European Aviation Safety Agency

Annex VII the draft Commission Regulation

on 'Air Operations — OPS'

Part-NCO — IR

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Part-NCO — IR

Subpart A — General requirements

NCO.GEN.100 Competent authority

(a) The competent authority shall be the authority designated by the Member State where the aircraft is registered.

(b) If the aircraft is registered in a third country, the competent authority shall be the authority designated by the Member State where the operator is established or residing.

NCO.GEN.101 Means of compliance

Alternative means of compliance to those adopted by the Agency may be used by an operator to establish compliance with Regulation (EC) No 216/2008[1] and its Implementing Rules.

NCO.GEN.102 Touring motor gliders and powered sailplanes

(a) Touring motor gliders shall be operated following the requirements for:

(1) aeroplanes when they are power-driven by an engine; and

(2) sailplanes when operated without using an engine.

(b) Touring motor gliders shall be equipped in compliance with the requirements applicable to aeroplanes unless otherwise specified in Subpart D.

(c) Powered sailplanes, excluding touring motor gliders, shall be operated and equipped in compliance with the requirements applicable to sailplanes.

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

(a) The pilot-in-command shall be responsible for:

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[1] Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC. *OJ L 79, 19.3.2008, p. 1*, as amended by Regulation (EC) No 1108/2009 of the European Parliament and of the Council of 21 October 2009, *OJ L 309, 24.11.2009, p. 51*.

(1) the safety of the aircraft and of all crew members, passengers and cargo on board during aircraft operations as referred to in 1.c of Annex IV to Regulation (EC) No 216/2008;

(2) the initiation, continuation, termination or diversion of a flight in the interest of safety;

(3) ensuring that all operational procedures and checklists are complied with as referred to in 1.b of Annex IV to Regulation (EC) No 216/2008;

(4) only commencing a flight if he/she is satisfied that all operational limitations referred to in 2.a.3. of Annex IV to Regulation (EC) No 216/2008 are complied with, as follows:

(i) the aircraft is airworthy;

(ii) the aircraft is duly registered;

(iii) instruments and equipment required for the execution of that flight are installed in the aircraft and are operative, unless operation with inoperative equipment is permitted by the minimum equipment list (MEL) or equivalent document, if applicable, as required in NCO.IDE.A.105, NCO.IDE.H.105, NCO.IDE.S.105 or NCO.IDE.B.105;

(iv) the mass of the aircraft and, except in the case of balloons, the centre of gravity location are such that the flight can be conducted within limits prescribed in the airworthiness documentation;

(v) all equipment, baggage and cargo are properly loaded and secured and an emergency evacuation remains possible; and

(vi) the aircraft operating limitations as specified in the aircraft flight manual (AFM) will not be exceeded at any time during the flight;

(5) not commencing a flight if he/she is incapacitated from performing duties by any cause such as injury, sickness, fatigue or the effects of any psychoactive substance;

(6) not continuing a flight beyond the nearest weather-permissible aerodrome or operating site when his/her capacity to perform duties is significantly reduced from causes such as fatigue, sickness or lack of oxygen;

(7) deciding on acceptance of the aircraft with unserviceabilities in accordance with the configuration deviation list (CDL) or minimum equipment list (MEL), as applicable; and

(8) recording utilisation data and all known or suspected defects in the aircraft at the termination of the flight, or series of flights, in the aircraft technical log or journey log for the aircraft.

(b) The pilot-in-command shall ensure that during critical phases of flight or whenever deemed necessary in the interest of safety, all crew members are seated at their assigned stations and do not perform any activities other than those required for the safe operation of the aircraft.

(c) The pilot-in-command shall have the authority to refuse carriage of or disembark any person, baggage or cargo that may represent a potential hazard to the safety of the aircraft or its occupants.

(d) The pilot-in-command shall, as soon as possible, report to the appropriate air traffic services (ATS) unit any hazardous weather or flight conditions encountered that are likely to affect the safety of other aircraft.

(e) The pilot-in-command shall, in an emergency situation that requires immediate decision and action, take any action he/she considers necessary under the circumstances in accordance with 7.d. of Annex IV to Regulation (EC) No 216/2008. In such cases he/she may deviate from rules, operational procedures and methods in the interest of safety.

(f) During flight, the pilot-in-command shall:

(1) except for balloons, keep his/her safety belt fastened while at his/her station; and

(2) remain at the controls of the aircraft at all times except if another pilot is taking the controls.

(g) The pilot-in-command shall submit a report of an act of unlawful interference without delay to the competent authority and shall inform the designated local authority.

(h) The pilot-in-command shall notify the nearest appropriate authority by the quickest available means of any accident involving the aircraft that results in serious injury or death of any person or substantial damage to the aircraft or property.

NCO.GEN.106 Pilot-in-command responsibilities and authority — balloons

The pilot-in-command of a balloon shall in addition to NCO.GEN.105 be responsible for:

(a) the pre-flight briefing of those persons assisting in the inflation and deflation of the envelope; and

(b) ensuring that persons assisting in the inflation and deflation of the envelope wear appropriate protective clothing.

NCO.GEN.110 Compliance with laws, regulations and procedures

(a) The pilot-in-command shall comply with the laws, regulations and procedures of those States where operations are conducted.

(b) The pilot-in-command shall be familiar with the laws, regulations and procedures, pertinent to the performance of his/her duties, prescribed for the areas to be traversed,

the aerodromes or operating sites to be used and the related air navigation facilities as referred to in 1.a. of Annex IV to Regulation (EC) No 216/2008.

NCO.GEN.115 Taxiing of aeroplanes

An aeroplane shall only be taxied on the movement area of an aerodrome if the person at the controls:

(a) is an appropriately qualified pilot; or

(b) has been designated by the operator and:

(1) is trained to taxi the aeroplane;

(2) is trained to use the radio telephone, if radio communications are required;

(3) has received instruction in respect of aerodrome layout, routes, signs, marking, lights, air traffic control (ATC) signals and instructions, phraseology and procedures; and

(4) is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

NCO.GEN.120 Rotor engagement

A helicopter rotor shall only be turned under power for the purpose of flight with a qualified pilot at the controls.

NCO.GEN.125 Portable electronic devices

The pilot-in-command shall not permit any person to use a portable electronic device (PED) on board an aircraft that could adversely affect the performance of the aircraft's systems and equipment.

NCO.GEN.130 Information on emergency and survival equipment carried

Except for aircraft taking-off and landing at the same aerodrome/operating site, the operator shall, at all times, have available for immediate communication to rescue coordination centres (RCCs) lists containing information on the emergency and survival equipment carried on board.

NCO.GEN.135 Documents, manuals and information to be carried

(a) The following documents, manuals and information shall be carried on each flight as originals or copies unless otherwise specified:

(1) the AFM, or equivalent document(s);

(2) the original certificate of registration;

(3) the original certificate of airworthiness (CofA);

(4) the noise certificate, if applicable;

(5) the list of specific approvals, if applicable;

(6) the aircraft radio licence, if applicable;

(7) the third party liability insurance certificate(s);

(8) the journey log, or equivalent, for the aircraft;

(9) details of the filed ATS flight plan, if applicable;

(10) current and suitable aeronautical charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;

(11) procedures and visual signals information for use by intercepting and intercepted aircraft;

(12) the MEL or CDL, if applicable; and

(13) any other documentation that may be pertinent to the flight or is required by the States concerned with the flight.

(b) Notwithstanding (a), on flights:

(1) intending to take off and land at the same aerodrome/operating site; or

(2) remaining within a distance or area determined by the competent authority,

the documents and information in (a)(2) to (a)(8) may be retained at the aerodrome or operating site.

(c) Notwithstanding (a), on flights with balloons or sailplanes, excluding touring motor gliders (TMGs), the documents and information in (a)(2) to (a)(8) and (a)(11) to (a)(13) may be carried in the retrieve vehicle.

(d) The pilot-in-command shall make available within a reasonable time of being requested to do so by the competent authority, the documentation required to be carried on board.

NCO.GEN.140 Transport of dangerous goods

(a) The transport of dangerous goods by air shall be conducted in accordance with Annex 18 to the Chicago Convention as last amended and amplified by the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Doc 9284-AN/905), including its supplements and any other addenda or corrigenda.

(b) Dangerous goods shall only be transported by the operator approved in accordance with Annex V (Part-SPA), Subpart G, to Regulation (EC) No xxx/XXXX except when:

(1) they are not subject to the Technical Instructions in accordance with Part 1 of those Instructions; or

(2) they are carried by passengers or the pilot-in-command, or are in baggage, in accordance with Part 8 of the Technical Instructions.

(c) The pilot-in-command shall take all reasonable measures to prevent dangerous goods from being carried on board inadvertently.

(d) The pilot-in-command shall, in accordance with the Technical Instructions, report without delay to the competent authority and the appropriate authority of the State of occurrence in the event of any dangerous goods accidents or incidents.

(e) The pilot-in-command shall ensure that passengers are provided with information about dangerous goods in accordance with the Technical Instructions.

NCO.GEN.145 Immediate reaction to a safety problem

The operator shall implement:

(a) any safety measures mandated by the competent authority in accordance with ARO.GEN.135(c); and

(b) any relevant mandatory safety information issued by the Agency, including airworthiness directives.

NCO.GEN.150 Journey log

Particulars of the aircraft, its crew and each journey shall be retained for each flight, or series of flights, in the form of a journey log, or equivalent.

NCO.GEN.155 Minimum equipment list

An MEL may be established as specified under 8.a.3. of Annex IV to Regulation (EC) No 216/2008. In that case, the MEL and any amendment thereto shall be approved by the competent authority.

Subpart B — Operational procedures

NCO.OP.100 Use of aerodromes and operating sites

The pilot-in-command shall only use aerodromes and operating sites that are adequate for the type of aircraft and operation concerned.

NCO.OP.105 Specification of isolated aerodromes — aeroplanes

For the selection of alternate aerodromes and the fuel policy, the pilot-in-command shall consider an aerodrome as an isolated aerodrome if the flying time to the nearest adequate destination alternate aerodrome is more than:

(a) for aeroplanes with reciprocating engines, 60 minutes; or

(b) for aeroplanes with turbine engines, 90 minutes.

NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

(a) For instrument flight rules (IFR) flights, the pilot-in-command shall select and use aerodrome operating minima for each departure, destination and alternate aerodrome. Such minima shall:

  (1) not be lower than those established by the State in which the aerodrome is located, except when specifically approved by that State; and

  (2) when undertaking low visibility operations, be approved by the competent authority in accordance with Annex V (Part-SPA), Subpart E to Regulation (EU) No xxx/XXXX.

(b) When selecting the aerodrome operating minima, the pilot-in-command shall take the following into account:

  (1) the type, performance and handling characteristics of the aircraft;

  (2) his/her competence and experience;

  (3) the dimensions and characteristics of the runways and final approach and take-off areas (FATOs) that may be selected for use;

  (4) the adequacy and performance of the available visual and non-visual ground aids;

(5) the equipment available on the aircraft for the purpose of navigation and/or control of the flight path, during the take-off, the approach, the flare, the landing, the rollout and the missed approach;

(6) the obstacles in the approach, the missed approach and the climb-out areas required for the execution of contingency procedures;

(7) the obstacle clearance altitude/height for the instrument approach procedures;

(8) the means to determine and report meteorological conditions; and

(9) the flight technique to be used during the final approach.

(c) The minima for a specific type of approach and landing procedure shall be used if:

(1) the ground equipment required for the intended procedure is operative;

(2) the aircraft systems required for the type of approach are operative;

(3) the required aircraft performance criteria are met; and

(4) the pilot is qualified appropriately.

NCO.OP.111 Aerodrome operating minima — NPA, APV, CAT I operations

(a) The decision height (DH) to be used for a non-precision approach (NPA) flown with the continuous descent final approach (CDFA) technique, approach procedure with vertical guidance (APV) or category I (CAT I) operation shall not be lower than the highest of:

(1) the minimum height to which the approach aid can be used without the required visual reference;

(2) the obstacle clearance height (OCH) for the category of aircraft;

(3) the published approach procedure DH where applicable;

(4) the system minimum specified in Table 1; or

(5) the minimum DH specified in the AFM or equivalent document, if stated.

(b) The minimum descent height (MDH) for an NPA operation flown without the CDFA technique shall not be lower than the highest of:

(1) the OCH for the category of aircraft;

(2) the system minimum specified in Table 1; or

(3) the minimum MDH specified in the AFM, if stated.

Table 1: System minima

Facility	Lowest DH/MDH (ft)
Instrument landing system (ILS)	200
Global navigation satellite system (GNSS) / Satellite-based augmentation system (SBAS) (Lateral precision with vertical guidance approach (LPV))	200
GNSS (Lateral Navigation (LNAV))	250
GNSS/Baro-vertical navigation (VNAV) (LNAV/ VNAV)	250
Localiser (LOC) with or without distance measuring equipment (DME)	250
Surveillance radar approach (SRA) (terminating at ½ NM)	250
SRA (terminating at 1 NM)	300
SRA (terminating at 2 NM or more)	350
VHF omnidirectional radio range (VOR)	300
VOR/DME	250
Non-directional beacon (NDB)	350
NDB/DME	300
VHF direction finder (VDF)	350

NCO.OP.112 Aerodrome operating minima — circling operations with aeroplanes

(a) The MDH for a circling operation with aeroplanes shall not be lower than the highest of:

(1) the published circling OCH for the aeroplane category;

(2) the minimum circling height derived from Table 1; or

(3) the DH/MDH of the preceding instrument approach procedure.

(b) The minimum visibility for a circling operation with aeroplanes shall be the highest of:

(1) the circling visibility for the aeroplane category, if published;

(2) the minimum visibility derived from Table 2; or

(3) the runway visual range / converted meteorological visibility (RVR/CMV) of the preceding instrument approach procedure.

Table 1: MDH and minimum visibility for circling vs. aeroplane category

	Aeroplane category			
	A	**B**	**C**	**D**
MDH (ft)	400	500	600	700
Minimum meteorological visibility (m)	1 500	1 600	2 400	3 600

NCO.OP.113 Aerodrome operating minima — circling operations with helicopters

The MDH for an onshore circling operation with helicopters shall not be lower than 250 ft and the meteorological visibility not less than 800 m.

NCO.OP.115 Departure and approach procedures — aeroplanes and helicopters

(a) The pilot-in-command shall use the departure and approach procedures established by the State of the aerodrome, if such procedures have been published for the runway or FATO to be used.

(b) The pilot-in-command may deviate from a published departure route, arrival route or approach procedure:

(1) provided obstacle clearance criteria can be observed, full account is taken of the operating conditions and any ATC clearance is adhered to; or

(2) when being radar-vectored by an ATC unit.

NCO.OP.120 Noise abatement procedures — aeroplanes, helicopters and powered sailplanes

The pilot-in-command shall take into account published noise abatement procedures to minimise the effect of aircraft noise while ensuring that safety has priority over noise abatement.

NCO.OP.121 Noise abatement procedures — balloons

The pilot-in-command shall take into account operating procedures to minimise the effect of heating-system noise while ensuring that safety has priority over noise abatement.

NCO.OP.125 Fuel and oil supply — aeroplanes

(a) The pilot-in-command shall only commence a flight if the aeroplane carries sufficient fuel and oil for the following:

(1) for visual flight rules (VFR) flights:

(i) by day, taking-off and landing at the same aerodrome/landing site and always remaining in sight of that aerodrome/landing site, to fly the intended route and thereafter for at least 10 minutes at normal cruising altitude;

(ii) by day, to fly to the aerodrome of intended landing and thereafter to fly for at least 30 minutes at normal cruising altitude; or

(iii) by night, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude;

(2) for IFR flights:

(i) when no destination alternate is required, to fly to the aerodrome of intended landing and thereafter to fly for at least 45 minutes at normal cruising altitude; or

(ii) when a destination alternate is required, to fly to the aerodrome of intended landing, to an alternate aerodrome and thereafter to fly for at least 45 minutes at normal cruising altitude.

(b) In computing the fuel required including to provide for contingency, the following shall be taken into consideration:

(1) forecast meteorological conditions;

(2) anticipated ATC routings and traffic delays;

(3) procedures for loss of pressurisation or failure of one engine while en-route, where applicable; and

(4) any other condition that may delay the landing of the aeroplane or increase fuel and/or oil consumption.

(c) Nothing shall preclude amendment of a flight plan in-flight, in order to re-plan the flight to another destination, provided that all requirements can be complied with from the point where the flight is re-planned.

NCO.OP.126 Fuel and oil supply — helicopters

(a) The pilot-in-command shall only commence a flight if the helicopter carries sufficient fuel and oil for the following:

(1) for VFR flights, to fly to the aerodrome/operating site of intended landing and thereafter to fly for at least 20 minutes at best-range-speed; and

(2) for IFR flights:

(i) when no alternate is required or no weather-permissible alternate aerodrome is available, to fly to the aerodrome/operating site of intended landing, and thereafter to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome/operating site under standard temperature conditions and approach and land; or

(ii) when an alternate is required, to fly to and execute an approach and a missed approach at the aerodrome/operating site of intended landing, and thereafter:

(A) to fly to the specified alternate; and

(B) to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate aerodrome/operating site under standard temperature conditions and approach and land.

(b) In computing the fuel required including to provide for contingency, the following shall be taken into consideration:

(1) forecast meteorological conditions;

(2) anticipated ATC routings and traffic delays;

(3) procedures for loss of pressurisation or failure of one engine while en-route, where applicable; and

(4) any other condition that may delay the landing of the aircraft or increase fuel and/or oil consumption.

(c) Nothing shall preclude amendment of a flight plan in-flight, in order to re-plan the flight to another destination, provided that all requirements can be complied with from the point where the flight is re-planned.

NCO.OP.127 Fuel and ballast supply and planning — balloons

(a) The pilot-in-command shall only commence a flight if the reserve fuel, gas or ballast is sufficient for 30 minutes of flight.

(b) Fuel, gas or ballast supply calculations shall be based upon at least the following operating conditions under which the flight is to be conducted:

(1) data provided by the balloon manufacturer;

(2) anticipated masses;

(3) expected meteorological conditions; and

(4) air navigation services provider procedures and restrictions.

NCO.OP.130 Passenger briefing

The pilot-in-command shall ensure that before or, where appropriate, during the flight, passengers are given a briefing on emergency equipment and procedures.

NCO.OP.135 Flight preparation

(a) Before commencing a flight, the pilot-in-command shall ascertain by every reasonable means available that the ground and/or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the aircraft, are adequate for the type of operation under which the flight is to be conducted.

(b) Before commencing a flight, the pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight. Preparation for a flight away from the vicinity of the place of departure, and for every flight under IFR, shall include:

(1) a study of available current weather reports and forecasts; and

(2) the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of weather conditions.

NCO.OP.140 Destination alternate aerodromes — aeroplanes

For IFR flights, the pilot-in-command shall specify at least one weather-permissible destination alternate aerodrome in the flight plan, unless:

(a) the available current meteorological information indicates that, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, the approach and landing may be made under visual meteorological conditions (VMC); or

(b) the place of intended landing is isolated and:

(1) an instrument approach procedure is prescribed for the aerodrome of intended landing; and

(2) available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the estimated time of arrival:

(i) a cloud base of at least 300 m (1 000 ft) above the minimum associated with the instrument approach procedure; and

(ii) visibility of at least 5.5 km or of 4 km more than the minimum associated with the procedure.

NCO.OP.141 Destination alternate aerodromes — helicopters

For IFR flights, the pilot-in-command shall specify at least one weather-permissible destination alternate aerodrome in the flight plan, unless:

(a) an instrument approach procedure is prescribed for the aerodrome of intended landing and the available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the estimated time of arrival, or from the actual time of departure to 2 hours after the estimated time of arrival, whichever is the shorter period:

(1) a cloud base of at least 120 m (400 ft) above the minimum associated with the instrument approach procedure; and

(2) visibility of at least 1 500 m more than the minimum associated with the procedure; or

(b) the place of intended landing is isolated and:

(1) an instrument approach procedure is prescribed for the aerodrome of intended landing;

(2) available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the estimated time of arrival:

(i) the cloud base is at least 120 m (400 ft) above the minimum associated with the instrument approach procedure;

(ii) visibility is at least 1 500 m more than the minimum associated with the procedure; and

(3) a point of no return (PNR) is determined in case of an offshore destination.

NCO.OP.145 Refuelling with passengers embarking, on board or disembarking

(a) The aircraft shall not be refuelled with aviation gasoline (AVGAS) or wide-cut type fuel or a mixture of these types of fuel, when passengers are embarking, on board or disembarking.

(b) For all other types of fuel, the aircraft shall not be refuelled when passengers are embarking, on board or disembarking, unless it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available.

NCO.OP.150 Carriage of passengers

Except for balloons, the pilot-in-command shall ensure that, prior to and during taxiing, take-off and landing, and whenever deemed necessary in the interest of safety, each passenger on board occupies a seat or berth and has his/her safety belt or restraint device properly secured.

NCO.OP.155 Smoking on board — aeroplanes and helicopters

The pilot-in-command shall not allow smoking on board:

(a) whenever considered necessary in the interest of safety; and

(b) during refuelling of the aircraft.

NCO.OP.156 Smoking on board — sailplanes and balloons

No person shall be allowed to smoke on board a sailplane or balloon.

NCO.OP.160 Meteorological conditions

(a) The pilot-in-command shall only commence or continue a VFR flight if the latest available meteorological information indicates that the weather conditions along the route and at the intended destination at the estimated time of use will be at or above the applicable VFR operating minima.

(b) The pilot-in-command shall only commence or continue an IFR flight towards the planned destination aerodrome if the latest available meteorological information indicates that, at the estimated time of arrival, the weather conditions at the destination or at least one destination alternate aerodrome are at or above the applicable aerodrome operating minima.

(c) If a flight contains VFR and IFR segments, the meteorological information referred to in (a) and (b) shall be applicable as far as relevant.

NCO.OP.165 Ice and other contaminants — ground procedures

The pilot-in-command shall only commence take-off if the aircraft is clear of any deposit that might adversely affect the performance or controllability of the aircraft, except as permitted in the AFM.

NCO.OP.170 Ice and other contaminants — flight procedures

(a) The pilot-in-command shall only commence a flight or intentionally fly into expected or actual icing conditions if the aircraft is certified and equipped to cope with such conditions as referred to in 2.a.5 of Annex IV to Regulation (EC) No 216/2008.

(b) If icing exceeds the intensity of icing for which the aircraft is certified or if an aircraft not certified for flight in known icing conditions encounters icing, the pilot-in-command shall exit the icing conditions without delay, by a change of level and/or route, and if necessary by declaring an emergency to ATC.

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

Before commencing take-off, the pilot-in-command shall be satisfied that:

(a) according to the information available, the weather at the aerodrome or operating site and the condition of the runway or FATO intended to be used would not prevent a safe take-off and departure; and

(b) applicable aerodrome operating minima will be complied with.

NCO.OP.176 Take-off conditions — balloons

Before commencing take-off, the pilot-in-command of a balloon shall be satisfied that, according to the information available, the weather at the operating site or aerodrome would not prevent a safe take-off and departure.

NCO.OP.180 Simulated abnormal situations in flight

(a) The pilot-in-command shall, when carrying passengers or cargo, not simulate abnormal or emergency situations that require the application of abnormal or emergency procedures or flight in instrument meteorological conditions (IMC) by artificial means.

(b) Notwithstanding (a), when training flights are conducted by an approved training organisation, such situations may be simulated with student pilots on-board.

NCO.OP.185 In-flight fuel management

The pilot-in-command shall check at regular intervals that the amount of usable fuel or ballast remaining in flight is not less than the fuel required to proceed, with the planned reserve fuel remaining as required by NCO.OP.125 and NCO.OP.126, to a weather-permissible aerodrome or operating site.

NCO.OP.190 Use of supplemental oxygen

The pilot-in-command shall ensure that he/she and flight crew members engaged in performing duties essential to the safe operation of an aircraft in flight use supplemental

oxygen continuously whenever the cabin altitude exceeds 10 000 ft for a period of more than 30 minutes and whenever the cabin altitude exceeds 13 000 ft.

NCO.OP.195 Ground proximity detection

When undue proximity to the ground is detected by the pilot-in-command or by a ground proximity warning system, the pilot-in-command shall take corrective action immediately in order to establish safe flight conditions.

NCO.OP.200 Airborne collision avoidance system (ACAS)

When ACAS is installed and serviceable, it shall be used in accordance with Regulation (EU) No 1332/2011[2].

NCO.OP.205 Approach and landing conditions — aeroplanes and helicopters

Before commencing an approach to land, the pilot-in-command shall be satisfied that, according to the information available, the weather at the aerodrome or the operating site and the condition of the runway or FATO intended to be used would not prevent a safe approach, landing or missed approach.

NCO.OP.210 Commencement and continuation of approach — aeroplanes and helicopters

(a) The pilot-in-command may commence an instrument approach regardless of the reported runway visual range / visibility (RVR/VIS).

(b) If the reported RVR/VIS is less than the applicable minimum, the approach shall not be continued:

(1) below 1 000 ft above the aerodrome; or

(2) into the final approach segment in the case where the decision altitude/height (DA/H) or minimum descent altitude/height (MDA/H) is more than 1 000 ft above the aerodrome.

(c) Where the RVR is not available, RVR values may be derived by converting the reported visibility.

(d) If, after passing 1 000 ft above the aerodrome, the reported RVR/VIS falls below the applicable minimum, the approach may be continued to DA/H or MDA/H.

(e) The approach may be continued below DA/H or MDA/H and the landing may be completed provided that the visual reference adequate for the type of approach

[2] Regulation (EU) No 1332/2011 laying down common airspace usage requirements and operating procedures for airborne collision avoidance, OJ L 336 , 20.12.2011 p. 20.

operation and for the intended runway is established at the DA/H or MDA/H and is maintained.

(f) The touchdown zone RVR shall always be controlling.

NCO.OP.215 Operational limitations — hot-air balloons

A hot-air balloon may take off during night, provided sufficient fuel is carried for a landing during day.

Subpart C — Performance and operating limitations

NCO.POL.100 Operating limitations

(a) During any phase of operation, the loading, the mass and, except for balloons, the centre of gravity (CG) position of the aircraft shall comply with any limitation specified in the AFM, or equivalent document.

(b) Placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the AFM for visual presentation, shall be displayed in the aircraft.

NCO.POL.105 Weighing — aeroplanes and helicopters

(a) The operator shall ensure that the mass of the aircraft and, for aeroplanes and helicopters only, the centre of gravity have been established by actual weighing prior to initial entry into service. The accumulated effects of modifications and repairs on the mass and balance shall be accounted for and properly documented. Such information shall be made available to the pilot-in-command. The aircraft shall be reweighed if the effect of modifications on the mass and balance is not accurately known.

(b) The weighing shall be accomplished by the manufacturer of the aircraft or by an approved maintenance organisation.

NCO.POL.110 Performance — general

(a) The pilot-in-command shall only operate the aircraft if the performance is adequate to comply with the applicable rules of the air and any other restrictions applicable to the flight, the airspace or the aerodromes or operating sites used, taking into account the charting accuracy of any charts and maps used.

(b) The pilot-in-command shall not operate the aircraft over the congested areas of cities, towns or settlements or over an open-air assembly of persons, if in the event of an engine failure a landing cannot be made without causing undue hazard to persons or property on the ground.

Subpart D — Instruments, data and equipment

Section 1 — Aeroplanes

NCO.IDE.A.100 Instruments and equipment — general

(a) Instruments and equipment required by this Subpart shall be approved in accordance with the applicable airworthiness requirements if they are:

(1) used by the flight crew to control the flight path, to comply with NCO.IDE.A.190 and NCO.IDE.A.195; or

(2) installed in the aeroplane.

(b) Instruments and equipment not required by this Subpart as well as any other equipment that is not required by other applicable Annexes, but is carried on a flight, shall comply with the following:

(1) the information provided by these instruments or equipment shall not be used by the flight crew to comply with Annex I to Regulation (EC) No 216/2008 or NCO.IDE.A.190 and NCO.IDE.A.195; and

(2) the instruments and equipment shall not affect the airworthiness of the aeroplane, even in the case of failures or malfunction.

(c) Instruments and equipment shall be readily operable or accessible from the station where the flight crew member that needs to use it is seated.

(d) All required emergency equipment shall be easily accessible for immediate use.

NCO.IDE.A.105 Minimum equipment for flight

A flight shall not be commenced when any of the aeroplane instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

(a) the aeroplane is operated in accordance with the MEL, if established; or

(b) the aeroplane is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

NCO.IDE.A.110 Spare electrical fuses

Aeroplanes shall be equipped with spare electrical fuses, of the ratings required for complete circuit protection, for replacement of those fuses that are allowed to be replaced in flight.

NCO.IDE.A.115 Operating lights

Aeroplanes operated at night shall be equipped with:

(a) an anti-collision light system;

(b) navigation/position lights;

(c) a landing light;

(d) lighting supplied from the aeroplane's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the aeroplane;

(e) lighting supplied from the aeroplane's electrical system to provide illumination in all passenger compartments;

(f) an independent portable light for each crew member station; and

(g) lights to conform with the International Regulations for Preventing Collisions at Sea if the aeroplane is operated as a seaplane.

NCO.IDE.A.120 Operations under VFR — flight and navigational instruments and associated equipment

(a) Aeroplanes operated under VFR by day shall be equipped with a means of measuring and displaying the following:

(1) magnetic heading,

(2) time, in hours, minutes and seconds,

(3) pressure altitude,

(4) indicated airspeed, and

(5) Mach number, whenever speed limitations are expressed in terms of Mach number.

(b) Aeroplanes operated under visual meteorological conditions (VMC) at night, or in conditions where the aeroplane cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with:

(1) a means of measuring and displaying the following:

(i) turn and slip,

(ii) attitude,

(iii) vertical speed, and

(iv) stabilised heading;

and

(2) a means of indicating when the supply of power to the gyroscopic instruments is not adequate.

(c) Aeroplanes operated in conditions where they cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a) and (b), equipped with a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

NCO.IDE.A.125 Operations under IFR — flight and navigational instruments and associated equipment

Aeroplanes operated under IFR shall be equipped with:

(a) a means of measuring and displaying the following:

(1) magnetic heading,

(2) time in hours, minutes and seconds,

(3) pressure altitude,

(4) indicated airspeed,

(5) vertical speed,

(6) turn and slip,

(7) attitude,

(8) stabilised heading,

(9) outside air temperature, and

(10) Mach number, whenever speed limitations are expressed in terms of Mach number;

(b) a means of indicating when the supply of power to the gyroscopic instruments is not adequate; and

(c) a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

NCO.IDE.A.130 Terrain awareness warning system (TAWS)

Turbine-powered aeroplanes certified for a maximum passenger seating configuration of more than nine shall be equipped with a TAWS that meets the requirements for:

(a) class A equipment, as specified in an acceptable standard, in the case of aeroplanes for which the individual certificate of airworthiness (CofA) was first issued after 1 January 2011; or

(b) class B equipment, as specified in an acceptable standard, in the case of aeroplanes for which the individual CofA was first issued on or before 1 January 2011.

NCO.IDE.A.135 Flight crew interphone system

Aeroplanes operated by more than one flight crew member shall be equipped with a flight crew interphone system, including headsets and microphones for use by all flight crew members.

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

(a) Aeroplanes shall be equipped with:

(1) a seat or berth for each person on board who is aged 24 months or more;

(2) a seat belt on each passenger seat and restraining belts for each berth;

(3) a child restraint device (CRD) for each person on board younger than 24 months; and

(4) a seat belt with upper torso restraint system on each flight crew seat, having a single point release.

NCO.IDE.A.145 First-aid kit

(a) Aeroplanes shall be equipped with a first-aid kit.

(b) The first-aid kit shall be:

(1) readily accessible for use; and

(2) kept up-to-date.

NCO.IDE.A.150 Supplemental oxygen — pressurised aeroplanes

(a) Pressurised aeroplanes operated at flight altitudes for which the oxygen supply is required in accordance with (b) shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.

(b) Pressurised aeroplanes operated above flight altitudes at which the pressure altitude in the passenger compartments is above 10 000 ft shall carry enough breathing oxygen to supply:

(1) all crew members and:

(i) 100 % of the passengers for any period when the cabin pressure altitude exceeds 15 000 ft, but in no case less than 10 minutes' supply.

(ii) at least 30 % of the passengers, for any period when, in the event of loss of pressurisation and taking into account the circumstances of the flight, the pressure altitude in the passenger compartment will be between 14 000 ft and 15 000 ft; and

(iii) at least 10 % of the passengers for any period in excess of 30 minutes when the pressure altitude in the passenger compartment will be between 10 000 ft and 14 000 ft;

and

(2) all the occupants of the passenger compartment for no less than 10 minutes, in the case of aeroplanes operated at pressure altitudes above 25 000 ft, or operated below that altitude but under conditions that will not allow them to descend safely to a pressure altitude of 13 000 ft within 4 minutes.

(c) Pressurised aeroplanes operated at flight altitudes above 25 000 ft shall, in addition, be equipped with a device to provide a warning indication to the flight crew of any loss of pressurisation.

NCO.IDE.A.155 Supplemental oxygen — non-pressurised aeroplanes

(a) Non-pressurised aeroplanes operated at flight altitudes when the oxygen supply is required in accordance with (b) shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.

(b) Non-pressurised aeroplanes operated above flight altitudes at which the pressure altitude in the passenger compartments is above 10 000 ft shall carry enough breathing oxygen to supply:

(1) all crew members and at least 10 % of the passengers for any period in excess of 30 minutes when the pressure altitude in the passenger compartment will be between 10 000 ft and 13 000 ft; and

(2) all crew members and passengers for any period that the pressure altitude in the passenger compartment will be above 13 000 ft.

NCO.IDE.A.160 Hand fire extinguishers

(a) Aeroplanes, except touring motor gliders (TMG), shall be equipped with at least one hand fire extinguisher:

(1) in the flight crew compartment; and

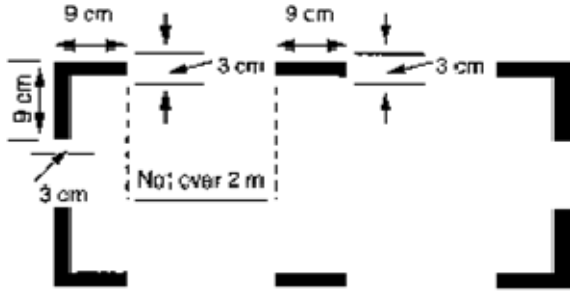
(2) in each passenger compartment that is separate from the flight crew compartment, except if the compartment is readily accessible to the flight crew.

(b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the compartment where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration in compartments occupied by persons.

NCO.IDE.A.165 Marking of break-in points

If areas of the aeroplane's fuselage suitable for break-in by rescue crews in an emergency are marked, such areas shall be marked as shown in Figure 1.

Figure 1: Marking of break-in points



NCO.IDE.A.170 Emergency locator transmitter (ELT)

(a) Aeroplanes shall be equipped with:

(1) an ELT of any type, when first issued with an individual CofA on or before 1 July 2008;

(2) an automatic ELT, when first issued with an individual CofA after 1 July 2008; or

(3) a survival ELT (ELT(S)) or a personal locator beacon (PLB), carried by the pilot-in-command or a passenger, when certified for a maximum passenger seating configuration of six or less.

(b) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121.5 MHz and 406 MHz.

NCO.IDE.A.175 Flight over water

(a) The following aeroplanes shall be equipped with a life-jacket for each person on board, or equivalent individual floatation device for each person on board younger than 24 months, that shall be worn or stowed in a position that is readily accessible from the seat or berth of the person for whose use it is provided:

(1) single-engined landplanes when:

(i) flying over water beyond gliding distance from land; or

(ii) taking off or landing at an aerodrome or operating site where, in the opinion of the pilot-in-command, the take-off or approach path is so disposed over water that there would be a likelihood of a ditching;

(2) seaplanes operated over water; and

(3) aeroplanes operated at a distance away from land where an emergency landing is possible greater than that corresponding to 30 minutes at normal cruising speed or 50 NM, whichever is less.

(b) Seaplanes operated over water shall be equipped with:

(1) one anchor;

(2) one sea anchor (drogue), when necessary to assist in manoeuvring; and

(3) equipment for making the sound signals, as prescribed in the International Regulations for Preventing Collisions at Sea, where applicable.

(c) The pilot-in-command of an aeroplane operated at a distance away from land where an emergency landing is possible greater than that corresponding to 30 minutes at normal cruising speed or 50 NM, whichever is the lesser, shall determine the risks to survival of the occupants of the aeroplane in the event of a ditching, based on which he/she shall determine the carriage of:

(1) equipment for making the distress signals;

(2) life-rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency; and

(3) life-saving equipment, to provide the means of sustaining life, as appropriate to the flight to be undertaken.

NCO.IDE.A.180 Survival equipment

Aeroplanes operated over areas in which search and rescue would be especially difficult shall be equipped with such signalling devices and life-saving equipment, including means of sustaining life, as may be appropriate to the area overflown.

NCO.IDE.A.190 Radio communication equipment

(a) Where required by the airspace being flown aeroplanes shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.

(b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

(c) When more than one communication equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

NCO.IDE.A.195 Navigation equipment

(a) Aeroplanes operated over routes that cannot be navigated by reference to visual landmarks shall be equipped with any navigation equipment necessary to enable them to proceed in accordance with:

(1) the ATS flight plan; if applicable; and

(2) the applicable airspace requirements.

(b) Aeroplanes shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.

(c) Aeroplanes operated on flights in which it is intended to land in IMC shall be equipped with suitable equipment capable of providing guidance to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at t which it is intended to land in IMC and for any designated alternate aerodromes.

NCO.IDE.A.200 Transponder

Where required by the airspace being flown, aeroplanes shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

Section 2 — Helicopters

NCO.IDE.H.100 Instruments and equipment — general

(a) Instruments and equipment required by this Subpart shall be approved in accordance with the applicable airworthiness requirements if they are:

(1) used by the flight crew to control the flight path, to comply with NCO.IDE.H.190 and NCO.IDE.H.195; or

(2) installed in the helicopter.

(b) Instruments and equipment not required by this Subpart, as well as any other equipment that is not required by other applicable Annexes, but is carried on a flight, shall comply with the following:

(1) the information provided by these instruments or equipment shall not be used by the flight crew to comply with Annex I to Regulation (EC) No 216/2008 or NCO.IDE.H.190 and NCO.IDE.H.195; and

(2) the instruments and equipment shall not affect the airworthiness of the helicopter, even in the case of failures or malfunction.

(c) Instruments and equipment shall be readily operable or accessible from the station where the flight crew member that needs to use it is seated.

(d) All required emergency equipment shall be easily accessible for immediate use.

NCO.IDE.H.105 Minimum equipment for flight

A flight shall not be commenced when any of the helicopter's instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

(a) the helicopter is operated in accordance with the MEL, if established; or

(b) the helicopter is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

NCO.IDE.H.115 Operating lights

Helicopters operated at night shall be equipped with:

(a) an anti-collision light system;

(b) navigation/position lights;

(c) a landing light;

(d) lighting supplied from the helicopter's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the helicopter;

(e) lighting supplied from the helicopter's electrical system to provide illumination in all passenger compartments;

(f) an independent portable light for each crew member station; and

(g) lights to conform with the International Regulations for Preventing Collisions at Sea if the helicopter is amphibious.

NCO.IDE.H.120 Operations under VFR — flight and navigational instruments and associated equipment

(a) Helicopters operated under VFR by day shall be equipped with a means of measuring and displaying the following:

(1) magnetic heading,

(2) time in hours, minutes and seconds,

(3) pressure altitude,

(4) indicated airspeed, and

(5) slip.

(b) Helicopters operated under VMC at night, or when the visibility is less than 1 500 m, or in conditions where the helicopter cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with:

(1) a means of measuring and displaying the following:

(i) attitude,

(ii) vertical speed, and

(iii) stabilised heading;

and

(2) a means of indicating when the supply of power to the gyroscopic instruments is not adequate.

(c) Helicopters operated when the visibility is less than 1 500 m, or in conditions where the helicopter cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a) and (b), equipped with a means

of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

NCO.IDE.H.125 Operations under IFR — flight and navigational instruments and associated equipment

Helicopters operated under IFR shall be equipped with:

(a) a means of measuring and displaying the following:

(1) magnetic heading,

(2) time in hours, minutes and seconds,

(3) pressure altitude,

(4) indicated airspeed,

(5) vertical speed,

(6) slip,

(7) attitude,

(8) stabilised heading, and

(9) outside air temperature;

(b) a means of indicating when the supply of power to the gyroscopic instruments is not adequate;

(c) a means of preventing malfunction of the airspeed indicating system required by (a)(4) due to condensation or icing; and

(d) an additional means of measuring and displaying attitude as a standby instrument.

NCO.IDE.H.126 Additional equipment for single pilot operations under IFR

Helicopters operated under IFR with a single pilot shall be equipped with an autopilot with at least altitude hold and heading mode.

NCO.IDE.H.135 Flight crew interphone system

Helicopters operated by more than one flight crew member shall be equipped with a flight crew interphone system, including headsets and microphones for use by all flight crew members.

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

(a) Helicopters shall be equipped with:

(1) a seat or berth for each person on board who is aged 24 months or more;

(2) a seat belt on each passenger seat and restraining belts for each berth;

(3) for helicopters first issued with an individual CofA after 31 July 1999, a seat belt with an upper torso restraint system for each passenger who is aged 24 months or more;

(4) a child restraint device for each person on board younger than 24 months; and

(5) a seat belt with upper torso restraint system incorporating a device that will automatically restrain the occupant's torso in the event of rapid deceleration on each flight crew seat.

(b) A seat belt with upper torso restraint system shall have a single point release.

NCO.IDE.H.145 First-aid kit

(a) Helicopters shall be equipped with a first-aid kit.

(b) The first-aid kit shall be:

(1) readily accessible for use; and

(2) kept up-to-date.

NCO.IDE.H.155 Supplemental oxygen — non-pressurised helicopters

(a) Non-pressurised helicopters operated at flight altitudes when the oxygen supply is required in accordance with (b) shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.

(b) Non-pressurised helicopters operated above flight altitudes at which the pressure altitude in the passenger compartments is above 10 000 ft shall carry enough breathing oxygen to supply:

(1) all crew members and at least 10 % of the passengers for any period in excess of 30 minutes when the pressure altitude in the passenger compartment will be between 10 000 ft and 13 000 ft; and

(2) all crew members and passengers for any period that the pressure altitude in the passenger compartment will be above 13 000 ft.

NCO.IDE.H.160 Hand fire extinguishers

(a) Helicopters shall be equipped with at least one hand fire extinguisher:

(1) in the flight crew compartment; and

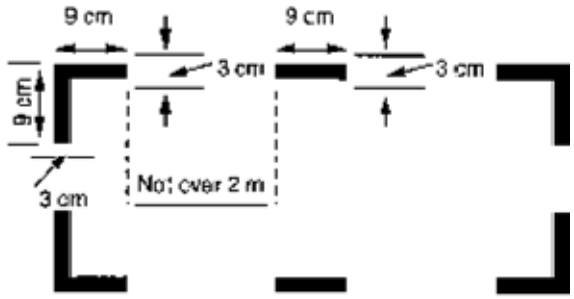
(2) in each passenger compartment that is separate from the flight crew compartment, except if the compartment is readily accessible to the flight crew.

(b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the compartment where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration in compartments occupied by persons.

NCO.IDE.H.165 Marking of break-in points

If areas of the helicopter's fuselage suitable for break-in by rescue crews in an emergency are marked, such areas shall be marked as shown in Figure 1.

Figure 1: Marking of break-in points



NCO.IDE.H.170 Emergency locator transmitter (ELT)

(a) Helicopters certified for a maximum passenger seating configuration above six shall be equipped with:

(1) an automatic ELT; and

(2) one survival ELT (ELT(S)) in a life-raft or life-jacket when the helicopter is operated at a distance from land corresponding to more than 3 minutes flying time at normal cruising speed.

(b) Helicopters certified for a maximum passenger seating configuration of six or less shall be equipped with an ELT(S) or a personal locator beacon (PLB), carried by the pilot-in-command or a passenger.

(c) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121.5 MHz and 406 MHz.

NCO.IDE.H.175 Flight over water

(a) Helicopters shall be equipped with a life-jacket for each person on board, or equivalent individual flotation device for each person on board younger than 24 months, that shall be worn or stowed in a position that is readily accessible from the seat or berth of the person for whose use it is provided, when:

(1) flying over water beyond autorotational distance from land; or

(2) taking off or landing at an aerodrome/operating site where the take-off or approach path is over water.

(b) Each life-jacket or equivalent individual flotation device shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

(c) The pilot-in-command of a helicopter operated on a flight over water at a distance from land corresponding to more than 30 minutes flying time at normal cruising speed or 50 NM, whichever is less, shall determine the risks to survival of the occupants of the helicopter in the event of a ditching, based on which he/she shall determine the carriage of:

(1) equipment for making the distress signals;

(2) life-rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency; and

(3) life-saving equipment, to provide the means of sustaining life, as appropriate to the flight to be undertaken.

(d) The pilot-in-command of a helicopter shall determine the risks to survival of the occupants of the helicopter in the event of a ditching, when deciding if the life-jackets required in (a) shall be worn by all occupants.

NCO.IDE.H.180 Survival equipment

Helicopters, operated over areas in which search and rescue would be especially difficult, shall be equipped with such signalling devices and life-saving equipment, including means of sustaining life, as may be appropriate to the area overflown.

NCO.IDE.H.185 All helicopters on flights over water — ditching

Helicopters flying over water in a hostile environment beyond a distance of 50 NM from land shall be:

(a) designed for landing on water in accordance with the relevant airworthiness code;

(b) certified for ditching in accordance with the relevant airworthiness code; or

(c) fitted with emergency flotation equipment.

NCO.IDE.H.190 Radio communication equipment

(a) Where required by the airspace being flown helicopters shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.

(b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

(c) When more than one communications equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

(d) When a radio communication system is required, and in addition to the flight crew interphone system required in NCO.IDE.H.135, helicopters shall be equipped with a transmit button on the flight controls for each required pilot and/or crew member at his/her working station.

NCO.IDE.H.195 Navigation equipment

(a) Helicopters operated over routes that cannot be navigated by reference to visual landmarks shall be equipped with navigation equipment that will enable them to proceed in accordance with:

(1) the ATS flight plan, if applicable; and

(2) the applicable airspace requirements.

(b) Helicopters shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.

(c) Helicopters operated on flights in which it is intended to land in IMC shall be equipped with navigation equipment capable of providing guidance to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at which is intended to land in IMC and for any designated alternate aerodromes.

NCO.IDE.H.200 Transponder

Where required by the airspace being flown, helicopters shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

Section 3 — Sailplanes

NCO.IDE.S.100 Instruments and equipment — general

(a) Instruments and equipment required by this Subpart shall be approved in accordance with the applicable airworthiness requirements if they are:

(1) used by the flight crew to control the flight path, to comply with NCO.IDE.S.145 and NCO.IDE.S.150; or

(2) installed in the sailplane.

(b) Instruments and equipment not required by this Subpart as well as any other equipment that is not required by other Annexes, but is carried on a flight, shall comply with the following:

(1) the information provided by these instruments or, equipment shall not be used by the flight crew to comply with Annex I to Regulation (EC) No 216/2008; and

(2) the instruments and equipment shall not affect the airworthiness of the sailplane, even in the case of failures or malfunction.

(c) Instruments and equipment shall be readily operable or accessible from the station where the flight crew member that needs to use it is seated.

(d) All required emergency equipment shall be easily accessible for immediate use.

NCO.IDE.S.105 Minimum equipment for flight

A flight shall not be commenced when any of the sailplane instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

(a) the sailplane is operated in accordance with the MEL, if established; or

(b) the sailplane is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

NCO.IDE.S.115 Operations under VFR — flight and navigational instruments

(a) Sailplanes operated under VFR by day shall be equipped with a means of measuring and displaying the following:

(1) in the case of powered sailplanes, magnetic heading,

(2) time in hours, minutes and seconds,

(3) pressure altitude, and

(4) indicated airspeed.

(b) Sailplanes operating in conditions where the sailplane cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with a means of measuring and displaying the following:

(1) vertical speed,

(2) attitude or turn and slip, and

(3) magnetic heading.

NCO.IDE.S.120 Cloud flying — flight and navigational instruments

Sailplanes performing cloud flying shall be equipped with a means of measuring and displaying the following:

(a) magnetic heading,

(b) time in hours, minutes and seconds,

(c) pressure altitude,

(d) indicated airspeed,

(e) vertical speed, and

(f) attitude or turn and slip.

NCO.IDE.S.125 Seats and restraint systems

(a) Sailplanes shall be equipped with:

(1) a seat for each person on board; and

(2) a seat belt with upper torso restraint system for each seat according to the AFM.

(b) A seat belt with upper torso restraint system shall have a single point release.

NCO.IDE.S.130 Supplemental oxygen

Sailplanes operated at pressure altitudes above 10 000 ft shall be equipped with an oxygen storage and dispensing apparatus carrying enough breathing oxygen to supply:

(a) crew members for any period in excess of 30 minutes when the pressure altitude will be between 10 000 ft and 13 000 ft; and

(b) all crew members and passengers for any period that the pressure altitude will be above 13 000 ft.

NCO.IDE.S.135 Flight over water

The pilot-in-command of a sailplane operated over water shall determine the risks to survival of the occupants of the sailplane in the event of a ditching, based on which he/she shall determine the carriage of:

(a) a life-jacket, or equivalent individual floatation device, for each person on board, that shall be worn or stowed in a position that is readily accessible from the seat of the person for whose use it is provided;

(b) an emergency locator transmitter (ELT) or a personal locator beacon (PLB), carried by the pilot-in-command or a passenger, capable of transmitting simultaneously on 121.5 MHz and 406 MHz; and

(c) equipment for making distress signals, when operating a flight:

(1) over water beyond gliding distance from land; or

(2) where the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of ditching.

NCO.IDE.S.140 Survival equipment

Sailplanes operated over areas in which search and rescue would be especially difficult shall be equipped with such signalling devices and life-saving equipment as appropriate to the area overflown.

NCO.IDE.S.145 Radio communication equipment

(a) Where required by the airspace being flown sailplanes shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations or those frequencies to meet airspace requirements.

(b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

NCO.IDE.S.150 Navigation equipment

Sailplanes shall be equipped with any navigation equipment necessary to proceed in accordance with:

(a) the ATS flight plan if applicable; and

(b) the applicable airspace requirements.

NCO.IDE.S.155 Transponder

When required by the airspace being flown, sailplanes shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

Section 4 — Balloons

NCO.IDE.B.100 Instruments and equipment — general

(a) Instruments and equipment required by this Subpart shall be approved in accordance with the applicable airworthiness requirements if they are:

(1) used by the flight crew to determine the flight path, to comply with NCO.IDE.B.145; or

(2) installed in the balloon.

(b) Instruments and equipment not required by this Subpart as well as any other equipment that is not required by other Annexes, but is carried on a flight, shall comply with the following:

(1) the information provided by these instruments or equipment shall not be used by the flight crew to comply with Annex I to Regulation (EC) No 216/2008; and

(2) the instruments and equipment shall not affect the airworthiness of the balloon, even in the case of failures or malfunction.

(c) Instruments and equipment shall be readily operable or accessible from the station where the flight crew member that needs to use it is assigned.

(d) All required emergency equipment shall be easily accessible for immediate use.

NCO.IDE.B.105 Minimum equipment for flight

A flight shall not be commenced when any of the balloon instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

(a) the balloon is operated in accordance with the MEL, if established; or

(b) the balloon is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

NCO.IDE.B.110 Operating lights

Balloons operated at night shall be equipped with:

(a) position lights;

(b) a means to provide adequate illumination for all instruments and equipment essential to the safe operation of the balloon;

(c) an independent portable light; and

(d) for hot air airships the following:

(1) a landing light, and

(2) an anti-collision light.

NCO.IDE.B.115 Operations under VFR — flight and navigational instruments and associated equipment

Balloons operated under VFR by day shall be equipped with the following:

(a) a means of displaying drift direction, and

(b) a means of measuring and displaying:

(1) time in hours, minutes and seconds,

(2) vertical speed, if required by the AFM, and

(3) pressure altitude, if required by the AFM, if required by airspace requirements or when altitude needs to be controlled for the use of oxygen.

NCO.IDE.B.120 First-aid kit

(a) Balloons shall be equipped with a first-aid kit.

(b) The first-aid kit shall be:

(1) readily accessible for use; and

(2) kept up-to-date.

NCO.IDE.B.121 Supplemental oxygen

Balloons operated at pressure altitudes above 10 000 ft shall be equipped with an oxygen storage and dispensing apparatus carrying enough breathing oxygen to supply:

(a) crew members for any period in excess of 30 minutes when the pressure altitude will be between 10 000 ft and 13 000 ft; and

(b) all crew members and passengers for any period that the pressure altitude will be above 13 000 ft.

NCO.IDE.B.125 Hand fire extinguishers

(a) Balloons shall be equipped with at least one hand fire extinguisher.

(b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the balloon where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration for the occupants of the balloon.

NCO.IDE.B.130 Flight over water

The pilot-in-command of a balloon operated over water shall determine the risks to survival of the occupants of the balloon in the event of a ditching, based on which he/she shall determine the carriage of:

(a) a life-jacket for each person on board, or equivalent individual floatation device for each person on board younger than 24 months, that shall be worn or stowed in a position that is readily accessible from the station of the person for whose use it is provided;

(b) when carrying more than 6 persons, an emergency locator transmitter (ELT) capable of transmitting simultaneously on 121.5 MHz and 406 MHz

(c) when carrying up to 6 persons, an ELT or a personal locator beacon (PLB), carried by the pilot-in-command or a passenger, capable of transmitting simultaneously on 121.5 MHz and 406 MHz; and

(c) equipment for making the distress signals.

NCO.IDE.B.135 Survival equipment

Balloons operated over areas in which search and rescue would be especially difficult shall be equipped with such signalling devices and life-saving equipment as appropriate to the area overflown.

NCO.IDE.B.140 Miscellaneous equipment

Hot-air balloons and mixed balloons shall be equipped with:

(a) an alternative source of ignition;

(b) a means of indicating excessive envelope temperature;

(c) a means of measuring and indicating fuel quantity;

(d) protective gloves for each crew member;

(e) a hook knife;

(f) a fire blanket or fire resistant cover; and

(g) a drop line of at least 25 m in length.

NCO.IDE.B.145 Radio communication equipment

(a) Where required by the airspace being flown, balloons shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations or those frequencies to meet airspace requirements.

(b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

NCO.IDE.B.150 Transponder

When required by the airspace being flown, balloons shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.