

Annex I to ED Decision 2020/005/R
AMC and GM to Part-FCL — Issue 1, Amendment 9

The Annex to ED Decision 2011/016/R of 15 December 2011 is hereby amended as follows:

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

- (a) deleted text is ~~struck through~~;
- (b) new or amended text is highlighted in **blue**; and
- (c) an ellipsis '[...]' indicates that the remaining text is unchanged.

SUBPART A — GENERAL REQUIREMENTS

GM1 FCL.005 Scope

INTERPRETATIVE MATERIAL

[...]

- (c) Whenever ~~'or' is used as~~ an inclusive or exclusive 'or' is used, it should be understood ~~in the sense of 'and/or'~~ within the context of the whole meaning of the requirement in which it is used.

GM1 FCL.010 Definitions

ABBREVIATIONS

[...]

AOH Aircraft Operating Handbook

[...]

CDFA Constant-Descent Final Approach

[...]

CFI Chief Flying Flight Instructor

[...]

~~CGI Chief Ground Instructor~~

[...]

DVE Degraded Visual Environment

[...]

ERPM Engine Revolutions Per Minute

[...]

IOS Instructor Operating Station

[...]

POM Pilot Operating Manual

[...]

QDM Magnetic Heading (aircraft to station)

QDR Magnetic Heading (station to aircraft)

[...]

RAIM Receiver Autonomous Integrity Monitoring

[...]

RPM Revolutions Per Minute

RRPM Rotor Revolutions Per Minute

[...]

VOLMET Meteorological Information for Aircraft in-Flight

[...]

GM5 FCL.010 Definitions

AVAILABLE AND ACCESSIBLE FSTDs

(a) To determine the availability of an FSTD, the following additional criteria should be taken into account.

The FSTD should be:

- (1) certified by a competent authority within the scope of the Basic Regulation;
- (2) approved by the competent authority for use within the scope of the Basic Regulation;
- (3) representative of the operator's or applicant's aircraft class or type, and serviceable; and
- (4) representative of the configuration of the operator's or applicant's aircraft.

(b) To determine the accessibility of an FSTD, the following additional criteria should be taken into account.

The FSTD should be:

- (1) accessible to the instructor or examiner of the applicant;
- (2) accessible for use within the scope of the candidate's/operator's training and checking activities; and
- (3) accessible to allow normal programming and prevent excessive scheduling disruptions within the operator's crew roster patterns.

(c) 'irrespective of any time considerations' means that the FSTD may be used at any time during day or night.

(d) If an FSTD is not available or accessible, mitigating measures to ensure the required level of safety should be agreed with the competent authority before testing or checking the applicant in an aircraft.

AMC1 GM1 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, which covers one subject required by the licence level or rating, 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 competent 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.

AMC1 FCL.050 Recording of flight time

GENERAL

[...]

- (c) Format of the record:

- (1) details of flights flown under commercial air transport may be recorded in an **electronic** ~~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 flights **in aeroplanes, helicopters and powered-lift aircraft**, the pilot should record the details of the flights flown in the following logbook format, **which may be kept in electronic format. All data set out in (a) should be included.**

- (3) For sailplanes ~~and~~, balloons **and airships**, a suitable format, **which may be electronic**, should be used. **That format should** contain the relevant items mentioned in (a) and additional information specific to the type of operation.

[...]

INSTRUCTIONS FOR USE

[...]

- (e) Flight crew logbook entries should be made as soon as practicable after any flight undertaken. All entries in the **flight crew** logbook should ~~be made~~ **comply with the following:**

- (1) **in case of paper records, they should be made** in ink or indelible pencil; **or**

- (2) **in case of electronic records, they should be made and kept in a way to be readily available at the request of a competent authority, and contain all relevant items that are mentioned in (a), certified by the pilot, and in a format acceptable by the competent authority.**

[...]

AMC1 FCL.055 Language proficiency

GENERAL

- (a) The **method of assessment of the language proficiency level** (hereinafter: **assessment**) ~~assessment~~ should be designed to reflect a range of tasks undertaken by pilots but with specific focus on language rather than operational procedures.

[...]

ASSESSMENT

[...]

- (h) The competent authority may use its own resources in developing or conducting the language proficiency assessment, or may delegate this task to language **testing** ~~assessment~~ bodies.

[...]

BASIC ASSESSMENT REQUIREMENTS

- (l) 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.

[...]

- (2) The assessment should include:

- (i) voice-only ~~or~~ **and** face-to-face situations;

[...]

~~(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

[...]

CRITERIA FOR THE ACCEPTABILITY OF LANGUAGE **TESTING** ~~ASSESSMENT~~ BODIES

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

- (1) To be accepted, the language-**testing** ~~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-**testing** ~~assessment~~ body should address the following:

[...]

SUBPART B — LIGHT AIRCRAFT PILOT LICENCE — LAPL

AMC1 FCL.115.110.A LAPL(A) ~~Experience requirements and crediting~~ Training course

FLIGHT INSTRUCTION FOR THE LAPL (A)

[...]

(b)

[...]

- (2) Before allowing ~~the~~ applicants to undertake ~~his/her~~ their first solo flight, the FI should ensure that the applicants can use R/T communication and can operate the required systems and equipment.

[...]

AMC1 FCL.115.110.A LAPL(A) ~~Experience requirements and crediting~~ Training course

CREDITING: PRE-ENTRY FLIGHT TEST

The pre-entry flight test referred to in FCL.110.A(c) should cover the total content of the syllabus of flight instruction for the issuance of the LAPL(A), in accordance with ~~AMC1 FCL.110.A~~ AMC1 FCL.115.

AMC1 FCL.115; FCL.120 LAPL training course and theoretical knowledge examination

SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE LAPL

[...]

- (b) The following tables contain the syllabi for the courses of theoretical knowledge, as well as for the theoretical knowledge examinations for the LAPL(B) and LAPL(S). The syllabi for the theoretical knowledge instruction and examination for the PPL(A) and PPL(H) in AMC1 FCL.210 ~~and~~ FCL.215 should be used for the LAPL(A) and the LAPL(H), respectively.

[...]

AMC1 FCL.105.A(b)(2) Privileges and conditions

In the case of previous MPL(A) holders, only those who extended their MPL(A) to include CPL privileges or PPL privileges in accordance with point FCL.405.A(b) may benefit from the exemption of point FCL.105.A(b)(2).

AMC1 FCL.140.A; FCL.140.S; FCL.740.A(b)(1)(ii) Recency and revalidation requirements

All hours flown on aeroplanes or sailplanes that are subject to a decision as per Article 2(8) of the Basic Regulation or that are specified in Annex I to the Basic Regulation should count in full towards fulfilling the hourly requirements of points FCL.140.A, FCL.140.S, and FCL.740.A(b)(1)(ii) under the following conditions:

- (a) the aircraft matches the definition and criteria of the respective Part-FCL aircraft category, class, and type ratings; and
- (b) the aircraft that is used for training flights with an instructor is an Annex-I aircraft of type (a), (b), (c), or (d) that is subject to an authorisation specified in points ORA.ATO.135 or DTO.GEN.240.

AMC1 FCL.140.A; FCL.140.H; FCL.140.S; FCL.140.B Recency requirements

Training flight items should be based on the exercise items of the proficiency check, as deemed relevant by the instructor, and depending on the experience of the candidate. For aeroplanes and helicopters, the briefing should include a discussion on TEM with special emphasis on decision-making when encountering adverse meteorological conditions or unintentional IMC, as well as on navigation flight capabilities. For sailplanes and balloons, the discussion should place special emphasis on principal occurrence categories of the activity that is covered by the licence.

AMC1 FCL.140.A(b)(1) LAPL(A) Recency requirements

The proficiency check should follow the content of the skill test that is set out in AMC1 FCL.125, point (e).

AMC21 FCL.115 ~~110.H~~ – LAPL(H) ~~Experience requirements and crediting~~ Training course

FLIGHT INSTRUCTION FOR THE LAPL(H)

[...]

(b)

[...]

- (2) Before allowing ~~the~~ applicants to undertake ~~his/her~~ their first solo flight, the FI should ensure that the applicants can use R/T communication and can operate the required systems and equipment.

(c) [...]

(2) [...]

(i)

[...]

(xxx) Exercise 22b: Navigation problems at low heights and in reduced visibility:

- (A) actions before descending;
- (B) hazards (for example obstacles and other aircraft);
- (C) difficulties ~~in~~ map reading;
- (D) effects of wind and turbulence;
- (E) avoidance of noise-sensitive areas;

- (F) ~~joining the circuit~~ actions in case of DVE;
- (G) decision to divert or make a precautionary landing;
- (H) bad-weather circuit and landing;
- (I) appropriate procedures and choice of landing area;
- (J) precautionary landing.
- ~~(G) bad weather circuit and landing;~~
- ~~(H) appropriate procedures and choice of landing area for precautionary landings.~~

[...]

AMC21 FCL.110.H LAPL(H) Experience requirements and crediting

CREDITING: PRE-ENTRY FLIGHT TEST

The pre-entry flight test referred to in FCL.110.H(b) should cover the total content of the syllabus of flight instruction for the issuance of the LAPL(H), in accordance with ~~AMC1 FCL.110.H~~ AMC2 FCL.115.

AMC1 FCL.140.H(b)(1) LAPL(H) Recency requirements

The proficiency check should follow the content of the skill test that is set out in AMC2 FCL.125, point (e).

AMC1 FCL.140.S(c)(1) LAPL(S) Recency requirements

The proficiency check should follow the content of the skill test that is set out in AMC1 FCL.125; FCL.235, point (d).

AMC1 FCL.140.B(b)(1) LAPL(B) Recency requirements

The proficiency check should follow the content of the skill test that is set out in AMC2 FCL.125; FCL.235, point (d).

SUBPART C — PRIVATE PILOT LICENCE (PPL), SAILPLANE PILOT LICENCE (SPL) AND BALLOON PILOT LICENCE (BPL)

AMC1 FCL.210; FCL.215 Training course and theoretical knowledge examination

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

[...]

[...]				
2.	HUMAN PERFORMANCE			

	[...]				
	Human overload and underload				
	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				
	[...]				
	Effects of convergence and divergence				
	General global circulation				
	General circulation around the globe	x		x	
	Local winds				
	Anabatic and katabatic winds, mountain and valley winds, Venturi effects, land and sea breezes	x		x	
	Mountain waves (standing waves, lee waves)				
	Origin and characteristics	x		x	
	Turbulence				
	Description and types of turbulence	x		x	
	Formation and location of turbulence	x		x	
	THERMODYNAMICS				
	Humidity				
	Water vapour in the atmosphere	x		x	
	Mixing ratio	x		x	
	Temperature/dew point, relative humidity	x		x	
	Change of state of aggregation				
	Condensation, evaporation, sublimation, freezing and melting, latent heat	x		x	
	Adiabatic processes				

Adiabatic processes, stability of the atmosphere	x		x	
CLOUDS AND FOG				
Cloud formation and description				
Cooling by adiabatic expansion and by advection	x		x	
Cloud types and cloud classification	x		x	
Influence of inversions on cloud development	x		x	
Fog, mist, haze				
General aspects	x		x	
Radiation fog	x		x	
Advection fog	x		x	
Steaming fog	x		x	
Frontal fog	x		x	
Orographic fog (hill fog)	x		x	
PRECIPITATION				
Development of precipitation				
Processes of development of precipitation	x		x	
Types of precipitation				
Types of precipitation, relationship with cloud types	x		x	
AIR MASSES AND FRONTS				
Air masses				
Description, classification and source regions of air masses	x		x	
Modifications of air masses	x		x	
Fronts				
General aspects	x		x	
Warm front, associated clouds, and weather	x		x	
Cold front, associated clouds, and weather	x		x	
Warm sector, associated clouds, and weather	x		x	
Weather behind the cold front	x		x	
Occlusions, associated clouds, and weather	x		x	
Stationary front, associated clouds, and weather	x		x	
Movement of fronts and pressure systems, life cycle	x		x	
Changes of meteorological elements at a frontal wave	x		x	
PRESSURE SYSTEMS				
Anticyclone				

Anticyclones, types, general properties, cold and warm anticyclones, ridges and wedges, subsidence	x		x	
Non-frontal depressions				
Thermal, orographic and polar depressions, troughs	x		x	
CLIMATOLOGY				
Climatic zones				
General seasonal circulation in the troposphere	x		x	
Typical weather situations in the mid-latitudes				
Westerly situation	x		x	
High-pressure area	x		x	
Flat-pressure pattern	x		x	
Local winds and associated weather				
e.g. <i>Foehn</i>	x		x	
FLIGHT HAZARDS				
Icing				
Conditions for ice accretion	x		x	
Types of ice accretion	x		x	
Hazards of ice accretion, avoidance	x		x	
Turbulence				
Effects on flight, avoidance	x		x	
Wind shear				
Definition of wind shear	x		x	
Weather conditions for wind shear	x		x	
Effects on flight, avoidance	x		x	
Thunderstorms				
Conditions for, and process of, development, forecast, location, type specification	x		x	
Structure of thunderstorms, life cycle, squall lines, electricity in the atmosphere, static charges	x		x	
Electrical discharges	x		x	
Development and effects of downbursts	x		x	
Thunderstorm avoidance	x		x	
Inversions				
Influence on aircraft performance	x		x	
Hazards in mountainous areas				

	Influence of terrain on clouds and precipitation, frontal passage	x		x	
	Vertical movements, mountain waves, wind shear, turbulence, ice accretion	x		x	
	Development and effect of valley inversions	x		x	
	Visibility-reducing phenomena				
	Reduction of visibility caused by precipitation and obscuration	x		x	
	Reduction of visibility caused by other phenomena	x		x	
	METEOROLOGICAL INFORMATION				
	Observation				
	Surface observations	x		x	
	Radiosonde observations	x		x	
	Satellite observations	x		x	
	Weather radar observations	x		x	
	Aircraft observations and reporting	x		x	
	Weather charts				
	Significant weather charts	x		x	
	Surface charts	x		x	
	Information for flight planning				
	Aviation weather messages	x		x	
	Meteorological broadcasts for aviation	x		x	
	Use of meteorological documents	x		x	
	Meteorological warnings	x		x	
	Meteorological services				
	World area forecast system (WAFS) and meteorological offices	x		x	
[...]					
		Aeroplane		Helicopter	
		PPL	Bridge course	PPL	Bridge course
7.	FLIGHT PERFORMANCE AND PLANNING				
[...]					
9.	NAVIGATION				
[...]					

	Navigation in cruising flight, use of fixes to revise navigation data Navigation in cruising flight, use of fixes to revise navigation data				
[...]					
	Flight log Flight log	X		X	
[...]					

AMC3 FCL.210; FCL.215 Training course and theoretical knowledge examination

SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE BPL AND SPL

The syllabi for the theoretical knowledge instruction and examination for the LAPL(B) and LAPL(S) in ~~AMC1 FCL.115 and FCL.120~~ AMC1 FCL.115; FCL.120 should be used for the BPL and SPL, respectively.

AMC1 FCL.210.A-PPL(A) ~~Experience requirements and crediting~~ Training course

FLIGHT INSTRUCTION FOR THE PPL(A)

[...]

(b)

[...]

- (2) Before allowing ~~the~~ applicants for a PPL(A) to undertake ~~his/her~~ their first solo flight, the FI should ensure that the applicants can use R/T communication and can operate the required systems and equipment.

[...]

AMC12 FCL.210.H-PPL(H) ~~Experience requirements and crediting~~ Training course

FLIGHT INSTRUCTION FOR THE PPL(H)

[...]

(c)

[...]

- (2) Before allowing ~~the~~ applicants for a PPL(H) to undertake ~~his/her~~ their first solo flight, the FI should ensure that the applicants can use R/T communication and can operate the required systems and equipment.

[...]

(d)

[...]

(2)

[...]

~~(xxxviii) 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.).~~

~~(xxxix) 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.)~~

AMC1 FCL.225.B BPL Extension of privileges to another balloon class or group

[...]

- (e) The ~~ATO or the~~ ATO or DTO should issue a certificate of satisfactory completion of the instruction, as required by point FCL.225.B(a) for ~~to~~ licence endorsement.

AMC1 FCL.230.B(c)(1) BPL Recency requirements

The proficiency check should follow the content of the skill test that is set out in AMC2 FCL.125; FCL.235, point (d).

SUBPART F — AIRLINE TRANSPORT PILOT LICENCE — ATPL

~~AMC1 FCL.510.A(b)(1) ATPL(A) — Prerequisites, experience and crediting~~

~~Equivalent requirements for CS-25 and CS-23 commuter category are the JAR/FAR25 transport category, JAR/FAR-23 commuter category, or BCAR or AIR 2051.~~

SUBPART H — CLASS AND TYPE RATINGS

AMC1 FCL.700 Circumstances in which class or type ratings are required

- (a) A class or type rating and license endorsement should comply with the class and type ratings that are listed in one of the following EASA publications, as applicable:

(1) 'List of Aeroplanes — Class and Type Ratings and Endorsement List'; and

(2) 'List of Helicopters — Type Ratings List'.

(b) Holders of Part-FCL licences should complete differences training or familiarisation training in accordance with the lists of point (a).

AMC1 FCL.725(a) Requirements for the issue of class and type ratings

SYLLABUS OF THEORETICAL KNOWLEDGE FOR CLASS OR TYPE RATINGS

I. SE AND ME AEROPLANES

(a)

[...]

(10)

[...]

(ii)

[...]

(I) warning systems; and-

(J) weather radar system, best practices for optimum use, interpretation of displayed information.

[...]

II. SE AND ME HELICOPTERS

(a)

[...]

(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, including radio ~~(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;
- (J) weather radar system, best practices for optimum use, interpretation of displayed information.

[...]

AMC1 FCL.735.A; FCL.735.H; FCL.735.As Multi-crew cooperation (MCC) training course

CERTIFICATE OF COMPLETION FORM

CERTIFICATE OF COMPLETION OF MCC			
Last name(s):		First name(s):	
Type of licence:		Number:	State:
ME/IR training completed		OR	ME/IR validity date: ME/IR skill test date:
Issued on:		passed on:	
	Signature of applicant:		

AMC1 FCL.740.A(b)(1)(ii) Revalidation of class and type ratings

CONTENT OF THE REFRESHER TRAINING

Training flight items should be based on the exercise items of the proficiency check, as deemed relevant by the instructor, and depending on the experience of the candidate. The briefing should include a discussion on TEM with special emphasis on decision-making when encountering adverse meteorological conditions or unintentional IMC, as well as on navigation flight capabilities.

SUBPART I — ADDITIONAL RATINGS

AMC1 FCL.800 Aerobatic rating

THEORETICAL KNOWLEDGE AND FLYING TRAINING

[...]

(c)

[...]

(3) [...]

- (i) air speed limitations (aeroplane, ~~helicopter~~, TMG and sailplane, as applicable);

[...]

AMC1 FCL.810(a) Night rating**AEROPLANE NIGHT RATING COURSE**

- (a) The aim of the course is to qualify holders of Part-FCL licences with privileges to fly aeroplanes or TMGs to exercise their privileges at night.
- (b) The ATO or DTO 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 or TMG.
- (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 or TMG 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.810(b) Night rating

PPL(H) HELICOPTER NIGHT RATING COURSE

- (a) The aim of the course is to qualify PPL(H) helicopter licence holders to exercise the privileges of the licence at night.

[...]

(d)

[...]

- (1) In all cases, exercises 4 to 6 of the night rating flight syllabus should be completed in a helicopter in flight.

- (2) For exercises 1 to 3, up to 50 % of the required flight training may be completed in an FSTD(H). However, all each items within each of exercises 1 to 3 should be conducted completed in a helicopter in-flight.

[...]

(4)

[...]

(vi)

[...]

- (B) practise night cross-country dual flight and either flight as SPIC or supervised solo to a satisfactory standard.

AMC1 FCL.820 Flight test rating

TRAINING COURSE

[...]

(a)

[...]

- (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.

[...]

SUBPART J — INSTRUCTORS

GM21 FCL.900(c)(1) Instructor certificates

[...]

GM1 FCL.900(c); FCL.1000(c) Instruction or examination outside the territory of the Member States

Instruction or examination outside the territory of the Member States is possible within the scope of:

- ATOs that have their principal place of business outside the territory of the Member States; or
- ATOs that have their principal place of business in a Member State and one or more additional training sites outside the territory of the Member States.

AMC1 FCL.935 Assessment of competence

GENERAL

[...]

- (d) During the ~~skill test~~ assessment of competence, the applicant occupies the seat normally occupied by the instructor (instructor's seat if in an FSTD, or pilot seat if in an aircraft), except in the case of balloons. The examiner, another instructor or, for MPA in an FFS, a real crew member 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.

[...]

GM1 FCL.905.FI(h)(2) Privileges and conditions

FSTDs should not be used to pass an assessment of competence on the class or type of aircraft.

AMC1 FCL.930.FI FI Training course

FI(A), FI(H) AND FI(AS) TRAINING COURSE

[...]

(a)

[...]

- (d) The ~~skill test~~ assessment of competence is additional to the course training time.

[...]

AMC1 FCL.940.FI(a)(2); FCL.940.IRI FI, Revalidation and renewal

(a) The instructor refresher training for the revalidation of the FI and IRI certificates should be provided as a seminar by either an ATO, DTO, or competent authority.

FI OR IRI REFRESHER SEMINAR

- (a1) FI or IRI refresher seminars made available in Member States should have due regard to geographical location, numbers attending, and periodicity throughout the territory of the Member State concerned.
- (b2) 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.
- (c3) ~~Some~~ 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.
- (d4) 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.
- (e5) The content of the FI or IRI refresher seminar should be selected from the following:
 - (i1) new or current rules or regulations, with emphasis on knowledge of Part-FCL and operational requirements;
 - (ii2) teaching and learning;
 - (iii3) instructional techniques;
 - (iv4) the role of the instructor;
 - (v5) national regulations (as applicable);
 - (vi6) human factors;
 - (vii7) flight safety, incident and accident prevention;
 - (viii8) airmanship;
 - (ix9) legal aspects and enforcement procedures;
 - (x10) navigational skills including new or current radio navigation aids;
 - (xi11) teaching instrument flying;
 - (xii12) weather-related topics including methods of distribution;
 - (xiii13) any additional topic selected by the competent authority.
- (f6) Formal sessions should allow time for a presentation and related questions time of 45 minutes, with 15 minutes for 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, DTO, or competent authority, whichever is appropriate to the category of aircraft, should consider all the above as well as the following, when assessing the refresher training programme:

(1) the ATO, DTO, or competent authority 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, DTO, or competent authority; 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, DTO, or competent authority 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 or DTO 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, DTO, or competent authority, as applicable, 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.

FI – Revalidation and renewal

[...]

GM1 FCL.910.TRI TRI Restricted privileges

(a) The restrictions of the TRI privileges are annotated on the license under 'Remarks and Restrictions' against the appropriate TRI certificate, along with the following endorsements:

(1) if the training is carried out in an FSTD: 'TRI/r' (r=restricted);

(2) if the TRI training, as specified in point FCL.910.TRI(a)(1), includes the LIFUS training endorsement as per point (a) and 'LIFUS'; and

(3) if the landing training, as specified in point FCL.910.TRI(a)(2), is included in the TRI training course: endorsement as per point (a) and 'LT' (LT = landing training).

(b) For example a TRI restricted with LIFUS and landing training privileges will have on their license the following endorsement: 'TRI/r LIFUS LT'.

GM1 FCL.910.TRI(b)(2) TRI training for type extension

'Relevant parts of the technical training and the flight instruction parts of the applicable TRI training course' means that the training should be relevant to its purpose, taking into consideration the experience of the individual TRI on other aircraft types that are similar to the one for which the extension of TRI privileges is applied for.

AMC1 FCL.930.TRI TRI Training course

TRI TRAINING COURSE: AEROPLANES

GENERAL

- (a) ~~The aim of the TRI(A) training course is to train aeroplane 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 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. hte the~~
- (c) ~~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.~~
- (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 training course to aim at giving the applicant the knowledge, skills and attitudes relevant to the role of the TRI.~~
- (e) ~~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.~~
- (f) ~~A TRI(A) may instruct in a TRI(A) course once he or she has conducted a minimum of four type rating instruction courses.~~

- ~~(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 instruction 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(A) to instruct the technical theoretical knowledge syllabus.~~
- ~~(b) — 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.~~
- ~~(c) — 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

- ~~(a) — The course should be related to the type of aeroplane on which the applicant wishes to instruct.~~
- ~~(b) — TEM, CRM and the appropriate use of behavioural markers should be integrated throughout.~~
- ~~(c) — The content of the training programme should cover all the significant exercises applicable to the aeroplane type.~~
- ~~(d) — 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.~~

FSTD TRAINING

- ~~(e) — The applicant for a TRI(A) certificate should be taught and made familiar with giving instruction from the instructor station. In addition, before being checked for base training instruction, the applicant for a TRI(A) should be taught and made familiar with giving instruction from all operating positions, including demonstrations of appropriate handling exercises.~~
- ~~(f) — 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 aeroplane 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.~~
- ~~(g) — The applicant should be required to plan, brief, train and debrief sessions using all relevant training techniques.~~

AEROPLANE TRAINING

- ~~(h) — The applicant for a TRI(A) certificate should receive instruction in an FFS to a satisfactory level in:
 - ~~(1) — right hand seat familiarisation, which should include at least the following as pilot flying:
 - ~~(i) — re-flight preparation and use of checklists;~~
 - ~~(ii) — taxiing;~~
 - ~~(iii) take-off;~~
 - ~~(iv) — rejected take-off;~~
 - ~~(v) — engine failure during take-off, after v1;~~
 - ~~(vi) — engine inoperative approach and go-around;~~
 - ~~(vii) — one engine (critical) simulated inoperative landing;~~
 - ~~(viii) — other emergency and abnormal operating procedures (as necessary).~~~~
 - ~~(2) — aeroplane training techniques:
 - ~~(i) — methods for giving appropriate commentary;~~
 - ~~(ii) — particularities of handling the aeroplane in touch and go manoeuvres;~~
 - ~~(iii) — intervention strategies developed from situations role-played by a TRI course instructor, taken from but not limited to:
 - ~~(A) — take-off configuration warning;~~
 - ~~(B) — over controlling;~~
 - ~~(C) — high flare: long float;~~
 - ~~(D) — long flare;~~
 - ~~(E) — baulked landing;~~
 - ~~(F) — immediate go-around from touch;~~~~~~~~

- ~~(G) — too high on approach: no flare;~~
- ~~(H) — incorrect configuration;~~
- ~~(I) — TAWS warning;~~
- ~~(J) — misuse of rudder;~~
- ~~(K) — over control in roll axis during flare;~~
- ~~(L) — incapacitation;~~
- ~~(M) — actual abnormal or emergencies.~~

~~(i) — Additionally, if the applicant is required to train emergency or abnormal procedures in an aeroplane, synthetic device training as follows:~~

- ~~(1) — appropriate methods and minimum altitudes for simulating failures;~~
- ~~(2) — incorrect rudder inputs;~~
- ~~(3) — failure of a critical engine;~~
- ~~(4) — approach and full stop landing with simulated engine out.~~

~~(j) — In this case, the abnormal manoeuvres refer to engine out handling as necessary for completion of type rating training. If the applicant is required to train other abnormal items in the transition course, additional training will be required.~~

~~(k) — Upon successful completion of the training above, the applicant should receive training in an aeroplane in flight under the supervision of a TRI(A). At the completion of training the applicant instructor should be required to conduct a training flight under the supervision and to the satisfaction of a TRI(A) nominated for this purpose by the training organisation.~~

TRAINING FOR ASYMMETRIC POWER FLIGHT ON SP MET AEROPLANES

~~(l) — During this part of the training, special emphasis is to be placed on the:~~

- ~~(1) — 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.~~
- ~~(2) — 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 unfeathering 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 restarted or set at zero thrust and identifying each control and naming the engine it is going to affect.~~
- ~~(3) — consideration to be given to avoid over-working the operating engine, and the degraded performance when operating the aeroplane during asymmetric flight.~~
- ~~(4) — need to use the specific checklist for the aeroplane type.~~

LONG BRIEFINGS:

~~(m) — Flight on asymmetric power~~

- ~~(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: regain normal flight;~~
- ~~(7) — finding the zero thrust setting: comparison of foot load when feathered and with zero thrust set.~~
- ~~(8) — effects and recognition of engine failure in level flight;~~
- ~~(9) — the forces and the effects of yaw;~~
- ~~(10) — types of failure:
 - ~~(i) — sudden or gradual;~~
 - ~~(ii) — complete or partial.~~~~
- ~~(11) — yaw, direction and further effects of yaw;~~
- ~~(12) — flight instrument indications;~~
- ~~(13) — identification of failed engine;~~
- ~~(14) — the couples and residual out of balance forces: resultant flight attitude;~~
- ~~(15) — use of rudder to counteract yaw;~~
- ~~(16) — use of aileron: dangers of misuse;~~
- ~~(17) — use of elevator to maintain level flight;~~
- ~~(18) — use of power to maintain a safe air speed and altitude;~~
- ~~(19) — supplementary recovery to straight and level flight: simultaneous increase of speed and reduction in power;~~
- ~~(20) — identification of failed engine: — idle engine;~~
- ~~(21) 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.~~~~
- ~~(22) — confirmation of identification: close the throttle of identified failed engine;~~
- ~~(23) — effects and recognition of engine failure in turns;~~
- ~~(24) — identification and control;~~

~~{25}—side forces and effects of yaw.~~

~~(n)—During turning flight:~~

~~(1)—effect of ‘inside’ engine failure: effect sudden and pronounced;~~

~~(2)—effect of ‘outside’ engine failure: effect less sudden and pronounced;~~

~~(3)—the possibility of confusion in identification (particularly at low power):~~

~~(i)—correct use of rudder;~~

~~(ii)—possible need to return to lateral level flight to confirm correct identification;~~

~~(4)—visual and flight instrument indications;~~

~~(5)—effect of varying speed and power;~~

~~(6)—speed and thrust relationship;~~

~~(7)—at normal cruising speed and cruising power: engine failure clearly recognised;~~

~~(8)—at low safe speed and climb power: engine failure most positively recognised;~~

~~(9)—high speed descent and low power: possible failure to notice asymmetry (engine failure);~~

~~(o)—Minimum control speeds:~~

~~(1)—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 vmca. 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 vmca.~~

~~(2)—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 vsse;~~

~~(3)—establish a minimum control speed for each asymmetrically disposed engine: to establish critical engine (if applicable);~~

~~(4)—effects on minimum control speeds of:~~

~~(i)—bank;~~

~~(ii)—zero thrust setting;~~

~~(iii)—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 vmca 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 vmca for the specific type. Thus the vmca quoted in the aeroplane manual will have been obtained using the technique.~~

~~(p) — Feathering and un-feathering:~~

~~(1) — minimum heights for practising feathering or un-feathering drills;~~

~~(2) — engine handling: precautions (overheating, icing conditions, priming, warm-up and method of simulating engine failure: reference to aircraft engine manual and service instructions and bulletins).~~

~~(q) — Engine failure procedure:~~

~~(1) — 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;~~

~~(2) — flight phase:~~

~~(i) — in cruising flight;~~

~~(ii) — critical phase such as immediately after take-off or during the approach to landing or during a go-around.~~

~~(r) — 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. 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 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.~~

~~(s) — In-flight engine failure in cruise or other flight phase not including take-off or landing:~~

~~(1) — immediate actions:~~

~~(i) — recognition of asymmetric condition;~~

- ~~(ii) — identification and confirmation of failed engine:
 - ~~(A) — idle leg = idle engine;~~
 - ~~(B) — closing of throttle for confirmation.~~~~
- ~~(iii) — cause and fire check:
 - ~~(A) — typical reasons for failure;~~
 - ~~(B) — methods of rectification.~~~~
- ~~(iv) — feathering decision and procedure:
 - ~~(A) — reduction of other drag;~~
 - ~~(B) — need for speed but not haste;~~
 - ~~(C) — use of rudder trim.~~~~
- ~~(2) — subsequent actions:
 - ~~(i) — 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.~~~~
 - ~~(ii) — re-plan flight:
 - ~~(A) — ATC and weather;~~
 - ~~(B) — terrain clearance, SE cruise speed;~~
 - ~~(C) — decision to divert or continue.~~~~
 - ~~(iii) — fuel management: best use of remaining fuel;~~
 - ~~(iv) — dangers of re-starting damaged engine;~~
 - ~~(v) — action if unable to maintain altitude: effect of altitude on power available;~~
 - ~~(vi) — effects on performance;~~
 - ~~(vii) — effects on power available and power required;~~
 - ~~(viii) — effects on various airframe configuration and propeller settings;~~
 - ~~(ix) — use of flight or owner's manual:
 - ~~(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 performance;~~
- ~~(t) — Significant factors:~~
 - ~~(1) — significance of take-off safety speed:~~
 - ~~(i) — effect of landing gear, flap, feathering, take-off, trim setting and systems for operating landing gear and flaps;~~
 - ~~(ii) — effect on mass, altitude and temperature (performance).~~
 - ~~(2) — significance of best SE climb speed (vyse):~~
 - ~~(i) — acceleration to best engine climb speed and establishing a positive climb;~~
 - ~~(ii) — relationship of SE climb speed to normal climb speed;~~
 - ~~(iii) — action if unable to climb.~~
 - ~~(3) — significance of asymmetric committal height and speed: action if baulked below asymmetric committal height;~~
- ~~(u) — Engine failure during take-off:~~
 - ~~(1) — below vmca or unstick speed:~~
 - ~~(i) — accelerate or stop distance considerations;~~
 - ~~(ii) — prior use of flight manual data if available.~~
 - ~~(2) — above vmca or unstick speed and below safety speed;~~
 - ~~(3) — immediate re-landing or use of remaining power to achieve forced landing;~~
 - ~~(4) — considerations:~~
 - ~~(i) — degree of engine failure;~~
 - ~~(ii) — speed at the time;~~
 - ~~(iii) — mass, altitude, temperature (performance);~~
 - ~~(iv) — configuration;~~
 - ~~(v) — length of runway remaining;~~
 - ~~(vi) — position of any obstacles ahead;~~
- ~~(v) — Engine failure after take-off:~~
 - ~~(1) — simulated at a safe height and at or above take-off safety speed;~~
 - ~~(2) — considerations:~~
 - ~~(i) — need to maintain control;~~
 - ~~(ii) — use of bank towards operating engine;~~

~~(iii) — use of available power achieving best SE climb speed;~~

~~(iv) — mass, altitude, temperature (performance);~~

~~(v) — effect of prevailing conditions and circumstances.~~

~~(3) — Immediate actions:~~

~~(i) — maintenance of control, including air speed and use of power;~~

~~(ii) — recognition of asymmetric condition;~~

~~(iii) — identification and confirmation of failed engine;~~

~~(iv) — feathering and removal of drag (procedure for type);~~

~~(v) — establishing best SE climb speed.~~

~~(4) — 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.~~

~~(w) — Asymmetric committal height:~~

~~(1) — 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-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.~~

~~(2) — Circuit approach and landing on asymmetric power:~~

~~(i) — definition and use of asymmetric committal height;~~

- ~~(ii) — use of standard pattern and normal procedures;~~
- ~~(iii) — action if unable to maintain circuit height;~~
- ~~(iv) — speed and power settings required;~~
- ~~(v) — decision to land or go-around at asymmetric committal height: factors to be considered;~~

~~(3) — Undershooting: importance of maintaining correct air speed, (not below v_{yse}).~~

~~(x) — Speed and heading control:~~

- ~~(1) — height, speed and power relationship: need for minimum possible drag;~~
- ~~(2) — establishing positive climb at best SE rate of climb speed:
 - ~~(i) — effect of availability of systems, power for flap and landing gear;~~
 - ~~(ii) — 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.~~

~~(y) — Engine failure during an all engines approach or missed approach:~~

- ~~(1) — use of asymmetric committal height and speed considerations;~~
- ~~(2) — speed and heading control: 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.~~

~~(z) — Instrument flying on asymmetric power:~~

- ~~(1) — considerations relating to aircraft performance during:
 - ~~(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.~~~~
- ~~(2) — vacuum operated instruments: availability;~~
- ~~(3) — electrical power source.~~

ADDITIONAL TRAINING FOR PRIVILEGES TO CONDUCT LINE FLYING UNDER SUPERVISION

~~(aa) — In order to be able to conduct line flying under supervision, as provided in FCL.910.TRI(a), the TRI should have received the additional training described in paragraph (k) of this AMC.~~

TRAINING WHERE NO FSTD EXISTS

(ab) ~~Where no FSTD exists for the type for which the certificate is sought, a similar course of training should be conducted in the applicable aeroplane type. This includes all elements listed under this sub-paragraph, the synthetic device elements being replaced with appropriate exercises in an aeroplane of the applicable type.~~

UPSET PREVENTION AND RECOVERY TRAINING (UPRT)

(ac) ~~It is of paramount importance that instructors have the specific competence to deliver UPRT during the type rating course, including the ability to demonstrate knowledge and understanding of the type-specific upset recovery procedures and recommendations developed by the original equipment manufacturers (OEMs). Therefore, during the TRI training course the student instructor should:~~

- ~~(1) be able to apply the correct upset recovery techniques for the specific aeroplane type;~~
- ~~(2) understand the importance of applying type-specific OEMs procedures for recovery manoeuvres;~~
- ~~(3) be able to distinguish between the applicable SOPs and the OEMs recommendations (if available);~~
- ~~(4) understand the capabilities and limitations of the FSTD used for UPRT;~~
- ~~(5) be able to ensure that the training remains within the FSTD training envelope to avoid the risk of negative transfer of training;~~
- ~~(6) understand and be able to use the (instructor operating station) IOS of the FSTD in the context of effective UPRT delivery;~~
- ~~(7) understand and be able to use the FSTD instructor tools available for providing accurate feedback on pilot performance;~~
- ~~(8) understand the importance of adhering to the FSTD UPRT scenarios that have been validated by the training programme developer; and~~
- ~~(9) 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.~~

TRI TRAINING COURSE — AEROPLANES**(a) General**

- (1) The training course should develop safety awareness throughout by imparting knowledge, skills, and attitudes relevant to the TRI task, and should be designed to adequately train the candidate instructor in theoretical-knowledge instruction, flight instruction, and FSTD instruction to enable the candidate instructor to instruct others on an aeroplane type rating for which the candidate instructor is qualified.
- (2) The TRI(A) training course should place particular emphasis on the role of the individual, human factors in the man-machine environment, and CRM.

- (3) Special attention should be given to the candidate instructor's maturity and judgment including their understanding of adults, behavioural attitudes, and variable levels of learning ability. During the training course, the candidate instructor should be made aware of their own attitude towards the importance of flight safety.
- (4) For a TRI(A), the amount of time for flight training should vary depending on the complexity of the aeroplane type. A similar number of hours should be allotted to the instruction on, and practice of, both preflight and postflight briefing for each exercise.
- (5) The flight instruction should ensure that the candidate instructor is able to teach the air exercises safely and efficiently and should be related to the type of aeroplane on which the candidate instructor wishes to instruct. The content of the training programme should cover training exercises applicable to the aeroplane type, which are set out in the applicable type rating training courses.
- (6) Airmanship is a vital element of all flight operations. Therefore, in the following exercises, the relevant aspects of airmanship should be stressed at the appropriate times during each flight.
- (7) The candidate 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 in accordance with AMC1 FCL.920;
- Part 2: technical theoretical-knowledge instruction (technical training); and
- Part 3: flight instruction.

(1) Part 1 — Teaching and learning

The content of the teaching and learning part of the FI training course as described in AMC1 FCL.930.FI should be used as guidance to develop the course syllabus.

(2) Part 2 — Technical theoretical-knowledge instruction syllabus

- (i) If a TRI(A) certificate for MP aeroplanes is sought, particular attention should be given to MCC. If a TRI(A) certificate for SP aeroplanes is sought, particular attention should be given to the duties in SP operations.
- (ii) The technical theoretical-knowledge instruction should comprise at least 10 hours of training to refresh Part-1 theoretical topics, as necessary, and aircraft technical knowledge. It should include preparation of lesson plans and development of briefing-room instructional skills. A proportion of the allotted 10 hours could be integrated into the practical flight instruction lessons of Part 3, using expanded preflight and postflight briefing sessions. Consequently, for practical purposes, Part 2 and Part 3 could be considered complementary to each other.
- (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 that are selected by the course instructor from the type rating course.

(3) Part 3 — Flight instruction

(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 of FSTDs

- (A) The applicant for a TRI(A) certificate should be instructed in using the device and made familiar with its limitations, capabilities, and safety features, 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 V_{MCA} 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 V_{MCA} .

- (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 (V_{sse}).

- (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 V_{MCA} 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 (V_{yse}):
 - (1) accelerating to V_{yse} and establishing a positive climb;
 - (2) relationship between V_{yse} 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 V_{MCA} or unstick speed:
 - (1) use AFM data, if available ; and
 - (2) accelerate or stop distance considerations;
 - (b) above V_{MCA} 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 V_{yse} ;
- (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 V_{yse} ; and

(d) subsequent actions, whilst carrying out an asymmetric power climb to the downwind position at V_{yse} :

- (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 go-around 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 V_{yse} , 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 V_{yse} :
 - (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 V_{yse} 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 (V_1);
 - (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

[...]

AMC1 FCL.940.TRI(a)(1)(ii), (a)(2)(ii), (b)(1)(ii), (b)(2)(ii); FCL.940.SFI(a)(2), (e)(1)

(a) The refresher training for revalidation of the TRI and SFI certificates should be provided as a seminar. The seminar should consist of 6 hours of learning and may be held in the form of either one or more of the following: e-learning, two-way online meetings, face-to-face seminars. The content of the refresher seminar for revalidation should be selected from the following items:

- (1) relevant changes to national or EU regulations;
- (2) the role of the instructor;
- (3) teaching and learning styles;
- (4) observational skills;
- (5) instructional techniques;

- (6) briefing and debriefing skills;
 - (7) TEM;
 - (8) human performance and limitations;
 - (9) flight safety, prevention of incidents and accidents, including those specific to the ATO;
 - (10) significant changes in the content of the relevant part of the aviation system;
 - (11) legal aspects and enforcement procedures;
 - (12) developments in competency-based instruction;
 - (13) report writing; and
 - (14) any additional topics proposed by the competent authority.
- (b) For the refresher training for renewal of the TRI and SFI certificates:
- (1) the ATO should determine on a case-by-case basis the amount of refresher training needed, through 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 TRI or SFI certificate; and
 - (iii) the technical elements of the TRI or SFI training course, as determined by the assessment of the candidate by the ATO;
 - (2) the ATO should also consider the elements defined in point (a) above to determine the refresher training needed; and
 - (3) once the ATO has determined the needs of the applicant, it should develop an individual training programme that should be based on the content of the TRI or SFI training course and focus on the aspects where the applicant has 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.
- (d) Upon successful completion of the 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.

AMC1 FCL.930.CRI CRI Training course

[...]

- (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, **except for single-pilot high-performance complex aeroplanes,** ~~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, **except for single-pilot high-performance complex aeroplanes.** ~~for non-complex non-high performance SP aeroplanes. The flight training may take place on the aeroplane or an FFS.~~

[...]

(f) [...]

- (1) Part 1: teaching and learning that should ~~follow the content of~~ **be in accordance with** AMC1 FCL.920;

[...]

Part 2

~~This syllabus is concerned only with the training on ME aeroplanes. Therefore, other knowledge areas, common to both SE and ME aeroplanes, should be revised as necessary to cover the handling and operating of the aeroplane with all engines operative, using the applicable sections of the ground subjects syllabus for the FI course. Additionally, the ground training should include 25 hours of classroom work to develop the applicant's ability to teach a student the knowledge and understanding required for the air exercise section of the ME training course. This part will include the long briefings for the air exercises.~~

- (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.

THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

Suggested breakdown of course classroom hours:

Tuition hours	Practice in class	Topic	Internal progress test
1.00		Aviation legislation	1.00
2.00		Performance, all engines operating, including mass and balance	
2.00		Asymmetric flight Principles of flight	
2.00	2.00	Control in asymmetric flight Minimum control and safety speeds Feathering and un-feathering	
2.00		Performance in asymmetric flight	1.00
2.00		Specific type of aeroplane — operation of systems.	1.00
4.00	5.00	Airframe and engine limitations Briefings for air exercises progress	
15.00	7.00		3.00
Course total	25.00 (including progress test)		

[...]

Part 3

[...]

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.~~ The syllabus for CRI SE and ME training courses should comprise air exercises 1 to 4 and should not last less than 3 hours. In addition, the syllabus for a CRI ME training course should also include air exercise 5 to address asymmetric power flight and should not last less than 2 hours.

EXERCISE 1: FAMILIARISATION WITH THE AEROPLANE

[...]

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.

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 or competent authority. 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 or competent authority for the revalidation of the certificate. The amount of refresher training needed should be determined on a case by case basis by the ATO or competent authority, 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 elapsed 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 elapsed.
- (b) Once the ATO or competent authority 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.

SUBPART K — EXAMINERS

GM1 FCL.1000 Examiner certificates

SPECIAL CONDITIONS

[...]

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 31 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.

GM1 FCL.1005(b) Limitation of privileges in case of vested interests

Examples of a situation where the examiners should consider if ~~his/her~~ **their** 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.

AMC1 FCL.1015 Examiner standardisation

GENERAL

[...]

(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 **real or** role-played proficiency checks, ~~and~~ skill tests **or assessments of competence** (at least 2 days).

[...]

AMC2 FCL.1015 Examiner standardisation

STANDARDISATION ARRANGEMENTS FOR EXAMINERS

[...]

METHOD AND CONTENTS OF THE TEST OR CHECK

- (o) Before undertaking a test of check, an examiner will verify that the aircraft or FSTD intended to be used is suitable and appropriately equipped for the test or check. **Aircraft that fall under points (a), (b), (c), or (d) of Annex I to the Basic Regulation can be used provided that they are subject to an authorisation as per point ORA.ATO.135 or point DTO.GEN.240.**

[...]

GM1 FCL.1015 Examiner standardisation

(a) An examiner should plan per day not more than:

[...]

- (3) two tests or checks related to ~~CPL, IR~~ **MPL** or ATPL;

[...]

(b) An examiner should plan at least 2 hours for a LAPL, SPL or BPL, 3 hours for a PPL, CPL, IR or class rating test or checks, and at least 4 hours for **instructor certificates**, ~~FI, CPL, IR~~, MPL, ATPL or MP type rating tests or checks, including preflight briefing and preparation, conduct of the test, check or assessment of competence, debriefing, evaluation of the applicant and document-~~ation~~.

(c) For the conduct of the test, check or assessment of competence, without additional activities specified in point (b) ~~When planning the duration of a test, check or assessment of competence,~~ the following values may be used as guidance:

- (1) [...]
- (2) ~~90 minutes for LAPL(A) or (H), PPL and CPL, including navigation section~~ 60 minutes for extension of BPL commercial privileges;
- (3) ~~60 minutes for IR, FI and SP type or class ratings~~ 90 minutes for LAPL(A) or (H), PPL(A) or (H), and CPL(A) or (H), including the navigation section;
- (4) ~~120 minutes for CPL, MPL, ATPL and MP type ratings~~ 60 minutes for PPL(As) and CPL(As);
- (5) 60 minutes for IR, EIR, instructor certificates, and SP type or class ratings; and
- (6) 120 minutes for MPL, ATPL, and MP type ratings.

[...]

APPENDICES TO ANNEX I

AMC1 to Appendix 3 Training courses for the issue of a CPL and an ATPL

GENERAL

(a)

[...]

(d) The flight instruction syllabus should take into account the principles of TEM.

A. ATP integrated course: aeroplanes

(a)

[...]

FLYING TRAINING

(d) [...]

(3) Phase 3:

[...]

(iii) dual night flight instruction ~~time including take-offs and landings as PIC.~~

(4) Phase 4:

[...]

(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 conducted at a safe altitude unless carried out in an FSTD);-

(vii) after completion of instrument training that is equivalent to the basic instrument flight module set out in AMC2 to Appendix 6, take-offs and landings as PIC at night.

[...]

B. ATP modular theoretical knowledge course: aeroplanes

[...]

- (c) The ATP modular course should ~~last~~ be completed within 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

[...]

FLYING TRAINING

(d) [...]

(3) Phase 3:

(iii) dual night flight instruction ~~time including take-offs and landings as PIC.~~

(4) Phase 4:

(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);-

(vii) after completion of instrument training that is equivalent to the basic instrument flight module set out in AMC2 to Appendix 6, take-offs and landings as PIC at night.

D. CPL integrated course: aeroplanes

FLYING TRAINING

(d) [...]

(3) Phase 3:

(iii) night flight time including, after completion of instrument training that is equivalent to the basic instrument flight module set out in AMC2 to Appendix 6, take-offs and landings as PIC.

[...]

E. CPL modular course: aeroplanes

- (a) The CPL modular course should ~~last~~ be completed within 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.

CREDITING

Applicants with prior experience as PIC may be credited with an amount of hours to meet the requirement of 150 hours of flight time of Appendix 3, Part E, point (3)(a).

The amount of credited hours should be decided by the ATO where the applicant takes the training course on the basis of a pre-entry flight test, but in any case, should have been completed only in one aircraft category other than aeroplane.

THEORETICAL KNOWLEDGE

[...]

FLYING TRAINING

- (c) [...]

(1)

[...]

- (4) Applicants who need to complete night training in accordance with point 10(b) of Section E of Appendix 3 to Part-FCL should perform take-offs and landings as PIC at night only after having completed the instrument flight training specified in point (2)(i) of 'FLYING TRAINING' of Section E of this AMC.

[...]

H. ATP modular theoretical knowledge course: helicopters

[...]

- (c) The ATP modular course should ~~last~~ be completed within 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.

[...]

K. CPL modular course: helicopters

- (a) The CPL modular course should ~~last~~ be completed within 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.

CREDITING

Applicants with prior experience as PIC may be credited with an amount of hours to meet the requirement of 150 hours of flight time of Appendix 3, Part K, point (3)(a).

The amount of credited hours should be decided by the ATO where the applicant takes the training course on the basis of a pre-entry flight test, but in any case, should have been completed only in one aircraft category other than helicopter, and not be a combination of hours in more than two different aircraft categories.

THEORETICAL KNOWLEDGE

[...]

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			Total	FSTD credits
	Dual	Solo	SPIC		
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	65 hrs FFS or 60 hrs FTD 2, 3 or 55 hrs FNPT II/III or 10 hrs in at least an FNPT I Note 2

	ATPL(H)/VFR integrated			Total	FSTD credits
	Dual	Solo	SPIC		
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	40 hrs FFS or

					35 hrs FTD 2, 3 or 30 hrs FNPT II/III or 5 hrs in at least an FNPT I Note 2
--	--	--	--	--	---

	CPL(H)/IR integrated				FFS; FTD; FNPT
	Dual	Solo	SPIC	Total	
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
Instrument rating training	40 hrs	-	-	40 hrs	or 10 hrs in at least an FNPT I
Total	125 hrs	55 hrs		180 hrs	50 hrs FFS C/D level or 45 hrs FTD 2, 3 or 40 hrs FNPT II/III or 10 hrs in at least an FNPT I Note 2

	CPL(H) integrated				FFS; FTD; FNPT
	Dual	Solo	SPIC	Total	
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	35 hrs FFS or 30 hrs FTD 2, 3 or 25 hrs FNPT II/III or 5 hrs in at least an FNPT I Note 2

	CPL(H) modular				FFS; FTD; FNPT
	Dual	Solo	SPIC	Total	
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	10 hrs FFS or FTD 2,3 or FNPT II/III or 5 hrs in at least an FNPT I Note 2

[...]

Note 1: 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.

GM1 to Appendix 7 IR skill test

To the skill test, an ME centreline thrust aeroplane is considered an SE aeroplane.