New air mobility

Subtask 2 — Gyroplanes

Flight crew licensing for private pilot licences and non-commercial operations conducted in visual flight rules by day and by night

RMT.0731

Important note:

This file is published for information purposes only. No quality control has been performed yet. The draft AMC and GM contained in this file already contain some updates resulting from the consultation of NPA 2021-12. However, not all inputs from the NPA consultation are yet fully reflected.

1. Proposed amendments to AMC/GM

1.1. Draft Flight Crew Licensing Regulation

ANNEX I (PART-FCL)

GM1 FCL.010

The following abbreviation is inserted in the alphabetical order:

GPL Gyroplane Pilot Licence

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

APPLICATION AND REPORT FORMS

Common application and report forms can be found: (a) For skill tests, proficiency checks for issue, revalidation or renewal of LAPL, GPL, PPL, CPL and IR in AMC1 to Appendix 7.

AMC1 FCL.050 Recording of flight time

[…]

(g) Flight time is recorded:

(1) for aeroplanes, touring motor gliders, gyroplanes, and powered-lift aircraft, from the moment an aircraft first moves to take~~ing~~ off until the moment it finally comes to rest at the end of the flight;

[…]

GM1 FCL.060(b)(1) Recent experience

AEROPLANES, HELICOPTERS, POWERED-LIFT, AIRSHIPS AND GYROPLANES[1]

[…]

AMC3 FCL.210.GPL Training course

FLIGHT INSTRUCTION FOR THE GPL

(a) Entry to training

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

(b) Flight instruction

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

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

(ii) ground manoeuvring, rotor handling;

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

(iv) control of the gyroplane by external visual reference;

(v) flight at altitude, at slow airspeed, maintaining altitude;

(vi) flight on idle power, at very slow airspeed, maintaining rudder authority;

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

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

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

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

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

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

(c) Syllabus of flight instruction

(1) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide; therefore the demonstrations and practices

[1] GM1 FCL.060(b)(1) is presented as currently in force. In parallel, the deletion of the term 'AND SAILPLANES' has already been proposed with EASA NPA 2020-14 'Simpler, lighter and better Part-FCL requirements for general aviation' of 14 December 2020. The progression of these two NPAs will be coordinated in order to ensure a final correct version of this GM.

need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(i) the applicant's progress and ability;

(ii) the weather conditions affecting the flight;

(iii) the flight time available;

(iv) instructional technique considerations;

(v) the local operating environment;

(vi) applicability of the exercises to the gyroplane.

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

(3) Syllabus and list of exercises

Exercise 1: Introduction to the gyroplane

(a) safety considerations around an airfield;

(b) introduction to the gyroplane;

(c) essential pre-flight preparation;

(d) safety brief in emergency drills;

(e) essential in-flight airmanship;

(f) introduction to rotary wing flight in a gyroplane.

Exercise 2: Basic Skills 1 — Lookout, Speed, Direction

(a) primary controls, instruments, cockpit layout;

(b) lookout procedure;

(c) use of the stick — speed and direction.

Exercise 3: Basic Skills 2 — Trim, Height, Balance

(a) trim (pitch and roll, as applicable), avoiding pilot-induced oscillation (PIO);

(b) use of throttle — height;

(c) use of pedals — balance

Exercise 4: Start-up, Taxi, Shutdown

(a) pre-flight planning — pilot/passenger, aircraft including documentation, maps and weather, flight content, human factors — risk mitigation;

(b) handling the gyroplane prior to start including external and internal check, harness, seat or rudder panel adjustments;

(c) pre-start and start-up procedure;

(d) taxiing (rotor stationary);

(e) turning in confined spaces;

(f) power and pre-runway checks;

(g) post-landing checks and procedures;

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

(I) completion of authorisation sheet and serviceability documents.

Exercise 5: Understanding Power Changes

(a) cruise datum power;

(b) the secondary effect of power changes on balance;

(c) the secondary effect of power changes on roll;

(d) the secondary effect of power changes on pitch;

(e) transition to the climb, descents and level-out at constant speed and balance throughout.

Exercise 6: Coordinated Medium-Level Turns

(a) medium-level turns;

(b) power requirements during a turn;

(c) maintaining balance during turns in different directions;

(d) turning onto headings using the compass.

Exercise 7: Correcting for Wind

(a) wind terminology;

(b) the technique for flying in a straight line with a strong crosswind;

(c) determining the wind position during flight.

Exercise 8: Accurate Height and Speed

(a) the technique for fine-tuning height.

Exercise 9: Performance Climbing and Descending

(a) effect of power on the rate of climb and descent;

(b) effect of airspeed on the rate of climb and descent;

(c) full-power climbs, idle-power descents.

Exercise 10: Climbing and Descending Turns

(a) effect of the angle of bank on the rate of climb and on descent;

(b) maintaining balance during full-power climbing turns, and the differences between right and left turns;

(c) maintaining balance during idle-power descending turns, and the differences between right and left turns.

Exercise 11: Significant Speed Changes, Fast Flight

(a) rapid acceleration and rapid deceleration to given speeds;

(b) fast flight.

Exercise 12: Flying the Circuit Pattern

(a) terminology in the circuit pattern;

(b) pre-landing checks;

(c) flying an accurate circuit pattern;

(d) maintaining appropriate spacing for other traffic in the circuit;

(e) go-around.

Exercise 13: Active Rotor Management

(a) active rotor management, taxi with rotor turning;

(b) building rotor speed during the early take-off phase;

(c) smooth transition to the wheel balance attitude, prior to take-off;

(d) stopping the gyroplane.

Exercise 14: Take-off — Wind on the Runway Heading

(a) lifting the gyroplane off the surface;

(b) building airspeed, transitioning to climb airspeed;

(c) understanding the height/velocity avoidance curve;

(d) rejecting take-offs, landing ahead;

(e) trimming during take-off;

(f) climbing through 300 ft — checks.

Exercise 15: Take-off — Different Conditions

(a) crosswinds from the left and the right;

(b) strong winds;

(c) nil wind;

(d) considerations for take-off performance;

(e) determining an appropriate take-off abortion point;

(f) rough ground take-offs;

(g) smooth surface take-offs;

(h) immediate-departure take-offs, pre-rotating at the holding point.

Exercise 16: Landing — Wind on the Runway Heading

(a) flying an accurate approach;

(b) descending through 300 ft — checks;

(c) extending a landing to touch down close to the exit point;

(d) recovering from a balloon when landing.

Exercise 17: Landing — Different Conditions

(a) crosswinds — left and right;

(b) considerations when flying a crosswind approach using the 'split angle' technique;

(c) landing in strong winds — considerations;

(d) landing in nil wind — considerations;

(e) rough/soft ground.

Exercise 18: Precision Landings

(a) the hazards related to precision landings;

(b) the safe precision touchdown technique;

(c) short field landings.

Exercise 19: Precision Landings — Idle Power

(a) the importance of maintaining airspeed;

(b) the technique for making a precision landing when power is not available.

Exercise 20: Departing and Arriving at Airfields

(a) departing from the airfield;

(b) arriving at the airfield.

Exercise 21: Slow Flight at Constant Altitude (Helicopter Mode)

(a) HASEL checks (Height, Area, Security, Engine, Lookout) before unusual manoeuvres;

(b) flying on the back side of the power curve;

(c) avoiding flying behind the power curve.

Exercise 22: Flight at Minimum Airspeed on Idle Power (Parachute Mode)

(a) importance of maintaining rudder authority to avoid loss of control;

(b) establishing slow flight on idle power;

(c) recovering speed when power is available;

(d) recovering speed to a glide descent when power is not available;

(e) recovery from an incipient slow rotation when loss of rudder authority.

Exercise 23: Ground Reference Turns

(a) high bank angle turns;

(b) turning in relation to a ground reference (with significant wind);

(c) turns around a fixed point;

(d) S-turns with constant radius along a line feature.

Exercise 24: Unusual Attitudes

(a) the hazards of distraction and fixation;

(b) recognising unusual attitudes;

(c) recovering from unusual attitudes:

(i) excessive pitch up;

(ii) excessive pitch up and roll (left and right);

(iii) excessive pitch down, close to never-exceed speed (VNE);

(iv) excessive pitch down and roll (left and right), spiral descent.

Exercise 25: Low Flying

(a) legal issues relating to low flying;

(i) Minimum height;

(ii) Land clear;

(iii) Noise and nuisance considerations;

(b) hazards associated with flying low;

(i) The influence of the wind on low flying (Speed perception, Low level turbulence);

(ii) Terrain, Wires, Masts and Cables;

(iii) The effect on radio communication;

(iv) The difficulties of map reading;

(c) Reduced visibility flying;

(i) Vertical situation awareness;

(ii) Bad weather/low level circuit joining, circuit flying and landing;

(d) The consequences of an engine failure when flying low downwind (discussion).

Exercise 26: Consolidation, En-Route Airmanship

Note: This exercise is a continuation of Exercise 4, and the combination of these exercises is taught and consolidated in parallel with all the previous exercises.

(a) advanced pre-flight preparation and post-flight responsibilities;

(b) en-route airmanship.

Exercise 27: In-flight Emergencies

(a) possible emergency scenarios;

(i) Pilot / Passenger;

(ii) Aircraft;

(iii) Weather related;

(iv) Flight related;

(b) standard emergency procedures;

(i) Trim failure / Trim runaway;

(ii) Throttle / Stick / Pedals control failure;

(iii) System failure;

(iv) Electrical fire / Fuel fire;

(v) Emergency evacuation;

(c) mitigating a catastrophic failure;

(d) Emergency radio calls.

Exercise 28: Precautionary Landing

(a) selecting appropriate fields;

(b) technique for surveying suitable fields prior to landing.

Exercise 29: Forced Landing

(a) restart procedure;

(b) distress/urgency radio calls;

(c) technique for positioning prior to the approach above 300 ft AGL;

(d) technique for positioning in the final stages of the approach below 300 ft AGL.

Exercise 30: Forced Landing Around the Airfield

(a) being prepared should the engine stop when flying in the circuit pattern;

(b) preparation prior to take-off.

Exercise 31: Pre-Solo Check Flight

(a) difference in flying characteristics;

(b) checking all the prerequisites have been completed.

Exercise 32: First Solo

(a) first solo flight;

(b) instructor's briefing, observation of flight and de-briefing.

Exercise 33: Solo Consolidation

(a) flying only according to the instructor's briefing;

(b) decision to fly — decision making.

Exercise 34: En-route Navigation

(a) navigation pre-flight planning;

(b) navigation technique — dead reckoning;

(c) navigation technique – GNSS if applicable;

(d) simulated inadvertent entry into IMC conditions.

Exercise 35: Landing Out

(a) destination pre-flight planning.

Exercise 36: Solo Navigation

(a) practise navigation flights.

Exercise 37: Qualifying Cross-Country

(a) planning and flying the cross-country flights.

Exercise 38: Preparing for the Skills Test

(a) flying all the exercises and assessing competence before taking the skills test.

AMC4 FCL.210; FCL.215 Training course and theoretical knowledge examination

SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE GPL

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

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

The table below indicates where the subjects and examinations are identical to PPL(A) or PPL(H). Entries marked with a X indicate the exam as specified in AMC1 FCL.210; FCL 215 should be used.

		PPL(A)	PPL(H)
1.	**AIR LAW AND ATC PROCEDURES**	X	X
2.	**HUMAN PERFORMANCE**	X	X
3.	**METEOROLOGY**	X	X
4.	**COMMUNICATIONS**	X	X
5.	**PRINCIPLES OF FLIGHT**	See below	See below
6.	**OPERATIONAL PROCEDURES**	See below	See below
7.	**FLIGHT PERFORMANCE AND PLANNING**	See below	See below
8.	**AIRCRAFT GENERAL KNOWLEDGE**	See below	See below
9.	**NAVIGATION**	X	X

5.	**PRINCIPLES OF FLIGHT — GYROPLANES**	**GPL**
5.1	**Forces acting on a gyroplane**	
	Weight, lift, thrust, drag	X
	Centre of gravity	X
	Mass, gravitational force, weight	X
	Blade loading, disc loading	X
5.2	**Aerofoils / Rotor blades**	
	Aerofoil lift, Bernoulii principle, boundary layer, streamline flow	X
	Turbulent flow, separation point, aerofoil stall	X

	Dynamic pressure	X
	The density of the air	X
	Relative airflow, chord line	X
	Angle of attack, total reaction, lift, drag	X
	Aerofoil shapes	X
	Centre of pressure	X
	Coefficient of lift versus angle of attack	X
5.3	**Drag**	
	Fuselage drag — air resistance	X
	Induced drag	X
	Parasite drag, profile drag, form, skin friction, interference	X
	Span, chord, aspect ratio	X
	Total drag (graph)	X
	Lift–drag ratio	X
5.4	**Propellers**	
	Airflow and the helix	X
	Fixed pitch propellers	X
	Variable pitch propellers	X
	Slipstream effect on the tail section	X
	Offset rudder considerations	X
5.5	**Engine torque**	
	Rolling effect with power	X
	Stability in the air	
	Positive dynamic stability, neutral dynamic stability, dynamic stability	X
	Thrust line	
5.6	**Stability on the ground**	
	Undercarrriage design	X
	High centre of gravity	X
	Forces in a turn	X
5.7	**Graph of power required**	
	Power available	X
	Power required	X
	Maximum endurance speed	X
	Maximum range speed	X
5.8	**Hight / velocity conciderations — Gyrolanes**	
	Hight / velocity dyagram	X
5.9	**Rotor dynamics**	
	Components of a rotor	X
	Autorotation forces	X
	Driven, driving and stalled regions of a blade/disc	X

	Coning angle	X
	Blade pattern	X
	Blade tracking	X
	Blade balancing	X
	Underslung rotors	X
	Dissymmetry of lift	X
	Teetering to equality	X
	Conservation of angular momentum and the effect on rotor rpm	X

6.	**OPERATIONAL PROCEDURES**	**GPL**
	General	
	Operation of aircraft: ICAO Annex 6, General requirements	
	Definitions	x
	Applicability	x
	Special operational procedures and hazards (general aspects)	x
	Noise abatement	
	Noise abatement procedures	x
	Influence of the flight procedure (departure, cruise and approach)	x
	Runway incursion awareness (meaning of surface markings and signals)	x
	Fire or smoke	
	Carburettor fire	x
	Engine fire	x
	Fire in the cabin and cockpit, (choice of extinguishing agents according to fire classification and use of the extinguishers)	x
	Smoke in the cockpit and (effects and action to be taken) and smoke in the cockpit and cabin (effects and actions taken)	x
	Windshear and microburst	
	Effects and recognition during departure and approach	x
	Actions to avoid and actions taken during encounter	x
	Wake turbulence	
	Cause	x
	List of relevant parameters	x
	Actions taken when crossing traffic, during take-off and landing	x
	Emergency and precautionary landings	
	Definition	x

	Cause	x
	Passenger information	x
	Evacuation	x
	Action after landing	x
7.	**FLIGHT PERFORMANCE AND PLANNING**	**GPL**
7.1	**MASS AND BALANCE: GYROPLANES**	
	Purpose of mass and balance considerations	
	Mass limitations	
	Importance in regard to structural limitations	x
	Importance in regard to performance limitations	x
	CG limitations	
	Importance in regard to stability and controllability	x
	Importance in regard to performance	x
	Loading	
	Terminology	
	Mass terms	x
	Load terms (including fuel terms)	x
	Mass limits	
	Structural limitations	x
	Performance limitations	x
	Baggage compartment limitations	x
	Mass calculations	
	Maximum masses for take-off and landing	x
	Use of standard masses for passengers, baggage and crew	x
	Fundamentals of CG calculations	
	Definition of centre of gravity	x
	Conditions of equilibrium (balance of forces and balance of moments)	x
	Basic calculations of CG	x
	Mass and balance details of aircraft	
	Contents of mass and balance documentation	
	Datum and moment arm	x
	CG position as distance from datum	x

	Extraction of basic mass and balance data from aircraft documentation	
	BEM	x
	CG position or moment at BEM	x
	Deviations from standard configuration	x
	Determination of CG position	
	Methods	
	Arithmetic method	x
	Graphic method	x
	Load and trim sheet	
	General considerations	x
	Load sheet and CG envelope for light aeroplanes and for helicopters	x
7.2	**FLIGHT PLANNING AND FLIGHT MONITORING**	
	Flight planning for VFR flights	
	VFR navigation plan	
	Routes, airfields, heights and altitudes from VFR charts	x
	Courses and distances from VFR charts	x
	Aerodrome charts and aerodrome directory	x
	Communications and radio navigation planning data	x
	Completion of navigation plan	x
	Fuel planning	
	General knowledge	x
	Pre-flight calculation of fuel required	
	Calculation of extra fuel	x
	Completion of the fuel section of the navigation plan (fuel log) and calculation of total fuel	x
	Pre-flight preparation	
	AIP and NOTAM briefing	
	Ground facilities and services	x
	Departure, destination and alternate aerodromes	x
	Airway routings and airspace structure	x
	Meteorological briefing	
	Extraction and analysis of relevant data from meteorological documents	x
	ICAO flight plan (ATS flight plan)	

	Individual flight plan	
	Format of flight plan	x
	Completion of the flight plan	x
	Submission of the flight plan	x
	Flight monitoring and in-flight replanning	
	Flight monitoring	
	Monitoring of track and time	x
	In-flight fuel management	x
	In-flight re-planning in case of deviation from planned data	x
7.3	**PERFORMANCE: GYROPLANES**	
	Introduction	
	Stages of flight	x
	Effect of gyroplane mass, wind, altitude, runway slope and runway conditions	x
	Gradients	x
	SP gyroplanes	
	Definitions of terms and speeds	x
	Take-off and landing performance	
	Use of gyroplane flight manual data	x
	Climb and cruise performance	
	Use of aeroplane flight data	x
	Effect of density altitude and gyroplane mass	x
	Endurance and the effects of the different recommended power or thrust settings	x
	Still air range with various power or thrust settings	x

8.	**AIRCRAFT GENERAL KNOWLEDGE — GYROPLANES**	**GPL**
8.1	**ENVELOPE, AIRFRAME AND SYSTEMS, ELECTRICS, POWERPLANT AND EMERGENCY EQUIPMENT**	
	Main components of a gyroplane	X
	Fuselage, doors, floor, windscreen, windows	X
	Keel, mast	X
	Rotorhead components and functionality	X
	Tail components and functionality	X
	Trim mechanisms	X
	Prerotation mechanisms	X
	Undercarriage, wheels, brakes and tyres	X

	Piston engines	X
	Principle of a 2-stroke engine	X
	Principle of a 4-stroke engine	X
	Fuel	X
	Carburettor	X
	Carburettor icing	X
	Fuel injection	X
	Air cooling	X
	Water cooling	X
	Lubrication systems	X
	Ignition circuits	X
	Electrics	X
	Battery	X
	Alternator	X
	Generator	X
	AC/DC	X
	Circuit breakers	X
	Propellers	X
	Hydraulics	X
	Pneumatics	X
8.2	**INSTRUMENTATION**	
	Static pressure	X
	Dynamic pressure	X
	Altimeter	X
	Vertical speed indicator	X
	Airspeed indicator	X
	Magnetic compass	X
	Temperature senders	X
	Rotor rpm mechanism	X
	Exhaust gas sensors	X
	GPS	X

AMC4 FCL.235 Skill test

CONTENTS OF THE SKILL TEST FOR THE ISSUE OF A GPL

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

ability to complete a route with at least three identified waypoints and may, as agreed between the applicant and FE, be flown as a separate test.

(b) An applicant should indicate to the FE the checks and duties carried out, including the identification of radio facilities. Checks should be completed in accordance with the authorised checklist for the gyroplane on which the test is being taken. During pre-flight preparation for the test the applicant should be required to determine power settings and speeds. Performance data for take-off, approach and landing should be calculated by the applicant in compliance with the operations manual or flight manual for the gyroplane used.

FLIGHT TEST TOLERANCE

(c) The applicant should demonstrate the ability to:

(1) operate the gyroplane within its limitations;

(2) complete all manoeuvres with smoothness and accuracy;

(3) exercise good judgment and airmanship;

(4) apply aeronautical knowledge;

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

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

(1) height: ± 150 ft

(2) heading or tracking of radio aids: ± 10°

(3) speed:

(i) take-off and approach: +15 / –5 kt

(ii) all other flight regimes: ± 15 kt

CONTENT OF THE SKILL TEST

(e) The skill test contents and sections set out in this AMC should be used for the skill test for the issue of a GPL. In all sections, all of the following should be included:

(1) RT, as appropriate for the airfield and classification of airspace;

(2) critical assessment of active rotor handling, whenever the blades are turning at less than flying speed;

(3) use of checklists, airmanship, control of gyroplane by external reference and anti-de-icing procedures etc.

(f) Content and sections of the skill test for the issue of a GPL

SECTION 1 — PRE-FLIGHT OPERATIONS	
a	Pre-flight preparation: Pilot(s) and passenger(s) Documentation; fitness to fly
b	Pre-flight preparation: Gyroplane

	Documentation; pre-flight inspection; servicing
c	Pre-flight preparation: Weather Forecast; interpretation of actual weather; personal limits
d	Pre-flight preparation: Flight planning NOTAM; route plan; destination plan; fuel; mass and balance; performance
e	External factors and pressure to fly
SECTION 2 — TAKE-OFF AND LANDING	
a	Pre- and after take-off procedures
b	Aerodrome departure procedures
c	Aerodrome arrival procedures
d	Start-up and taxi
e	Take-off and landing; touch and go; and full stop
f	Rejected take-off
g	Go-around from baulked approach
h	Precision landing 0 + 100 m (simulated 1-m fence at each side)
i	Glide approach, precision landing 0 + 200 m (simulated 1-m fence at each side)
SECTION 3 — GENERAL HANDLING	
a	Straight and level flight
b	Turning to heading
c	360-degree turns
d	Climb and descent to given heights and headings
e	Fast flight (90 % VNE)
f	Slow flight, level altitude
g	Stationary flight (if possible)
h	Idle-power slow-speed descent, recover with power
I	Idle-power slow-speed descent, recover without power to glide descent
J	360-degree turns around a ground reference
SECTION 4 — EN-ROUTE PROCEDURES	
a	Flight plan, dead reckoning and map reading
b	Maintenance of altitude, heading and speed
c	Orientation, airspace structure, timing and revision of ETAs, log keeping
d	Diversion to alternate aerodrome (planning and implementation)
e	Flight management (checks, fuel systems, carburettor icing, etc.)
SECTION 5 — EMERGENCY LANDING	
	Standard emergency procedures
b	Precautionary landings
c	Simulated engine failure
d	Unusual attitude recovery
SECTION 6 — RETURN AND POST-FLIGHT	
a	Airfield rejoin procedure
b	Shutdown
c	Post-flight actions

AMC1 FCL.210.G(c) GPL - Training course

CREDITING: PRE-ENTRY FLIGHT ASSESMENT

The pre-entry flight assessment referred to in FCL.210.G(c) should cover the total content of the syllabus of flight instruction for the issuance of the GPL, in accordance with AMC3 FCL.210.

AMC1 FCL.215.G Recency requirements

(a) Before the training flight takes place, the instructor should hold a briefing with the candidate. That briefing should include a discussion on all of the following:

1. TEM with special emphasis on decision-making when encountering adverse meteorological conditions or unintentional IMC;
2. navigation flight capabilities;
3. exercises as specified in point (b), as applicable.

(b) The 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. In any case, the training flight items should include exercises related to practice forced landing.

AMC1 FCL.215.G(a)(2) Recency requirements

The proficiency check should follow the content of the skill test that is set out in AMC4 FCL.235, point (f).

GM1 FCL.235.G Extension of privileges to another class or variant of gyroplane

DIFFERENCES AND FAMILIARISATION TRAINING

(a) Differences training requires the acquisition of additional knowledge and training on an appropriate training device or the aircraft.

(b) Familiarisation training requires the acquisition of additional knowledge.

AMC1 FCL.810(c) Night rating

[…]

GYROPLANE NIGHT RATING COURSE

(a) The aim of the course is to qualify GPL holders to exercise the privileges of the licence at night.

(b) The DTO or the ATO should issue a certificate of satisfactory completion of the instruction towards licence endorsement.

(c) Theoretical knowledge

The theoretical knowledge syllabus should cover the revision or explanation of the following:

(1) night VMC minima;

(2) rules about airspace control at night and facilities available;

(3) rules about aerodrome ground, runway, landing site and obstruction lighting;

(4) aircraft navigation lights and collision avoidance rules;

(5) physiological aspects of night vision and orientation;

(6) dangers of disorientation at night;

(7) dangers of weather deterioration at night;

(8) instrument systems or functions and errors;

(9) instrument lighting and emergency cockpit lighting systems;

(10) map marking for use under cockpit lighting;

(11) practical navigation principles;

(12) electronic navigation aid principles;

(13) planning and use of safety altitude;

(14) danger from icing conditions, avoidance and escape manoeuvres.

(d) Flying training

(1) The exercises of the night rating flight syllabus should be repeated as necessary until the student achieves a safe and competent standard:

(2) The flying exercises should comprise the following:

(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, when applicable*;

(iii) exercise 3:
explain and demonstrate the use of radar assistance, when applicable*;

(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.

Items marked (*) should be completed in simulated IMC and may be completed in daylight.

GM1 FCL.900 Instructor certificates

(a) Nine instructor categories are recognised:

(1) FI certificate: aeroplane (FI(A)), helicopter (FI(H)), airship (FI(As)), sailplane (FI(S)), gyroplane (FI(G)) and balloon (FI(B));

[…]

GM1 FCL.900(c)(1) Instructor certificates

INSTRUCTION OUTSIDE THE TERRITORY OF THE MEMBER STATES

The competent authority may issue an unrestricted flight instructor (FI) certificate (FI(A) for aeroplanes, ~~or~~ FI(H) for helicopters, or FI(G) for gyroplanes) to an applicant that has at least 100 hours of experience in flight instruction and 25 hours of experience in solo-flight supervision.

AMC5 FCL.935 Assessment of competence

REPORT FORMS FOR THE INSTRUCTOR CERTIFICATES

(a) Assessment of competence form for the FI, IRI and CRI certificates:

APPLICATION AND REPORT FORM FOR THE INSTRUCTOR ASSESSMENT OF COMPETENCE			
1	**Applicant's personal particulars:**		
Applicant's last name(s):		First name(s):	
Date of birth:		Tel. (home):	Tel. (work):
Address:		Country:	
2	**Licence details**		
Licence type:		Number:	
Class ratings included in the licence:		Exp. Date:	
Type ratings included in the licence:	1.		
	2.		
	3.		
	4.		
	5.		

Other ratings included in the licence:	1.
	2.
	3.
	4.
	5.

3	**Pre-course flying experience**			
Total flying hours	PIC, SEP or TMG hours	SEP preceding 6 months	Instrument flight instruction	Cross-country hours

4	**Pre-entry flight test**
I recommend ..... for the FI course.	
Name of ATO:	Date of flight test:
Name(s) of FI conducting the test (capital letters):	
Licence number:	
Signature:	

5	**Declaration by the applicant**					
I have received a course of training in accordance with the syllabus for the: (tick as applicable)						
FI certificate FI(A)/(H)/(As)/(G)		IRI certificate IRI(A)/(H)/(As)		CRI certificate CRI(A)		
Applicant's name(s): (capital letters)		Signature:				

6	**Declaration by the CFI**					
I certify that ..... has satisfactorily completed an approved course of training for the						
FI certificate FI(A)/(H)/(As)/(G)		IRI certificate IRI(A)/(H)/(As)		CRI certificate CRI(A)		
in accordance with the relevant syllabus.						
Flying hours during the course:						
Aircraft or FSTDs used:						
Name(s) of CFI:						
Signature:						
Name of ATO:						

7	**Flight instructor examiner's certificate**
I have tested the applicant according to Part-FCL	
A. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT (in case of partial pass):	
Theoretical oral examination:	Skill test:

Passed	***Failed***	***Passed***	***Failed***
	I recommend further flight or ground training with an instructor before re-test		
	I do not consider further flight or theoretical instruction necessary before re-test (tick as applicable)		
B. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT:			
	FI certificate		
	IRI certificate		
	CRI certificate *(tick as applicable)*		
Name(s) of FIE (capital letters):			
Signature:			
Licence number:		Date:	

AMC1 FCL.930.FI FI — Training course

FI(A), FI(H), FI(G) AND FI(As~~S~~) TRAINING COURSE

[…]

D. Gyroplanes

Part 2

AIR EXERCISES

(a) The air exercises are similar to those used for the GPL training, but with additional items designed to cover the needs of an FI.

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

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment;

(6) the applicability of the exercises to the gyroplane type used.

(c) It follows that student instructors will eventually be faced with similar interrelated factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make best use of each flight lesson, combining parts of different exercises as necessary.

GENERAL

(d) The briefing normally includes a statement of the objectives and, only if relevant, a brief reference to the principles of flight. An explanation is to be given of what air

exercises exactly are to be taught by the instructor and practicsed by the student during the flight.

The explanation should include how the flight will be conducted, who is to fly the gyroplane, and what airmanship, weather and flight safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(e) The four basic components of the briefing should be:

(1) the aim;

(2) principles of flight (briefest reference only);

(3) the air exercise(s) (what, and how and by whom);

(4) airmanship (weather, flight safety etc.).

PLANNING OF FLIGHT LESSONS

(f) The preparation of the lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of the flight lesson plans.

GENERAL CONSIDERATIONS

(g) The student instructor should complete flight training to practicse the principles of basic instruction at the GPL level.

(h) During this training, except when acting as a student pilot for mutual flights, the student instructor occupies the seat that is normally occupied by the FI(G).

(i) It is to be noted that airmanship and lookout is a vital ingredient of all flight operations. Therefore, in the following air exercises, the relevant aspects of airmanship are to be stressed at all times.

(j) If the privileges of the FI(G) certificate are to include instruction for night flying, Exercise 39 of the flight instruction syllabus should be undertaken at night in addition to that undertaken by day either as part of the course or subsequent to the issue of the certificate.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

(l) The student instructor should be trained to keep in mind that, wherever possible, flight simulation should be used to demonstrate to student pilots the effects of flight into DVE and to enhance their understanding and need for avoidance of this potentially fatal flight regime.

(m) The student instructor should attain flying skills that allows them to recover from student errors and land safely in the event of an actual engine failure during training.

These include:

(1) precision forced landings from above the landing point when flying into wind (360-degree turn) and downwind (180-degree turn);

(2) precision powered approaches at a slower-than-normal approach speed to land with very little ground roll in a small area;

(3) take-off and air-taxi at the slowest speed possible (accurate control at the slow end of the flight envelope of the gyroplane;

(4) flying and landing dead stick;

(5) taking off and flying in strong winds and crosswinds close to the approved limits of the particular gyroplane model;

(6) advanced rotor handling on the ground to include building up rotor rpm from a slow rotor speed using airflow and slowing down a rotor in relatively strong winds without the aid of a rotor brake;

(7) safely entering each of the unusual attitude manoeuvres and knowing the safe flight limits of each attitude;

(8) rounding out significantly high with low airspeed and being able to safely recover to land;

(9) taking off and climbing with insufficient airspeed approaching the edges of the 'do not fly' region of the height/velocity curve and recovering to land;

(10) taking off with limited power to demonstrate to a student what limited power take-offs feel like.

CONTENTS OF THE FLIGHT INSTRUCTION SYLLABUS

IMPORTANT: Where the student instructor holds an instructor certificate for fixed-wing aircraft or helicopters, there must be sufficient time allocated and significant emphasis given to highlight the differences between a gyroplane and the other type(s) of aircraft. This applies to the flight envelope, the coordination of controls and instructional techniques since often the differences can appear similar but are actually not. Flight instructor knowledge and skills related to aeroplanes or helicopters cannot automatically be transferred to flying/instructing in a gyroplane.

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: INTRODUCTION TO THE GYROPLANE

(a) Long-briefing objectives:

(1) safety considerations around an airfield;

(2) introduction to the gyroplane;

(3) key differences between a gyroplane and a helicopter;

(4) key differences between a gyroplane and a fixed-wing aircraft;

(5) key differences between a gyroplane and a delta-wing aircraft;

(6) initial preparation for the introductory flight:

(i) fitness of pilot/passenger to fly;

(ii) importance of lookout;

(iii) in-cockpit communication (standby, traffic, repeat instructions);

(iv) explanation of the cockpit layout;

(v) internal and external checks before flight;

(vi) suitability of weather for introductory flight;

(vii) the flight content (handover of controls);

(7) passenger safety brief and emergency routines;

(8) differences when occupying the instructor seat

Note: Items (a)(3) to (5) are particularly important as a significant number of student pilots will have experience with fixed-wing aircraft and/or helicopters. Due consideration must be given to the differences.

(b) Air exercise:

(1) Appropriate demonstrations and hands-on control related to the previous experience and expectations of the student pilot.

EXERCISE 2: BASIC SKILLS 1 — LOOKOUT, SPEED, DIRECTION

(a) Long-briefing objectives:

(1) the six basic skills of flying: lookout, speed, direction, trim, height, balance;

(2) the primary controls, instruments and the gyroplane cockpit;

(3) straight and level cruise flight: attitude; visual references;

(4) the lookout technique;

(5) the stick and the axes of rotation: pitch, roll;

(6) maintain correct and constant airspeed, use of the airspeed indicator;

(7) changing direction, limited angle of bank;

(8) recap in-cockpit communication: who has control; standby; repeat instructions.

(b) Air exercise:

(1) lookout technique and what to say when traffic is seen;

(2) straight and level flight, determining the attitude of the gyroplane;

(3) handover of control — procedure;

(4) sensitivity of the stick and boundaries for pitch-up /down roll left/right in early exercises;

(5) technique for glancing at the instruments during lookout; interpret ASI;

(6) the procedure for holding a constant chosen speed (limited speed ranges suitable for early training exercises);

(7) gentle turns to follow features (no requirement for additional power);

(8) the importance of being relaxed when flying and building situational awareness.

EXERCISE 3: BASIC SKILLS 2 — TRIM, HEIGHT, BALANCE

(a) Long-briefing objectives:

(1) pitch and roll trim: principles and how it works (as applicable to a given gyroplane model);

(2) use of the throttle for adjusting height: terminology, idle/max/cruise power;

(3) use of the pedals for adjusting balance; explanation of flying in balance; yaw;

(4) the danger of over-controlling: avoiding pilot-induced oscillation (PIO);

(5) reinforcing where a student should be looking when flying.

(b) Air exercise:

(1) trimming the gyroplane;

(2) interpret altimeter and vertical speed indicator;

(3) gentle adjustments of height using the throttle;

(4) interpret the balance indicator;

(5) use of the pedals to keep the gyroplane in balance.

EXERCISE 4: START-UP, TAXI, SHUTDOWN

(a) Long-briefing objectives:

(1) introduction to risk mitigation using threat and error management;

(2) pre-flight planning:

(i) pilot and passenger preparation;

(A) IMSAFE (illness, medication, stress, alcohol, fatigue, eaten);

(ii) aircraft preparation;

(A) check of aircraft documentation and maintenance status;

(B) daily inspection in accordance with the AFM;

(C) checks before flight in accordance with the AFM;

(D) harness and rudder pedal adjustments;

(iii) weather preparation;

(A) interpreting weather forecasts,

(B) interpreting weather by looking from the airfield,

(C) personal weather limits;

(iv) flight content preparation;

(A) NOTAMs;

(B) fuel planning;

(C) mass and balance;

(D) maps and in-flight navigation equipment;

(iv) external factors and pressures that add risks to the flight;

(3) terminology relating to an airfield;

(4) ground handling of a gyroplane;

(5) pre-start checks and starting the engine;

(6) taxi procedure, and additional checks on initial taxi and turning in confined spaces;

(7) warming the engine and engine checks before the flight;

(8) pre-runway procedure;

(9) post-runway procedure;

(10) engine shutdown procedure;

(11) after flight action including security and tie-down;

(12) end-of-day actions.

(b) Air exercise:

(1) emergency actions should someone approach the gyroplane with the engine running;

(2) pre-start and start-up procedure;

(3) initial taxi and general taxi procedure (rotor stationary);

(4) use of RT when the gyroplane is on the ground;

(5) engine power checks;

(6) pre-runway actions;

(7) actions after the runway has been vacated;

(8) engine shutdown procedure.

Note: The student instructor should be taught to introduce the concept of this exercise in parallel with Exercises 5 to 25. The topics should be introduced incrementally in line with the student pilot's workload.

EXERCISE 5: UNDERSTANDING POWER CHANGES

(a) Long-briefing objectives:

(1) energy management in a gyroplane;

(i) fuel (engine rpm);

(ii) airspeed (kinetic);

(iii) height (potential);

(iv) rotor energy (stored);

(2) the effect of mass, weather, rotor/propeller cleanliness on the gyroplane's performance;

(3) introduction to the power curve, and engine rpm requirements for different cruise speeds;

(4) the effect of propeller slipstream on yaw/balance;

(5) the effect of engine roll on torque;

(6) the effect of power change on pitch and the relation to the centre of gravity;

(7) the need to coordinate stick and pedal with throttle changes to maintain speed, a disc level attitude and balance.

(b) Air exercise:

(1) establish the datum cruise power for a given speed on a given day;

(2) build muscle memory:

(i) setting key throttle positions by sound and feel;

(ii) maintain balance with power changes;

(iii) maintain disc level attitude with power changes;

(iv) trim adjustments with power changes for constant speed;

(3) transition to the climb at a constant speed, in balance and trim, climb attitude;

(4) transition to the descent at a constant speed, in balance and trim, descent attitude;

(5) level out from a climb/descent at a constant speed, in balance and trim.

Note: During these exercises, student pilots should move from reacting to instruments (when controls are moved individually) to pre-empting the consequential actions in roll, pitch and yaw as power is (significantly) adjusted.

EXERCISE 6: COORDINATED MEDIUM-LEVEL TURNS

(a) Long-briefing objectives:

(1) the forces in a turn;

(2) the procedure for a level turn, maintaining speed and balance;

(3) the limitations of a compass during a turn.

(b) Air exercise:

(1) reinforcement of lookout in a turn;

(2) medium-level turns left and right at a constant speed, maintaining balance;

(3) turning to a given compass heading.

EXERCISE 7: CORRECTING FOR WIND

(a) Long-briefing objectives:

(1) wind terminology;

(2) airspeed and ground speed;

(3) drift and wind correction angles;

(4) the difference between track and heading;

(5) the technique for flying a straight track in a crosswind;

(6) determining the direction of the wind during flight.

(b) Air exercise:

(1) determine the wind signals from visual clues;

(2) determine an appropriate wind correction angle to fly in a straight track, disc level, and in balance.

Note: This exercise will almost definitely be briefed/flown out of sequence as it requires appropriate wind conditions.

EXERCISE 8: ACCURATE HEIGHT AND SPEED

(a) Long-briefing objectives:

(1) the relationship between energy, height and speed;

(2) the technique for fine-tuning flying at an accurate height;

(3) consolidating the coordinated control movements for adjusting speed, height and direction.

(b) Air exercise:

(1) maintaining height in particularly thermic conditions;

(2) making fine adjustments to the controls to achieve accurate flying.

Note: This exercise does not introduce new exercises but reinforces to the student the need for accurate flying (lookout/speed/direction/trim/height/balance) as it will be required in the circuit pattern, particularly coordinating controls and taking into account lift and sink conditions.

EXERCISE 9: CLIMBING AND DESCENDING PERFORMANCE

(a) Long-briefing objectives:

(1) the effect of power on the rate of climb and descent;

(2) the effect of airspeed on the rate of climb and descent;

(3) the procedure for climbing and levelling out;

(4) the procedure for descending and levelling out;

(5) the technique for accurately levelling out at a given altitude.

(b) Air exercise:

(1) full-power climbs at a constant speed;

(2) level out from a full-power climb at a given altitude, with accurate level, speed and balance;

(3) idle-power descents at a constant speed;

(4) level out from an idle-power descent at a given altitude, with accurate level, speed and balance;

(5) smooth transition from a high-power climb to a low-power descent maintaining speed and balance throughout;

(6) smooth transition from a low-power descent to a high-power climb maintaining speed and balance throughout.

EXERCISE 10: CLIMBING AND DESCENDING TURNS

(a) Long-briefing objectives:

(1) reinforce the differences in pedal coordination for balance when turning left and right with high power (climbing turns) and low power (idle-power descents);

(2) the effect of the angle of bank on the rate of climb and descent.

(b) Air exercise:

(1) level turns, initiate a climbing turn, level out while maintaining the turn;

(2) level turns, initiate a descending turn, level out while maintaining the turn;

(3) straight high-power climb, introduce a turn, continue on initial heading;

(4) straight idle descent, introduce a turn, continue on initial heading.

Note: Turns should be practised both to the left and to the right, should be 360 degrees, with constant speed and balance maintained throughout.

EXERCISE 11: SIGNIFICANT SPEED CHANGES, FAST FLIGHT

(a) Long-briefing objectives:

(1) the procedure for making speed changes with significant acceleration and deceleration;

(i) acceleration attitude;

(ii) deceleration attitude;

(2) fast flight;

(i) consequences of exceeding VNE;

(ii) differences in control responsiveness;

(iii) differences in vibration at speed.

(b) Air exercise:

(1) significant acceleration from cruise to fast flight, constant height and balance;

(2) significant deceleration from fast flight to cruise, constant height and balance;

(3) gentle turns at fast flight, constant height and speed.

Note: Fast flight is considered at the speed where a constant altitude can be maintained with the power close to maximum continuous. Care must be taken to never allow the student to exceed VNE.

EXERCISE 12: FLYING THE CIRCUIT PATTERN

(a) Long-briefing objectives:

(1) the terminology associated with the circuit pattern;

(2) considerations when flying the circuit pattern;

(i) high density of other traffic;

(ii) maintaining suitable separation from other aircraft;

(3) pre-landing checks;

(i) pilot/passenger security;

(ii) aircraft configured as per flight manual;

(iii) wind check (correct runway, type of landing);

(iv) flight situational awareness;

(4) final approach and positioning for landing;

(5) the go-around procedure;

(6) use of RT in the circuit pattern.

(b) Air exercise:

(1) flying the circuit pattern, maintaining good situational awareness;

(2) go-around at 300 ft above the runway;

(3) pre-landing checks;

(4) RT, as appropriate for the airfield.

Note: This exercise is likely to be flown in parallel with the previous lessons as training flights return to the airfield after the general handling exercises.

EXERCISE 13: ACTIVE ROTOR MANAGEMENT

(a) Long-briefing objectives:

(1) active rotor handling, taxi with rotor turning;

(2) starting the rotor prior to take-off — pre-rotation;

(3) setting off and building rotor speed using airflow;

(i) the need for an initial power setting that is unlikely to be full power;

(ii) stick forces during take-off;

(iii) importance of stick back before applying significant power;

(4) the wheel balance attitude;

(5) stopping the rotor after landing;

(6) what to do when the rotor rpm falls below the critical threshold.

(b) Air exercise:

(1) recap the lining-up procedure;

(2) pre-rotation and setting-off procedure;

(3) maintaining directional control during rotor speed acceleration;

(4) understanding how the stick forces change during the take-off;

(5) understanding the reduction in rotor acceleration with forward stick position;

(6) the importance of monitoring rotor rpm during this stage of the take-off;

(7) establishing the wheel balance attitude;

(8) stopping the gyroplane;

(i) using the rotor disc to slow the gyroplane;

(ii) stick position after stopping;

(iii) when it is appropriate to use the wheel brake;

(9) taxiing with rotor turning, stick positioned in relation to the wind.

EXERCISE 14: TAKE-OFF — WIND ON THE RUNWAY HEADING

(a) Long-briefing objectives:

(1) critical checks immediately prior to commencing the take-off run;

(i) passenger/pilot ready for take-off;

(ii) aircraft engine final check;

(iii) wind direction, is it still as required;

(iv) runway clear, crosswind clear;

(2) the gyroplane 'lift/unstick' from the runway;

(3) the height/velocity curve and the need to remain close to the ground during airspeed build-up;

(4) the stick forces and the need to trim during the airspeed build-up;

(5) the low-hops flight profile, flying at a height of approximately 1 metre;

(6) the high-hops flight profile, flying at a height of approximately 50 metres;

(7) landing ahead and rejecting take-offs.

(b) Air exercise:

(1) student lift and airspeed acceleration;

(i) with the instructor transitioning to a landing on the remaining runway;

(ii) with the student transitioning to a landing on the remaining runway;

(iii) low hop on cruise power, student landing on remaining runway;

(iv) high hop, student landing on remaining runway.

(2) take-off and climb out;

(3) checks when climbing through 300ft;

(i) passenger check (especially tandem gyroplane);

(ii) aircraft performance check;

(iii) weather check (clear of obstructions);

(iv) flight path and situational awareness.

Note: It is vital that the student learn to remain in control throughout the take-off and is comfortable to land ahead before continuing with the climb-out part of the exercise. Rejecting take-offs should be trained until the student is capable of rejecting a take-off safely, otherwise pilots will favour climbing out in situations that should be aborted for safety reasons.

EXERCISE 15: TAKE OFF — DIFFERENT CONDITIONS

(a) Long-briefing objectives:

(1) crosswind considerations;

(2) rough ground considerations;

(3) take-off performance:

(i) factors affecting take-off performance;

(ii) acceptable method or maximising take-off performance;

(A) higher pre-rotation;

(B) quicker application of high power;

(iii) noting a ground reference feature as take-off abortion point;

(iv) the danger of climbing out with insufficient airspeed to clear an obstacle. 'fools confidence', a significant contributing factor to gyroplane accidents;

(v) noting there is no additional 'short field' take-off technique in a gyroplane.

(4) strong wind considerations;

(5) slope considerations;

(6) immediate-departure take-offs, pre-rotating prior to lining up.

(b) Air exercise:

(1) take-off with crosswind from the left;

(2) take-off with crosswind from the right;

(3) take-off in a strong wind;

(4) rough ground take-off technique;

(5) immediate-departure take-off technique;

(6) emulating take-off with poor performance characteristics (see Note 1).

Note 1: This exercise is done to allow the student feel what the gyroplane will do when there is insufficient power to climb out safely. The purpose is to teach the student recognise the problem and make the decision to land ahead.

Note 2: This exercise will be flown on different days as it requires different wind conditions that are extremely unlikely to happen on a single day and in sequence. If, in the absence of particular wind conditions, take-offs in the wind conditions cannot be trained, the relevant parts of this exercise should be subject to an extensive briefing between the student and instructor during this exercise as well as during Exercise 17.

EXERCISE 16: LANDING — WIND ON THE RUNWAY HEADING

(a) Long-briefing objectives:

(1) the basics of the approach to landing;

(2) checks when descending through 300 ft;

(i) passenger standby;

(ii) aircraft settled — constant power and airspeed;

(iii) wind — prepare to anticipate drift;

(iv) runway clear or initiate go-around procedure;

(3) use of the controls during landing;

(i) throttle — rate of descent and angle of descent;

(ii) fore/aft stick — airspeed;

(iii) left/right stick — position over the ground;

(iv) pedals — aligning the wheels with the runway direction;

(4) extending the touchdown point to be close to a runway exit point;

(5) recovering from an inadvertent gaining of height during the final stages of landing caused by gusting winds or incorrect movement of the controls;

(6) consideration of the approach profile in relation to other traffic that may not be familiar with the descent profiles available in a gyroplane flight envelope.

(b) Air exercise:

(1) approach to a nominated reference point;

(i) go-around at 300 ft, with a constant airspeed;

(ii) descent through 300 ft and make appropriate checks;

(A) go-around with a constant airspeed at a height as low as the student is comfortable;

(B) continue practising until the student pilot is comfortable with flying a few feet above the runway.

(2) when the student is comfortable at flying a few feet above the runway, land ahead;

(3) flying the approach with different power settings, including idle power.

Note: The instructor should avoid asking the student to go around at specific heights below 300 ft so that the student concentrate on judging the height above the ground visually and not by reference to the altimeter.

EXERCISE 17: LANDING — DIFFERENT CONDITIONS

(a) Long-briefing objectives:

(1) considerations when landing in crosswinds, use of the 'split angle' technique;

(2) considerations when landing in light winds or no wind;

(3) the significant hazards of attempting to land downwind due to the rotor disc;

(4) considerations when landing in a strong wind;

(5) considerations when landing in soft or uneven ground.

(b) Air exercise:

(1) landing in a crosswind from the right;

(2) landing in a crosswind from the left;

(3) landing in no wind or in light wind conditions;

(4) landing in a strong wind, close to the runway heading;

(5) landing in strong crosswind, opting to land cross-runway into the wind;

(6) landing on soft or uneven ground.

EXERCISE 18: PRECISION LANDING

(a) Long-briefing objectives:

(1) the technique for a precision landing (power available);

(2) the importance of maintaining airspeed until immediately prior to touchdown.

(b) Air exercise:

(1) high-power approach, shallow approach angle;

(2) low-power approach, steep approach angle;

(3) approach and landing, simulating a short field.

EXERCISE 19: PRECISION LANDING — IDLE POWER

(a) Long-briefing objectives:

(1) the technique for a precision landing (idle power or no power available) using a close-in base leg and altering the radius of the final turn to get to the correct landing area;

(2) the importance of maintaining sufficient airspeed when close to the ground.

(b) Air exercise:

(1) glide approaches to touch down at a given point on the runway;

(i) straight-in approach;

(ii) using a single turn from the base leg;

(iii) using descending turns in a figure of 8 pattern perpendicular to the runway heading; balance must be maintained throughout.

EXERCISE 20: DEPARTING AND ARRIVING AT AIRFIELDS

(a) Long-briefing objectives:

(1) procedure when departing from the airfield;

(2) procedure when arriving at the airfield;

(3) airfield joining techniques:

(i) overhead join;

(ii) joining from the dead side of the airfield;

(iii) joining from the live side of the airfield.

(b) Air exercise:

(1) departing from the airfield;

(2) arriving from the airfield;

(3) joining procedures appropriate to the airfield.

Note: This exercise may be included in parallel with any other exercises that are flown outside the airfield ATZ as student workload permits.

EXERCISE 21: SLOW FLIGHT AT CONSTANT ALTITUDE (HELICOPTER MODE)

(a) Long-briefing objectives:

(1) the backside of the power curve and behind the power curve;

(2) HASEL checks (Height, Area, Secure, Engine, Lookout) before unusual manoeuvres;

(3) the technique for slow flight;

(4) flying stationary, at altitude, in relation to a ground reference (into wind).

(b) Air exercise:

(1) HASEL checks;

(2) slow flight into the wind;

(3) slow flight downwind;

(4) flying stationary in reference to a ground feature.

Note: The term 'helicopter mode' is a turn of phrase to indicate that a gyroplane has slow flight characteristics that are consistent with light helicopters and outside the flight envelope of fixed-wing aircraft. These exercises are all flown at a safe altitude.

EXERCISE 22: FLIGHT AT THE MINIMUM AIRSPEED ON IDLE POWER (PARACHUTE MODE)

(a) Long-briefing objectives:

(1) the technique for establishing slow flight on idle power;

(2) the importance of maintaining airflow over the rudder to avoid loss of control;

(3) the technique for regaining airspeed with minimum height loss when power is available;

(4) the technique for regaining airspeed with minimum height loss when power is not available;

(5) the tendency of a gyroplane to rotate around its vertical axis if rudder authority is lost due to the dissymmetry of propeller thrust when there is a high rate of descent and the power is idle;

(6) the recovery technique if the gyroplane starts to enter a rotation around its vertical axis.

(b) Air exercise:

(1) initiate a descent on idle power and an airspeed close to the minimum airspeed possible for the model of gyroplane used while maintaining rudder authority;

(2) recover from the slow-airspeed descent, with minimum height loss:

(i) with power available;

(ii) when no power is available;

(iii) instructor demo: inadvertent entry into loss of rudder authority — student recovery.

Note: The term 'parachute mode' is a turn of phrase to indicate that a gyroplane has the capability to descend in a controlled manner at very low airspeed when power is not available. This is not dissimilar to a parachute. This can be a key concept used in emergency handling. These exercises are all flown at safe altitude.

EXERCISE 23: GROUND REFERENCE TURNS

(a) Long-briefing objectives:

(1) reminder of throttle and pedal coordination during turns to maintain height and balance;

(2) high bank angle turns;

(3) the technique for turning around a ground reference feature at a constant radius to counter the effect of wind.

(b) Air exercise:

(1) high bank turns to the left and to the right;

(2) turning around a ground reference feature with significant wind:

(i) 360-degree turns around the feature (both left and right turns);

(ii) changing direction of the turn;

(iii) flying an S shape with constant radius along a line feature (180-degree turns).

EXERCISE 24: UNUSUAL ATTITUDES

(a) Long-briefing objectives:

(1) why unusual attitudes occur: distraction and fixation;

(2) recognising unusual attitudes;

(3) the unusual attitude recovery technique;

(4) the unusual attitude recovery exercises.

(b) Air exercise:

(1) reminder of the HASEL checks;

(2) distracted, head inside the cockpit:

(i) sudden pull-up in pitch, recover;

(II) powered descent towards VNE, recover;

(3) fixated, head outside the cockpit, looking at the ground:

(i) slow-airspeed spiral descent, turning with the pedals, recover;

(ii) fast-airspeed spiral descent, close to VNE, recover.

Note: Unusual attitudes are created by the instructor and recovered by the student.

EXERCISE 25: LOW FLYING

(a) Long-briefing objectives:

(1) the legal requirements relating to low flying;

(i) minimum height;

(ii) land clear;

(iii) noise and nuisance considerations;

(2) the hazards related to low flying:

(i) the influence of the wind on low flying (Speed perseption, Low level turbulence);

(ii) terrain, wires, masts and cables;

(iii) the effect on radio communication;

(iv) the difficulties of map reading;

(3) the pilot's limitations related to recovering from an emergency associated with low flying;

(4) Reduced Visibility Flying;

(i) vertical situational awareness;

(ii) bad weather/low level circuit joining, circuit flying and landing.

(b) Air exercise:

(1) flying low, with a suitable safety margin, to demonstrate how significantly reduced the margin or error is, with low height;

(2) analysing:

(i) the difficulty in seeing wires and masts;

(ii) loss-of-line-of-sight radio communications;

(iii) lack of time in the event of an engine failure;

(iv) noise and nuisance implications.

EXERCISE 26: CONSOLIDATION, EN-ROUTE AIRMANSHIP

(a) Long-briefing objectives:

(1) consolidation of the pre-flight planning process;

(2) en-route checks:

(i) pilot and passenger (stress, hunger, illness, tiredness);

(ii) aircraft (vibrations, engine, fuel);

(iii) weather (as expected/forecast, escape route);

(iv) flight situational awareness (location, airspace, radio).

(b) Air exercise:

(1) en-route checks.

Note: The flying element of this exercise is incorporated into other general handling flights as student workload permits. The pre-flight planning aspects of this exercise are likely to be included in parallel with all previous flights. This exercise exists to state that the complete pre-flight planning process should be competently done by the student by this point in the syllabus.

EXERCISE 27: IN-FLIGHT EMERGENCIES

(a) Long-briefing objectives:

(1) preparing for emergencies:

(i) possible emergency scenarios;

(a) Pilot / Passenger;

(b) Aircraft;

(c) Weather related;

(d) Flight related;

(ii) categories of emergencies;

(a) Aircrart is still flying;
(b) Precautionary landing required;
(c) Forced landing;
(d) Catastrophic;

(iii) how threat and error management reduces the likelihood of incidents;

(iv) standard emergency procedures;

(a) Trim Failure / Trim runaway;
(b) Throttle / Stick / Pedals control failure;
(c) Systems failure;
(d) Electrical fire / fuel fire;
(e) Emergency avacuation;

(v) ensuring that a catastrophic failure is mitigated;

(vi) emergency RT calls.

(b) Air exercise:

(1) simulated fire in the air;

(2) simulated fire on the ground;

(3) simulated bird strike or sudden noise;

(4) simulated violent shaking of the gyroplane;

(5) simulated limited engine power (slightly below the power required to maintain a constant altitude);

(6) simulated trim failure (where applicable):

(i) excessive rear trim;

(ii) excessive forward trim;

(iii) excessive roll trim;

(7) simulated rudder control failure;

(8) simulated stick failure;

(9) simulated throttle stuck on high power.

EXERCISE 28: PRECAUTIONARY LANDING

(a) Long-briefing objectives:

(1) awareness that poor in-flight planning during a precautionary landing increases the risk of accidents;

(2) reasons for making a precautionary field landing;

(3) criteria for the selection of an ideal field for landing;

(4) precautionary landing technique.

(b) Air exercise:

(1) surveying of field suitability for precautionary landing;

(2) simulating the reasons for a precautionary landing;

(3) practising the approach for precautionary landings.

EXERCISE 29: FORCED LANDING

(a) Long-briefing objectives:

(1) the phraseology that should be used when simulating forced landings;

(2) recap of the necessary skills already learned to make forced landings;

(i) Exercise 7: always being aware of the wind direction;

(ii) Exercise 10: descending turns on idle power;

(iii) Exercise 19: glide approaches;

(iv) Exercise 22: slow flight on idle power (parachute mode);

(v) Exercise 25: the hazards of low-level flying;

(vi) Exercise 28: field selection for landing;

(3) options for positioning for the field, above 300 ft AGL;

(4) options for positioning for the field, below 300 ft AGL;

(5) flying defensively, thinking ahead for landing areas, in relation to the wind direction.

(b) Air exercise:

(1) preselected fields and starting position;

(i) use slower than normal cruise speed to position at a key point on the field;

(ii) fly a path at the correct airspeed for landing to the field;

(iii) go around at an appropriate height;

(2) simulated restart in flight;

(3) simulated emergency RT calls;

(4) simulated forced landings, without prior notice;

(5) fly the routes defensively, verbalising options in the event of a forced landing.

EXERCISE 30: FORCED LANDING AROUND THE AIRFIELD

(a) Long-briefing objectives:

(1) engine failure on take-off:

(i) when still on the ground;

(ii) during the airspeed build-up phase;

(iii) during the climb-out;

(2) preparing for engine failures around the circuit pattern:

(i) crosswind;

(ii) downwind;

(iii) base leg;

(iv) final approach.

(b) Air exercise:

(1) recap of the aborted take-off technique;

(2) simulated engine failure:

(i) as the gyroplane is lifting;

(ii) during the airspeed build-up phase;

(iii) during climb-out;

(iv) crosswind;

(v) downwind;

(vi) base leg;

(vii) final approach (when it is not possible to reach the runway).

Note: When simulating engine failure in the circuit pattern, the emphasis should be on the proper initial reaction by the student pilot. It is not so important to continue at low level, as this is likely to be restricted due to noise abatement procedures.

EXERCISE 31: PRE-SOLO CHECK FLIGHT

(a) Long-briefing objectives:

(1) prerequisite for the first solo flight.

(b) Air exercise:

(1) simulated first solo flight (no hands-on control from the instructor unless required to save the aircraft from incident).

EXERCISE 32: FIRST SOLO

(a) Long-briefing objectives:

(1) differences in power requirements when flying solo;

(2) differences in handling characteristics when flying solo;

(3) what to do if the airfield closes during solo flight including procedures for navigating and landing at an alternate airfield.

(b) Air exercise:

(1) first solo flight.

EXERCISE 33: SOLO CONSOLIDATION

(a) Long-briefing objectives:

(1) readiness for solo flight:

(i) personal weather criteria;

(ii) decision-making by the student pilot, to be confirmed by the instructor;

(iii) only flying in accordance with the brief unless safety is compromised.

(b) Air exercise:

(1) solo flight in the local area, exercises determined by the instructor.

EXERCISE 34: EN-ROUTE NAVIGATION

(a) Long-briefing objectives:

(1) pre-fight planning for cross-country flights;

(2) considerations when flying a route;

(3) weather deterioration;

(4) procedure when unsure of position;

(5) dead reckoning;

(6) flying with GNPSS;

(7) en-route RT.

(b) Air exercise:

(1) flying planned routes at the discretion of the instructor;

(2) flying a simulated inadvertent entry into IMC

EXERCISE 35: LANDING OUT

(a) Long-briefing objectives:

(1) pre-flight planning when landing at different airfields.

(b) Air exercise:

(1) landing at different airfields at the discretion of the flight instructor.

EXERCISE 36: SOLO NAVIGATION

(a) Long-briefing objectives:

(1) always flying to plan unless safety is compromised.

(b) Air exercise:

(1) flying planned routes solo at the discretion of the flight instructor.

EXERCISE 37: QUALIFYING CROSS-COUNTRY FLIGHT(S)

(a) Long-briefing objectives:

(1) the prerequisite for qualifying cross-country flight(s).

(b) Air exercise:

(1) flying the qualifying cross-country flight(s).

EXERCISE 38: PREPARING FOR THE SKILL TEST

(a) Long-briefing objectives:

(1) the content of the skill test.

(b) Air exercise:

(1) flying the skill test programme.

EXERCISE 39: NIGHT FLYING (if night instructional qualification is required)

(a) Long-briefing objectives:

(1) night VMC minima;

(2) rules about airspace control at night and facilities available;

(3) rules about aerodrome ground, runway, landing site and obstruction lighting;

(4) aircraft navigation lights and collision avoidance rules;

(5) physiological aspects of night vision and orientation;

(6) dangers of disorientation at night;

(7) dangers of weather deterioration at night;

(8) instrument systems or functions and errors;

(9) instrument lighting and emergency cockpit lighting systems;

(10) map marking for use under cockpit lighting;

(11) practical navigation principles;

(12) electronic navigation aid principles;

(13) planning and use of safety altitude;

(14) danger due to icing conditions, avoidance and escape manoeuvres.

(b) Air exercise:

(1) Dual instruction by sole reference to instruments simulating inadvertent entry into IMC:

(i) interpretation and use of the EFIS;

(ii) straight and level flight;

(iii) rate-1 turns left and right;

(iv) turns to specific headings;

(v) maintain a heading for a significant period of time;

(vi) standard climbs to specific altitudes;

(vii) standard descents to specific altitudes;

(viii) glide descents;

(ix) maintaining trim and balance;

(x) unusual attitudes:

(A) nose high and banked,

(B) nose low and banked;

(xi) emergencies:

(A) initial response when inadvertently entering IMC;

(B) simulated engine failure in flight;

(2) flying by night:

(i) standard night flying:

(A) circuit flying at night;

(B) navigating to a specified location; (ii) emergencies: (A) initial response when inadvertently entering IMC; (B) simulated engine failure in flight (initial actions only); (iii) unusual attitudes at night: (A) nose high and banked; (B) nose low and banked.

AMC1 FCL.940.FI; FCL.940.IRI — Revalidation and renewal

[…]

FI — Revalidation and renewal
FI CERTIFICATE: REVALIDATION AND RENEWAL FORM

[…]

F. GYROPLANES[2]

INSTRUCTIONAL FLYING EXPERIENCE		
Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.		
Total instructional hours (preceding 36 months):		
Total instructional hours (preceding 12 months):		
FLIGHT INSTRUCTOR REFRESHER SEMINAR		
1	This is to certify that the undersigned attended an FI seminar	
2	Attendee's personal particulars:	
Name(s):		Address:
Licence number:		Expiration date of FI(G) certificate:
3	Seminar particulars:	
Date(s) of seminar:		Place:
4	Declaration by the responsible organiser:	
I certify that the above data are correct and that the FI seminar was carried out.		
Date of approval:		Name(s) of organiser: (capital letters)
Date and place:		Signature:
5	Declaration by the attendee:	

[2] NPA 2020-14 'Simpler, lighter and better Part-FCL requirements for general aviation' proposes the deletion of Sections D and E of this AMC. In coordination with RMT.0678, this new Section for the FI(G) form may be renamed 'Section D'.

I confirm the validity and correctness of the data under 1 through 3.	
Attendee's signature:	
PROFICIENCY CHECK	
(Name(s) of applicant) has given proof of flight instructional ability during a proficiency check flight. This was done to the required standard.	
Flying time:	Gyroplane or FFS used:
Main exercise:	
Name(s) of the FIE:	Licence number:
Date and place:	Signature:

AMENDMENTS TO ANNEX VI (PART-ARA)

List of acronyms used throughout this Annex

The following provides a list of acronyms used throughout this Annex:

(A) aeroplane

(H) helicopter

(G) gyroplane

[…]

In the List of acronyms used throughout this Annex a new item is inserted in the alphabetical order:

'GPL Gyroplane Pilot Licence';

1.2. Draft Air Operations Regulation

GM1 Annex I Definitions

DEFINITIONS FOR TERMS USED IN ACCEPTABLE MEANS OF COMPLIANCE AND GUIDANCE MATERIAL

[…]

(af) 'Rotorcraft' includes helicopters, gyroplanes, and tiltrotors.

[…]

ANNEX VII (PART-NCO)

GM1 NCO.GEN.105 Pilot-in-command responsibilities and authority

GENERAL

[…]

(b) the operation and safety of the aircraft:

(1) for aeroplanes and gyroplanes, from the moment it is first ready to move for the purpose of flight until the moment it comes to rest at the end of the flight and the engine(s) used as primary propulsion unit(s) is/are shut down;

[…]

AMC1 NCO.GEN.115 Taxiing of aeroplanes or gyroplanes

GYROPLANES — SAFETY-CRITICAL ACTIVITY

When a person is designated by the operator to taxi a gyroplane on the movement area of an aerodrome, and that person is not an appropriately qualified pilot, the rotor of the gyroplane should be secured in its parking position.

GM1 NCO.GEN.115 Taxiing of aeroplanes or gyroplanes

SAFETY-CRITICAL ACTIVITY

(a) Taxiing should be treated as a safety-critical activity due to the risks related to the movement of the aeroplane or the gyroplane and the potential for a catastrophic event on the ground.

(b) Taxiing is a high-workload phase of flight that requires the full attention of the pilot-in-command.

GM1 NCO.GEN.115(b)(4) Taxiing of aeroplanes or gyroplanes

SKILLS AND KNOWLEDGE

The person designated by the operator to taxi an aeroplane or a gyroplane should possess the following skills and knowledge:

(a) positioning of the aeroplane or the gyroplane to ensure safety when starting the engine;

(b) getting ATIS reports and taxi clearance, where applicable;

(c) interpretation of airfield markings/lights/signals/indicators;

(d) interpretation of marshalling signals, where applicable;

(e) identification of suitable parking areas;

(f) maintaining lookout and right-of-way rules and complying with ATC or marshalling instructions, when applicable;

(g) avoidance of adverse effect of propeller slipstream or jet wash on other ~~aeroplanes~~aircraft, aerodrome facilities and personnel;

(h) inspection of taxi path when surface conditions are obscured;

(i) communication with others when controlling an aeroplane or a gyroplane on the ground;

(j) interpretation of operational instructions;

(k) reporting of any problem that may occur while taxiing an aeroplane or a gyroplane; and

(l) adapting the taxi speed in accordance with prevailing aerodrome, traffic, surface and weather conditions.

AMC1 NCO.OP.125(b) Fuel/energy and oil supply ~~— aeroplanes and helicopters~~

PLANNING CRITERIA — FINAL RESERVE FUEL/ENERGY

[…]

(b) for rotorcraft~~helicopters~~:

[…]

AMC2 NCO.OP.125(b) Fuel/energy and oil supply ~~— aeroplanes and helicopters~~

[…]

AMC3 NCO.OP.125(b) Fuel/energy and oil supply ~~— aeroplanes and helicopters~~

[…]

GM1 NCO.OP.125(b) Fuel/energy and oil supply ~~— aeroplanes and helicopters~~

[…]

GM2 NCO.OP.125(b) Fuel/energy and oil supply ~~— aeroplanes and helicopters~~

[…]

AMC1 NCO.OP.160 Meteorological conditions

APPLICATION OF AERODROME FORECASTS (TAF & TREND) ~~— AEROPLANES AND HELICOPTERS~~

[…]

GM1 NCO.OP.160 Meteorological conditions

CONTINUATION OF A FLIGHT ~~— AEROPLANES AND HELICOPTERS~~

[…]

GM2 NCO.OP.160 Meteorological conditions

EVALUATION OF METEOROLOGICAL CONDITIONS ~~— AEROPLANES AND HELICOPTERS~~

[…]

AMC1 NCO.OP.175 Take-off conditions ~~— aeroplanes and helicopters~~

[…]

AMC1 NCO.OP.207 Approach and landing conditions — gyroplanes

The in-flight determination of the landing distance suitability should be based on the latest available meteorological report.

GM1 NCO.IDE.H.100(a) Instruments and equipment — general

APPLICABLE AIRWORTHINESS REQUIREMENTS

The applicable airworthiness requirements for the approval of instruments and equipment required by this Part are the following:

(a) Regulation (EU) No 748/2012 for ~~helicopters~~ rotorcraft registered in the EU; and

(b) ~~A~~airworthiness requirements of the State of registry for ~~helicopters~~ rotorcraft registered outside the EU.

GM1 NCO.IDE.H.100(c) Instruments and equipment — general

NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH THE APPLICABLE AIRWORTHINESS REQUIREMENTS, BUT ARE CARRIED ON A FLIGHT

[…]

(b) The failure of additional non-installed instruments or equipment not required by this Part or by the applicable airworthiness requirements or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the ~~helicopters~~ rotorcraft. Examples may be the following:

(1) portable electronic flight bag (EFB);

(2) portable electronic devices carried by crew members; and

(3) non-installed passenger entertainment equipment.

AMC1 NCO.IDE.H.115 Operating lights

LANDING LIGHT FOR HELICOPTERS

For helicopters, ~~T~~the landing light should be trainable, at least in the vertical plane, or optionally be an additional fixed light or lights positioned to give a wide spread of illumination.

AMC1 NCO.IDE.H.120 & NCO.IDE.H.125 Operations under VFR & operations under IFR — flight and navigational instruments and associated equipment

INTEGRATED INSTRUMENTS

(a) Individual equipment requirements may be met by combinations of instruments, by integrated flight systems or by a combination of parameters on electronic displays. The information so available to each required pilot should not be less than that required in the applicable operational requirements, and the equivalent safety of the installation should be approved during the type certification of the ~~helicopters~~ rotorcraft for the intended type of operation.

(b) The means of measuring and indicating turn and slip, ~~helicopters~~ rotorcraft attitude and stabilised ~~helicopters~~ rotorcraft heading may be met by combinations of instruments or by integrated flight director systems, provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

AMC1 NCO.IDE.H.120(a)(4) & NCO.IDE.H.125(a)(4) Operations under VFR & operations under IFR — flight and navigational instruments and associated equipment

CALIBRATION OF THE INSTRUMENT INDICATING AIRSPEED

(a) The instrument indicating airspeed should be calibrated in knots (kt).

(b) In the case of ~~helicopters~~ rotorcraft with an MCTOM below 2 000 kg, calibration in kilometres per hour (km/h~~kph~~) or in miles per hour (mph) is acceptable when such units are used in the AFM.

AMC1 NCO.IDE.H.135 Flight crew interphone system

GENERAL

(a) The flight crew interphone system should not be of a handheld type.

(b) A headset consists of a communication device which includes two earphones to receive and a microphone to transmit audio signals to the ~~helicopter's~~ rotorcraft's communication system. To comply with the minimum performance requirements, the earphones and microphone should match the communication system's characteristics and the flight crew compartment environment. The headset should be adequately adjustable in order to fit the pilot's head. Headset boom microphones should be of the noise-cancelling type.

(c) If the intention is to utilise noise-cancelling earphones, the pilot-in-command should ensure that the earphones do not attenuate any aural warnings or sounds necessary for alerting the flight crew on matters related to the safe operation of the ~~helicopters~~ rotorcraft.

AMC1 NCO.IDE.H.140 Seats, seat safety belts, restraint systems and child restraint devices

CHILD RESTRAINT DEVICES (CRDs)

(a) A CRD is considered to be acceptable if:

(1) it is a supplementary loop belt manufactured with the same techniques and the same materials of the approved safety belts; or

(2) it complies with (b).

(b) Provided the CRD can be installed properly on the respective ~~helicopter~~ rotorcraft seat, the following CRDs are considered acceptable:

[…]

GM1 NCO.IDE.H.145 First-aid kit

LOCATION AND USE

The location of the first-aid kit is normally indicated by ~~using~~ internationally recognisable signs.

The first-aid kit~~FAK~~ 'should be easily~~readily~~ accessible for use' in ~~helicopter~~ rotorcraft operations should be understood as the first-aid kit being ~~either~~ accessible either in flight or immediately after landing.

[…]

AMC1 NCO.IDE.H.175 Flight over water

[…]

RISK ASSESSMENT

(a) When conducting the risk assessment, the pilot-in-command should base his/her decision, as far as is practicable, on the Implementing Rules and AMC~~s~~ applicable to the operation of the ~~helicopter~~ rotorcraft.

[…]

AMC1 NCO.IDE.H.180 Survival equipment

GENERAL

~~Helicopters~~ Rotorcraft operated across areas in which search and rescue would be especially difficult should be equipped with the following:

[…]

AMC2 NCO.IDE.H.180 Survival equipment

ADDITIONAL SURVIVAL EQUIPMENT

(a) The following additional survival equipment should be carried when required:

(1) 500 ml of water for each four, or fraction of four, persons on board;

(2) one knife;

(3) first-aid equipment; and

(4) one set of air/ground codes.

(b) If any item of equipment contained in the above list is already carried on board the ~~helicopter~~ rotorcraft in accordance with another requirement, there is no need for this to be duplicated.

AMC1 NCO.IDE.H.185 All ~~helicopters~~ rotorcraft on flights over water – ditching

[…]

GM1 NCO.IDE.H.195 Navigation equipment

APPLICABLE AIRSPACE REQUIREMENTS

For ~~helicopters~~ rotorcraft that are ~~being~~ operated under European air traffic control, the applicable airspace requirements include the Single European Sky legislation.

AMC1 NCO.IDE.H.200 Transponder

GENERAL

(a) The secondary surveillance radar (SSR) transponders of ~~helicopters~~ rotorcraft ~~being~~ operated under European air traffic control should comply with any applicable Single European Sky legislation.

[…]

GM1 NCO.SPEC.100 Scope

LIST OF SPECIALISED OPERATIONS

(a) Specialised operations include the following activities:

(1) helicopter external loads operations;

(2) ~~helicopters~~ rotorcraft survey operations;

[…]

GM1 NCO.SPEC.105 Checklist

DEVELOPMENT OF CHECKLISTS

[…]

(b) aircraft and equipment:

(1) the category of aircraft to be used for the activity should be indicated, e.g. helicopter/gyroplane/aeroplane, single-/multi-engined;

(2) all equipment required for the activity should be listed;

[…]