

**AMC/GM to Annex IV (Part-CAT ) – Issue 2**

**Change information**

The amendments are presented as follows:

Text to be deleted	<del>Text to be deleted is shown with a line through it.</del>
New text to be inserted	New text to be inserted is highlighted with grey shading.
New text to replace existing text	<del>Text to be deleted is shown with a line through it</del> followed by the replacement text which is highlighted with grey shading.
Text unchanged	Text without a horizontal line through it or grey shading remains the same.
Remaining text is unchanged in front of or following the amendment	...

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## Amendments to AMC/GM to Annex IV (Part-CAT)

### Subpart A – General requirements

#### Section 1 – Motor-powered aircraft

1. amend AMC1 CAT.GEN.MPA.115(a) as follows:

#### **AMC1 CAT.GEN.MPA.115(a) Personnel or crew members other than cabin crew in the passenger compartment**

##### MEASURES TO PREVENT CONFUSION BY PASSENGERS

If personnel or crew members other than operating cabin crew members carry out duties in a passenger compartment, the operator should ensure that they do not perform tasks or wear a uniform in such a way that might ~~lead passenger to~~ identify them as members of the operating cabin crew.

2. add GM1 CAT.GEN.MPA.115 as follows:

#### **GM1 CAT.GEN.MPA.115 Personnel or crew members other than cabin crew in the passenger compartment**

##### POSITIONING CABIN CREW MEMBERS

To prevent confusion by passengers and undue expectations in case of emergency, positioning cabin crew members should not wear, or should at least make invisible to passengers, parts of the operator's cabin crew uniform, such as main jacket or crew signs or badges, that might identify them as members of the operating cabin crew.

3. amend GM1 CAT.GEN.MPA.125 as follows:

#### **GM1 CAT.GEN.MPA.125 Taxiing of aeroplanes**

##### SKILLS AND KNOWLEDGE

The following skills and knowledge may be assessed to check if a person can be authorised by the operator to taxi an aeroplane:

- (a) positioning of the aeroplane to ensure safety when starting engine;
- (b) ~~obtaining automatic terminal information service (getting~~ ATIS reports and taxi clearance, where applicable;

...

4. amend AMC1 CAT.GEN.MPA.180 as follows:

**AMC1 CAT.GEN.MPA.180 Documents, manuals and information to be carried**

GENERAL

The documents, manuals and information may be available in a form other than on printed paper. ~~An electronic storage medium is acceptable if accessibility~~Accessibility, usability and reliability ~~can~~should be assured.

5. amend GM1 CAT.GEN.MPA.180(a)(5) as follows:

**GM1 CAT.GEN.MPA.180(a)(5)(6) Documents, manuals and information to be carried**

THE AIR OPERATOR CERTIFICATE CERTIFIED TRUE COPIES

- (a) Certified true copies may be provided:
- (a1) directly by the competent authority; or
  - (b2) by persons holding privileges for certification of official documents in accordance with the applicable Member State's legislation, e.g.7 public notaries, authorised officials in public services.
- (b) Translations of the air operator certificate (AOC) including operations specifications do not need to be certified.

6. amend GM1 CAT.GEN.MPA.180(a)(9) as follows:

**GM1 CAT.GEN.MPA.180(a)(9) Documents, manuals and information to be carried**

JOURNEY LOG OR EQUIVALENT

'Journey log, or equivalent' means ~~in this context~~ that the required information may be recorded in documentation other than a log book, such as the operational flight plan or the aircraft technical log.

7. amend AMC1 CAT.GEN.MPA.180(a)(13) as follows:

**AMC1 CAT.GEN.MPA.180(a)(13) Documents, manuals and information to be carried**

PROCEDURES AND VISUAL SIGNALS FOR USE BY INTERCEPTING AND INTERCEPTED AIRCRAFT

The procedures and the visual signals ~~information~~ information for use by intercepting and intercepted aircraft should reflect those contained in ~~the~~International Civil Aviation Organization (ICAO) Annex 2. This may be part of the operations manual.

8. add a new Section 2 to Subpart A – General requirements as follows:

**Section 2 – Non-motor-powered aircraft**

**AMC1 CAT.GEN.NMPA.100(b)(1) Responsibilities of the commander**

**ALCOHOL CONSUMPTION**

The operator should issue instructions concerning the consumption of alcohol by commanders. The instructions should not be less restrictive than the following:

- (a) no alcohol should be consumed less than 8 hours prior to the specified reporting time for a flight duty period or the commencement of standby;
- (b) the blood alcohol level should not exceed the lower of the national requirements or 0.2 per thousand at the start of a flight duty period; and
- (c) no alcohol should be consumed during the flight duty period or whilst on standby.

**GM1 CAT.GEN.NMPA.100(b)(2) Responsibilities of the commander**

**ELAPSED TIME BEFORE RETURNING TO FLYING DUTY**

24 hours is a suitable minimum length of time to allow after normal blood donation or normal recreational (sport) diving before returning to flying duties. This should be considered by operators when determining a reasonable time period for the guidance of crew members.

**PART-MED**

Information on the effects of medication, drugs, other treatments and alcohol can be found in Annex IV (Part-MED) to Commission Regulation (EU) No 1178/2011<sup>1</sup>.

**GM1 CAT.GEN.NMPA.100(d)(3) Responsibilities of the commander**

**PROTECTIVE CLOTHING – BALLOON OPERATIONS**

Protective clothing includes:

- (a) long sleeves and trousers preferably made out of natural fibres;
- (b) stout footwear; and
- (c) gloves.

**AMC1 CAT.GEN.NMPA.105(a) Additional balloon crew member**

**INSTRUCTIONS FOR THE ADDITIONAL CREW MEMBER**

The additional crew member should have taken part in:

- (a) the following practical training inflations with subsequent flights, as applicable:
  - (1) three on any balloon;
  - (2) two on balloons with baskets of a capacity of at least seven passengers; and

<sup>1</sup> Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 311, 25.11.2011, p. 1).

- (3) one on a balloon with a basket of a capacity of more than 19 passengers;
- (b) at least two landings under (a) with a ground speed of at least 5 kt; and
- (c) training in first-aid and in the use of the fire extinguisher at intervals of maximum 24 months.

**AMC1 CAT.GEN.NMPA.105(b)(1) Additional balloon crew member**

**ALCOHOL CONSUMPTION**

The operator should issue instructions concerning the consumption of alcohol by crew members. The instructions should not be less restrictive than the following:

- (a) no alcohol should be consumed less than 8 hours prior to the specified reporting time for a flight duty period or the commencement of standby;
- (b) the blood alcohol level should not exceed the lower of the national requirements or 0.2 per thousand at the start of a flight duty period;
- (c) no alcohol should be consumed during the flight duty period or whilst on standby.

**GM1 CAT.GEN.NMPA.105(b)(2) Additional balloon crew member**

**ELAPSED TIME BEFORE RETURNING TO FLYING DUTY**

24 hours is a suitable minimum length of time to allow after normal blood donation or normal recreational (sport) diving before returning to flying duties. This should be considered by operators when determining a reasonable time period for the guidance of crew members.

**PART-MED**

Information on the effects of medication, drugs, other treatments and alcohol can be found in Annex IV (Part-MED) to Commission Regulation (EU) No 1178/2011.

**GM1 CAT.GEN.NMPA.120 Portable electronic devices**

**GENERAL**

- (a) A portable electronic device (PED) is any kind of electronic device not being part of the certified aircraft configuration but brought on-board the aircraft either by crew members or passengers, or being inside the personal luggage or cargo.
- (b) The associated risk relates to interference of the PED with electronic operated aircraft systems, mainly instruments or communication equipment. The interference can result in malfunctioning or misleading information of on-board systems and communication disturbance which may subsequently increase flight crew workload.
- (c) Interference may be caused by transmitters being part of the PED functionality or by unintentional transmissions of the PED. Due to the short distance and the lack of shielding from a metal aircraft structure the risk of interference is to be considered higher in small aircraft compared to aircraft made of big metal structures. It has been found that compliance to the electromagnetic compatibility (EMC) Directive 2004/108/EC<sup>2</sup> and related European standards as indicated by the

<sup>2</sup> Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to

CE marking is not sufficient to exclude the existence of interference. A well-known interference is the demodulation of the transmitted signal from GSM mobile phones leading to audio disturbances in other systems. Similar to this case interferences can hardly be predicted during the PED design and protecting aircraft electronic against all kind of potential interferences is similar impossible. Therefore, not operating PEDs on-board aircraft is the safe option, especially as effects may not be identified immediately but under the most inconvenient circumstances.

**AMC1 CAT.GEN.NMPA.125 Information on emergency and survival equipment carried**

ITEMS FOR COMMUNICATION TO THE RESCUE COORDINATION CENTRE

The information, compiled in a list, should include, as applicable:

- (a) the number, colour and type of life rafts and pyrotechnics;
- (b) details of emergency medical supplies and water supplies; and
- (c) the type and frequencies of the emergency portable radio equipment.

**GM1 CAT.GEN.NMPA.140 Documents, manuals and information to be carried**

GENERAL

The documents, manuals and information may be available in a form other than on printed paper. Accessibility, usability and reliability should be assured.

**GM1 CAT.GEN.NMPA.140(a)(1) Documents, manuals and information to be carried**

AIRCRAFT FLIGHT MANUAL OR EQUIVALENT DOCUMENT(S)

At least the operating limitations, normal and emergency procedures should be available to the commander during operation by providing the relevant data of the AFM or by other means (e.g. placards, quick reference cards) that effectively accomplish the purpose.

**GM1 CAT.GEN.NMPA.140(a)(5)(6) Documents, manuals and information to be carried**

CERTIFIED TRUE COPIES

- (a) Certified true copies may be provided:
  - (1) directly by the competent authority; or
  - (2) by persons holding privileges for certification of official documents in accordance with applicable Member State's legislation, e.g. public notaries, authorised officials in public services.
- (b) Translations of the air operator certificate (AOC) including operations specifications do not need to be certified.

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electromagnetic compatibility and repealing Directive 89/336/EEC (OJ L 390, 31.12.2004, p. 24).

**GM1 CAT.GEN.NMPA.140(a)(9) Documents, manuals and information to be carried**

JOURNEY LOG, OR EQUIVALENT

'Journey log, or equivalent' means that the required information may be recorded in documentation other than a log book, such as the operational flight plan or the aircraft technical log.

**AMC1 CAT.GEN.NMPA.140(a)(13) Documents, manuals and information to be carried**

CURRENT AND SUITABLE AERONAUTICAL CHARTS

(a) The aeronautical charts carried should contain data appropriate to the applicable air traffic regulations, rules of the air, flight altitudes, area/route and nature of the operation. Due consideration should be given to carriage of textual and graphic representations of:

(1) aeronautical data including, as appropriate for the nature of the operation:

- (i) airspace structure;
  - (ii) significant points, navigation aids (navaids) and air traffic services (ATS) routes;
  - (iii) navigation and communication frequencies;
  - (iv) prohibited, restricted and danger areas; and
  - (v) sites of other relevant activities that may hazard the flight;
- and

(2) topographical data, including terrain and obstacle data.

(b) A combination of different charts and textual data may be used to provide adequate and current data.

(c) The aeronautical data should be appropriate for the current aeronautical information regulation and control (AIRAC) cycle.

(d) The topographical data should be reasonably recent, having regard to the nature of the planned operation.

**AMC1 CAT.GEN.NMPA.140(a)(14) Documents, manuals and information to be carried**

PROCEDURES AND VISUAL SIGNALS FOR USE BY INTERCEPTING AND INTERCEPTED AIRCRAFT

The procedures and the visual signals information for use by intercepting and intercepted aircraft should reflect those contained in International Civil Aviation Organization (ICAO) Annex 2. This may be part of the operations manual.

**GM1 CAT.GEN.NMPA.140(a)(15) Documents, manuals and information to be carried**

SEARCH AND RESCUE INFORMATION

This information is usually found in the State's aeronautical information publication.

**GM1 CAT.GEN.NMPA.140(a)(21) Documents, manuals and information to be carried**

DOCUMENTS THAT MAY BE PERTINENT TO THE FLIGHT

Any other documents that may be pertinent to the flight or required by the States concerned with the flight may include, for example, forms to comply with reporting requirements.

STATES CONCERNED WITH THE FLIGHT

The States concerned are those of origin, transit, overflight and destination of the flight.

**GM1 CAT.GEN.NMPA.150(a)(1) Transport of dangerous goods**

EXCEPTIONS, APPROVALS, EXEMPTIONS

- (a) The Technical Instructions (T.I.) provide for exceptions to the provisions for the transport of dangerous goods for those goods that are required on board in accordance with airworthiness rules and/or are used for operational purposes, e.g. portable electronic devices.
- (b) Furthermore, the T.I. allow to deviate from provisions on how to transport dangerous goods through approvals. However, such approvals are likely to be used only for operators holding a specific approval to dangerous goods as in Annex V (Part-SPA), Subpart G. Approvals under Part 1 of the T.I. may therefore not be relevant for commercial air transport operations with sailplanes and balloons.
- (c) The T.I. also provide for exemptions. An exemption would allow the transport of dangerous goods which would normally be forbidden. Exemptions may be granted by the State of the operator, the States of origin, transit, overflight and destination. Exemptions, as stated in the T.I., can be granted under the following conditions:
  - (1) the overall level of safety is at least equivalent to the level of safety provided for in the T.I.; and
  - (2) at least one of the following three criteria is fulfilled:
    - (i) in cases of extreme urgency; or
    - (ii) when other forms of transport are inappropriate; or
    - (iii) when full compliance with the T.I. is contrary to the public interest.

**GM1 CAT.GEN.NMPA.150(a)(2) Transport of dangerous goods**

DANGEROUS GOODS CARRIED UNDER THE PROVISIONS OF PART 8 OF THE T.I.

Passengers and crew may carry certain dangerous goods under the provisions of Part 8 of the T.I. either in their baggage or on the person. The T.I. specify for which goods an approval from the operator or a notification to the commander is compulsory. The T.I., furthermore, specify restrictions to the carriage of some of these goods.



**GM1 CAT.GEN.NMPA.150(b)(c) Transport of dangerous goods**

**PROCEDURES AND INFORMATION TO PERSONNEL AND PASSENGERS**

- (a) Personnel should be trained to get familiarised with the items that are allowed or forbidden on board to an extent that they can inform the passengers accordingly. An updated list of permitted items under Part 8 of the T. I. should be available to the personnel. This can be a poster, a leaflet or anything that can be easily understood and shown to the passengers when needed. This list should also specify the items that are forbidden under all circumstances as established in Part 8 of the T.I.
- (b) Information should be given to the passengers as regards goods that are forbidden to take on board before the flight takes place. This can be done in the website where the ticket is bought or in a summary written on the physical ticket that is given to the passenger. In case this is not possible, the crew can provide this information in a briefing before the flight.
- (c) An operator should provide information in the operations manual to enable the commander and other personnel to carry out their responsibilities and identify which dangerous goods can be allowed on board.
- (d) Procedures should also be established and described in the operations manual to respond to accidents or incidents involving dangerous goods. The relevant personnel should be familiar with them.

**Subpart B – Operating procedures**

**Section 1 – Motor-powered aircraft**

9. add a new AMC12 CAT.OP.MPA.110 as follows:

**AMC12 CAT.OP.MPA.110 Aerodrome operating minima**

**VFR OPERATIONS WITH OTHER-THAN-COMPLEX MOTOR-POWERED AIRCRAFT**

For the establishment of VFR operation minima, the operator may apply the VFR operating minima specified in Part-SERA. Where necessary, the operator may specify in the OM additional conditions for the applicability of such minima taking into account such factors as radio coverage, terrain, nature of sites for take-off and landing, flight conditions and ATS capacity.

10. add AMC2 CAT.OP.MPA.170 as follows:

**AMC2 CAT.OP.MPA.170 Passenger briefing**

**SINGLE-PILOT OPERATIONS WITHOUT CABIN CREW**

For single-pilot operations without cabin crew, the commander should provide safety briefings to passengers except during critical phases of flight and taxiing.

11. add a new Section 2 to Subpart B – Operating procedures as follows:

## Section 2 – Non-motor-powered aircraft

### GM1 CAT.OP.NMPA.100 Use of aerodromes and operating sites

#### BALLOONS

An adequate operating site is a site that the commander considers to be satisfactory, taking account of the applicable performance requirements and site characteristics.

### AMC1 CAT.OP.NMPA.115 Carriage of special categories of passengers (SCPs)

#### CARRIAGE OF CHILDREN AND PERSONS WITH REDUCED MOBILITY – BALLOONS

The operator may exclude children and/or persons with reduced mobility (PRM)s from transportation in a balloon, when:

- (a) their presence may impede:
  - (1) the crew in their duties;
  - (2) access to emergency equipment; or
  - (3) the emergency evacuation of the balloon;and/or
- (b) those persons are:
  - (1) unable to take a proper brace position; or
  - (2) shorter than the inner height of the basket wall.

### AMC1 CAT.OP.NMPA.120 Passenger briefing

#### SAILPLANES

The briefing should include the locations and use of seat belts and if applicable:

- (a) emergency canopy opening;
- (b) use of the parachute;
- (c) oxygen dispensing equipment;
- (d) passenger emergency briefing cards; and
- (e) other emergency equipment, where provided for individual passenger use.

### AMC2 CAT.OP.NMPA.120 Passenger briefing

#### BALLOONS

- (a) Passengers should be given a verbal briefing and demonstration about safety matters in such a way that the information is easily retained and reproduced during the landing and in the case of an emergency situation.
- (b) The briefing/demonstration should contain the following items:
  - (1) use of landing hand-holds;
  - (2) use of oxygen dispensing equipment, if applicable;
  - (3) other emergency equipment, where provided for individual passenger use;
  - (4) wearing of suitable clothing;

- (5) smoking regulations and the use of portable electronic devices;
  - (6) stowage of baggage;
  - (7) importance to remain inside the basket at all times, particularly after landing;
  - (8) landing positions to be assumed to minimise the effect of the impact upon an emergency landing; and
  - (9) safe transport of the balloon on the ground after landing.
- (c) Part or all of the verbal briefing may be provided additionally by a safety briefing card on which pictorial instructions indicate the correct landing position.
- (d) Before take-off the correct landing position should be demonstrated.
- (e) Before commencing the landing phase, passengers should be required to practise the correct landing position.

### **AMC1 CAT.OP.NMPA.125(a) Flight preparation**

#### **GROUND FACILITIES**

NOTAMS should be considered as an appropriate means to gather the required information.

### **AMC1 CAT.OP.NMPA.130 Submission of the ATS flight plan**

#### **FLIGHTS WITHOUT ATS FLIGHT PLAN**

- (a) The operator should nominate a person to be responsible for alerting search and rescue services for flights without submitted ATS flight plans.
- (b) The operator should establish procedures to ensure that each flight is located at all times and provide:
- (1) the nominated person with at least the information required to be included in a VFR flight plan, and the location, date and estimated time for re-establishing communications;
  - (2) for notification to the appropriate ATS or search and rescue facility, if an aircraft is overdue or missing; and
  - (3) that the information is retained at a designated place until the completion of the flight.

### **AMC1 CAT.OP.NMPA.155 Take-off conditions**

#### **FACILITIES AT THE TAKE-OFF SITE - BALLOONS**

At the balloon take-off site a means of assessing the wind direction and wind speed should be provided by the operator.

### **GM1 CAT.OP.NMPA.180 Operational limitations – hot-air balloons**

#### **AVOIDANCE OF NIGHT LANDING**

The intent of rule is to ensure that when the balloon takes off during night, sufficient fuel is on board for landing under VFR by day.

The risk of collision with overhead lines is considerable and cannot be overstated. The risk is considerably increased during night flights in conditions of failing light and visibility when there is increasing pressure to land. A number of incidents have occurred in the late evening in just such conditions and may have been avoided had an earlier landing been planned. Night landings should therefore be avoided by taking appropriate measures including a larger quantity of fuel and/or additional safety equipment.

## **Subpart C – Aircraft performance and operating limitations**

### **Section 1 – Aeroplanes**

12. amend AMC1 CAT.POL.A.310 as follows:

#### **AMC1 CAT.POL.A.310 Take-off obstacle clearance – multi-engined aeroplanes**

##### **TAKE-OFF FLIGHT PATH – VISUAL COURSE GUIDANCE NAVIGATION**

- (a) In order to allow visual course guidance navigation, the weather conditions prevailing at the time of operation, including ceiling and visibility, should be such that the obstacle and/or ground reference points can be seen and identified. For VFR operations by night, the visual course guidance should be considered available when the flight visibility is 1 500 m or more.

...

### **Section 3 – Mass and balance**

#### **CHAPTER 1 – MOTOR-POWERED AIRCRAFT**

13. amend AMC1 CAT.POL.MAB.100(b) as follows:

#### **AMC1 CAT.POL.MAB.100(b) Mass and balance, loading**

##### **WEIGHING OF AN AIRCRAFT**

- (a) New aircraft that have been weighed at the factory may be placed into operation without reweighing if the mass and balance records have been adjusted for alterations or modifications to the aircraft. Aircraft transferred from one EU operator to another EU operator do not have to be weighed prior to use by the receiving operator, unless more than 4 years have elapsed since the last weighing.
- (b) The mass and centre of gravity (CG) position of an aircraft should be revised whenever the cumulative changes to the dry operating mass exceed  $\pm 0.5\%$  of the maximum landing mass or, for aeroplanes, the cumulative change in CG position exceeds  $0.5\%$  of the mean aerodynamic chord. This may be done by weighing the aircraft or by calculation. If the AFM requires to record changes to mass and CG position below these thresholds, or to record changes in any case, and make them known to the commander, mass and CG position should be revised accordingly and made known to the commander

...

Table 1: Accuracy criteria for weighing equipment

For a scale/cell load	An accuracy of
below 2 000 kg	±1 %
from 2 000 kg to 20 000 kg	±20 kg
<del>from 2 000 kg to</del> above 20 000 kg	±0.1 %

14. amend GM1 CAT.POL.MAB.100(e) as follows:

**GM1 CAT.POL.MAB.100(e) Mass and balance, loading**

ADJUSTMENT OF STANDARD MASSES

When standard mass values are used, AMC1 CAT.POL.MAB.100(~~de~~) subparagraph (g) states that the operator should identify and adjust the passenger and checked baggage masses in cases where significant numbers of passengers or quantities of baggage are suspected of significantly deviating from the standard values. Therefore, the operations manual should contain instructions to ensure that:

15. add a new Section 4 to Subpart C — Aircraft performance and operating limitations as follows:

**Section 4 — Sailplanes**

*Reserved*

16. add a new Section 5 to Subpart C — Aircraft performance and operating limitations as follows:

**Section 5 — Balloons**

**GM1 CAT.POL.B.105 Weighing**

GENERAL

- (a) New balloons that have been weighed at the factory may be placed into operation without reweighing if the mass records have been adjusted for alterations or modifications to the balloon. Balloons transferred from one EU operator to another EU operator do not have to be weighed prior to use by the receiving operator unless the mass cannot be accurately established by calculation.
- (b) The mass of a balloon should be revised whenever the cumulative changes to the balloon empty mass due to modifications or repairs exceed ± 10 % of the initial empty mass. This may be done by weighing the balloon or by calculation.

- (c) The initial empty mass for a balloon is the balloon empty mass determined by a weighing performed by the manufacturer of the balloon before the initial entry into service

**AMC1 CAT.POL.B.110(a)(2) System for determining the mass**

**TRAFFIC LOAD**

Traffic load should be determined by actual weighing or using standard masses for passengers, persons other than flight crew members and baggage.

**AMC2 CAT.POL.B.110(a)(2) System for determining the mass**

**MASS VALUES FOR PASSENGERS AND BAGGAGE**

- (a) Passenger mass may be calculated on the basis of a statement by, or on behalf of, each passenger, adding to it a predetermined mass to account for hand baggage and clothing.
- (b) The predetermined mass for hand baggage and clothing should be established by the operator on the basis of experience relevant to his particular operation. In any case, it should not be less than:
  - (1) 4 kg for clothing; and
  - (2) 3 kg for hand baggage.

The passengers' stated mass and the mass of passengers' clothing and hand baggage should be checked prior to boarding and adjusted, if necessary.

- (c) When determining the actual mass by weighing, passengers' personal belongings and hand baggage should be included.

**AMC1 CAT.POL.B.110(a)(6) System for determining the mass**

**DOCUMENTATION**

- (a) Mass documentation should contain the following:
  - (1) balloon registration and type;
  - (2) date and flight identification;
  - (3) name of the commander;
  - (4) name of the person who prepared the document;
  - (5) balloon empty mass;
  - (6) mass of the fuel or ballast at take-off;
  - (7) load components including passengers, baggage and, if applicable, freight;
  - (8) take-off mass allowed by the AFM according to temperature and altitude; and
  - (10) limiting mass values.
- (b) The mass documentation should enable the commander to determine that the load is within the mass limits of the balloon.
- (c) The information above may be available in flight planning documents, other documents or mass calculation systems and it should be readily available for use.

- (d) Any last minute change should be brought to the attention of the commander and entered in the documents containing the mass information. The operator should specify the maximum last minute change allowed in passenger numbers. New mass documentation should be prepared if this maximum number is exceeded.
- (e) Where mass documentation is generated by a computerised mass system, the operator should verify the integrity of the output data at intervals not exceeding 6 months.
- (f) A copy of the final mass documentation should be made available to the commander for its acceptance.

**GM1 CAT.POL.B.110(a)(6) System for determining the mass**

**LIMITING MASS VALUES**

The limiting mass values contained in the mass documentation are those stipulated in the AFM.

## Subpart D – Instrument, data, equipment

### Section 1 – Aeroplanes

17. add a new GM1 CAT.IDE.A.100(a) as follows:

#### **GM1 CAT.IDE.A.100(a) Instruments and equipment – general**

REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012

The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval, as listed in CAT.IDE.A.100(a), should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.

18. amend GM1 CAT.IDE.A.100(b) as follows:

#### **GM1 CAT.IDE.A.100(b) Instruments and equipment – general**

NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012, BUT ARE CARRIED ON A FLIGHT

- (a) The provision of this paragraph does not exempt any installed instrument or the item of equipment from complying with Commission Regulation (E~~CE~~EU) No 748/2012<sup>3</sup> if the instrument or equipment is installed in the aeroplane. In this case, the installation should be approved as required in Commission Regulation (E~~CE~~EU) No 748/2012 and should comply with the applicable airworthiness codes as required under the same Regulation.
- (b) The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.
- (eb) The failure of additional non-installed instruments or equipment not required by this Part or by Regulation (E~~CE~~EU) No 748/2012 or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the aeroplane. Examples ~~are~~ may be the following:
- (1) ~~instruments supplying additional flight information (e.g. stand-alone global positioning system (GPS))~~portable electronic flight bag (EFB);
  - (2) portable electronic devices carried by flight crew or cabin crew~~mission dedicated equipment (e.g. radios)~~; and
  - (3) non-installed passenger entertainment equipment.

<sup>3</sup> Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1)



19. amend AMC1 CAT.IDE.A.175 as follows:

**AMC1 CAT.IDE.A.175 Crew member interphone system**

SPECIFICATIONS

...

(d) have a means for the recipient of a call to determine whether it is a normal call or an emergency call that uses ~~one or a combination of the following:~~

- (1) lights of different colours;
- (2) codes defined by the operator (e.g. different number of rings for normal and emergency calls); ~~and/or~~
- (3) any other indicating signal specified in the operations manual;

...

20. amend AMC2 CAT.IDE.A.205 as follows:

**AMC2 CAT.IDE.A.205 Seats, seat safety belts, restraint systems and child restraint devices**

UPPER TORSO RESTRAINT SYSTEM

An upper torso restraint system having ~~two~~three shoulder straps and additional straps is deemed to be compliant with the requirement for restraint systems with two shoulder straps.

~~SAFETY~~SEAT BELT

A ~~safety~~seat belt with a diagonal shoulder strap (three anchorage points) is deemed to be compliant with the requirement for ~~a seatsafety~~ belts (two anchorage points).

21. amend AMC1 CAT.IDE.A.280 as follows:

**AMC1 CAT.IDE.A.280 Emergency locator transmitter (ELT)**

ELT-BATTERIES

~~Batteries used in the ELTs should be replaced (or recharged, if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour, and also when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the equipment manufacturer has expired. The new expiry date for the replacement (or recharged) battery should be legibly marked on the outside of the equipment. The battery useful life (or useful life of charge) requirements of this paragraph do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.~~(a) All batteries used in ELTs should be replaced (or recharged, if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour or in the following cases:

- (1) Batteries specifically designed for use in ELTs and having an airworthiness release certificate (EASA Form 1 or equivalent) should be replaced (or recharged if the battery is rechargeable) before the end of their useful life in accordance with the maintenance instructions applicable to the ELT.

- (2) Standard batteries manufactured in accordance with an industry standard and not having an airworthiness release certificate (EASA Form 1 or equivalent), when used in ELTs should be replaced (or recharged if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.
  - (3) The battery useful life (or useful life of charge) criteria in (1) and (2) do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.
- (b) The new expiry date for a replaced (or recharged) battery should be legibly marked on the outside of the equipment.

22. amend AMC2 CAT.IDE.A.280 as follows:

**AMC2 CAT.IDE.A.280 Emergency locator transmitter (ELT)**

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

- (a) The ELT required by this provision should be one of the following:
- (1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an ~~aeroplane~~aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.
  - (2) Automatic portable (ELT(AP)). An automatically activated ELT, that is rigidly attached to an ~~aeroplane~~aircraft before a crash, but is readily removable from the ~~aeroplane~~aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT(AP) does not employ an integral antenna, the ~~aeroplane~~aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored in the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).
  - (3) Automatic deployable (ELT(AD))an ELT that is rigidly attached to the ~~aeroplane~~aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.
  - (4) Survival ELT (ELT(S)). An ELT that is removable from an ~~aeroplane~~aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life raft or a survivor.
- (b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the ~~aeroplane~~aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.
- (c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III communications systems and should be registered with the

national agency responsible for initiating search and rescue or other nominated agency.

23. Add a new GM1 CAT.IDE.A.280 as follows:

**GM1 CAT.IDE.A.280 Emergency locator transmitter (ELT)**

**TERMINOLOGY**

'ELT' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.

**Section 2 – Helicopters**

24. add a new GM1 CAT.IDE.H.100(a) as follows:

**GM1 CAT.IDE.H.100(a) Instruments and equipment – general**

REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012

The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval, as listed in CAT.IDE.H.100(a), should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.

25. amend GM1 CAT.IDE.H.100(b) as follows:

**GM1 CAT.IDE.H.100(b) Instruments and equipment – general**

NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (E~~CEU~~) No 748/2012, BUT ARE CARRIED ON A FLIGHT

- (a) The provision of this paragraph does not exempt any installed instrument or the item of equipment from complying with Commission Regulation (E~~CEU~~) No 748/2012 if the instrument or equipment is installed in the helicopter. In this case, the installation should be approved as required in Commission Regulation (E~~CEU~~) No 748/2012 and should comply with the applicable airworthiness codes as required under that Regulation.
- ~~(b) The functionality of non-installed instruments and equipment required by this Subpart that do not need an equipment approval should be checked against recognised industry standards appropriated for the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.~~
- (cb) The failure of additional non-installed instruments or equipment not required by this Part or the airworthiness codes as required under Commission Regulation (E~~CEU~~) No 748/2012 or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the aircraft. Examples are may be the following:

- (1) portable electronic flight bag (EFB) instruments supplying additional flight information (e.g. stand-alone Global Positioning System (GPS));
- (2) portable electronic devices carried by flight crew or cabin crew mission dedicated equipment (e.g. radios); and
- (3) non-installed passenger entertainment equipment.

26. amend AMC1 CAT.IDE.H.175 as follows:

### **AMC1 CAT.IDE.H.175 Crew member interphone system**

#### SPECIFICATIONS

...

- (d) have a means for the recipient of a call to determine whether it is a normal call or an emergency call that uses ~~one or a combination of the following:~~
  - (1) lights of different colours;
  - (2) codes defined by the operator (e.g. different number of rings for normal and emergency calls); ~~and/or~~
  - (3) any other indicating signal specified in the operations manual;

...

27. amend AMC2 CAT.IDE.H.205 as follows:

### **AMC2 CAT.IDE.H.205 Seats, seat safety belts, restraint systems and child restraint devices**

#### UPPER TORSO RESTRAINT SYSTEM

An upper torso restraint system having ~~three~~two shoulder straps and additional straps is deemed to be compliant with the requirement for restraint systems with two shoulder straps.

#### SAFETYSEAT BELT

A ~~safety~~seat belt with a diagonal shoulder strap (three anchorage points) is deemed to be compliant with the requirement for a ~~safety~~seat belts (two anchorage points).

28. amend AMC1 CAT.IDE.H.280 as follows:

### **AMC1 CAT.IDE.H.280 Emergency locator transmitter (ELT)**

#### ELT-BATTERIES

~~Batteries used in the ELTs should be replaced (or recharged, if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour, and also when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the equipment manufacturer has expired. The new expiry date for the replacement (or recharged) battery should be legibly marked on the outside of the equipment. The battery useful life (or useful life of~~

~~charge) requirements of this paragraph do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.~~(a) All batteries used in ELTs should be replaced (or recharged if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour or in the following cases:

- (1) Batteries specifically designed for use in ELTs and having an airworthiness release certificate (EASA Form 1 or equivalent) should be replaced (or recharged if the battery is rechargeable) before the end of their useful life in accordance with the maintenance instructions applicable to the ELT.
- (2) Standard batteries manufactured in accordance with an industry standard and not having an airworthiness release certificate (EASA Form 1 or equivalent), when used in ELTs should be replaced (or recharged if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.
- (3) The battery useful life (or useful life of charge) criteria in (1) and (2) do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(b) The new expiry date for a replaced (or recharged) battery should be legibly marked on the outside of the equipment.

29. amend AMC2 CAT.IDE.H.280 as follows:

### **AMC2 CAT.IDE.H.280 Emergency locator transmitter (ELT)**

#### TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

- (a) The ELT required by this provision should be one of the following:
- (1) Automatic Fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an ~~helicopter~~aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.
  - (2) Automatic Portable (ELT(AP)). An automatically activated ELT, which is rigidly attached to a ~~helicopter~~an aircraft before a crash, but is readily removable from the ~~helicopter~~aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the ~~helicopter~~aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored in the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).
  - (3) Automatic Deployable (ELT(AD)). An ELT that is rigidly attached to the ~~helicopter~~aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.
  - (4) Survival ELT (ELT(S)). An ELT that is removable from a ~~helicopter~~an aircraft, stowed so as to facilitate its ready use in an emergency, and manually

activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life raft or a survivor.

- (b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the ~~helicopter~~ aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.
- (c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III Communications Systems and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

30. Add a new GM1 CAT.IDE.H.280 as follows:

**GM1 CAT.IDE.H.280 Emergency locator transmitter (ELT)**

**TERMINOLOGY**

'ELT' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.

31. Re-number AMC1 CAT.IDE.H.290(a) as follows:

**AMC1 CAT.IDE.H.290 Life-jackets**

32. Re-number AMC2 CAT.IDE.H.290(c) as follows:

**AMC2 CAT.IDE.H.290 Life-jackets**

33. add a new Section 3 to Subpart D – Instruments, data and equipment as follows:

**Section 3 – Sailplanes**

**GM1 CAT.IDE.S.100(b) Instruments and equipment – general**

**REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012**

The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval, as listed in CAT.IDE.S.100(b), should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.

**GM1 CAT.IDE.S.100(c) Instruments and equipment – general**

NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012, BUT ARE CARRIED ON A FLIGHT

- (a) The provision of this paragraph does not exempt any installed instrument or item of equipment from complying with Commission Regulation (EU) No 748/2012. In this case, the installation should be approved as required in Commission Regulation (EU) No 748/2012 and should comply with the applicable airworthiness codes.
- (b) The failure of additional non-installed instruments or equipment not required by this Part or by Commission Regulation (EU) No 748/2012 or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the sailplane. Examples may be portable electronic devices carried by crew members or passengers.

**AMC1 CAT.IDE.S.110 & CAT.IDE.S.115 Operations under VFR & cloud flying – flight and navigational instruments**

INTEGRATED INSTRUMENTS

- (a) Individual equipment requirements may be met by combinations of instruments or 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 type certification of the sailplane for the intended type of operation.
- (b) The means of measuring and indicating turn and slip and sailplane attitude may be met by combinations of instruments, provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

**AMC1 CAT.IDE.S.110(a)(1) & CAT.IDE.S.115(a) Operations under VFR & cloud flying – flight and navigational instruments**

MEANS OF MEASURING AND DISPLAYING MAGNETIC HEADING

The means of measuring and displaying magnetic heading should be a magnetic compass or equivalent.

**AMC1 CAT.IDE.S.110(a)(2) & CAT.IDE.S.115(b) Operations under VFR & cloud flying – flight and navigational instruments**

MEANS OF MEASURING AND DISPLAYING THE TIME

A means of measuring and displaying the time in hours, minutes and seconds may be a wrist watch capable of the same functions.

**AMC1 CAT.IDE.S.110(a)(3) & CAT.IDE.S.115(c) Operations under VFR & cloud flying – flight and navigational instruments**

CALIBRATION OF THE MEANS FOR MEASURING AND DISPLAYING PRESSURE ALTITUDE

- (a) The instrument measuring and displaying pressure altitude should be of a sensitive type calibrated in feet (ft), with a sub-scale setting, calibrated in

hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight.

- (b) Calibration in metres (m) is also acceptable.

**AMC1 CAT.IDE.S.110(a)(4) & CAT.IDE.S.115(d) Operations under VFR & cloud flying – flight and navigational instruments**

**CALIBRATION OF THE INSTRUMENT INDICATING AIRSPEED**

- (a) The instrument indicating airspeed should be calibrated in knots (kt).
- (b) Calibration in kilometres (km) per hour or in miles per hours (mph) is also acceptable.

**GM1 CAT.IDE.S.110(b) Operations under VFR – flight and navigational instruments**

**CONDITIONS WHERE THE SAILPLANE CANNOT BE MAINTAINED IN A DESIRED ATTITUDE WITHOUT REFERENCE TO ONE OR MORE ADDITIONAL INSTRUMENTS**

Sailplanes operating in conditions where the sailplane cannot be maintained in a desired attitude without reference to one or more additional instruments means a condition that is still under VFR (under VMC) though where there is no external reference such as the natural horizon or a coastline, that would allow the attitude to be maintained. Such conditions may occur over water, a desert or snow-covered areas where the colour of the surface cannot be distinguished from the colour of the sky and therefore no external reference is available. Cloud flying is not considered to be one of these conditions.

**AMC1 CAT.IDE.S.120 Seats and restraint systems**

**UPPER TORSO RESTRAINT SYSTEM**

- (a) A seat belt with upper torso restraint system should have four anchorage points and should include shoulder straps (two anchorage points) and a seat belt (two anchorage points).
- (b) A restraint system having five anchorage points is deemed to be compliant to the requirement for seat belt with upper torso restraint system with four anchorage points.

**AMC1 CAT.IDE.S.130 Flight over water**

**RISK ASSESSMENT**

- (a) When conducting the risk assessment, the commander should base his/her decision, as far as is practicable, on the Implementing Rules and AMCs applicable to the operation of the sailplane.
- (b) The commander should, for determining the risk, take the following operating environment and conditions into account:
- (1) sea state;
  - (2) sea and air temperatures;
  - (3) the distance from land suitable for making an emergency landing; and
  - (4) the availability of search and rescue facilities.



**AMC1 CAT.IDE.S.130(a) Flight over water**

MEANS OF ILLUMINATION FOR LIFE JACKETS

Each life jacket or equivalent individual flotation device should be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

**GM1 CAT.IDE.S.130(a) Flight over water**

SEAT CUSHIONS

Seat cushions are not considered to be flotation devices.

**AMC1 CAT.IDE.S.130(b) Flight over water**

BATTERIES

(a) All batteries used in ELTs or PLBs should be replaced (or recharged, if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour or in the following cases:

(1) Batteries specifically designed for use in ELTs and having an airworthiness release certificate (EASA Form 1 or equivalent) should be replaced (or recharged, if the battery is rechargeable) before the end of their useful life in accordance with the maintenance instructions applicable to the ELT.

(2) Standard batteries manufactured in accordance with an industry standard and not having an airworthiness release certificate (EASA Form 1 or equivalent), when used in ELTs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.

(3) All batteries used in PLBs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.

(4) The battery useful life (or useful life of charge) criteria in (1),(2) and (3) do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(b) The new expiry date for a replaced (or recharged) battery should be legibly marked on the outside of the equipment.

**AMC2 CAT.IDE.S.130(b) Flight over water**

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the

ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored in the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

- (3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.
  - (4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed to be tethered to a life raft or a survivor.
- (b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.
  - (c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III communication systems and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

### **AMC3 CAT.IDE.S.130(b) Flight over water**

#### **PLB TECHNICAL SPECIFICATIONS**

- (a) A personal locator beacon (PLB) should have a built-in GNSS receiver with a *kosmicheskaya sistema poiska aviarnich sudov* — search and rescue satellite-aided tracking (COSPAS-SARSAT) type approval number. However, devices with a COSPAS-SARSAT number belonging to series 700 are excluded as this series of numbers identifies the special-use beacons not meeting all the technical requirements and all the tests specified by COSPAS-SARSAT.
- (b) Any PLB carried should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

### **AMC4 CAT.IDE.S.130(b) Flight over water**

#### **BRIEFING ON PLB USE**

When a PLB is carried by a passenger, he/she should be briefed on its characteristics and use by the commander before the flight.

### **GM1 CAT.IDE.S.130(b) Flight over water**

#### **TERMINOLOGY**

- (a) 'ELT' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.

- (b) A PLB is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.

### **AMC1 CAT.IDE.S.135 Survival Equipment**

#### **GENERAL**

Sailplanes operated across land areas in which search and rescue would be especially difficult should be equipped with the following:

- (a) signalling equipment to make the distress signals;
- (b) at least one ELT(S) or a PLB; and
- (c) additional survival equipment for the route to be flown taking account of the number of persons on board.

### **AMC2 CAT.IDE.S.135 Survival equipment**

#### **ADDITIONAL SURVIVAL EQUIPMENT**

- (a) The following additional survival equipment should be carried when required:
  - (1) 500 ml of water;
  - (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 sailplane in accordance with another requirement, there is no need for this to be duplicated.

### **GM1 CAT.IDE.S.135 Survival equipment**

#### **SIGNALLING EQUIPMENT**

The signalling equipment for making distress signals is described in ICAO Annex 2, Rules of the Air.

### **GM2 CAT.IDE.S.135 Survival equipment**

#### **AREAS IN WHICH SEARCH AND RESCUE WOULD BE ESPECIALLY DIFFICULT**

The expression 'areas in which search and rescue would be especially difficult' should be interpreted, in this context, as meaning:

- (a) areas so designated by the authority responsible for managing search and rescue; or
- (b) areas that are largely uninhabited and where:
  - (1) the authority referred to in (a) has not published any information to confirm whether search and rescue would be or would not be especially difficult; and
  - (2) the authority referred to in (a) does not, as a matter of policy, designate areas as being especially difficult for search and rescue.

**GM1 CAT.IDE.S.145 Navigation equipment**

**APPLICABLE AIRSPACE REQUIREMENTS**

For sailplanes being operated under European air traffic control, the applicable airspace requirements include the Single European Sky legislation.

**AMC1 CAT.IDE.S.150 Transponder**

**GENERAL**

- (a) The SSR transponders of sailplanes being operated under European air traffic control should comply with any applicable Single European Sky legislation.
- (b) If the Single European Sky legislation is not applicable, the SSR transponders should be operated in accordance with the relevant provisions of Volume IV of ICAO Annex 10.

34. add a new Section 4 to Subpart D – Instruments, data and equipment as follows:

#### **Section 4 – Balloons**

##### **GM1 CAT.IDE.B.100(b) Instruments and equipment – general**

###### **REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012**

The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval, as listed in CAT.IDE.B.100(b), should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.

##### **GM1 CAT.IDE.B.100(c) Instruments and equipment – general**

###### **NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH COMMISSION REGULATION (EU) No 748/2012, BUT ARE CARRIED ON A FLIGHT**

- (a) The provision of this paragraph does not exempt any installed instrument or item of equipment from complying with Commission Regulation (EU) No 748/2012. In this case, the installation should be approved as required in Commission Regulation (EU) No 748/2012 and should comply with the applicable airworthiness codes.
- (b) The failure of additional non-installed instruments or equipment not required by this Part or by Commission Regulation (EU) No 748/2012 or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the balloon. Examples may be portable electronic devices carried by crew members or passengers.

##### **AMC1 CAT.IDE.B.110(b) Operating lights**

###### **ANTI-COLLISION LIGHTS**

An acceptable means of compliance is the anti-collision light required for free manned balloons certified for VFR at night in accordance with CS 31HB/GB.

###### **ILLUMINATION FOR INSTRUMENTS AND EQUIPMENT**

A means to provide adequate illumination to instruments and equipment essential to the safe operation of the balloon may be an independent portable light.

##### **AMC1 CAT.IDE.B.115(a) Operations under VFR – flight and navigational instruments**

###### **MEANS OF DISPLAYING DRIFT DIRECTION**

The drift direction may be determined by using a map and reference to visual landmarks.

**AMC1 CAT.IDE.B.115(b)(1) Operations under VFR – flight and navigational instruments**

**MEANS OF MEASURING AND DISPLAYING THE TIME**

A means of measuring and displaying the time in hours, minutes and seconds may be a wrist watch capable of the same functions.

**GM1 CAT.IDE.B.115(b)(2) Operations under VFR – flight and navigational instruments**

**MEANS OF MEASURING AND DISPLAYING VERTICAL SPEED**

The necessity of a vertical speed indicator depends on the balloon design. Some envelope shapes have a high drag and will therefore not develop a high ascent/descent speed. Such balloons usually do not require a vertical speed indicator. More slender envelope shapes such as special shape balloons may have a significantly lower drag. Their ascent/descent speed is usually limited to a certain value so that controllability of the balloon is maintained. To be able to stay within this limitation of the AFM a vertical speed indicator is required for these balloons.

**GM1 CAT.IDE.B.115(b)(3) Operations under VFR – flight and navigational instruments and associated equipment**

**MEANS OF MEASURING AND DISPLAYING PRESSURE ALTITUDE**

A means of measuring and displaying pressure altitude is needed when required by ATC or by Commission Implementing Regulation (EU) No 923/2012<sup>4</sup>, or when altitude needs to be checked for flights where oxygen is used, or the limitations in the AFM require to limit altitude and/or rate of climb/descent.

**AMC1 CAT.IDE.B.120 Restraint systems**

**GENERAL**

A pilot restraint harness mounted to the basket is considered to meet the objective of CAT.IDE.B.120.

**AMC1 CAT.IDE.B.125 First-aid kit**

**CONTENT OF FIRST-AID KITS**

- (a) First-aid kits should be equipped with appropriate and sufficient medications and instrumentation. However, these kits should be amended by the operator according to the characteristics of the operation (scope of operation, flight duration, number and demographics of passengers, etc.).
- (b) The following should be included in the FAKs:
  - (1) bandages (assorted sizes),
  - (2) burns dressings (large and small),

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<sup>4</sup> Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).

- (3) wound dressings (large and small),
- (4) adhesive dressings (assorted sizes),
- (5) antiseptic wound cleaner,
- (6) safety scissors,
- (7) disposable gloves.

**AMC2 CAT.IDE.B.125 First-aid kit**

**MAINTENANCE OF FIRST-AID KIT**

To be kept up to date, first-aid kits should be:

- (a) inspected periodically to confirm, to the extent possible, that contents are maintained in the condition necessary for their intended use;
- (b) replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant; and
- (c) replenished after use in-flight at the first opportunity where replacement items are available.

**AMC1 CAT.IDE.B.135 Hand fire extinguishers**

**AIRWORTHINESS CODE**

The applicable airworthiness code for hot-air balloons should be CS-31HB or equivalent.

**AMC1 CAT.IDE.B.140 Flight over water**

**RISK ASSESSMENT**

- (a) When conducting the risk assessment, the commander should base his/her decision, as far as is practicable, on the Implementing Rules and AMCs applicable to the operation of the balloon.
- (b) The commander should, for determining the risk, take the following operating environment and conditions into account:
  - (1) sea state;
  - (2) sea and air temperatures;
  - (3) the distance from land suitable for making an emergency landing; and
  - (4) the availability of search and rescue facilities.

**AMC1 CAT.IDE.B.140(a) Flight over water**

**MEANS OF ILLUMINATION FOR LIFE JACKETS**

Each life jacket or equivalent individual flotation device should be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

**AMC1 CAT.IDE.B.140(b) Flight over water**

**BATTERIES**

- (a) All batteries used in ELTs or PLBs should be replaced (or recharged if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour or in the following cases:
- (1) Batteries specifically designed for use in ELTs and having an airworthiness release certificate (EASA Form 1 or equivalent) should be replaced (or recharged if the battery is rechargeable) before the end of their useful life in accordance with the maintenance instructions applicable to the ELT.
  - (2) Standard batteries manufactured in accordance with an industry standard and not having an airworthiness release certificate (EASA Form 1 or equivalent), when used in ELTs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable 50 % of their useful life of charge), as established by the battery manufacturer, has expired.
  - (3) All batteries used in PLBs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.
  - (4) The battery useful life (or useful life of charge) criteria in (1),(2) and (3) do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.
- (b) The new expiry date for a replaced (or recharged) battery should be legibly marked on the outside of the equipment.

**AMC2 CAT.IDE.B.140(b) Flight over water**

**TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS**

- (a) The ELT required by this provision should be one of the following:
- (1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.
  - (2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored in the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).
  - (3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and which is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.



- (4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed to be tethered to a life-raft or a survivor.
- (b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.
- (c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III communication systems and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

#### **AMC3 CAT.IDE.B.140(b) Flight over water**

##### PLB TECHNICAL SPECIFICATIONS

- (a) A personal locator beacon (PLB) should have a built-in GNSS receiver with a *kosmicheskaya sistyema poiska avaryynich sudov* — search and rescue satellite-aided tracking (COSPAS-SARSAT) type approval number. However, devices with a COSPAS-SARSAT number belonging to series 700 are excluded as this series of numbers identifies the special-use beacons not meeting all the technical requirements and all the tests specified by COSPAS-SARSAT.
- (b) Any PLB carried should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

#### **AMC4 CAT.IDE.B.140(b) Flight over water**

##### BRIEFING ON PLB USE

When a PLB is carried by a passenger, he/she should be briefed on its characteristics and use by the commander before the flight.

#### **GM1 CAT.IDE.B.140(b) Flight over water**

##### TERMINOLOGY

- (a) 'ELT' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.
- (b) A PLB is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.

#### **GM1 CAT.IDE.B.140(c) Flight over water**

##### SIGNALLING EQUIPMENT

The signalling equipment for making distress signals is described in ICAO Annex 2, Rules of the Air.

### **AMC1 CAT.IDE.B.145 Survival equipment**

#### **GENERAL**

Balloons operated across land areas in which search and rescue would be especially difficult should be equipped with the following:

- (a) signalling equipment to make the distress signals;
- (b) at least one ELT(S) or a PLB; and
- (c) additional survival equipment for the route to be flown taking account of the number of persons on board.

### **AMC2 CAT.IDE.B.145 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 balloon in accordance with another requirement, there is no need for this to be duplicated.

### **GM1 CAT.IDE.B.145 Survival equipment**

#### **SIGNALLING EQUIPMENT**

The signalling equipment for making distress signals is described in ICAO Annex 2, Rules of the Air.

### **GM2 CAT.IDE.B.145 Survival equipment**

#### **AREAS IN WHICH SEARCH AND RESCUE WOULD BE ESPECIALLY DIFFICULT**

The expression 'areas in which search and rescue would be especially difficult' should be interpreted, in this context, as meaning:

- (a) areas so designated by the authority responsible for managing search and rescue;  
or
- (b) areas that are largely uninhabited and where:
  - (1) the authority referred to in (a) has not published any information to confirm whether search and rescue would be or would not be especially difficult; and
  - (2) the authority referred to in (a) does not, as a matter of policy, designate areas as being especially difficult for search and rescue.

**AMC1 CAT.IDE.B.150(b)(3) Miscellaneous equipment**

**FIRE BLANKET**

A fire blanket should comply with EN 1869 or equivalent. The size should be at least 1.5 m x 2 m. Smaller sizes are not recommended as they cannot sufficiently cover the source of developing propane fire.

**AMC1 CAT.IDE.B.140 (c)(1) Miscellaneous equipment**

**KNIFE**

The knife, hook knife or equivalent, should be capable of cutting any control line or handling rope that is accessible to the commander or a crew member from the basket.

**GM1 CAT.IDE.B.155 Radio communication equipment**

**APPLICABLE AIRSPACE REQUIREMENTS**

For balloons being operated under European air traffic control, the applicable airspace requirements include the Single European Sky legislation.

**AMC1 CAT.IDE.B.160 Transponder**

**GENERAL**

- (a) The SSR transponders of balloons being operated under European air traffic control should comply with any applicable Single European Sky legislation.
- (b) If the Single European Sky legislation is not applicable, the SSR transponders should operate in accordance with the relevant provisions of Volume IV of ICAO Annex 10.