations room with facilities to control flying operations.

K.1.2 A flight planning room with the following facilities:

K.1.2.1 appropriate current maps and charts;

K.1.2.2 current AIS information;

K.1.2.3 current meteorological information;

K.1.2.4 communications to ATC and the operations room;

K.1.2.5 maps showing standard cross-country routes;

K.1.2.6 maps showing current prohibited, danger and restricted areas;

K.1.2.7 any other flight safety related material.

K.1.3 Adequate facilities including:

K.1.3.1 briefing rooms/cubicles of sufficient size and number;

K.1.3.2 Suitable offices for the supervisory staff and room(s) to allow flying instructors to write reports on students, complete records, etc;

K.1.3.3 Furnished crew-room(s) for instructors and students.

K.2 For ATO's providing training for SPL and PPL only, a single room may be sufficient to provide the functions listed in 2 and 3 above plus function as classroom accommodation for theoretical training.

L. THEORETICAL KNOWLEDGE INSTRUCTION FACILITIES

The following facilities for theoretical knowledge instruction shall be available:

L.1 Adequate classroom accommodation for the current student population;

L.2 Suitable demonstration equipment to support the theoretical knowledge instruction;

L.3 An R/T training and testing facility for ATO;

L.4 A reference library containing publications giving coverage of the syllabus;

L.5 Offices for the instructional staff.

SECTION 2 – ADDITIONAL REQUIREMENTS FOR ATOS PROVIDING TRAINING FOR CPL, MPL AND ATPL AND THE ASSOCIATED RATINGS AND CERTIFICATES

M. PERSONNEL REQUIREMENTS

M.1 Head of training (HT).

M.1.1 The nominated HT shall have extensive experience in training as an instructor for professional pilot licences and associated ratings or certificates.

M.1.2 The HT shall hold or have held in the three years prior to first appointment as a HT, a professional pilot licence and rating(s) issued in accordance with ICAO Annex 1, related to the flying training courses conducted.

M.2 Chief flying instructor (CFI)

The ATO providing flight instruction shall nominate a CFI who shall be responsible for the supervision of flight and flight simulation training instructors and for the standardisation of all flight instruction and flight simulation instruction. The CFI shall:

M.2.1 hold the highest professional pilot licence and associated ratings related to the flight training courses conducted;

M.2.2 hold an t instructor certificate with the privilege to instruct at least one training courses provided.

M.3 Chief theoretical knowledge instructor (CTKI for ATO)

The ATO providing theoretical knowledge instruction shall nominate a CTKI who shall be responsible for the supervision of all theoretical knowledge instructors and for the standardisation of all theoretical knowledge instruction. The CTKI shall have a practical background in aviation and have undergone a course of training in instructional techniques or have had extensive previous experience in giving theoretical knowledge instruction in the areas relevant or the training provided by the ATO.

M.4 Instructors, other than synthetic flight instructors

Instructors shall hold:

M.4.1 a professional pilot licence and rating(s) related to the flying training courses they are appointed to conduct;

M.4.2 an instructor rating relevant to the part of the course being conducted e.g. instrument rating instructor, flight instructor, type/class rating instructor, as appropriate; or

M.4.3 an authorisation from the Authority to conduct specific training in an ATO.

M.5 Instructors for synthetic flight training

For flight training duties on a FTD and a FNPT I, instructors shall hold or have held a professional pilot licence for 3 years prior to the first appointment appropriate to the training courses they are appointed to conduct, and have had instructional training experience. For flight training duties on a flight simulator and/or FNPT II, instructors shall hold a FI(A), TRI(A) or CRI(A) rating or a SFI(A) or STI (A) or MCCI(A) authorisation relevant to the course the instructor is conducting.

M.6 Theoretical knowledge instructors

Theoretical Knowledge Instructors in licence and ratings examination subjects shall have appropriate experience in aviation and shall, before appointment, give proof of their competency by giving a test lecture based on material they have developed for the subjects they are to teach.

N. TRAINING MANUAL AND OPERATIONS MANUAL

N.1 The Training Manuals for ATO' providing training for CPL, MPL and ATPL, shall state the standards, objectives and training goals for each phase of training that the students are required to comply with and shall address the following subjects:

N.1.1 Part 1 – The Training Plan

N.1.2 Part 2 – Briefing and Air Exercises

N.1.3 Part 3 – Synthetic Flight Training

N.1.4 Part 4 – Theoretical Knowledge Instruction

For further guidance see AMC to Subpart M.

N.2 The Operations Manual shall provide relevant information to particular groups of personnel, e.g. FIs, SFI, TRI, TRE, theoretical knowledge instructors, operations and maintenance staff, etc., and shall include the following information:

N.2.1 General

N.2.2 Technical

N.2.3 Route

N.2.4 Staff Training

APPENDIX 12 - ADDITIONAL REQUIREMENTS FOR FOREIGN TRAINING ORGANISATIONS

A. RECOGNITION APPROVAL PROCESS FOR ATO's APPROVED BY EASA MEMBER STATES OR UKCAA

A.1 ATOs who have a current and valid approval certificate issued in an EASA Member state or that have been approved by the UK CAA after 1 January 2021, wishing to train for AUA-FCL licences and associated ratings shall apply for approval of such courses to the Authority. Approval will be subject to the following:

A.1.1 The ATO shall meet the requirements of Subpart M; and

A.1.2 The ATO shall submit to the DCA an application form and all relevant supporting documents requested by the Authority including all approval documents from the original Approval State.

B. APPROVAL PROCESS FOR OTHER FOREIGN TRAINING ORGANISATIONS

B.2 ATOs whose principal place of business and registered office are located outside of Aruba or an EASA Member State, wishing to train for AUA-FCL licences and associated ratings shall apply for approval of such courses to the Authority. Approval will be subject to the following:

B.2.1 The ATO shall meet the requirements of Subpart M; and

B.2.2 The Authority can ensure adequate jurisdiction over the ATO during the approval process and the conduct of subsequent training courses ; and

B.2.3 The State in which the ATO has its principal place of business and registered office may assist the Authority in the approval process and provide oversight of training courses subject to an arrangement being agreed between the two States.

B.2 Subject to satisfactory inspection, the approval of the ATO will be granted for a period of maximum three years, revalidation of the approval may be granted for further periods of three years .

C. JURISDICTION

C.1 In the context of approval of ATOs located outside of Aruba or an EASA Member State, the term ‘adequate jurisdiction’ shall mean that the Authority shall be able to:

C.1.1 conduct initial and routine inspections of the ATO located in that State to ensure compliance with the requirements of AUA-FCL; and

C.1.2 conduct flight tests and other standardisation checks as deemed necessary by the approving Authority; and

C.1.3 discharge its legal responsibilities for the grant, variation, suspension or revocation of approvals in accordance with the applicable law of Aruba.

C.2 The Authority may, subject to an arrangement with the State in which the ATO has its principal place of business and registered office, delegate responsibility for the provisions of paragraph (C.1.1) above to that State.

D. ATOs TRAINING FOR THE PPL(A) AND ASSOCIATED RATINGS ONLY

D.1 Provided that the requirements of this Appendix are met, approval to conduct courses for the PPL(A) and associated ratings may be granted if the Authority considers adequate supervision in accordance with Authority procedures to be possible.

D.2 Training aeroplanes, airfields and navigation training routes used for PPL training shall be acceptable to the Authority.

D.3 On completion of the required training the PPL(A) skill test may be taken by a locally-based FE(A) authorised by the Authority provided that the examiner has taken no part in the student’s flight instruction.

D.4 The Training and Operations Manuals required by Subpart M and Appendix 11 may, for ATOs conducting training for the PPL(A) and associated ratings only, be combined and contain only those references relevant to training for the PPL(A).

E. THEORETICAL KNOWLEDGE

E.1 Training for theoretical knowledge may be given at an ATO conducting approved training outside of Aruba. The theoretical knowledge examinations for licence or rating issue shall be approved by the Authority.

F. SPECIFIC AUTHORISATION FOR INSTRUCTORS NOT HOLDING AN AUA-FCL LICENCE

F.1 Instructors seeking to instruct for an AUA-FCL licence including class and instrument ratings shall:

F.1.1 hold at least a CPL and ratings issued in accordance with ICAO Annex I required by the that State for the instruction to be given on aircraft registered in that State;

F.1.2 have completed at least 500 hours of flight time as a pilot of aeroplanes of which at least 200 hours shall be as a flight instructor, including experience in the role of instruction to be given, and meet the experience requirements of Subpart J;

F.1.3 have completed in accordance with AUA-FCL the approved relevant course(s) of theoretical instruction and flight training (or an equivalent course). The course may be modified, as approved by the Authority, taking into account the previous training and the experience of the applicant;

F.1.4 have passed the skill test set out in Subpart J;

F.1.5 have a validity period of the authorisation is at the discretion of the Authority but not exceeding 3 years;

F.1.6 revalidate or renew any authorisation issued in accordance with paragrph F.1.1 to F.1.4 above shall be in accordance with Subpart J.

F.2 The authorisation will be restricted as follows:

F.2.1 no instruction for the issue of any instructor ratings;

F.2.2 no instruction within Aruba;

F.2.3 instruction to students only who have sufficient knowledge of the language in which the instruction is given;

F.2.4 to those parts of the ATP integrated course where the instructor can demonstrate the experience relevant to the intended training according to paragraph F1.3;

F.2.5 no instruction for MCC training as defined in Subpart H.

F.3 Instructors seeking to instruct for an AUA-FCL type rating shall:

F.3.1 hold at least the licence and ratings issued in accordance with ICAO Annex I required by the respective State for the instruction to be given on aircraft registered in that State;

F.3.2 comply with the experience requirements of AUA-FCL in order to act as TRI (A) or as SFI(A);

F.3.3 have completed as a type rating instructor (TRI(A) or equivalent) at least 100 hours of flight or simulator instruction time;

F.3.4 validity period of the authorisation is at the discretion of the Authority but not exceeding 3 years;

F.3.5 have complied with the revalidation requirements of AUA-FCL acting as TRI(A) or as SFI(A), as applicable.

F.4 The authorisation will be restricted as follows:

F.4.1 no instruction for the issue of any instructor ratings;

F.4.2 no instruction within Aruba;

F.4.3 instruction to students only who have sufficient knowledge of the language in which the instruction is given;

F.4.4 no instruction for MCC training as defined in Subpart H unless specifically authorized by the authority.

APPENDIX 13 - REQUIREMENTS FOR THE VALIDATION OF A LICENCE

A. Requirements

A.1 The minimum requirements for the validation of a PPL/CPL/MPL/ATPL /FE issued by an ICAO Contracting State are:

(see FCL.075)

A.1.1 For all Validations :

A.1.1.1 the applicant shall hold a current licence issued in accordance with ICAO Annex 1;

A.1.1.2 the applicant shall hold the appropriate valid medical certificate issued by the State of licence issue;

A.1.1.3 the applicant shall demonstrate to the satisfaction of the Authority, the Type and/or Class rating revalidation requirements;

A.1.1.4 the applicant shall demonstrate, or hold, a knowledge of English in accordance with FCL.055, or submit a proof of English Language proficiency acceptable to the Authority;

A.1.1.5 the applicant shall hold R/T privileges acceptable to the Authority; and

A.1.1.6 Any other requirement stated by the Authority.

A.1.2 A PPL Validation shall only be issued to applicants that:

A.1.2.1 are registered as owner of the aircraft to be flown; or

A.1.2.2 will be flying an aircraft based in Aruba.

A.1.3 Additional requirements for applicants of a CPL or ATPL involved in Commercial Air Transportation in aeroplanes if the National Licence held is not issued by EASA or UK CAA[†]:

[†] Applicable as of 1 January 2021.

A.1.3.1 Comply with the experience requirement set out in the following table if applicant did not complete an ab-initio or MPL program at a DCA acceptable ATO.

Min. National Licence Held	Total flying hours experience	Validation conditions
(1)	**(2)**	**(3)**
ATPL(A)	>1 000 hours as PIC on multi-pilot aeroplanes **Note:** 50 % of SIC time may be accounted as PIC	ATPL: Commercial air transport in multi-pilot aeroplanes as PIC
CPL(A)/IR*	>500 hours as PIC or co-pilot on aeroplanes	CPL: Commercial air transport in multi-pilot aeroplanes as co-pilot
CPL(A)/IR	>500 hours as PIC in commercial air transport since gaining an IR	Commercial air transport in single-pilot aeroplanes as PIC
CPL(A)/IR	>500 hours as PIC or as co-pilot in single-pilot aeroplanes according to operational requirements	Commercial air transport in single-pilot aeroplanes as co-pilot according to AUA–OPS

A.1.3.2 Applicants employed by an Aruban AOC holder shall have :

A.1.3.2.1 passed the English assessment to comply with A 1.1.4 directly at a DCA acceptable organisation or English Proctor;

A.1.3.2.2 Successfully completed the operator proficiency check.

A.1.4 Additional requirements for applicants involved in Commercial Air Transportation in helicopters:

A.1.4.1 Comply with the experience requirement set out in the following table;

A.1.4.2 Applicants employed by an Aruban AOC holder shall have :

A.1.4.2.1 passed the English assessment to comply with 1.(d) directly at a DCA acceptable organisation or English Proctor;

A.1.4.2.2 Successfully completed the operator training and proficiency check.

MIN. NATIONAL LICENCE HELD	TOTAL FLYING HOURS EXPERIENCE	VALIDATION CONDITIONS
(1)	(2)	(3)
ATPL(H) valid IR(H)	> 1 000 as PIC on multi-pilot helicopters	ATPL(H) and IR
ATPL(H) no IR(H) Privileges	> 1 000 as PIC on multi-pilot helicopters	ATPL(H)
ATPL(H) valid IR(H)	> 500 on multi- pilot helicopters	ATPL(H), and IR with type rating restricted to co- pilot
ATPL(H) no IR(H) Privileges	> 500on multi- pilot helicopters	ATPL(H) type rating restricted to co- pilot
CPL/IR(H)	> 500 hrs on multi-pilot helicopters	CPL/IR(H) as co-pilot
CPL/IR(H)	> 500 as PIC on single-pilot helicopters	CPL/IR(H) with type ratings restricted to single- pilot helicopters
CPL(H)	> 500 as PIC on single-pilot helicopters	CPL(H), with type ratings restricted to single-pilot helicopters and restricted to day VFR operations

APPENDIX 14 - FRAMEWORK FOR A SAFETY MANAGEMENT SYSTEM (SMS)

A. SMS Implementation

Note. *— Guidance on the implementation of the framework for an SMS and for the acceptance by the authority of the SMS, is contained in the Safety Management Manual (SMM) (Doc 9859).*

This Appendix specifies the framework for the implementation and maintenance of an Safety Management system (SMS). The framework comprises four components and twelve elements as the minimum requirements for SMS implementation:

A.1 Safety policy and objectives

A.1.1 Management commitment

The organisation shall define its safety policy which shall:

A.1.1.1 reflect organisational commitment regarding safety, including the promotion of a positive safety culture;

A.1.1.2 include a clear statement about the provision of the necessary resources for the implementation of the safety policy;

A.1.1.3 include safety reporting procedures;

A.1.1.4 clearly indicate which types of behaviours are unacceptable related to the organisation's aviation activities and include the circumstances under which disciplinary action would not apply;

A.1.1.5 be signed by the accountable executive of the organisation;

A.1.1.6 be communicated, with visible endorsement, throughout the organisation; and

A.1.1.7 be periodically reviewed to ensure it remains relevant and appropriate to the organisation.

A.1.2 Taking due account of its safety policy, the organisation shall define safety objectives. The safety objectives shall:

A.1.2.2 form the basis for safety performance monitoring and measurement;

A.1.2.3 reflect the organisation's commitment to maintain or continuously improve the overall effectiveness of the SMS;

A.1.2.4 be communicated throughout the organisation; and

A.1.2.5 be periodically reviewed to ensure they remain relevant and appropriate to the organisation.

A.2 Safety accountability and responsibilities

A.2.1 The organisation shall:

A.2.1.1 identify the accountable executive who, irrespective of other functions, is accountable on behalf of the organisation for the implementation and maintenance of an effective SMS;

A.2.1.2 clearly define lines of safety accountability throughout the organisation, including a direct accountability for safety on the part of senior management;

A.2.1.3 identify the responsibilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the organisation;

A.2.1.4 document and communicate safety accountability, responsibilities and authorities throughout the organisation; and

A.2.1.5 define the levels of management with authority to make decisions regarding safety risk tolerability.

A.2.1.6 define the responsibilities with respect to external interfaces.

A.3 Appointment of key safety personnel

The organisation shall appoint a safety manager who is responsible for the implementation and maintenance of the SMS. The safety manager is allowed to fulfil other role(s) within the organization provided these do not cause a conflict of interest.

A.4 Coordination of emergency response planning

The organisations, that provide or have aircraft operations, shall be required to establish and maintain an emergency response plan for accidents and incidents in aircraft operations and other aviation emergencies and shall ensure that the emergency response plan is properly coordinated with the emergency response plans of those organisations it must interface with during the provision of services.

A.5 SMS documentation

A.5.1 The organisation shall develop and maintain an SMS manual that describes its:

A.5.1.1 safety policy and objectives;

A.5.1.2 SMS requirements;

A.5.1.3 SMS processes and procedures; and

A.5.1.4 accountability, responsibilities and authorities for SMS processes and procedures.

A.5.1.5 SMS implementation plan (prior to full implementation of their SMS or major changes to the SMS)

A.5.2 The organisation shall develop and maintain SMS operational records as part of its SMS documentation.

Note.— *Depending on the size of the organisation and the complexity of its aviation services, the SMS manual and SMS operational records may be in the form of stand-alone documents or may be integrated with other organisational documents (or documentation) maintained by the organisation.*

B. Safety risk management

B.1 Hazard identification

B.1.1 The organisation shall develop and maintain a process to identify hazards associated with its aviation services;

B.1.2 Hazard identification shall be based on a combination of reactive and proactive methods.

B.2 Safety risk assessment and mitigation

The organisation shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

Note.— *The process may include predictive methods of safety data analysis.*

C. Safety assurance

C.1 Safety performance monitoring and measurement

C.1.1 The organisation shall develop and maintain the means to verify the safety performance of the organisation and to validate the effectiveness of safety risk controls;

Note.— *An internal audit process is one means to monitor compliance with safety regulations, the foundation upon which SMS is built, and assess the effectiveness of these safety risk controls and the SMS.*

C.1.2 The organisation's safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS in support of the organisation's safety objectives.

Note.— *The organisation shall submit to the Authority safety performance reports in the predetermined intervals as agreed with the Authority.*

C.2 The management of change

The organisation shall develop and maintain a process to identify changes which may affect the level of safety risk associated with its aviation services and to identify and manage the safety risks that may arise from those changes.

C.3 Continuous improvement of the SMS

The organisation shall monitor and assess its SMS processes to maintain or continuously improve the overall effectiveness of the SMS.

D. Safety promotion

D.1 Training and education

D.1.1 The organisation shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform their SMS duties;

D.1.2 The scope of the safety training programme shall be appropriate to each individual's involvement in the SMS.

D.2 Safety communication

The organisation shall develop and maintain a formal means for safety communication that:

D.2.1 ensures personnel are aware of the SMS to a degree commensurate with their positions;

D.2.2 conveys safety-critical information;

D.2.3 explains why particular actions are taken to improve safety; and

D.2.4 explains why safety procedures are introduced or changed.