



International
Civil Aviation
Organization

Organisation
de l'aviation civile
internationale

Organización
de Aviación Civil
Internacional

Международная
организация
гражданской
авиации

منظمة الطيران
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航空组织

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Ref.: AN 11/1.1.34-20/75

17 September 2020

Subject: Proposed amendments to Annex 6 Parts I, II, III, Annex 14, Volume I and PANS-OPS, Volume III, relating to offshore alternates, rescue and fire fighting for general aviation and guidance arising from the Fifth and Sixth Meetings of the Flight Operations Panel (FLTOPSP/5 and 6)

Action required: Comments to reach Montréal by 19 March 2021

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission (ANC), at the seventh meeting of its 214th Session virtually held on 16 June 2020, considered a preliminary review of Proposed amendments to Annex 6 — *Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes, Part II — International General Aviation — Aeroplanes* and Part III — *International Operations — Helicopters*, Annex 14 — *Aerodromes, Volume I — Aerodrome Design and Operations, and Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Doc 8168), Volume III — *Aircraft Operating Procedures* relating to offshore alternates, rescue and fire fighting for general aviation and guidance arising from the Fifth and Sixth Meetings of the Flight Operations Panel (FLTOPSP/5 and 6). The Commission authorized the transmission of these proposals to Contracting States and appropriate international organizations for comments.

2. The background of the aforementioned amendment proposals is explained in Attachment A. The proposals for amendment to Annex 6, Parts I, II and III, Annex 14, Volume I and PANS-OPS, Volume III are contained in Attachments B to F, respectively. A rationale box providing more information has been included immediately following each proposal.

3. In examining the proposed amendment, you should not feel obliged to comment on editorial aspects as such matters will be addressed by the ANC during its final review of the draft amendment.

4. May I request that any comments you wish to make on the amendment proposals be dispatched to reach me not later than 19 March 2021. To facilitate the processing of replies with substantive comments, I invite you to submit an electronic version in Word format to icaohq@icao.int. The ANC has asked me to specifically indicate that comments received after the due date may not be considered by the Commission and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date.

5. In addition, the proposed amendments to Annex 6, Parts I, II and III, Annex 14, Volume I and PANS-OPS, Volume III are envisaged for applicability on 3 November 2022. Any comments you may have thereon would be appreciated.

6. The subsequent work of the ANC and the Council would be greatly facilitated by specific statements on the acceptability or otherwise of the proposals.

7. Please note that for the review of your comments by the ANC and the Council, replies are normally classified as “agreement with or without comments”, “disagreement with or without comments” or “no indication of position”. If in your reply the expressions “no objections” or “no comments” are used, they will be taken to mean “agreement without comment” and “no indication of position”, respectively. In order to facilitate proper classification of your response, a form has been included in Attachment G which may be completed and returned together with your comments, if any, on the proposals in Attachments B to F.

Accept, Sir/Madam, the assurances of my highest consideration.

Fang Liu
Secretary General

Enclosures:

- A — Background information
- B — Proposed amendment to Annex 6, Part I
- C — Proposed amendment to Annex 6, Part II
- D — Proposed amendment to Annex 6, Part III
- E — Proposed amendment to Annex 14, Volume 1
- F — Proposed amendment to PANS-OPS, Volume III
- G — Response form

BACKGROUND INFORMATION

1.1 Extended diversion time operations (EDTO) guidance

1.1.1 Initial Proposal 1 of Attachment B proposes to remove the extended diversion time operations (EDTO) guidance (Attachment C) from Annex 6 — *Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes*. With the publication of the *Extended Diversion Time Operations (EDTO) Manual* (Doc 10085), more complete guidance is now available with examples and updated best practice for the implementation and oversight of EDTO operations. Reference to Doc 10085 would be required in order to fully understand the EDTO requirements; therefore, it is no longer considered useful to maintain a separate, smaller and less comprehensive set of guidance materials in parallel.

1.1.2 Following the feedback received from a series of implementation workshops for EDTO, a change to the provisions related to EDTO significant systems is also proposed to clarify that the most limiting restriction on an EDTO diversion length cannot be exceeded; this will need to be considered at dispatch.

1.2 Infant life jackets

1.2.1 Initial Proposal 2 of Attachment B introduces a note referring to additional guidance on the carriage of infant life jackets. Annex 6, Part I requires landplanes, flying over water, to carry a life jacket or equivalent individual flotation device for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided. This provision is interpreted in two different ways by States when considering infant passenger life jackets, resulting in the issuance of findings during ramp inspections and delays to departure. After review, it was concluded that both methods currently in use to provide life jackets to infants are acceptable and clarification for both methods should be included in the guidance material.

1.3 Ground proximity warning systems (GPWS)

1.3.1 A review of recent accidents highlighted the need to consider upgrading the recommendation in Annex 6, Part I regarding ground proximity warning systems (GPWS) for aircraft with a maximum certified take-off mass (MCTOM) of 5 700 kg or less, to a Standard. Supporting information was reviewed from the European Union Aviation Safety Agency (EASA) which identified a positive cost/benefit for this on a forward-fit basis, although insufficient benefit was identified to require a retro-fit. This is presented in Initial Proposal 3 of Attachment B.

1.4 Runway overrun awareness and alerting systems (ROAAS)

1.4.1 Initial Proposal 4 of Attachment B presents the first Standards requiring the use of runway overrun awareness and alerting systems (ROAAS), following the determination that there would be sufficient benefit to propose the inclusion of the ROAAS for forward-fit to commercial air transport aircraft. Additional work remains to determine if an equivalent Standard should be proposed for Annex 6, Part II and to develop provisions for the use of such systems in the *Procedures for Air Navigation Services — Aircraft Operations, Volume III — Aircraft Operating Procedures* (PANS-OPS, Doc 8168). The latter work will be completed once a more complete view of such a system is obtained, in time to support the proposed forward equipage date.

1.5 **Operational credit**

1.5.1 Significant work is now being conducted on the concept and application of performance-based aerodrome operating minima (PBAOM). Definitions for the elements of PBAOM along with a definition of the concept itself are included in Annex 6 as the first stage in introducing this concept into commercial operations.

1.5.2 The PBAOM concept includes the use of equipment in addition to that which is required for the operation, permitting the granting of operational credit to achieve, for example, lower operational minima. While many of these technologies are known, it is intended to move the text away from specific references to systems such as enhanced vision systems (EVS) and head-up displays (HUDs) and provide more generic text which is not technology specific, to allow for further developments in this area.

1.5.3 Attachment H to Annex 6, Part I, which contains information on the use of automatic landing systems, head-up displays and vision systems, is proposed for deletion as this material is now contained in the *Manual of All-Weather Operations* (Doc 9365) and represents duplicated guidance presenting a risk of non-alignment. Initial Proposal 5 of Attachment B proposes these changes for Annex 6 Part I; Initial Proposal 2 to Attachment C proposes the equivalent changes for Annex 6 Part II; Initial Proposal 4 of Attachment D proposes equivalent changes for Annex 6 Part III.

1.6 **Commensurate rescue and fire fighting (RFF) provisions for general aviation (GA)**

1.6.1 Annex 6, Part II refers to the acceptance of a lower safety level for general aviation (GA) operations as there is no equivalent duty of care to protect the occupants as there is for fare-paying customers in commercial operations. Instead, the responsibility to ensure the safety of GA operations rests with the owner or pilot-in-command. The decision to operate at an aerodrome should be taken considering all factors, including rescue and fire fighting (RFF) facilities and services. To this end, Initial Proposal 1 of Attachment C proposes new text for Sections 2 and 3 of Annex 6, Part II, which explicitly identifies the need to consider RFF facilities and services at an aerodrome of intended operation.

1.6.2 Initial Proposal 1 of Attachment E proposes to exclude GA from the fire fighting provisions in Annex 14 — *Aerodromes, Volume I — Aerodrome Design and Operations*. Some States interpret the current text to mean that all aerodromes, regardless of size and type of operations, must have dedicated RFF facilities. For small, exclusively GA aerodromes, this creates a major burden and has resulted in the restriction of operating hours or even closure of the aerodrome.

1.6.3 When considering the particular case of operators of large commercial aeroplanes, it is understood that such operators will have a safety management system (SMS) (as required by Annex 19 — *Safety Management*) and that the facilities available at an aerodrome intended for use by such aircraft would therefore be part of the operator's risk assessment process.

1.7 **Offshore alternates for long-range helicopter operations**

1.7.1 Existing provisions do not prohibit the use of offshore alternates in hostile areas, but rather recommend that they not be used. The proposed change to Annex 6, Part III presented in Initial Proposal 1 of Attachment D would allow an operator to plan for an offshore alternate in a hostile area, subject to the completion of a risk assessment. The intention is for an operator to safely and efficiently manage optimized payload against fuel and range and diversion requirements, while maintaining at least the equivalent level of safety as stated in the current provision.

1.7.2 It is proposed that oversight of the use of offshore alternates be provided by the State of the Operator issuing a specific approval. This new requirement is meant to ensure the operations have adequate regulations commensurate with the increased complexity.

1.7.3 Initial Proposal 2 of Attachment D presents the minimum requirements of the risk assessment necessary to ensure an equivalent level of safety to that provided by the use of onshore alternates. Further restrictions detailed in Initial Proposal 3 include requirements for weather observation and reporting system standards and specific minimum weather requirements. Initial Proposal 3 suggests that the offshore alternate not be used solely to increase payload. The risks involved must be considered and the use of an offshore alternate specified only where this is justified.

1.8 **Dangerous goods considerations for Annex 6, Part III**

1.8.1 Initial Proposal 5 of Attachment D details the proposed amendments to Annex 6, Part III with regard to the carriage of dangerous goods by helicopter. There are currently no adequate Standards in Part III, specifically with regard to provisions related to the responsibilities of the State of the Operator. Such provisions are needed to address the safe oversight of dangerous goods operations and also to clarify the requirements for operators not authorized to carry dangerous goods.

1.8.2 The provisions are based on those included in Annex 6, Part I and have been adapted specifically for Annex 6, Part III. These provisions are consistent with the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284, Technical Instructions).

1.9 **Crew briefings**

1.9.1 Initial Proposal 1 of Attachment F completely revises the provisions related to crew briefing for a heightened focus on preparing for threats to the operation. The existing text remained unchanged for some time and does not adequately represent current thinking on the nature and purpose of an interactive crew brief. The material proposed was developed by the International Air Transport Association (IATA), with the involvement of their members and presented to ICAO for final review and agreement.

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES**

**OPERATION OF AIRCRAFT
ANNEX 6**

**PART 1
INTERNATIONAL COMMERCIAL AIR TRANSPORT —
AEROPLANES**

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES**

**ANNEX 6 — OPERATION OF AIRCRAFT
PART I— INTERNATIONAL COMMERCIAL AIR TRANSPORT —
AEROPLANES**

INITIAL PROPOSAL 1

...

CHAPTER 1. DEFINITIONS

...

EDTO critical fuel. The fuel quantity necessary to fly to an en-route alternate aerodrome considering, at the most critical point on the route, the most limiting system failure.

Note.— ~~Attachment C~~ Guidance on EDTO critical fuel scenarios is contained in the Extended Diversion Time Operations Manual (Doc 10085) ~~contains guidance on EDTO critical fuel scenarios.~~

...

CHAPTER 3. GENERAL

...

3.2 EDTO for aeroplanes with more than two turbine engines

...

3.2.2 Operational and diversion planning principles

...

3.2.2.2 EDTO critical fuel

...

3.2.2.2.2 The following should be considered, using the anticipated mass of the aeroplane, in determining the corresponding EDTO critical fuel:

...

Note.— Guidance on EDTO critical fuel planning can be found in the Flight Planning and Fuel Management Manual (Doc 9976) and in the Extended Diversion Time Operations Manual (Doc 10085).

...

3.3 EDTO for aeroplanes with two turbine engines

...

3.3.2 Operational and diversion planning principles

...

3.3.2.2 EDTO critical fuel

...

3.3.2.2.2 The following should be considered, using the anticipated mass of the aeroplane, in determining the corresponding EDTO critical fuel:

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Note.— Guidance on EDTO critical fuel planning can be found in the Flight Planning and Fuel Management Manual (Doc 9976) and in the Extended Diversion Time Operations Manual (Doc 10085).

...

CHAPTER 4. FLIGHT OPERATIONS

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4.3 FLIGHT PREPARATION

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4.3.6 Fuel requirements

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4.3.6.3 The pre-flight calculation of usable fuel required shall include:

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- f) *additional fuel*, which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with 4.3.6.3 b), c), d) and e) is not sufficient to:

...

- 3) meet additional requirements not covered above;

Note 1.— Fuel planning for a failure that occurs at the most critical point along a route (4.3.6.3 f) 1)) may place the aeroplane in a fuel emergency situation based on 4.3.7.2.

Note 2.— Guidance on EDTO critical fuel scenarios is contained in Attachment C the Extended Diversion Time Operations Manual (Doc 10085).

...

4.7 ADDITIONAL REQUIREMENTS FOR OPERATIONS BY AEROPLANES WITH TURBINE ENGINES BEYOND 60 MINUTES TO AN EN-ROUTE ALTERNATE AERODROME INCLUDING EXTENDED DIVERSION TIME OPERATIONS (EDTO)

4.7.1 Requirements for operations beyond 60 minutes to an en-route alternate aerodrome

4.7.1.1 Operators conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome shall ensure that:

...

- b) for aeroplanes with two turbine engines, the most up-to-date information provided to the flight crew

indicates that conditions at identified en-route alternate aerodromes will be at or above the operator's established aerodrome operating minima for the operation at the estimated time of use.

Note.— Guidance on compliance with the requirements of these provisions is contained in ~~Attachment C~~ the Extended Diversion Time Operations Manual (Doc 10085).

...

4.7.2 Requirements for extended diversion time operations (EDTO)

4.7.2.1 Unless the State of the Operator has issued a specific approval for EDTO, an aeroplane with two or more turbine engines shall not be operated on a route where the diversion time to an en-route alternate aerodrome from any point on the route, calculated in ISA and still-air conditions at the one-engine-inoperative cruise speed for aeroplanes with two turbine engines and at the all engines operating cruise speed for aeroplanes with more than two turbine engines, exceeds a threshold time established for such operations by that State. The specific approval shall identify the applicable threshold time established for each particular aeroplane and engine combination.

...

Note 2.— Guidance on the establishment of an appropriate threshold time and on specific approval of extended diversion time operations is contained in ~~Attachment C and in the~~ Extended Diversion Time Operations Manual (Doc 10085).

...

4.7.2.2 On issuing the specific approval for extended diversion time operations, the State of the Operator shall specify the maximum diversion time granted to the operator for each particular aeroplane and engine combination.

Note.— Guidance on the conditions to be used when converting ~~EDTO maximum~~ diversion times to distances is contained in ~~Attachment C and in the~~ Extended Diversion Time Operations Manual (Doc 10085).

4.7.2.3 When specifying the appropriate maximum diversion time for the operator of a particular aeroplane type engaged in extended diversion time operations, the State of the Operator shall ensure that:

- a) *for all aeroplanes: the most limiting operator has in place procedures to prevent the aeroplane being dispatched on a route with diversion times beyond the capability of EDTO significant system time limitations, indicated in the aeroplane flight manual (directly or by reference) and relevant to that particular operation is not exceeded; and*
- b) *for aeroplanes with two turbine engines: the aeroplane is EDTO certified.*

...

Note 2.— Guidance on the conditions to be used when converting EDTO significant system time limitations to distances and on the consideration of the EDTO system time limitations at dispatch ~~on compliance with the requirements of this provision~~ is contained in ~~Attachment C~~ the Extended Diversion Time Operations Manual (Doc 10085).

4.7.2.3.1 Notwithstanding the provisions in 4.7.2.3 a), the State of the Operator may, based on the

results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve operations beyond the time limits of the most time-limited system. The specific safety risk assessment shall include at least the:

...

- e) specific mitigation measures.

Note.— *Guidance on the specific safety risk assessment is contained in ~~Attachment C and in the~~ Extended Diversion Time Operations Manual (Doc 10085).*

4.7.2.4 For aeroplanes engaged in EDTO, the additional fuel required by 4.3.6.3 f) 2) shall include the fuel necessary to comply with the EDTO critical fuel scenario as established by the State of the Operator.

Note.— *Guidance on compliance with the requirements of this provision is in ~~Attachment C and in the~~ Extended Diversion Time Operations Manual (Doc 10085).*

...

Editorial Note.— Delete Attachment C in toto.

~~**ATTACHMENT C.— GUIDANCE FOR OPERATIONS BY
TURBINE ENGINED AEROPLANES BEYOND 60 MINUTES
TO AN EN-ROUTE ALTERNATE AERODROME INCLUDING
EXTENDED DIVERSION TIME OPERATIONS (EDTO)**~~
(Supplementary to Chapter 4, 4.7)

<i>Origin:</i> FLTOPSP/5, 6	<i>Rationale:</i> <p>With the publication of the <i>Extended Diversion Time Operations (EDTO) Manual</i> (Doc 10085), there is a duplication of content in the guidance material and Attachment C to Annex 6, Part I. The manual represents the latest information and clearly explains in detail the requirements for EDTO.</p> <p>Attachment C is necessarily shorter and does not contain all the information needed by an operator or regulator. Reference to the EDTO manual is therefore required, making the inclusion of the material in the Attachment unnecessary.</p> <p>The panel concluded to remove the references to Attachment C in Annex 6, Part I and refer only to the Doc 10085. This results in the manual being the primary location for EDTO guidance, avoiding the risk of conflicting information being published due to differences in the update process for Attachments to the Annex and guidance in manuals.</p> <p>Following feedback from EDTO workshops conducted in 2019, it was clear that the EDTO significant systems requirements in Annex 6, Part I were potentially misleading. A change to the text was proposed to clarify the requirement not to dispatch an aeroplane beyond the most limiting capability. This is expressed as a time but needs to be converted to a distance for planning purposes, and for EDTO beyond 180 minutes, the effects of forecast wind and temperatures along with selected speeds mean that the most limiting capability may not be the one with the smallest time associated with it.</p>
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INITIAL PROPOSAL 2

CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

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6.5 ALL AEROPLANES ON FLIGHTS OVER WATER

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6.5.2 Landplanes

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6.5.2.2 The equipment referred to in 6.5.2.1 shall comprise one life jacket or equivalent individual flotation device for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.

Note 1.— “Landplanes” includes amphibians operated as landplanes.

Note 2.— Life jackets accessible from seats or berths located in crew rest compartments are required only if the seats or berths concerned are certified to be occupied during take-off and landing.

Note 3. —information regarding the acceptable means of compliance with this Standard, particularly in the case of infants, can be found, in the Preparation of an Operations Manual (Doc 9376), Chapter TBD.

...

<i>Origin:</i> FLTOSP/6	<i>Rationale:</i> Distribution of infant life jackets may be conducted at the start of the flight, or when preparing the cabin for a ditching. Both methods have advantages and disadvantages, and both are to be considered acceptable as long as the crew training and procedures are suitably adapted to the method used. Clarification will be included in the upcoming guidance material, hence the addition of Note 3.
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INITIAL PROPOSAL 3

6.15 AEROPLANES REQUIRED TO BE EQUIPPED WITH GROUND PROXIMITY WARNING SYSTEMS (GPWS)

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6.15.3 Recommendation.—, *All turbine-engined aeroplanes of a maximum certificated take-off mass of 5 700 kg or less and authorized to carry more than five but not more than nine passengers should be equipped with a ground proximity warning system which provides the warnings of 6.15.87 a) and c), warning of unsafe terrain clearance and a forward looking terrain avoidance function.*

6.15.4 All turbine-engined aeroplanes of a maximum certificated take-off mass of 5 700 kg or less and authorized to carry more than five but not more than nine passengers for which the individual certificate of airworthiness is first issued on or after 1 January 2026, shall be equipped with a ground proximity warning system which provides the warnings of 6.15.7 a) and c), warning of unsafe terrain clearance and a forward looking terrain avoidance function.

Editorial Note.— Renumber subsequent paragraphs

...

<i>Origin:</i> FLTOSP/6	<i>Rationale:</i> Recent accidents have highlighted the need for considering a mandate for the carriage of GPWS for aircraft with a MCTOM of 5 700 kg or less. Analysis has shown a positive cost/benefit for this change, therefore an embedded forward equipage date, in line with the requirement of Article 41 of the Convention on International Civil Aviation, is proposed. The delayed and embedded applicability dates ensure the recommendation remains until such a time where it becomes a requirement.
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INITIAL PROPOSAL 4

PUBLICATIONS
(referred to in this Annex)

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Other Publications

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European Organisation for Civil Aviation Equipment (EUROCAE) Documents ED-55, ED-56A, ED-76, ED-77, ED-112, ED-112A, and ED-155 and ED-250

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**CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT
AND FLIGHT DOCUMENTS**

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**6.26 TURBINE AEROPLANE - RUNWAY OVERRUN AWARENESS
AND ALERTING SYSTEM (ROAAS)**

6.26.1 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 2026, shall be equipped with a runway overrun awareness and alerting system (ROAAS).

Note.— Guidance material for ROAAS design is contained in EUROCAE ED-250, Minimum Operation Performance Specification (MOPS) for Runway Overrun Awareness and Alerting System (ROAAS), or equivalent documents.

<i>Origin:</i> FLTOPSP/6	<i>Rationale:</i> With the EUROCAE publication of ED-250 and further analysis conducted on the cost/benefit of implementing ROAAS, the panel concluded there was sufficient justification for proposing a Standard for large transport category aeroplanes. Additional costs incurred from a retrofit requirement could not be justified.
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INITIAL PROPOSAL 5

CHAPTER 1. DEFINITIONS

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Advanced aircraft. An aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

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Basic aircraft. An aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

...

Operational credit. A credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure.

...

Performance-based aerodrome operating minimum (PBAOM). A lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft.

Note 1.— The PBAOM is derived by considering the combined capabilities of the aircraft and available ground facilities. Additional guidance material on PBAOM may be found in the Manual of All-Weather Operations (Doc 9365).

Note 2.— PBAOM may be based on operational credits.

Note 3.— PBAOM are not limited to PBN operations.

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CHAPTER 4. FLIGHT OPERATIONS

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4.2.8 Aerodrome operating minima

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4.2.8.1.1 The State of the Operator shall authorize operational credit(s) for operations with advanced aircraft ~~aeroplanes equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.~~ Where the operational credit relates to low visibility operations, the State of the Operator shall issue a specific approval. Such authorizations shall not affect the classification of the instrument approach procedure.

Note 1.— Operational credit includes:

- a) for the purposes of an approach ban (4.4.1.2) ~~or dispatch considerations, a minima~~ minimum below the aerodrome operating minima;

...

Note 2.— Guidance on operational credit and how to express the operational credit in the Operations Specifications for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS is contained in Attachment H and in the Manual of All-Weather Operations (Doc 9365).

...

4.2.8.1.2 In granting a specific approval for the operational credit, the State of the Operator shall ensure that:

- a) the aeroplane meets the appropriate airworthiness certification requirements;
- b) the information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual is more than one;
- c) the operator has carried out a safety risk assessment of the operations supported by the equipment;
- d) the operator has established and documented normal and abnormal procedures and MEL;
- e) the operator has established a training programme for the flight crew members and relevant personnel involved in the flight preparation;
- f) the operator has established a system for data collection, evaluation and trend monitoring for low visibility operations for which there is an operational credit; and
- g) the operator has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes.

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on operational approvals is contained in the Manual Of All-Weather Operations (Doc 9365).

4.2.8.1.3 For operations with operational credit with minima above those related to low visibility operations, the State of the Operator shall establish criteria for the safe operation of the aeroplane.

Note .— Guidance on operational credit for operations with minimum above those related to low visibility operations is contained in the Manual of All-Weather Operations (Doc 9365).

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CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

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6.24 AEROPLANES EQUIPPED WITH AUTOMATIC LANDING SYSTEMS, A HEAD-UP DISPLAY (HUD) OR EQUIVALENT DISPLAYS, ENHANCED VISION SYSTEMS (EVS), SYNTHETIC VISION SYSTEMS (SVS) AND/OR COMBINED VISION SYSTEMS (CVS)

~~6.24.1~~ Notwithstanding Chapter 4, 4.2.8.1.1 to 4.2.8.1.3, where aeroplanes are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of an aeroplane shall be approved established by the State of the Operator.

Note.— Information regarding, automatic landing systems, a HUD or equivalent displays, including references to RTCA and EUROCAE documents EVS, SVS or CVS, is contained in the Manual of All-Weather Operations (Doc 9365).

~~6.24.2~~ In approving the operational use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, the State of the Operator shall ensure that:

- ~~a) the equipment meets the appropriate airworthiness certification requirements;~~
- ~~b) the operator has carried out a safety risk assessment of the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS;~~
- ~~e) the operator has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.~~

~~*Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).*~~

~~*Note 2.— Guidance on operational approvals is contained in Attachment H.*~~

...

**APPENDIX 2. ORGANIZATION AND CONTENTS OF
AN OPERATIONS MANUAL**
(Chapter 4, 4.2.3.1, refers)

...

2. CONTENTS

2.1 General

...

2.1.38 Instructions and training requirements for the use of automatic landing systems, a head-up displays (HUD or equivalent displays) and enhanced vision systems (EVS), SVS or CVS equipment as applicable.

...

2.3 Routes and aerodromes

...

2.3.5 Instructions for determining aerodrome operating minima for instrument approaches using HUD and EVS eligible equipment for operational credit.

...

APPENDIX 6. AIR OPERATOR CERTIFICATE (AOC)
(Chapter 4, 4.2.1.5 and 4.2.1.6, refer)

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3. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

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Notes.—

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12. List the airborne capabilities (~~to~~ e.g. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.

...

Editorial note.— Delete Attachment H in toto and renumber subsequent attachments.

**~~ATTACHMENT H. AUTOMATIC LANDING SYSTEMS,
 HEAD-UP DISPLAY (HUD) OR EQUIVALENT DISPLAYS
 AND VISION SYSTEMS~~**

Supplementary to Chapter 4, 4.2.8.1.1, and Chapter 6, 6.24

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<p><i>Origin:</i></p> <p>FLTOPSP/6</p>	<p><i>Rationale:</i></p> <p>Since the introduction of the concept of operational credit, additional systems have been introduced or are planned that would also qualify but are not explicitly named in the relevant Standards. To avoid the continual updating of the Standards when new technology is introduced, the relevant text has been amended to avoid the use of specific terminology and be technology neutral.</p> <p>The application of operational credit is now included in performance-based aerodrome operating minima (PBAOM), which considers the performance of the ground-based infrastructure and aircraft systems.</p> <p>In PBAOM, an advanced aircraft has additional equipment above that required for the operation as compared to a basic aircraft which only has the equipment needed and is, therefore, not eligible for any operational credit. These definitions are included to facilitate the understanding of the concept and to allow the Standards to be written in a more generic manner.</p> <p>The information contained in Attachment H is transferred to the <i>Manual of All-Weather Operations</i> (Doc 9365). To avoid duplication and issues related to maintaining consistency it is proposed that Attachment H be removed from the Annex.</p>
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ATTACHMENT C to State letter AN 11/1.1.34-20/75

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES
OPERATION OF AIRCRAFT
ANNEX 6
PART II
INTERNATIONAL GENERAL AVIATION — AEROPLANES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

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**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES**

**ANNEX 6 — OPERATION OF AIRCRAFT
PART II — INTERNATIONAL GENERAL AVIATION — AEROPLANES**

INITIAL PROPOSAL 1

...

ABBREVIATIONS AND SYMBOLS

(used in this Annex)

Abbreviations

...

RFFS *Rescue and fire-fighting services*

...

SECTION 2

GENERAL AVIATION OPERATIONS

...

CHAPTER 2.2 FLIGHT OPERATIONS

2.2.1 Operating facilities

2.2.1.1 The pilot-in-command shall ensure that a flight will not be commenced unless it has been ascertained 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 aeroplane, are adequate for the type of operation under which the flight is to be conducted.

...

2.2.1.2 Recommendation.— *The pilot-in-command, in making a decision on the adequacy of facilities and services available at an aerodrome of intended operation, should assess the level of safety risk associated with the aircraft type and nature of the operation, in relation to the availability of rescue and fire-fighting services (RFFS).*

...

SECTION 3

LARGE AND TURBOJET AEROPLANES

...

CHAPTER 3.4 FLIGHT OPERATIONS

3.4.1 Operating facilities

3.4.1.1 The operator shall ensure that a flight will not be commenced unless it has been ascertained 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 aeroplane, are adequate for the type of operation under which the flight is to be conducted.

...

3.4.1.2 The operator, in making a decision on the adequacy of facilities and services available at an aerodrome of intended operation, shall assess the level of safety risk associated with the aircraft type and nature of the operation, in relation to the availability of rescue and firefighting services (RFFS).

<i>Origin:</i> FLTOPSP/5	<i>Rationale:</i> The new recommendation proposed for Annex 6, Part II enables the operator or pilot-in-command to assess the suitability of the aerodrome of intended operation and to include the availability of RFF facilities in this assessment. In particular, operators of larger CAT-type aeroplanes as addressed by Annex 6, Part II, Section 3, are required to have an SMS in place. The need for adequate RFF facilities should therefore be addressed by the SMS when choosing at which aerodrome to operate.
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INITIAL PROPOSAL 2

...

SECTION 1

GENERAL

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

CHAPTER 1.1 DEFINITIONS

...

Advanced aircraft. An aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

...

Basic aircraft. An aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

...

Operational credit. A credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure.

...

Performance-based aerodrome operating minimum (PBAOM). A lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft.

Note 1.— The PBAOM is derived by considering the combined capabilities of the aircraft and available ground facilities. Additional guidance material on PBAOM may be found in the Manual of All-Weather Operations (Doc 9365).

Note 2.— PBAOM may be based on operational credits.

Note 3.— PBAOM are not limited to PBN operations.

...

CHAPTER 2.2 FLIGHT OPERATIONS

...

2.2.2 Operational management

...

2.2.2.2 Aerodrome operating minima

...

2.2.2.2.1.1 The State of Registry shall authorize operational credit(s) for operations with aeroplanes equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS advanced aircraft. Where the operational credit relates to low visibility operations, the State of the Registry shall issue a specific approval. Such authorizations shall not affect the classification of the instrument approach procedure.

Note 1.— Operational credit includes:

- a) for the purposes of an approach ban (2.2.4.1.2) or dispatch considerations, a ~~minima~~ minimum below the aerodrome operating minima;

...

Note 2.— Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS and how to express the operational credit in the specific approvals template is contained in Attachment 2.B and in the Manual of All-Weather Operations (Doc 9365).

2.2.2.2.1.2 In granting a specific approval for the operational credit, the State of Registry shall ensure that:

- a) the aeroplane meets the appropriate airworthiness certification requirements;
- b) the information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual is more than one;
- c) the operator/owner has carried out a safety risk assessment of the operations supported by the equipment;
- d) the operator/owner has established and documented the procedures for normal and abnormal procedures and MEL;
- e) the operator/owner has established a training programme for the flight crew members and relevant personnel involved in the flight preparation; and
- f) the operator/owner has established a system for data collection, evaluation and trend monitoring for operations with operational credit in low visibility operations.

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on operational approvals is contained in the Manual of All Weather Operations (Doc 9365).

2.2.2.2.1.3 For operations with operational credit with minima above those related to low visibility operations, the State of Registry shall establish criteria for the safe operation of the aeroplane.

Note 1.— Guidance on operational credit with minimum above those related to low visibility operations is contained in the Manual of All-Weather Operations (Doc 9365).

...

CHAPTER 2.4 AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

...

2.4.15 Aeroplanes equipped with automatic landing systems, a head-up display (HUD) or equivalent displays, enhanced vision systems (EVS), synthetic vision systems (SVS) and/or combined vision systems (CVS)

~~2.4.15.1 Notwithstanding Chapter 2.2, 2.2.2.2.1.1 to 2.2.2.2.1.3, W~~where aeroplanes are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of an aeroplane shall be established by the State of Registry.

Note.— Information regarding automatic landing systems, a HUD or equivalent displays, including references to RTCA and EUROCAE documents EVS, SVS or CVS, is contained in the Manual of All-Weather Operations (Doc 9365).

~~2.4.15.2 In establishing operational criteria for the use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, the State of Registry shall ensure that:~~

- ~~a) the equipment meets the appropriate airworthiness certification requirements;~~
- ~~b) the operator/owner has carried out a safety risk assessment associated with the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS;~~
- ~~e) the operator/owner has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.~~

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on establishing operational criteria is contained in Attachment 2.B.

...

APPENDIX 2.4 GENERAL AVIATION SPECIFIC APPROVALS

(Section 2, Chapter 2.1, 2.1.4, refers)

...

2. SPECIFIC APPROVAL TEMPLATE

...

a) Notes.—

...

8. List the airborne capabilities (~~i.e.~~ **e.g.** automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.

<p><i>Origin:</i></p> <p>FLTOPSP/6</p>	<p><i>Rationale:</i></p> <p>Since the introduction of the concept of operational credit, additional systems have been introduced or are planned that would also qualify, but are not explicitly named in the relevant Standards. In order to avoid the need for continual updating of the Standards when new technology is introduced, the relevant text has been amended to avoid the use of specific terminology and be technology neutral.</p> <p>The application of operational credit is now included in performance-based aerodrome operating minima (PBAOM), which considers the performance of the ground-based infrastructure and aircraft systems.</p> <p>In PBAOM, an advance aircraft has additional equipment above that required for the operation as compared to a basic aircraft which only has the equipment needed and is, therefore, not eligible for any operational credit. These definitions are included to facilitate the understanding of the concept, and to allow the Standards to be written in a more generic manner.</p>
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PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES
OPERATION OF AIRCRAFT
ANNEX 6
PART III
INTERNATIONAL OPERATIONS — HELICOPTERS

NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
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**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES**

**ANNEX 6 — OPERATION OF AIRCRAFT
PART III — INTERNATIONAL OPERATIONS — HELICOPTERS**

INITIAL PROPOSAL 1

...

ABBREVIATIONS AND SYMBOLS
(used in this Annex)

...

IGE In-ground effect

...

OEI One engine inoperative

OGE Out of ground effect

...

SECTION II

INTERNATIONAL COMMERCIAL AIR TRANSPORT

...

CHAPTER 2. FLIGHT OPERATIONS

...

2.3 FLIGHT PREPARATION

...

2.3.4 Alternate heliports

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~~2.3.4.3 When an offshore alternate heliport is specified, it shall be specified subject to the following:~~

- ~~a) the offshore alternate heliport shall be used only after a PNR. Prior to a PNR, onshore alternate heliports shall be used;~~
- ~~b) mechanical reliability of critical control systems and critical components shall be considered and taken into account when determining the suitability of the alternate heliport(s);~~
- ~~c) one engine inoperative performance capability shall be attainable prior to arrival at the alternate heliport;~~

- ~~d) to the extent possible, deck availability shall be guaranteed; and~~
- ~~e) weather information must be reliable and accurate.~~

~~Note.—The landing technique specified in the flight manual following control system failure may preclude the nomination of certain helidecks as alternate heliports.~~

~~2.3.4.4 **Recommendation.**—Offshore alternate heliports should not be used when it is possible to carry enough fuel to have an onshore alternate. Offshore alternate heliports should not be used in a hostile environment.~~

Insert new text as follows

2.3.4.3 *Offshore destination alternate heliport*

2.3.4.3.1 The State of the Operator shall issue a specific approval for the operational use of offshore destination alternate heliports.

2.3.4.3.2 A helideck may be specified as an offshore destination alternate heliport when the closest onshore destination alternate is not within achievable range of the helicopter. Specification is subject to the following conditions:

- a) a helideck shall only be used as an offshore destination alternate heliport after the PNR and when an onshore aerodrome is not geographically available. Prior to the PNR, an onshore destination alternate aerodrome shall be used;
- b) the operator shall have a risk assessment process detailed in the operations manual for the utilization of helidecks as offshore destination alternate heliports and conduct such an assessment prior to their selection and use;
- c) the operator has established specific procedures and appropriate training programmes in the operations manual for offshore destination alternate heliport operations;
- d) the operator shall have pre-surveyed, and assessed for suitability, any helideck intended to be used as an offshore destination alternate heliport and with the information published in an appropriate form in the operations manual (including the orientation of the helideck);
- e) the helicopter shall have a one engine inoperative (OEI) landing capability at the offshore alternate heliport; and
- f) the MEL shall contain specific provisions for this type of operation.

2.3.4.3.3 **Recommendation.**— *The use of an offshore alternate heliport should be restricted to helicopters which can achieve OEI in ground effect (IGE) hover at an appropriate power rating at the offshore alternate heliport.*

2.3.4.3.4 **Recommendation.**— *Where the surface of the helideck, or prevailing conditions (especially wind velocity), precludes an OEI IGE, OEI out of ground effect (OGE) hover performance at an appropriate power rating should be used to compute the landing mass.*

2.3.4.3.5 **Recommendation.**— *The landing mass should be calculated from graphs provided in the operations manual. When calculating this landing mass, due account should be taken of helicopter configuration, environmental conditions and the operation of systems that have an adverse effect on performance.*

2.3.4.3.6 **Recommendation.**— *The planned landing mass of the helicopter, including crew, passengers, baggage, cargo and 30 minutes final reserve fuel, should not exceed the OEI landing mass at the time of approach to the offshore alternate heliport.*

End of new text

<i>Origin:</i> FLTOPSP/5	<i>Rationale:</i> The proposed amendment regarding the use of offshore alternate heliports is intended to retain the existing principles with one important exception: the new Standard does not recommend against the use of offshore alternates in a hostile environment, as was previously the case. It was decided not to explicitly allow such operations but to require the operator to consider all of the relevant factors when making the determination. It is considered that the hostile/non-hostile discussion is not an issue that is logically connected to offshore alternates, as it mainly affects the ability to make a safe forced landing. The intention of the use of offshore alternates is to land safely on the helidecks, not to end up in the water. However, that would, like any other flight that is carried out over water, be the only option available if all else fails. This could be reflected in the normal sea state considerations applied to the flight planning, as it would be comparable to any emergency requiring an (immediate) landing on the water.
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2.

INITIAL PROPOSAL 2

Insert new text as follows.

2.3.4.3.7 The operator’s risk assessment process shall take into consideration at least the following:

- a) the type and circumstances of the operation;
- b) the area over which the operation is being conducted, including sea conditions, survivability and search and rescue facilities;
- c) the availability and suitability of the helideck for use as an offshore destination alternate heliport including the physical characteristics, dimensions, configuration and obstacle clearance, the effect of wind direction, strength and turbulence;

- d) the type of helicopter(s) being used;
- e) mechanical reliability of the helicopter engines and critical control systems and components;
- f) the training and operational procedures, including mitigation of the consequences of helicopter technical failures;
- g) specific mitigation measures;
- h) helicopter equipment;
- i) spare payload capacity for the carriage of additional fuel;
- j) weather minima, taking into account the accuracy and reliability of meteorological information; and
- k) communications and aircraft tracking facilities.

Note 1.— The landing technique specified in the flight manual following control system failure may preclude the nomination of certain helidecks as alternate heliports.

Note 2.— Specific mitigation measures may include equipment improvements such as a sea state certification standard, safety equipment and tracking equipment.

2.3.4.3.8 Recommendation.— *Training programmes should ensure that the requirements of Chapter 7, 7.4.2.2 are complied with, such as, but not limited to, route qualification, flight preparation, concept of operations with offshore alternates and criteria for their use. Training programme refers to the training for pilots and other relevant personnel (including as required meteorological observers and helideck personnel) involved in such operations.*

End of new text.

<i>Origin:</i> FLTOPSP/5	<i>Rationale:</i> The proposal for the use of offshore alternate heliports provides Standards and guidance that will allow operators to safely and efficiently manage the optimized payload versus fuel/range requirements. By introducing a thorough risk assessment procedure and the provision for the operator to be authorized by the State of the Operator under a specific approval, an acceptable level of safety should be better assured and overseen in the regions where such activities may take place. The list of items that need to be included in the risk assessment is considered to be comprehensive and is intended to ensure that the operator has fully considered the hazards and mitigations that apply in this scenario.
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INITIAL PROPOSAL 3

Insert new text as follows.

2.3.4.3.9 **Recommendation.**— *When the use of an offshore alternate heliport is planned, the meteorological observations, both at the offshore destination and the offshore alternate heliport, should be taken by an observer acceptable to the designated meteorological authority .*

Note.— *Appropriate automatic weather stations may satisfy this requirement.*

2.3.4.3.10 **Recommendation.**— *Offshore alternates should not be used for payload enhancement.*

2.3.4.3.11 **Recommendation.**— *To demonstrate the mechanical reliability of critical control systems and critical components of the helicopter, the operator should install and utilize a health and usage monitoring system with tailored criteria for this type of operation.*

2.3.4.3.12 The heliport operating minima for the offshore destination and offshore destination alternate heliport required under 2.2.8.2 shall make due allowance for the availability and reliability of weather information and the geographic environment.

2.3.4.3.13 The operator shall specify cloud ceiling and visibility criteria relevant to the helideck elevation and location.

2.3.4.3.14 To use an offshore destination alternate helideck, it shall be ensured that, within 60 NM of the destination helideck and alternate helideck, fog is not present nor forecasted during the period commencing one hour before and ending one hour after the expected time of arrival at the offshore destination or alternate helideck.

2.3.4.3.15 **Recommendation.**— *An offshore alternate should be more than 30 NM from the original destination to reduce the likelihood of a localized weather event precluding landings at both the destination and the alternate.*

2.3.4.3.16 The operator shall ensure that, before passing the PNR, the following actions have been completed:

- a) confirmation that navigation to the destination and offshore alternate heliport is assured;
- b) radio contact with the destination and offshore alternate heliport (or master station) is established;
- c) the landing forecast at the destination and offshore alternate heliport are obtained and confirmed to be at or above the required minima;
- d) the requirements for OEI landing are verified against the latest reported weather conditions to ensure that they can be met; and
- e) to the extent possible, having considered information on current and forecast use of the offshore destination alternate heliport, and on conditions prevailing, the availability of the offshore alternate

heliport will be guaranteed by the helideck provider until the landing at the destination, or the offshore destination alternate heliport, is achieved.

End of new text.

<i>Origin:</i>	<i>Rationale:</i>
FLTOPSP/5	<p>The recommendation that offshore alternates should not be used for payload enhancement is retained as part of the revised proposal. This should ensure that range/payload capability is appropriately considered when choosing the helicopter type and equipment needed for an operation. There will, however, be circumstances where the requirement of an onshore alternate will result in a very low number of passengers being carried on each flight. This could be the case for even the most capable and well equipped helicopters if the distance is very long and would result in more flights to transport the required number of passengers, thereby increasing the exposure to hazards and thus, overall risk. If such an operation is assessed in a total-risk perspective, it might be concluded that carrying more passengers on one flight using an offshore alternate in a well-organized system is a safer alternative than carrying fewer passengers on several flights over the same distance and conditions. The proposed Standards and Recommended Practices (SARPs) are intended to allow for such considerations.</p> <p>The proposed controls specified for weather are included as the weather conditions are of paramount importance for the safe use of offshore alternates. Generally, both the destination and the alternate will be remote and located in areas where weather service may be sparse. The proposed controls include both requirements for the standard of the weather observation and reporting system, and specific minimum weather requirements.</p> <p>The proposed requirement for deck availability is appropriate, as a lack of availability will preclude landing on the helideck and most likely force a landing in the water. There can never be a guarantee for deck availability, as there is always a risk of an abnormal or emergency situation occurring on the installation where the helideck is located, which may render the deck unavailable for landing (e.g. a gas leak). Adequate means of, and procedures for communication are therefore essential to enhance the crew's situational awareness and to ensure to the furthest extent that any unforeseen situation can be taken into consideration as early as possible.</p>

INITIAL PROPOSAL 4

CHAPTER 1. DEFINITIONS

...

Advanced aircraft. An aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

...

Basic aircraft. An aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

...

Operational credit. A credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure.

...

Performance-based aerodrome operating minimum (PBAOM). A lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft.

Note 1.— The PBAOM is derived by considering the combined capabilities of the aircraft and available ground facilities. Additional guidance material on PBAOM may be found in the Manual of All-Weather Operations (Doc 9365).

Note 2.— PBAOM may be based on operational credits.

Note 3.— PBAOM are not limited to PBN operations.

...

SECTION II

INTERNATIONAL COMMERCIAL AIR TRANSPORT

...

CHAPTER 2. FLIGHT OPERATIONS

...

2.2 OPERATIONAL CERTIFICATION AND SUPERVISION

...

2.2.8 Heliport or landing location operating minima

2.2.8.1.1 The State of the Operator shall authorize operational credit(s) for operations with helicopters equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS advanced aircraft. Where the operational credit relates to low visibility operations, the State of the Operator shall issue a specific approval. Such authorizations shall not affect the classification of the instrument approach procedure.

Note 1.— Operational credit includes:

a) for the purposes of an approach ban (2.4.1.2) or dispatch considerations, a ~~minima~~ minimum below the heliport or landing location operating minima;

...

Note 2.— Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS and how to express the operational credit in the operations specifications is contained in Attachment G and in the Manual of All-Weather Operations (Doc 9365).

2.2.8.1.2 In granting a specific approval for the operational credit, the State of the Operator shall ensure that:

- a) the aircraft meets the appropriate airworthiness certification requirements;
- b) the information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual is more than one;
- c) the operator has carried out a safety risk assessment of the operations supported by the equipment;
- d) the operator has established and documented the procedures for normal and abnormal procedures and MEL;
- e) the operator has established a training programme for the flight crew members and relevant personnel involved in the flight preparation; and
- f) the operator has established a system for data collection, evaluation and trend monitoring for operations with operational credit in low visibility operations.

g) the operator has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on operational approvals is contained in the Manual of All-Weather Operations (Doc 9365).

2.2.8.1.3 For operations with operational credit with minima above those related to low visibility operations, the State of the Operator shall establish criteria for the safe operation of the aircraft.

Note.— Guidance on operational credit with minimum above those related to low visibility operations is contained in the Manual of All-Weather Operations (Doc 9365).

...

4.16 HELICOPTERS EQUIPPED WITH AUTOMATIC LANDING SYSTEMS, A HEAD-UP DISPLAY (HUD) OR EQUIVALENT DISPLAYS, ENHANCED VISION SYSTEMS (EVS), SYNTHETIC VISION SYSTEMS (SVS) AND/OR COMBINED VISION SYSTEMS (CVS)

4.16.1 Notwithstanding Chapter 2, 2.2.8.1.2 to 2.2.8.1.3, where helicopters are equipped with automatic landing systems, HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of a helicopter shall be established by the State of the Operator.

Note 1.— Information regarding automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS including references to RTCA and EUROCAE documents, is contained in the Manual of All-Weather Operations (Doc 9365).

Note 2.— Automatic landing system — helicopter is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.

4.16.2 In approving the operational use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, the State of the Operator shall ensure that:

- a) the equipment meets the appropriate airworthiness certification requirements;
- b) the operator has carried out a safety risk assessment of the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS; and
- e) the operator has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on operational approvals is contained in Attachment G.

...

SECTION III

INTERNATIONAL GENERAL AVIATION

...

CHAPTER 2. FLIGHT OPERATIONS

...

2.2 HELIPORT OR LANDING LOCATION OPERATING MINIMA

...

2.2.1.1 The State of Registry shall authorize operational credit(s) for operations with ~~helicopters equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS~~ advanced aircraft. Where the operational credit relates to low visibility operations, the State of Registry shall issue a specific approval. Such authorizations shall not affect the classification of the instrument approach procedure.

Note 1.— Operational credit includes:

- a) for the purposes of an approach ban (2.6.3.2) ~~or dispatch considerations, a minima~~ minimum below the heliport or landing location ~~aerodrome~~ operating minima;

...

Note 2.— Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS and how to express the operational credit in the specific approvals template is contained in Attachment G and in the Manual of All-Weather Operations (Doc 9365).

...

2.2.1.2 In granting a specific approval for the operational credit, the State of Registry shall ensure that:

- a) the aircraft meets the appropriate airworthiness certification requirements;
- b) the information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual is more than one;
- c) the operator/owner has carried out a safety risk assessment of the operations supported by the equipment;
- d) the operator/owner has established and documented the procedures for normal and abnormal procedures and MEL;
- e) the operator/owner has established a training programme for the flight crew members and relevant personnel involved in the flight preparation;
- f) the operator/owner has established a system for data collection, evaluation and trend monitoring for operations with operational credit in low visibility operations.

g) the operator has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on operational approvals is contained in the Manual of All-Weather Operations (Doc 9365).

2.2.1.3 For operations with operational credit with minima above those related to low visibility operations, the State of Registry shall establish criteria for the safe operation of the aircraft.

Note.— Guidance on operational credit with minimum above those related to low visibility operations is contained in the Manual of All-Weather Operations (Doc 9365).

...

CHAPTER 4. HELICOPTER INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

...

4.11 HELICOPTERS EQUIPPED WITH AUTOMATIC LANDING SYSTEMS, A HEAD-UP DISPLAY (HUD) OR EQUIVALENT DISPLAYS, ENHANCED VISION SYSTEMS (EVS), SYNTHETIC VISION SYSTEMS (SVS) AND/OR COMBINED VISION SYSTEMS (CVS)

4.11.1 Notwithstanding Chapter 2, 2.2.1.1 to 2.2.1.3, where helicopters are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of a helicopter shall be established by the State of Registry.

Note.— Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the Manual of All-Weather Operations (Doc 9365).

4.11.2 In establishing operational criteria for the use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, the State of Registry shall require that:

- a) the equipment meets the appropriate airworthiness certification requirements;
- b) the operator/owner has carried out a safety risk assessment associated with the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS;
- e) the operator/owner has established and documented the procedures for the use of, and training requirements for automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on establishing operational criteria is contained in Attachment G.

...

APPENDIX 3. AIR OPERATOR CERTIFICATE (AOC)
(Section II, Chapter 2, 2.2.1.5 and 2.2.1.6, refers)

...

3. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

...

Notes.—

...

12. List the airborne capabilities (~~i.e.~~ **e.g.** automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.

...

APPENDIX 5. GENERAL AVIATION SPECIFIC APPROVALS
(Section III, Chapter 1, 1.4, refers)

...

2. SPECIFIC APPROVAL TEMPLATE

...

Notes.—

...

8. List the airborne capabilities (~~i.e.~~ **e.g.** automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.

...

<i>Origin:</i>	<i>Rationale</i>
FLTOPSP/6	<p>Since the introduction of the concept of operational credit, additional systems have been introduced or are planned that would also qualify, but are not explicitly named in the relevant Standards. In order to avoid the need for continual updating of the Standards when new technology is introduced, the relevant text has been amended to avoid the use of specific terminology and be technology neutral.</p> <p>The application of operational credit is now included in Performance-based Aerodrome Operating Minima (PBAOM), which considers the performance of the ground based infrastructure and aircraft systems.</p> <p>In PBAOM, an advanced aircraft has additional equipment above that required for the operation as compared to a basic aircraft which only has the equipment needed and is, therefore, not eligible for any operational credit. These definitions are included to facilitate the understanding of the concept, and to allow the Standards to be written in a more generic manner.</p>

INITIAL PROPOSAL 5

ABBREVIATIONS AND SYMBOLS
(used in this Annex)

...

COMAT Operator material

...

SECTION I

GENERAL

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS

...

COMAT. Operator material carried on an operator's aircraft for the operator's own purposes.

...

SECTION II

INTERNATIONAL COMMERCIAL AIR TRANSPORT

CHAPTER 1. GENERAL

...

~~1.4 DANGEROUS GOODS~~

Note 1. — Provisions for carriage of dangerous goods are contained in Annex 18.

Note 2. — Article 35 of the Convention refers to certain classes of cargo restrictions.

...

CHAPTER 2. FLIGHT OPERATIONS

...

2.2 OPERATIONAL CERTIFICATION AND SUPERVISION

2.2.1 The air operator certificate

...

2.2.1.3.1 The operator shall develop policies and procedures for third parties that perform work on its behalf.

...

CHAPTER 7. HELICOPTER FLIGHT CREW

...

7.3 FLIGHT CREW MEMBER TRAINING PROGRAMMES

7.3.1 The operator shall establish and maintain a ground and flight training programme, approved by the State of the Operator, which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

...

Note 5. — Provisions for training in the transport of dangerous goods are contained in Annex 18. For more information on dangerous goods operational requirements, see Chapter 12.

...

CHAPTER 10. CABIN CREW

...

10.3 TRAINING

The operator shall establish and maintain a training programme, approved by the State of the Operator, to be completed by all persons before being assigned as a cabin crew member. Cabin crew members shall complete a recurrent training programme annually. These training programmes shall ensure that each person is:

...

Note 2. — For more information on dangerous goods operational requirements, see Chapter 12.

Note 3. — Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Cabin Crew Safety Training Manual (Doc 10002).

...

Insert new Chapter 12 as follows

CHAPTER 12. DANGEROUS GOODS

12.1 GENERAL APPLICABILITY

Note 1.— Annex 18 — The Safe Transport of Dangerous Goods by Air include broad provisions for the international transport of dangerous goods by air which are amplified in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284, Technical Instructions). Annex 18, Chapter 2 includes provisions making dangerous goods under certain conditions not subject to Annex 18. These are amplified in Parts 1;1 and 1;2 of the Technical Instructions.

Note 2. — Due to the differences in the type of operations carried out by helicopters, compared to those of aeroplanes, some additional considerations need to be made when dangerous goods are carried by helicopter, as described in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284, Technical Instructions), Part 7;7.

12.2 STATE RESPONSIBILITIES

Note 1.— Annex 18 — The Safe Transport of Dangerous Goods by Air, Chapter 2, contains requirements for each State to take the necessary measures to achieve compliance with the detailed provisions contained in the Technical Instructions.

Note 2.— Operator responsibilities for the transport of dangerous goods are contained in Chapters 8, 9 and 10 of Annex 18. Part 7 of the Technical Instructions contains the operator's responsibilities and requirements for incident and accident reporting.

Note 3.— Annex 18, Chapter 11 contains requirements for each Contracting State to establish oversight procedures for all entities (including packers, shippers, ground handling agents and operators) performing dangerous goods functions.

Note 4.— The requirements pertaining to crew members or passengers carrying dangerous goods on aircraft are set forth in Part 8;1, of the Technical Instructions.

Note 5.— Operator material (COMAT) that meets the classification criteria of the Technical Instructions for dangerous goods are considered cargo and must be transported in accordance with Part 1;2; 2.2 of the Technical Instructions (e.g., aircraft parts such as chemical oxygen generators, fuel control units, fire extinguishers, oils, lubricants and cleaning products).

12.3 OPERATORS WITH NO SPECIFIC APPROVAL FOR THE TRANSPORT OF DANGEROUS GOODS AS CARGO

The State of the Operator shall ensure that operators with no specific approval to transport dangerous goods have:

- a) established a dangerous goods training programme that meets the requirements of Annex 18, the applicable requirements of the Technical Instructions, Part 1;4 and the requirements of the State's regulations, as appropriate. Details of the dangerous goods training programme shall be included

in the operators' operations manuals; and

- b) established dangerous goods policies and procedures in their operations manuals to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the State's regulations to allow operator personnel to:
 - 1) identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and
 - 2) report to the appropriate authorities of the State of the Operator, and the State in which it occurred, any:
 - i) occasions when undeclared dangerous goods are discovered in cargo or mail; and
 - ii) dangerous goods accidents and incidents.

12.4 OPERATORS WITH A SPECIFIC APPROVAL FOR THE TRANSPORT OF DANGEROUS GOODS AS CARGO

12.4.1 Overview

The State of the Operator shall issue a specific approval for the transport of dangerous goods and ensure that the operator:

- a) establishes a dangerous goods training programme that meets the requirements in the Technical Instructions, Part 1;4, and the requirements of the State regulations, as appropriate. Details of the dangerous goods training programme shall be included in the operator's operations manuals;
- b) establishes dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the State's regulations to enable operator personnel to:
 - 1) identify and reject undeclared or mis-declared dangerous goods in cargo or mail, including COMAT classified as dangerous goods;
 - 2) report to the appropriate authorities of the State of the Operator, and the State in which it occurred, any:
 - i) occasions when undeclared or mis-declared dangerous goods are discovered in cargo or mail; and
 - ii) dangerous goods accidents and incidents;
 - 3) report to the appropriate authorities of the State of the Operator any occasions when dangerous goods are discovered to have been carried:
 - i) when not loaded, segregated, separated or secured in accordance with the Technical Instructions, Part 7;2; and
 - ii) without information having been provided to the pilot-in-command;

- 4) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
- 5) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo;
 - i) for helicopter operations, with the approval of the State of the Operator, the information provided to the pilot-in-command may be abbreviated or briefed by other means (e.g., radio communication, as part of the working flight documentation such as a journey log or operational flight plan) where circumstances make it impractical to produce written or printed information or a dedicated form (see Part S-7;4.8 of the Supplement to the Technical Instructions).

12.4.2 Loading and securing of dangerous goods

Packages or overpacks of dangerous goods bearing the “cargo aircraft only” label shall be loaded on a helicopter performing cargo only operations in accordance with Part 7, Chapter 2, Section 4.1 of the Technical Instructions.

12.4.3 Dispensing or expending of dangerous goods from helicopters

Note.— These provisions refer to operations where dangerous goods are carried on helicopters with the intent to dispense the items in flight (e.g., for the purpose of avalanche control).

12.4.3.1 Each operator shall prepare and keep current a manual containing operational guidelines and handling procedures for the use and guidance of flight, maintenance and ground personnel concerned in the dispensing or expending of dangerous goods.

12.4.3.2 No person, other than a required flight crew member, or person necessary for handling or dispensing the dangerous goods, shall be carried on the aircraft.

12.4.3.3 The operator of the aircraft shall have prior permission for the dispensing or expending of dangerous goods from the owners of any airport to be used.

12.5 PROVISION OF INFORMATION

The operator shall ensure that all personnel, including third-party personnel, involved in the acceptance, handling, loading and unloading of cargo are informed of the operator’s specific approval and limitations with regard to the transport of dangerous goods.

12.6 DOMESTIC COMMERCIAL AIR TRANSPORT OPERATIONS

Recommendation. — *The International Standards and Recommended Practices set forth in this chapter should be applied by all Contracting States, including in the case of domestic commercial air transport operations.*

Note.— *Annex 18 contains a similar provision in this regard.*

End of new chapter.

...

SECTION III

INTERNATIONAL GENERAL AVIATION

CHAPTER 1. GENERAL

...

1.2 DANGEROUS GOODS

~~*Note 1.*— *Provisions for carriage of dangerous goods are contained in Annex 18.*~~

~~*Note 2.*— *Article 35 of the Convention refers to certain classes of cargo restrictions.*~~

Insert new text as follows

1.2.1 General applicability

Note 1. — *Provisions for carriage of dangerous goods are contained in Annex 18.*

Note 2. — *Due to the differences in the type of operations carried out by helicopters, compared with aeroplanes, some additional considerations need to be made when dangerous goods are carried by helicopter, as described in Helicopter Operations in the Technical Instruction for the Safe Transport of Dangerous Goods by Air (DOC 9284), Part 7, Chapter 7, Section 1;1.*

1.2.2 Applicability

1.2.2.1 The provisions of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc. 9284) also apply to the acceptance for carriage, loading and carriage of dangerous goods in any general aviation helicopter.

1.2.2.2 *Exceptions.* The General Exceptions contained in Part 1;1.1.5 of the Technical Instructions and the Exceptions contained in Part 1;2.2 of the Technical Instructions also apply to any general aviation helicopter.

End of new text.

...

Insert new Attachment I as follows

ATTACHMENT I. DANGEROUS GOODS

(Supplementary to Section II, Chapter 12)

1. PURPOSE AND SCOPE

The material in this attachment provides guidance regarding the carriage of dangerous goods as cargo. Section II, Chapter 12 includes dangerous goods operational requirements that apply to all operators. Operators that are approved to transport dangerous goods as cargo need to meet additional requirements. In addition to the operational requirements contained in Annex 6, there are other requirements in Annex 18 and in the Technical Instructions that also need to be complied with.

2. DEFINITIONS

Where the term below is used in this attachment, it has the following meaning:

Cargo. Any property carried on an aircraft other than mail and accompanied or mishandled baggage.

Note 1.— This definition differs from the definition of “cargo” given in Annex 9 — Facilitation.

Note 2.— COMAT that meets the classification criteria of dangerous goods, and which is transported in accordance with Part 1;2.2.2, Part 1;2.2.3 or Part 1;2.2.4 of the Technical Instructions, are considered as “cargo” (e.g., aircraft parts such as chemical oxygen generators, fuel control units, fire extinguishers, oils, lubricants and cleaning products).

3. STATES

3.1 The State of the Operator should indicate in the operations specification if the operator is approved or is not approved to transport dangerous goods as cargo. When the operator is approved to transport dangerous goods as cargo, any limitations should be included.

3.2 An operational approval may be granted for the transport of specific types of dangerous goods only (e.g., dry ice; biological substance, Category B and dangerous goods in excepted quantities) or COMAT.

3.3 The Supplement to the Technical Instructions contains guidance on a State’s responsibilities with respect to operators. This includes additional information to Part 7 of the Technical Instructions on storage and loading, provision of information, inspections, enforcement and Annex 6 information relevant to the State’s responsibilities for dangerous goods.

3.4 The carriage of dangerous goods other than as cargo (e.g., medical flights, search and rescue) is addressed in Part 1;1 of the Technical Instructions. The exceptions for the carriage of dangerous goods that are either equipment or for use on board the aircraft during flight are detailed in Part 1;2;2.2.1 of the Technical Instructions.

4. OPERATOR

4.1 The operator’s training programme should cover, as a minimum, the aspects of the transport of dangerous goods, listed in the Technical Instructions in Table 1-4 for operators holding an approval or

Table 1-5 for operators without an approval. Recurrent training must be provided within 24 months of previous training, except as otherwise provided by the Technical Instructions.

4.2 Details of the dangerous goods training programme, including the policies and procedures regarding third-party personnel involved in the acceptance, handling, loading and unloading of dangerous goods cargo, should be included in the operations manual.

4.3 The Technical Instructions require that operators provide information in the operations manual, and/or other appropriate manuals that will enable flight crews, other employees and ground handling agents to carry out their responsibilities with regard to the transport of dangerous goods, and that initial training be conducted prior to performing a job function involving dangerous goods.

4.4 Operators should meet and maintain requirements established by the States, in which operations are conducted in accordance with Section III, Chapter 2, 2.2.2.3 of this Annex.

4.5 Operators may seek approval to transport, as cargo, specific dangerous goods only, such as dry ice, biological substance, Category B, COMAT and dangerous goods in excepted quantities.

4.6 Attachment 1 to Part S-7; 7 of the Supplement to the Technical Instructions contains additional guidance and information on requirements regarding operators not approved to transport dangerous goods as cargo and for operators that are approved to transport dangerous goods as cargo.

4.7 All operators should develop and implement a system that ensures they will remain current with regulatory changes and updates. The Technical Instructions contain detailed instructions necessary for the safe transport of dangerous goods by air. These instructions are issued biennially, becoming effective on 1 January of an odd-numbered year.

End of new Attachment I

<p><i>Origin:</i></p> <p>FLTOPSP/6</p>	<p><i>Rationale:</i></p> <p>The responsibilities of the operator and the State of the Operator with regards to the carriage of dangerous goods are lacking from Annex 6, Part III. Audits conducted by the Universal Safety Oversight Audit Programme (USOAP) have highlighted issues whereby dangerous goods have been presented for carriage in helicopters with no effective oversight, and in particular, where these goods are intended for carriage by operators without authorization to carry such items. This presents a serious safety problem.</p> <p>Equivalent provisions in Annex 6, Part I were introduced in November 2014.</p>
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ATTACHMENT E to State letter AN 11/1.1.34-20/75

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES
AERODROMES
ANNEX 14
VOLUME I
AERODROME DESIGN AND OPERATIONS
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

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| 1. Text to be deleted is shown with a line through it. | text to be deleted |
| 2. New text to be inserted is highlighted with grey shading. | new text to be inserted |
| 3. Text to be deleted is shown with a line through it followed by the replacement text which is highlighted with grey shading. | new text to replace existing text |

**INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES
PROPOSED AMENDMENT TO**

**ANNEX 14 — AERODROMES
VOLUME I — AERODROME DESIGN AND OPERATIONS**

INITIAL PROPOSAL 1

...

**CHAPTER 9. AERODROME OPERATIONAL SERVICES,
EQUIPMENT AND INSTALLATIONS**

...

9.2 Rescue and firefighting

...

Application

9.2.1 Rescue and firefighting equipment and services shall be provided at an aerodrome when serving commercial air transport operations.

...

<p><i>Origin:</i></p> <p>FLTOPSP/5</p>	<p><i>Rationale:</i></p> <p>RFF requirements create a significant burden for GA pilots and airport operators due to the expense required to maintain a fire brigade at a small general aviation aerodrome. This frequently restricts the operating schedule for these facilities in an effort to avoid the associated RFF expenses. When this expense is spread over only forty to fifty daily operations (typical at many small general aviation aerodromes), the cost to individual pilots and airport operators becomes prohibitive.</p> <p>The mandatory provision of services has caused:</p> <ul style="list-style-type: none"> - airports to be closed when no RFF was available (at the end of normal working days or on holidays); - some airports to be open only on weekends when there is enough activity to pay for RFF on the field; and - more recently with the decline of GA activity world-wide, the closure of airports as they are no longer able to afford the services. <p>The temporary closure or restricted operating hours of airports is in itself a hazard, particularly to GA aircraft, which have a more limited fuel range, are often restricted to daylight operations and are more constrained by weather conditions.</p> <p>The requirement has provided little benefit for GA personnel, primarily because the mass, take-off and landing speeds and fuel capacity of small GA aircraft are insufficient to yield the type of take-off or landing accident that would require a aerodrome fire brigade. This contention is supported by the fact that many active GA</p>
--	--

States either have filed a complete or partial difference with Annex 14 on this issue, relieving those States of the responsibility to provide RFF services at general aviation aerodromes.

When proposing this change, the self-responsibility identified in the Foreword to Annex 6, Part II was considered a key element in accepting a reduced level of safety for GA operations.

ATTACHMENT F to State letter AN 11/1.1.34-20/75

PROPOSED AMENDMENT TO

***PROCEDURES FOR AIR NAVIGATION SERVICES —
AIRCRAFT OPERATIONS (DOC 8168)***

VOLUME III, AIRCRAFT OPERATING PROCEDURES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

PROPOSED AMENDMENT TO

***PROCEDURES FOR AIR NAVIGATION SERVICES —
AIRCRAFT OPERATIONS (DOC 8168)***

VOLUME III, AIRCRAFT OPERATING PROCEDURES

INITIAL PROPOSAL 1

**Section 1
DEFINITIONS, ABBREVIATIONS AND ACRONYMS
AND UNITS OF MEASUREMENT**

...

Chapter 2

**ABBREVIATIONS AND ACRONYMS
*(used in this document)***

...

FMS Flight management system

...

MEL Minimum equipment list

...

NAT HLA North Atlantic high-level airspace

...

OEI One-engine inoperative

...

...

PF Pilot flying

PM Pilot monitoring

...

...

Section 4

SECONDARY SURVEILLANCE RADAR (SSR) TRANSPONDER OPERATING PROCEDURES

...

Attachment A to Section 4, Chapter 3

ACAS TRAINING GUIDELINES FOR PILOTS

...

2. ACAS ACADEMIC TRAINING

...

2.2.2.4 Crew coordination

...

- a) division of duties between the pilot flying (PF) and the pilot not flying, including a clear definition of whether the pilot flying or the pilot-in-command will fly the aircraft during a response to an RA;

...

Section 6

STANDARD OPERATING PROCEDURES (SOPs) AND CHECKLISTS

...

Chapter 3

CREW BRIEFINGS

Note. — Unless specified as flight crew or cabin crew, the term “crew” refers to all operational crew required on board for the air operator to support the flight.

3.1 GENERAL

3.1.1 Operators shall establish crew briefings as an integral part of standard operating procedures (SOPs). Crew briefings ~~communicate duties~~ identify and mitigate potential threats, standardize activities, ensure that a plan of action is shared by crew members and enhance crew situational awareness.

...

3.2 OBJECTIVES

Crew briefings should aid crews to: ~~in performing safety critical actions~~

- a) ~~identify and manage threats and errors~~ relevant to specific phases of flight ~~by;~~
- a) ~~refreshing prior knowledge to make it more readily accessible in real time during flight;~~
- b) ~~constructing~~ create a shared mental picture ~~model~~ of the situation to support situational awareness intended operation;
- c) ~~building a plan of action and transmitting it to crew members to promote effective error detection and management~~ identify significant differences or deviations to standardize the operation; and
- d) ~~preparing crew members for responses to foreseeable hazards to enable prompt and effective reaction~~ refresh SOPs or techniques if they are relevant and expected for the on-going operation.

Note.— Without briefings, and under the pressure of time constraints and stress, retrieving information from memory may be an extremely unreliable process.

3.3 PRINCIPLES

3.3.1 ~~The following principles should be considered w~~When establishing crew briefings, the following principles should be considered:

- a) ~~crew briefings should be short and should not include more than ten items. If more than ten items are necessary, consideration should be given to splitting the briefing into sequential phases of the flight;~~
- b) ~~crew briefings should be simple and succinct, yet sufficiently comprehensive to promote understanding of the plan of action among all crew members;~~
- c) ~~crew briefings should be interactive and where possible should use a question and answer format;~~
- d) ~~crew briefings should be scheduled so as not to interfere with, and to provide adequate time for, the performance of operational tasks; and~~
- e) ~~crew briefings should achieve a balance between effectiveness and continual repetition of recurring items.~~
- a) aim to keep them as short as possible, but long enough to cover all relevant items;
- b) organize the briefing in a way such that interruptions and distractions are avoided as much as possible; and
- c) maintain a conversational, interactive style and use open-ended questions engaging all crew members to share their experiences and expectations.

Note.— Crew briefings that become routine recitations do not refresh prior knowledge and are ineffective.

— 3.3.2 ~~Any intended deviation from SOPs required by operational circumstances should be included as a specific briefing item.~~

3.4 APPLICATION

...

3.4.3 Additional briefings should be conducted depending on the operational scenario:

- a) cruise briefing: required when expecting specific operational threats in cruise such as high terrain en-route or weather avoidance, or for areas with special operational rules such as the North Atlantic high level airspace (NAT HLA); and
- b) crew relief briefing: required when changing flight crew members in augmented crew operation.

Editorial Note.— Renumber subsequent paragraphs.

3.5 SCOPE

3.5.1 The main purpose of a crew briefing is to identify threats impeding the intended operation and decide on a mitigation plan (avoidance, management) for those identified threats. The briefing should result in an agreement on the general plan of the flight trajectory and plan for significant differences to routine operation.

3.5.2 At the end of a crew briefing, all crew members should have a shared mental model of the intended operation, the identified threats, the mitigations and the deviations from standard operations.

3.5.3 Briefings should empower the pilot monitoring (PM) by setting the monitoring framework expected.

3.5.4 Crew briefings should complement SOPs, they should not be merely a repetition of SOP items.

~~3.5.1 Pre flight briefings shall include both flight crew and cabin crew.~~

~~3.5.2 Pre flight briefings should focus on crew coordination as well as aircraft operational issues. They should include, but not be limited to:~~

- ~~a) any information necessary for the flight, including unserviceable equipment or abnormalities that may affect operational or passenger safety requirements;~~
- ~~b) essential communications, and emergency and safety procedures; and~~
- ~~e) weather conditions.~~

~~3.5.3 Flight crew departure briefings should prioritize all relevant conditions that exist for the take-off and climb. They should include, but not be limited to:~~

- ~~a) runway in use, aircraft configuration and take-off speeds;~~
- ~~b) taxi out route and relevant hot spots;~~
- ~~e) departure procedures;~~
- ~~d) departure routes;~~
- ~~e) navigation and communications equipment set up;~~

- ~~f) aerodrome, terrain and performance restrictions, including noise abatement procedures (if applicable);~~
- ~~g) take-off alternates (if applicable);~~
- ~~h) any item(s) included in the minimum equipment list (if applicable);~~
- ~~i) review of applicable emergency procedures; and~~
- ~~j) applicable standard call-outs.~~

~~— Note.— The Preparation of an Operations Manual (Doc 9376), Chapter 8, 8.6.9, includes general considerations about standard call-outs. Attachment F to Chapter 8 contains an example of an operator's guidance on standard call-out procedures.~~

~~3.5.4 Flight crew arrival briefings should prioritize all relevant conditions that exist for the descent, approach and landing. They should include, but not be limited to:~~

- ~~a) terrain restrictions and minimum safe altitudes during descent;~~
- ~~b) arrival routes;~~
- ~~c) instrument or visual approach procedures and runway in use;~~
- ~~d) operational minima, aircraft configuration, and landing speeds;~~
- ~~e) navigation and communications equipment set-up;~~
- ~~f) taxi in route and relevant hot spots;~~
- ~~g) missed approach procedures;~~
- ~~h) alternate aerodromes and fuel considerations;~~
- ~~i) review of applicable emergency procedures;~~
- ~~j) applicable standard call-outs; and~~

~~Note.— The Preparation of an Operations Manual (Doc 9376), Chapter 8, 8.6.9, includes general considerations about standard call-outs. Attachment F to Chapter 8 contains an example of an operator's guidance on standard call-out procedures.~~

- ~~k) cold temperature correction (see Section 2, Chapter 4, 4.3).~~

~~3.5.5 Cabin crew briefings should prioritize all relevant conditions that exist for the departure. They should include, but not be limited to:~~

- ~~a) assignment of take-off/landing positions;~~
- ~~b) review of emergency equipment;~~
- ~~c) passengers requiring special attention;~~
- ~~d) the silent review process;~~

~~*Note.— The silent review process is the self review of individual actions in the event of emergencies.*~~

- ~~e) review of applicable emergencies;~~
- ~~f) security or service related topics that may impact on passenger or crew safety; and~~
- ~~g) any additional information provided by the operator, including review of new procedures, equipment and systems.~~

Insert new text as follows

3.6 TECHNIQUE AND CONTENT

3.6.1 Each briefing should be initiated and managed by the pilot flying.

3.6.2 An effective briefing requires unique thinking, beyond the pure reflection of standard operation and routine. It should focus on the risks associated with the operational, aircraft, environmental and crew related information.

3.6.3 The source of the briefing material is obtained from the pre-flight preparation, aircraft operation and the knowledge and experience of all crew members engaged in the operation.

3.6.4 The briefing should contain the following elements:

- a) threats;
- b) mitigations;
- c) operational plan;
- d) differences from the standard operation; and
- e) a summary of key points.

Note.— Abnormal procedures or techniques should only be briefed when the crew have information that makes the use of such a procedure or technique likely in order to mitigate a threat (e.g. wind shear reported in ATIS).

3.6.5 Threats, and the associated mitigation strategies, should be identified with regard to the:

- a) crew factors;
- b) aircraft;
- c) airport and airspace including terrain; and
- d) environment.

Note.— Threat and error management is a comprehensive process. A checklist-style briefing aid to identify threats is discouraged as it may lead to automatic repetition without due consideration of the real issues.

3.6.6 A briefing on the operational plan of the flight should make all flight crew members aware of the planned taxi and flight trajectory. This should be a high-level description and not be confused with the detailed setting and checking of the flight trajectory in the flight management system (FMS,) accomplished by the respective SOP items.

3.6.7 The briefing should include significant differences or deviations to routine operations and how they will be managed.

Note.— Examples of significant differences could be: non-routine supplementary or special operational procedures, minimum equipment list (MEL) operational procedures, using an approach technique rarely used in routine operation and briefing of a one-engine inoperative (OEI) climb profile.

3.6.8 Each briefing should be concluded with a summary of key points.

End of new text.

<i>Origin:</i> FLTOPSP/6	<i>Rationale:</i> The purpose of a crew briefing should be to enhance flight safety and mitigate risk; it should identify significant differences from the typical operation. The current text places too much emphasis on repetition of standard items which could lead to boredom, complacency and a consequent decrease in flight safety. Revising the text for an effective briefing will help promote proactive threat assessment and mitigation.
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ATTACHMENT G to State letter AN 11/1.1.34-20/75

**RESPONSE FORM TO BE COMPLETED AND RETURNED TO ICAO TOGETHER
WITH ANY COMMENTS YOU MAY HAVE ON THE PROPOSED AMENDMENTS**

To: The Secretary General
International Civil Aviation Organization
999 Robert-Bourassa Boulevard
Montréal, Quebec
Canada, H3C 5H7

(State) _____

Please make a checkmark (✓) against one option for each amendment. If you choose options “agreement with comments” or “disagreement with comments”, **please provide your comments on separate sheets.**

	<i>Agreement without comments</i>	<i>Agreement with comments*</i>	<i>Disagreement without comments</i>	<i>Disagreement with comments</i>	<i>No position</i>
Amendment to Annex 6, Part I (Attachment B refers)					
Amendment to Annex 6, Part II (Attachment C refers)					
Amendment to Annex 6, Part III (Attachment D refers)					
Amendment to Annex 14, Volume II (Attachment E refers)					
Amendment to PANS-OPS, Volume III (Attachment F refers)					

*“Agreement with comments” indicates that your State or organization agrees with the intent and overall thrust of the amendment proposal; the comments themselves may include, as necessary, your reservations concerning certain parts of the proposal and/or offer an alternative proposal in this regard.

Signature: _____ Date: _____

— END —