

Commission Implementing Regulation (EU) 2019/1387 of 1 August 2019 amending Regulation (EU) No 965/2012 as regards requirements for aeroplane landing performance calculations and the standards for assessing the runway surface conditions, update on certain aircraft safety equipment and requirements and operations without holding an extended range operational approval

COMMISSION IMPLEMENTING REGULATION (EU) 2019/1387

of 1 August 2019

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THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91⁽¹⁾, and in particular Article 31 thereof,

Whereas:

- (1) Commission Regulation (EU) No 965/2012⁽²⁾ lays down detailed rules as regard safety margins for approach and landing performance conditions, for flights of two-engined aeroplanes with one engine inoperative without holding an extended range operational approval ('ETOPS'), as well as technical requirements for the carriage of flight recorders. That Regulation also lays down detailed rules on the secure flight crew compartment door for performance class A aeroplanes that have a maximum operational passenger seating ('MOPS') configuration of 19.
- (2) Investigation reports of accidents have indicated that the different methods for assessing the runway surface conditions before landing and on reporting on them after landing contribute significantly to runway excursions, in particular when the runway is wet or contaminated. The current standards in Commission Regulation (EU) No 965/2012 for aeroplane performance calculations do not cover adequately all surface conditions on wet and contaminated runways in relation to the method used for assessing and reporting the runway surface conditions.
- (3) In this regard, the International Civil Aviation Organization ('ICAO') amended a number of Standards and Recommended Practices ('SARPs') in Annexes 6, 8, 14 and 15 to the Convention on International Civil Aviation ('Chicago Convention') and has produced extensive accompanying guidance material. The purpose of those documents

is to establish a globally harmonised reporting format for runway surface conditions and the airworthiness standards necessary for the assessment of the landing distance for aeroplanes as well as operational provisions on landing performance calculations and runway surface conditions reporting.

- (4) Regulation (EU) No 965/2012 should therefore be amended to address the safety recommendations issued by investigation authorities and to implement the relevant ICAO SARPs. In order to meet the ICAO recommendations, the amended requirements should enter into force on 5 November 2020 at the latest.
- (5) Furthermore, in CAT operations aeroplanes of certain performance classes (A and B) are allowed in other regulatory systems to land within a reduced landing distance available on the intended runway, provided that they are granted a prior approval from the competent authority and that they fulfil a number of risk-mitigating conditions. Regulation (EU) No 965/2012 should define the conditions under which those operations may be conducted, while maintaining an acceptable level of safety. The relevant administrative form for operational approvals should be amended accordingly to include those operations.
- (6) Reports from investigations of accidents have indicated that in some instances a continuous recording by cockpit voice recorders ('CVRs') and their associated cockpit-mounted area microphones after an interruption of the main electrical generating system could have provided useful information. Therefore, to mitigate any possible interruption of the main electrical generating system, an alternate power supply should be required. This is in line with Annex 6 Part I to the Chicago Convention.
- (7) For some categories of light aeroplanes and helicopters operated in CAT, the recently adopted SARPs in Annex 6 to the Chicago Convention require the carriage of in-flight recording equipment. In addition, safety investigation authorities addressed to the European Union Aviation Safety Agency ('the Agency') twelve safety recommendations related to the need for an in-flight recording for light aeroplanes and helicopters.
- (8) In line with the principle of proportionality and based on risk assessment, the obligation to install a flight recorder in new aircraft should reflect the size and complexity of such aircraft and the type of operation. Therefore, light aeroplanes and helicopters that are newly manufactured and that are used in CAT or commercial specialised operations ('SPO') should be equipped with flight recorders when they meet certain criteria regarding their maximum take-off weight, their propulsion-type or their maximum occupancy. In addition, requirements on the handling (preservation, production, protection and use) of recordings by flight recorders, should be modified to encompass the types of flight recorders introduced by the new flight recorder carriage requirements.
- (9) With regard to the requirement to equip with a secure flight crew compartment door, ICAO amended SARPs by changing the mass limits that render a secure flight crew compartment door mandatory. Thus, Regulation (EU) No 965/2012 should be amended accordingly to ensure harmonisation of the rules for air operations and a level playing field between Union and third-country air operators.

- (10) Regulation (EU) No 965/2012 defines eligibility criteria (certified maximum take-off mass and certified maximum operational passenger seating configuration threshold) for the conduct of flights without holding an ETOPS approval and with performance class A aeroplanes over a route that contains a point further to a distance beyond 60 minutes and up to 120 minutes of flight time from an adequate aerodrome at the one-engine-inoperative cruising speed. Class A aeroplanes that meet those eligibility criteria are allowed to be operated at a distance between 120 and 180 minutes from an adequate aerodrome, provided they obtained an approval by the competent authority and provided that the aeroplane has been granted a type design approval for such operations.
- (11) Several aeroplane manufacturers have already designed or are designing performance class A aeroplanes that are above those eligibility criteria for operations without ETOPS. The current provisions distort competition among air taxi operators with aeroplanes that are below those criteria. Given that no other major regulatory body has imposed such criteria for operations without ETOPS, Regulation (EU) No 965/2012 should be amended accordingly.
- (12) With regard to first-aid oxygen equipment in CAT operations, recent technological developments of that equipment attain an equivalent level of safety and therefore Regulation (EU) No 965/2012 should be amended to allow the use of such equipment.
- (13) Requirements of a Minimum Equipment List (MEL) of Annex III of Regulation (EU) No 965/2012 are not applicable to Approved Training Organisation (ATO), therefore Regulation (EU) No 965/2012 should be amended to allow competent authorities to issue an approval for the development of a (MEL) by an ATO.
- (14) Further to recent amendments to Commission Regulation (EU) No 1321/2014⁽³⁾, Regulation (EU) No 965/2012 should be amended to correct cross-references between the two regulations.
- (15) The Agency has prepared draft implementing rules and submitted them with Opinion No 02/2019 to the Commission in accordance with points (b) and (c) Article 75(2) and Article 76(1) of Regulation (EU) 2018/1139.
- (16) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 127 of Regulation (EU) 2018/1139,

HAS ADOPTED THIS REGULATION:

Article 1

Amendments to Regulation (EU) No 965/2012

- (1) Article 9aa is replaced by the following:

Article 9aa

Flight crew requirements for maintenance check flights

A pilot having acted, before 25 September 2019, as a pilot-in-command on a maintenance check flight that in accordance with the definition in point SPO.SPEC.MCF.100 in Annex VIII is categorised as a Level A maintenance check flight, shall be given credit for the purpose of complying with point SPO.SPEC.MCF.115(a)(1) of that Annex. In that case, the operator shall ensure that the pilot-in-command receives a briefing on any differences identified between the operating practices established before 25 September 2019 and the obligations provided in Section 5 of Subpart E of Annex VIII to this Regulation including those derived from the related procedures established by the operator.;

- (2) Annexes I, II, III, IV, V, VI, VII and VIII to Regulation (EU) No 965/2012 are amended in accordance with the Annex to this Regulation.

Article 2

Date of entry into force and application

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

The following points of the Annex shall apply from 25 September 2019:

- point (4)(a);
- point (6)(b);
- point (8)(b).

The following points of point (4) of the Annex shall apply from 5 November 2020:

- point (c);
- point (d);
- point (e);
- point (f);
- point (g);
- point (n);
- point (q).

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 1 August 2019.

For the Commission

The President

Jean-Claude JUNCKER

ANNEX

Annexes I, II, III, IV, VI, VII and VIII to Regulation (EU) No 965/2012 are amended as follows:

- (1) Annex I (Definitions for terms used in Annexes II to VIII) is amended as follows:
 - (a) the following point (22a) is inserted:
 - (22a) “cockpit voice recorder (CVR)” means a crash-protected flight recorder that uses a combination of microphones and other audio and digital inputs to collect and record the aural environment of the flight crew compartment and communications to, from and between the flight crew members;;
 - (b) point (25) is replaced by the following:
 - (25) “contaminated runway” means a runway of which a significant portion of its surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed under the runway surface condition descriptors;;
 - (c) point (32) is deleted;
 - (d) point (42) is replaced by the following:
 - (42) “dry runway” means a runway whose surface is free of visible moisture and not contaminated within the area intended to be used;;
 - (e) the following point (49b) is inserted:
 - (49b) “flight data recorder (FDR)” means a crash-protected flight recorder that uses a combination of data sources to collect and record parameters that reflect the state and performance of the aircraft;;
 - (f) the following point (49c) is inserted:
 - (49c) “flight recorder” means any type of recorder that is installed on the aircraft for the purpose of facilitating accident or incident safety investigations;;
 - (g) the following point (70a) is inserted:
 - (70a) “landing distance at time of arrival (LDTA)” means a landing distance that is achievable in normal operations based on landing performance data and associated procedures determined for the prevailing conditions at the time of landing;;
 - (h) the following point (103c) is inserted:
 - (103c) “runway condition report (RCR)” means a comprehensive standardised report relating to the conditions of the runway surface and their effect on the aeroplane landing and take-off performance, described by means of runway conditions code;;
 - (i) the following point (107a) is inserted:
 - (107a) “specially prepared winter runway” means a runway with a dry frozen surface of compacted snow or ice which has been treated

with sand or grit or has been mechanically treated to improve runway friction;;

(j) point (128) is replaced by the following:

(128) “wet runway” means a runway whose surface is covered by any visible dampness or water up to and including 3 mm deep within the area intended to be used;;

(2) in Annex II (Part-ARO), Appendix II is replaced by the following:

Appendix II Telephone and fax contact details of the competent authority, including the country code. Email to be provided if available. Insertion of associated air operator certificate (AOC) number. Insertion of the operator's registered name and the operator's trading name, if different. Insert “DbA” before the trading name (for “Doing business as”). Issue date of the operations specifications (dd-mm-yyyy) and signature of the competent authority representative. Insertion of ICAO designation of the aircraft make, model and series, or master series, if a series has been designated (e.g. Boeing-737-3K2 or Boeing-777-232). Either the registration marks are listed in the operations specifications or in the operations manual. In the latter case, the related operations specifications must make a reference to the related page in the operations manual. In case not all specific approvals apply to the aircraft model, the registration marks of the aircraft may be entered in the remark column to the related specific approval. Other type of transportation to be specified (e.g. emergency medical service). Listing of geographical areas of authorised operation (by geographical coordinates or specific routes, flight information region, or national or regional boundaries). Listing of applicable special limitations (e.g. VFR only, Day only, etc.). List in this column the most permissive criteria for each approval or the approval type (with appropriate criteria). Insertion of applicable precision approach category: LTS CAT I, CAT II, OTS CAT II, CAT IIIA, CAT IIIB or CAT IIIC. Insertion of minimum runway visual range (RVR) in meters and decision height (DH) in feet. One line is used per listed approach category. Insertion of approved minimum take-off RVR in metres. One line per approval may be used if different approvals are granted. The Not Applicable (N/A) box may be checked only if the aircraft maximum ceiling is below FL290. Extended range operations (ETOPS) currently applies only to two-engined aircraft. Therefore, the not applicable (N/A) box may be checked if the aircraft model has less or more than two engines. The threshold distance may also be listed (in NM), as well as the engine type. Performance-based navigation (PBN): one line is used for each complex PBN specific approval (e.g. RNP AR APCH), with appropriate limitations listed in the “Specifications” or “Remarks” columns, or in both. Procedure-specific approvals of specific RNP AR APCH procedures may be listed in the operations specifications or in the operations manual. In the latter case, the related operations specifications must have a reference to the related page in the operations manual. Specify if the specific approval is limited to certain runway ends or aerodromes, or both. Insertion of the particular airframe or engine combination. Approval to conduct the training course and examination to be completed by applicants for a cabin crew attestation as specified in Annex V (Part-CC) to Regulation (EU) No 1178/2011. Approval to issue cabin crew attestations as specified in Annex V (Part-CC) to Regulation (EU) No

1178/2011. Insertion of the list of type B EFB applications together with the reference of the EFB hardware (for portable EFBs). Either this list is contained in the operations specifications or in the operations manual. In the latter case, the related operations specifications must make a reference to the related page in the operations manual. The name of the person or organisation responsible for ensuring that the continuing airworthiness of the aircraft is maintained and a reference to the regulation that requires the work, i.e. Subpart G of Annex I (Part-M) to Regulation (EU) No 1321/2014. Other approvals or data may be entered here, using one line (or one multi-line block) per authorisation (e.g. short landing operations, steep approach operations, reduced required landing distance, helicopter operations to or from a public interest site, helicopter operations over a hostile environment located outside a congested area, helicopter operations without a safe forced landing capability, operations with increased bank angles, maximum distance from an adequate aerodrome for two-engined aeroplanes without an ETOPS approval). EASA FORM 139 Issue 6 OPERATIONS SPECIFICATIONS (subject to the approved conditions in the operations manual) Issuing Authority Contact Details Telephone: ...; Fax ...; Email: ... AOC: Operator Name: Date: Signature: Db a Trading Name Operations Specifications #: Aircraft Model: Registration Marks: Types of operations: Commercial operations# Passengers# Cargo# Others: ... Area of operation: Special Limitations: Specific Approvals: Yes/No Specification Remarks Dangerous Goods## Low Visibility Operations CAT ... Take-off RVR: m Approach and Landing## DA/H: ft RVR: m RVSM# N/A## ETOPS# N/A## Maximum Diversion Time: min. Complex navigation specifications for PBN operations## Minimum navigation performance specification## Operations of single-engined turbine aeroplane at night or in IMC (SET-IMC)## Helicopter operations with the aid of night vision imaging systems## Helicopter hoist operations# Helicopter emergency medical service operations## Helicopter offshore operations## Cabin crew training## Issue of CC attestation## Use of type B EFB applications## Continuing airworthiness## Others

(3) Annex III (Part-ORO) is amended as follows:

(a) point ORO.GEN.310(f)(3) is replaced by the following:

(3) that any defect or technical malfunction occurring while the aircraft is under its operational control is reported to the organisation referred in point (d);;

(b) point ORO.SEC.100 is replaced by the following:

ORO.SEC.100 crew compartment security — aeroplanes

(a) In an aeroplane which is equipped with a secure flight crew compartment door, that door shall be capable of being locked, and means shall be provided by which the cabin crew can notify the flight crew in the event of suspicious activity or security breaches in the cabin.

(b) All passenger-carrying aeroplanes that are engaged in the commercial transportation of passengers shall be equipped with an approved secure flight crew compartment door that is capable of

being locked and unlocked from either pilot's station and designed to meet the applicable airworthiness requirements, where such airplanes fall within any of the following categories:

- (1) aeroplanes with an MCTOM that exceeds 54 500 kg;
 - (2) aeroplanes with an MCTOM that exceeds 45 500 kg and have an MOPSC of more than 19; or
 - (3) aeroplanes with an MOPSC of more than 60.
- (c) In all aeroplanes which are equipped with a secure flight crew compartment door in accordance with point (b):
- (1) that door shall be closed prior to engine start for take-off and shall be locked when required so by security procedures or by the pilot-in-command until engine shutdown after landing, except when deemed to be necessary for authorised persons to access or egress in compliance with national civil aviation security programmes;
 - (2) means shall be provided for monitoring from either pilot's station the entire door area outside the flight crew compartment to identify persons that request to enter and to detect suspicious behaviour or potential threat.;
- (4) Annex IV (Part-CAT) is amended as follows:
- (a) point CAT.GEN.MPA.195 is replaced by the following:
CAT.GEN.MPA.195 of flight recorder recordings: preservation, production, protection and use
 - (a) Following an accident, a serious incident or an occurrence identified by the investigating authority, the operator of an aircraft shall preserve the original recorded data of the flight recorders for a period of 60 days or until otherwise directed by the investigating authority.
 - (b) The operator shall conduct operational checks and evaluations of the recordings to ensure the continued serviceability of the flight recorders which are required to be carried under this Regulation.
 - (c) The operator shall ensure that the recordings of flight parameters and data link communication messages required to be recorded on flight recorders are preserved. However, for the purpose of testing and maintaining those flight recorders, up to 1 hour of the oldest recorded data at the time of testing may be erased.
 - (d) The operator shall keep and maintain up to date documentation that presents the necessary information to convert raw flight data into flight parameters expressed in engineering units.
 - (e) The operator shall make available any flight recorder recordings that have been preserved, if so determined by the competent authority.

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- (f) Without prejudice to Regulation (EU) No 996/2010 and Regulation (EU) 2016/679 of the European Parliament and of the Council⁽⁴⁾:
- (1) Except for ensuring flight recorder serviceability, audio recordings from a flight recorder shall not be disclosed or used unless all of the following conditions are fulfilled:
 - (i) a procedure related to the handling of such audio recordings and of their transcript is in place;
 - (ii) all crew members and maintenance personnel concerned have given their prior consent;
 - (iii) such audio recordings are used only for maintaining or improving safety.
 - (1a) When inspecting flight recorder audio recordings to ensure flight recorder serviceability, the operator shall protect the privacy of those audio recordings and make sure that they are not disclosed or used for purposes other than for ensuring flight recorder serviceability.
 - (2) Flight parameters or data link messages recorded by a flight recorder shall not be used for purposes other than for the investigation of an accident or an incident which is subject to mandatory reporting, unless such recordings meet any of the following conditions:
 - (i) are used by the operator for airworthiness or maintenance purposes only;
 - (ii) are de-identified;
 - (iii) are disclosed under secure procedures.
 - (3) Except for ensuring flight recorder serviceability, images of the flight crew compartment that are recorded by a flight recorder shall not be disclosed or used unless all of the following conditions are fulfilled:
 - (i) a procedure related to the handling of such image recordings is in place;
 - (ii) all crew members and maintenance personnel concerned have given their prior consent;
 - (iii) such image recordings are used only for maintaining or improving safety.
 - (3a) When images of the flight crew compartment that are recorded by a flight recorder are inspected for ensuring the serviceability of the flight recorder, then:
 - (i) those images shall not be disclosed or used for purposes other than for ensuring flight recorder serviceability;

- (ii) if body parts of crew members are likely to be visible on the images, the operator shall ensure the privacy of those images.
- (b) point CAT.OP.MPA.140 is amended as follows:
 - point (a) is replaced by the following:
 - (a) Unless approved by the competent authority in accordance with Subpart F of Annex V (Part-SPA), the operator shall not operate a two-engined aeroplane over a route that contains a point further from an adequate aerodrome, under standard conditions in still air, than the appropriate distance for the given type of aeroplane among the following:
 - (1) for performance class A aeroplanes with a maximum operational passenger seating configuration (MOPSC) of 20 or more, the distance flown in 60 minutes at the one-engine-inoperative (OEI) cruising speed determined in accordance with point (b);
 - (2) for performance class A aeroplanes with an MOPSC of 19 or less, the distance flown in 120 minutes or, subject to approval by the competent authority, up to 180 minutes for turbojet aeroplanes, at the OEI cruising speed determined in accordance with point (b);
 - (3) for performance class B or C aeroplanes, whichever is less:
 - (i) the distance flown in 120 minutes at the OEI cruising speed determined in accordance with point (b);
 - (ii) 300 NM.;
 - point (d) is replaced by the following:
 - (d) To obtain the approval referred to in point (a)(2), the operator shall provide evidence that:
 - (1) procedures have been established for flight planning and dispatch;
 - (2) specific maintenance instructions and procedures to ensure the intended levels of continued airworthiness and reliability of the aeroplane including its engines have been established and included in the operator's aircraft maintenance programme in accordance with Annex I (Part-M) to Regulation (EU) No 1321/2014, including:
 - (i) an engine oil consumption programme;
 - (ii) an engine condition monitoring programme;
- (c) point CAT.OP.MPA.300 is replaced by the following:

CAT.OP.MPA.300h and landing conditions — aeroplanes

Before commencing an approach to land, the commander shall:

- (a) be satisfied that, according to the information available to him or her, the weather at the aerodrome and the condition of the runway intended to be used would not prevent a safe approach, landing or missed approach, having regard to the performance information contained in the operations manual (OM);
- (b) carry out a landing distance assessment in accordance with point CAT.OP.MPA.303.;
- (d) the following point CAT.OP.MPA.301 is inserted:

CAT.OP.MPA.301h and landing conditions — helicopters

Before commencing an approach to land, the commander shall be satisfied that according to the information available to him or her, the weather at the aerodrome and the condition of the final approach and take-off area (FATO) intended to be used would not prevent a safe approach, landing or missed approach, having regard to the performance information contained in the operations manual (OM).;

- (e) the following point CAT.OP.MPA.303 is inserted:

CAT.OP.MPA.303 check of the landing distance at time of arrival — aeroplanes

- (a) No approach to land shall be continued unless the landing distance available (LDA) on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the landing distance at time of arrival (LDTA) and the approach to land is performed with performance class A aeroplanes that are certified in accordance with either of the following certification specifications, as indicated in the type-certificate:
 - (1) CS-25 or equivalent;
 - (2) CS-23 at level 4 with performance level “High speed” or equivalent.
- (b) For performance class A aeroplanes other than those referred to in point (a), no approach to land shall be continued, except in either of the following situations:
 - (1) the LDA on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the LDTA;
 - (2) if performance information for the assessment of the LDTA is not available, the LDA on the intended runway at the estimated time of landing is at least the required landing distance determined in accordance

with point CAT.POL.A.230 or point CAT.POL.A.235, as applicable.

- (c) For performance class B aeroplanes, no approach to land shall be continued, except in either of the following situations:
- (1) the LDA on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the LDTA;
 - (2) if performance information for the assessment of the LDTA is not available, the LDA on the intended runway at the estimated time of landing is at least the required landing distance determined in accordance with point CAT.POL.A.330 or point CAT.POL.A.335, as applicable.
- (d) For performance class C aeroplanes, no approach to land shall be continued, except in either of the following situations:
- (1) the LDA on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the LDTA;
 - (2) if performance information for the assessment of the LDTA is not available, the LDA on the intended runway at the estimated time of landing is at least the required landing distance determined in accordance with point CAT.POL.A.430 or point CAT.POL.A.435, as applicable.
- (e) Performance information for the assessment of the LDTA shall be based on approved data contained in the AFM. When approved data contained in the AFM are insufficient in respect of the assessment of the LDTA, they shall be supplemented with other data which are either determined in accordance with the applicable certification standards for aeroplanes or determined in line with the AMCs issued by the Agency.
- (f) The operator shall specify in the OM the performance information for the assessment of the LDTA and the assumptions made for its development, including other data that, in accordance with point (e), may be used to supplement that contained in the AFM.;
- (f) the following point CAT.OP.MPA.311 is inserted:
- CAT.OP.MPA.311 on runway braking action**
- Whenever the runway braking action encountered during the landing roll is not as good as that reported by the aerodrome operator in the runway condition report (RCR), the commander shall notify the air traffic services (ATS) by means of a special air-report (AIREP) as soon as practicable.;
- (g) in point CAT.POL.A.105, point (d) is replaced by the following:

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- (d) The operator shall take account of charting accuracy when assessing the take-off requirements of the applicable chapters.;
- (h) in point CAT.POL.A.105, point (e) is deleted
- (i) in point CAT.POL.A.215, points (b), (c) and (d) are replaced by the following:
 - (b) The gradient of the en-route net flight path shall be positive at least 1 000 ft above all terrain and obstructions along the route within 9,3 km (5 NM) on either side of the intended track.
 - (c) The en-route net flight path shall permit the aeroplane to continue flight from the cruising altitude to an aerodrome where a landing can be made in accordance with point CAT.POL.A.230 or CAT.POL.A.235, as appropriate. The en-route net flight path shall clear vertically, by at least 2 000 ft, all terrain and obstructions along the route within 9,3 km (5 NM) on either side of the intended track, taking into account the following elements:
 - (1) the engine is assumed to fail at the most critical point along the route;
 - (2) account is taken of the effects of winds on the flight path;
 - (3) fuel jettisoning is permitted to an extent consistent with reaching the aerodrome where the aeroplane is assumed to land after engine failure with the required fuel reserves in accordance with point CAT.OP.MPA.150, appropriate for an alternate aerodrome, if a safe procedure is used;
 - (4) the aerodrome, where the aeroplane is assumed to land after engine failure, shall meet the following criteria:
 - (i) the performance requirements for the expected landing mass are met;
 - (ii) weather reports or forecasts and runway condition reports indicate that a safe landing can be accomplished at the estimated time of landing;
 - (5) if the AFM does not contain en-route net flight path data, the gross OEI en-route flight path shall be reduced by a climb gradient of 1,1 % for two-engined aeroplanes, 1,4 % for three-engined aeroplanes, and 1,6 % for four-engined aeroplanes.
 - (d) The operator shall increase the width margins provided for in points (b) and (c) to 18,5 km (10 NM) if the navigational accuracy does not meet at least navigation specification RNAV 5.;
 - (j) point CAT.POL.A.220 is replaced by the following:

CAT.POL.A.220e — aeroplanes with three or more engines, two engines inoperative

- (a) An aeroplane that has three or more engines shall not be away from an aerodrome at which the requirements of points CAT.POL.A.230 or CAT.POL.A.235(a) for the expected landing mass are met accordingly, at any point along the intended track for more than 90 minutes, with all engines operating at cruising power or thrust, as appropriate, at standard temperature in still air, unless points (b) to (f) of this point are complied with.
- (b) The two-engines-inoperative en-route net flight path data shall allow the aeroplane to continue the flight, in the expected meteorological conditions, from the point where two engines are assumed to fail simultaneously to an aerodrome at which it is possible to land and come to a complete stop when using the prescribed procedure for a landing with two engines inoperative. The en-route net flight path shall clear vertically, by at least 2 000 ft, all terrain and obstructions along the route within 9,3 km (5 NM) on either side of the intended track. At altitudes and in meteorological conditions that require ice protection systems to be operable, the effect of their use on the en-route net flight path data shall be taken into account. If the navigational accuracy does not meet at least navigation specification RNAV 5, the operator shall increase the prescribed width margin provided for in the second sentence to 18,5 km (10 NM).
- (c) The two engines shall be assumed to fail at the most critical point of that portion of the route where the aeroplane is operated for more than 90 minutes, with all engines operating at cruising power or thrust, as appropriate, at standard temperature in still air, away from the aerodrome referred to in point (a).
- (d) The net flight path shall have a positive gradient at 1 500 ft above the aerodrome where the landing is assumed to be made after the failure of two engines.
- (e) Fuel jettisoning shall be permitted to an extent consistent with reaching the aerodrome with the required fuel reserves referred to in point (f), if a safe procedure is used.
- (f) The expected mass of the aeroplane at the point where the two engines are assumed to fail shall not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at an altitude of at least 450 m (1 500 ft) directly over the landing area and thereafter to fly for 15 minutes at cruising power or thrust, as appropriate.;
- (k) point CAT.POL.A.230 is replaced by the following:

CAT.POL.A.230g — dry runways

- (a) The landing mass of the aeroplane determined in accordance with point CAT.POL.A.105(a) for the estimated time of landing at the destination aerodrome and at any alternate aerodrome shall allow a full-stop landing from 50 ft above the threshold:

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- (1) for turbojet-powered aeroplanes, within 60 % of the landing distance available (LDA);
 - (2) for turbopropeller-powered aeroplanes, within 70 % of the LDA;
 - (3) by way of derogation from points (a)(1) and (a)(2), for aeroplanes that are approved for reduced landing distance operations under point CAT.POL.A.255, within 80 % of the LDA.
- (b) For steep approach operations, the operator shall use the landing distance data factored in accordance with point (a)(1) or (a)(2), as applicable, based on a screen height of less than 60 ft, but not less than 35 ft, and shall comply with point CAT.POL.A.245.
- (c) For short landing operations, the operator shall use the landing distance data factored in accordance with point (a)(1) or (a)(2), as applicable, and shall comply with point CAT.POL.A.250.
- (d) When determining the landing mass, the operator shall take into account the following:
- (1) not more than 50 % of the headwind component or not less than 150 % of the tailwind component;
 - (2) corrections as provided in the AFM.
- (e) For dispatching the aeroplane, the aeroplane shall either:
- (1) land on the most favourable runway, in still air;
 - (2) land on the runway most likely to be assigned, considering the probable wind speed and direction, the ground-handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
- (f) If the operator is unable to comply with point (e)(2) for the destination aerodrome, the aeroplane shall only be dispatched if an alternate aerodrome is designated that allows full compliance with one of the following:
- (1) points (a) to (d), if the runway at the estimated time of arrival is dry;
 - (2) points CAT.POL.A.235(a) to (d), if the runway at the estimated time of arrival is wet or contaminated.;
- (l) point CAT.POL.A.235 is replaced by the following:
- CAT.POL.A.235g — wet and contaminated runways**
- (a) When the appropriate weather reports or forecasts, or both, indicate that the runway at the estimated time of arrival may be wet, the LDA shall be one of the following distances:
- (1) a landing distance provided in the AFM for use on wet runways at time of dispatch, but not less than that

- required by point CAT.POL.A.230(a)(1) or (a)(2), as applicable;
- (2) if a landing distance is not provided in the AFM for use on wet runways at time of dispatch, at least 115 % of the required landing distance, determined in accordance with point CAT.POL.A.230(a)(1) or (a)(2), as applicable;
 - (3) a landing distance shorter than that required by point (a)(2), but not less than that required by point CAT.POL.A.230(a)(1) or (a)(2), as applicable, if the runway has specific friction-improving characteristics and the AFM includes specific additional information for landing distance on that runway type;
 - (4) by way of derogation from points (a)(1), (a)(2) and (a)(3), for aeroplanes that are approved for reduced landing distance operations under point CAT.POL.A.255, the landing distance determined in accordance with point CAT.POL.A.255(b)(2)(v)(B).
- (b) When the appropriate weather reports or forecasts indicate that the runway at the estimated time of arrival may be contaminated, the LDA shall be one of the following distances:
- (1) at least the landing distance determined in accordance with point (a), or at least 115 % of the landing distance determined in accordance with approved contaminated landing distance data or equivalent, whichever is greater;
 - (2) on specially prepared winter runways, a landing distance shorter than that required by point (b)(1), but not less than that required by point (a), may be used if the AFM includes specific additional information about landing distances on contaminated runways. Such landing distance shall be at least 115 % of the landing distance contained in the AFM.
- (c) By way of derogation from point (b), the increment of 15 % needs not to be applied if it is already included in the approved landing distance data or equivalent.
- (d) For points (a) and (b), the criteria of points CAT.POL.A.230(b), (c) and (d) shall apply accordingly.
- (e) For dispatching the aeroplane, the aeroplane shall either:
- (1) land on the most favourable runway, in still air;
 - (2) land on the runway most likely to be assigned, considering the probable wind speed and direction, the ground-handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
- (f) If the operator is unable to comply with point (e)(1) for a destination aerodrome where the appropriate weather reports or forecasts indicate that the runway at the estimated time of arrival

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may be contaminated and where a landing depends upon a specific wind component, the aeroplane shall only be dispatched if two alternate aerodromes are designated.

- (g) If the operator is unable to comply with point (e)(2) for the destination aerodrome where the appropriate weather reports or forecasts indicate that the runway at the estimated time of arrival may be wet or contaminated, the aeroplane shall only be dispatched if an alternate aerodrome is designated.
- (h) For points (f) and (g), the designated alternate aerodrome or aerodromes shall allow compliance with one of the following:
 - (1) points CAT.POL.A.230(a) to (d), if the runway at the estimated time of arrival is dry;
 - (2) points CAT.POL.A.235(a) to (d), if the runway at the estimated time of arrival is wet or contaminated.;
- (m) in point CAT.POL.A.250(b) the following point (11a) is inserted as follows:
 - (11a) reduced required landing distance operations in accordance with CAT.POL.A.255 are prohibited.;
- (n) the following point CAT.POL.A.255 is inserted:

CAT.POL.A.255 Approval of reduced required landing distance operations

- (a) An aeroplane operator may conduct landing operations within 80 % of the landing distance available (LDA) if it complies with the following conditions:
 - (1) the airplane has an MOPSC of 19 or less;
 - (2) the airplane has an eligibility statement for reduced required landing distance in the AFM;
 - (3) the airplane is used in non-scheduled on-demand commercial air transport (CAT) operations;
 - (4) the landing mass of the aeroplane allows a full-stop landing within that reduced landing distance;
 - (5) the operator has obtained a prior approval of the competent authority.
- (b) To obtain the approval referred to in point (a)(5), the operator shall provide evidence of either of the following circumstances:
 - (1) that a risk assessment has been conducted to demonstrate that a level of safety equivalent to that intended by point CAT.POL.A.230(a)(1) or (2), as applicable, is achieved;
 - (2) that the following conditions are met:
 - (i) special-approach procedures, such as steep approaches, planned screen heights higher than 60 ft or lower than 35 ft, low-visibility operations, approaches outside

- stabilised approach criteria approved under point CAT.OP.MPA.115(a), are prohibited;
- (ii) short landing operations in accordance with point CAT.POL.A.250 are prohibited;
 - (iii) landing on contaminated runways is prohibited;
 - (iv) an adequate training, checking and monitoring process for the flight crew is established;
 - (v) an aerodrome landing analysis programme (ALAP) is established by the operator to ensure that the following conditions are met:
 - (A) no tailwind is forecast at the expected time of arrival;
 - (B) if the runway is forecast to be wet at the expected time of arrival, the landing distance at dispatch shall either be determined in accordance with point CAT.OP.MPA.303(a) or (b) as applicable, or shall be 115 % of the landing distance determined for dry runways, whichever is longer;
 - (C) no forecast contaminated runway conditions exist at the expected time of arrival;
 - (D) no forecast adverse weather conditions exist at the expected time of arrival;
 - (vi) all the equipment that affects landing performance is operative before commencing the flight;
 - (vii) the flight crew is composed of at least two qualified and trained pilots that have recency in reduced required landing distance operations;
 - (viii) based on the prevailing conditions for the intended flight, the commander shall make the final decision to conduct reduced required landing distance operations and may decide not to do so when he or she considers that to be in the interest of safety;
 - (ix) additional aerodrome conditions, if specified by the competent authority that has certified the aerodrome, taking into account orographic characteristics of the approach area, available approach aids, missed-approach and balked-landing considerations.;

- (o) point CAT.POL.A.330 is replaced by the following:

CAT.POL.A.330g — dry runways

- (a) The landing mass of the aeroplane determined in accordance with point CAT.POL.A.105(a) for the estimated time of landing at the destination aerodrome and at any alternate aerodrome shall allow a full-stop landing from 50 ft above the threshold within 70 % of the LDA.
- (b) By way of derogation from point (a), and where point CAT.POL.A.355 is complied with, the landing mass of the aeroplane determined in accordance with point CAT.POL.A.105(a) for the estimated time of landing at the destination aerodrome shall be such as to allow a full-stop landing from 50 ft above the threshold within 80 % of the LDA.
- (c) When determining the landing mass, the operator shall take the following into account:
- (1) the altitude at the aerodrome;
 - (2) not more than 50 % of the headwind component or not less than 150 % of the tailwind component;
 - (3) the type of runway surface;
 - (4) the runway slope in the direction of landing.
- (d) For steep approach operations, the operator shall use landing distance data factored in accordance with point (a), based on a screen height of less than 60 ft, but not less than 35 ft, and comply with point CAT.POL.A.345.
- (e) For short landing operations, the operator shall use landing distance data factored in accordance with point (a), and comply with point CAT.POL.A.350.
- (f) For dispatching the aeroplane, the aeroplane shall either:
- (1) land on the most favourable runway, in still air;
 - (2) land on the runway most likely to be assigned considering the probable wind speed and direction, the ground-handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
- (g) If the operator is unable to comply with point (f)(2) for the destination aerodrome, the aeroplane shall only be dispatched if an alternate aerodrome is designated that permits full compliance with points (a) to (f).;
- (p) point CAT.POL.A.335 is replaced by the following:

CAT.POL.A.335g — wet and contaminated runways

- (a) When the appropriate weather reports or forecasts indicate that the runway at the estimated time of arrival may be wet, the LDA shall be one of the following distances:
- (1) a landing distance provided in the AFM for use on wet runways at time of dispatch, but not less than that required by point CAT.POL.A.330;
 - (2) if a landing distance is not provided in the AFM for use on wet runways at time of dispatch, at least 115 % of the required landing distance, determined in accordance with point CAT.POL.A.330(a);
 - (3) a landing distance shorter than that required by point (a)(2), but not less than that required by point CAT.POL.A.330(a), as applicable, if the runway has specific friction improving characteristics and the AFM includes specific additional information for landing distance on that runway type;
 - (4) by way of derogation from points (a)(1), (a)(2) and (a)(3), for aeroplanes that are approved for reduced landing distance operations under point CAT.POL.A.355, the landing distance determined in accordance with point CAT.POL.A.355(b)(7)(iii).
- (b) When the appropriate weather reports or forecasts indicate that the runway at the estimated time of arrival may be contaminated, the landing distance shall not exceed the LDA. The operator shall specify in the operations manual the landing distance data to be applied.;
- (q) the following point CAT.POL.A.355 is inserted:

CAT.POL.A.355 Approval of reduced required landing distance operations

- (a) Operations with a landing mass of the aeroplane that allows a full-stop landing within 80 % of the landing distance available (LDA) require prior approval by the competent authority. Such approval shall be obtained for each runway on which operations with reduced required landing distance are conducted.
- (b) To obtain the approval referred to in point (a), the operator shall conduct a risk assessment to demonstrate that a level of safety equivalent to that intended by point CAT.POL.A.330(a) is achieved and at least the following conditions are met:
- (1) the State of the aerodrome has determined a public interest and operational necessity for the operation, either due to the remoteness of the aerodrome or to physical limitations relating to the extension of the runway;
 - (2) short landing operations in accordance with point CAT.POL.A.350 and approaches outside stabilised approach criteria approved under point CAT.OP.MPA.115(a) are prohibited;

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- (3) landing on contaminated runways is prohibited;
- (4) a specific control procedure of the touchdown area is defined in the operations manual (OM) and implemented; this procedure shall include adequate go-around and balked-landing instructions when touchdown in the defined area cannot be achieved;
- (5) an adequate aerodrome training and checking programme for the flight crew is established;
- (6) the flight crew is qualified and has recency in reduced required landing distance operations at the aerodrome concerned;
- (7) an aerodrome landing analysis programme (ALAP) is established by the operator to ensure that the following conditions are met:
 - (i) no tailwind is forecast at the expected time of arrival;
 - (ii) if the runway is forecast to be wet at the expected time of arrival, the landing distance at dispatch shall either be determined in accordance with point CAT.OP.MPA.303(c), or shall be 115 % of the landing distance determined for dry runways, whichever is longer;
 - (iii) no forecast contaminated runway conditions exist at the expected time of arrival;
 - (iv) no forecast adverse weather conditions exist at the expected time of arrival;
- (8) operational procedures are established to ensure that:
 - (i) all the equipment that affects landing performance and landing distance is operative before commencing the flight;
 - (ii) deceleration devices are correctly used by the flight crew;
- (9) specific maintenance instructions and operational procedures are established for the aeroplane's deceleration devices to enhance the reliability of those systems;
- (10) the final approach and landing are conducted under visual meteorological conditions (VMC) only;
- (11) additional aerodrome conditions, if specified by the competent authority that has certified the aerodrome, taking into account orographic characteristics of the

approach area, available approach aids, missed-approach and balked-landing considerations.;

- (r) in point CAT.POL.A.415, points (d) and (e) are replaced by the following:
 - (d) The width margins provided for in point (a) shall be increased to 18,5 km (10 NM) if the navigational accuracy does not meet at least navigation specification RNAV 5.
 - (e) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome where the aeroplane is assumed to land after engine failure with the required fuel reserves in accordance with point CAT.OP.MPA.150, appropriate for an alternate aerodrome, if a safe procedure is used.;
- (s) point CAT.POL.A.420 is replaced by the following:

CAT.POL.A.430 — aeroplanes with three or more engines, two engines inoperative

- (a) An aeroplane that has three or more engines shall not be away from an aerodrome at which the requirements of point CAT.POL.A.430 for the expected landing mass are met, at any point along the intended track for more than 90 minutes with all engines operating at cruising power or thrust, as appropriate, at standard temperature in still air, unless points (b) to (e) of this point are complied with.
- (b) The two-engines-inoperative flight path shall permit the aeroplane to continue the flight, in the expected meteorological conditions, clearing all obstacles within 9,3 km (5 NM) on either side of the intended track by a vertical interval of at least 2 000 ft, to an aerodrome at which the performance requirements applicable for the expected landing mass are met.
- (c) The two engines shall be assumed to fail at the most critical point of that portion of the route where the aeroplane is operated for more than 90 minutes, with all engines operating at cruising power or thrust, as appropriate, at standard temperature in still air, away from the aerodrome referred to in point (a).
- (d) The expected mass of the aeroplane at the point where the two engines are assumed to fail shall not be less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made and to arrive there at an altitude of at least 450 m (1 500 ft) directly over the landing area and thereafter to fly for 15 minutes at cruising power or thrust, as appropriate.
- (e) The available rate of climb of the aeroplane shall be 150 ft per minute less than that specified.
- (f) The width margins provided for in point (b) shall be increased to 18,5 km (10 NM) if the navigational accuracy does not meet at least navigation specification RNAV 5.
- (g) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves in accordance with point (d), if a safe procedure is used.;

- (t) in point CAT.POL.A.430(a), point (4) is replaced by the following:
 - (4) the runway slope in the direction of landing.;
- (u) in point CAT.POL.A.435, point (a) is replaced by the following:
 - (a) When the appropriate weather reports or forecasts indicate that the runway at the estimated time of arrival may be wet, the LDA shall be one of the following distances:
 - (1) a landing distance provided in the AFM for use on wet runways at time of dispatch, but not less than that required by point CAT.POL.A.430;
 - (2) if a landing distance is not provided in the AFM for use on wet runways at time of dispatch, at least 115 % of the required landing distance, determined in accordance with point CAT.POL.A.430.;
- (v) in point CAT.IDE.A.185, the following point (i) is added:
 - (i) Aeroplanes with an MCTOM of over 27 000 kg and first issued with an individual CofA on or after 5 September 2022 shall be equipped with an alternate power source to which the CVR and the cockpit-mounted area microphone are switched automatically in the event that all other power to the CVR is interrupted.;
- (w) the following point CAT.IDE.A.191 is inserted:

CAT.IDE.A.191 Weight flight recorder

- (a) Turbine-engined aeroplanes with an MCTOM of 2 250 kg or more and aeroplanes with an MOPSC of more than 9 shall be equipped with a flight recorder if all of the following conditions are met:
 - (1) they are not within the scope of point CAT.IDE.A.190(a);
 - (2) they are first issued with an individual CofA on or after 5 September 2022.
- (b) The flight recorder shall record, by means of flight data or images, information that is sufficient to determine the flight path and aircraft speed.
- (c) The flight recorder shall be capable of retaining the flight data and the images recorded during at least the preceding 5 hours.
- (d) The flight recorder shall automatically start to record prior to the aeroplane being capable of moving under its own power and shall stop automatically after the aeroplane is no longer capable of moving under its own power.
- (e) If the flight recorder records images or audio of the flight crew compartment, then a function shall be provided which can be operated by the commander and which modifies image and audio recordings made before the operation of that function, so that those recordings cannot be retrieved using normal replay or copying techniques.;

- (x) point CAT.IDE.A.230(b) is replaced by the following:
- (b) The oxygen supply referred to in (a) shall be sufficient for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 8 000 ft but does not exceed 15 000 ft, for at least 2 % of the passengers carried, but in no case for less than one person.;
- (y) point CAT.IDE.A.230(d) is replaced by the following:
- (d) The first-aid oxygen equipment shall be capable of generating a mass flow to each person.;
- (z) point CAT.IDE.A.345 is amended as follows:
- i. The title of the article is replaced by the following:
- CAT.IDE.A.345. Communication, navigation and surveillance equipment for operations under IFR or under VFR over routes not navigated by reference to visual landmarks**
- ii. point CAT.IDE.A.345(a) is replaced by the following:
- (a) Aeroplanes operated under IFR or under VFR over routes that cannot be navigated by reference to visual landmarks shall be equipped with radio communication, navigation and surveillance equipment in accordance with the applicable airspace requirements.
- (aa) the following point CAT.IDE.H.191 is inserted:
- CAT.IDE.H.191. High weight flight recorder**
- (a) Turbine-engined helicopters with an MCTOM of 2 250 kg or more shall be equipped with a flight recorder if all of the following conditions are met:
- (1) they are not within the scope of point CAT.IDE.H.190(a);
- (2) they are first issued with an individual CofA on or after 5 September 2022.
- (b) The flight recorder shall record, by means of flight data or images, information that is sufficient to determine the flight path and aircraft speed.
- (c) The flight recorder shall be capable of retaining the flight data and the images recorded during at least the preceding 5 hours.
- (d) The flight recorder shall automatically start to record prior to the helicopter being capable of moving under its own power and shall stop automatically after the helicopter is no longer capable of moving under its own power.
- (e) If the flight recorder records images or audio of the flight crew compartment, then a function shall be provided which can be operated by the commander and which modifies image and audio

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recordings made before the operation of that function, so that those recordings cannot be retrieved using normal replay or copying techniques.;

- (bb) point CAT.IDE.H.345 is amended as follows:
- i. The title of the article is replaced by the following:

CAT.IDE.H.345 Communication, navigation and surveillance equipment for operations under IFR or under VFR over routes not navigated by reference to visual landmarks
 - ii. point CAT.IDE.H.345(a) is replaced by the following:
 - (a) Helicopters operated under IFR or under VFR over routes that cannot be navigated by reference to visual landmarks shall be equipped with radio communication, navigation and surveillance equipment in accordance with the applicable airspace requirements.
- (5) Annex V (Part-SPA) is amended as follows:
- (a) Point SPA.SET-IMC.105(b) is replaced by the following:
 - (b) specific maintenance instructions and procedures to ensure the intended levels of continued airworthiness and reliability of the aeroplane and its propulsion system have been established and included in the operator's aircraft maintenance programme in accordance with Regulation (EU) No 1321/2014, including all of the following:
 - (1) an engine trend monitoring programme, except for aeroplanes first issued with an individual certificate of airworthiness after 31 December 2004 that have an automatic trend monitoring system;
 - (2) a propulsion and associated systems' reliability programme;;
- (6) Annex VI (Part-NCC) is amended as follows:
- (a) Point NCC.GEN.101 is replaced by the following:

Approved training organisations that are required to comply with this Annex shall also comply with:

 - (a) ORO.GEN.310, as applicable; and
 - (b) ORO.MLR.105.;
 - (b) Point NCC.GEN.145 is replaced by the following:

NCC.GEN.145 Handling of flight recorder recordings: preservation, production, protection and use

 - (a) Following an accident, a serious incident or an occurrence identified by the investigating authority, the operator of an aircraft shall preserve the original recorded data of the flight recorders for

- a period of 60 days or until otherwise directed by the investigating authority.
- (b) The operator shall conduct operational checks and evaluations of recordings to ensure the continued serviceability of the flight recorders which are required to be carried.
 - (c) The operator shall ensure that the recordings of flight parameters and data link communication messages required to be recorded on flight recorders are preserved. However, for the purpose of testing and maintaining those flight recorders, up to 1 hour of the oldest recorded data at the time of testing may be erased.
 - (d) The operator shall keep and maintain up to date documentation that presents the necessary information to convert raw flight data into flight parameters expressed in engineering units.
 - (e) The operator shall make available any flight recorder recordings that have been preserved, if so determined by the competent authority.
 - (f) Without prejudice to Regulations (EU) No 996/2010 and (EU) 2016/679:
 - (1) Except for ensuring flight recorder serviceability, audio recordings from a flight recorder shall not be disclosed or used unless all of the following conditions are fulfilled:
 - (i) a procedure related to the handling of such audio recordings and of their transcript is in place;
 - (ii) all crew members and maintenance personnel concerned have given their prior consent;
 - (iii) such audio recordings are used only for maintaining or improving safety.
 - (1a) When flight recorder audio recordings are inspected for ensuring flight recorder serviceability, the operator shall protect the privacy of those audio recordings and make sure that they are not disclosed or used for purposes other than ensuring flight recorder serviceability.
 - (2) Flight parameters or data link messages recorded by a flight recorder shall not be used for purposes other than for the investigation of an accident or an incident which is subject to mandatory reporting, unless such recordings meet any of the following conditions:
 - (i) are used by the operator for airworthiness or maintenance purposes only;
 - (ii) are de-identified;
 - (iii) are disclosed under secure procedures.

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- (3) Except for ensuring flight recorder serviceability, images of the flight crew compartment that are recorded by a flight recorder shall not be disclosed or used unless all the following conditions are fulfilled:
- (i) a procedure related to the handling of such image recordings is in place;
 - (ii) all crew members and maintenance personnel concerned have given their prior consent;
 - (iii) such image recordings are used only for maintaining or improving safety.
- (3a) When images of the flight crew compartment that are recorded by a flight recorder are inspected for ensuring the serviceability of the flight recorder, then:
- (i) those images shall not be disclosed or used for purposes other than for ensuring flight recorder serviceability;
 - (ii) if body parts of crew members are likely to be visible on the images, the operator shall ensure the privacy of those images.;
- (c) point NCC.OP.225 is replaced by the following:
- NCC.OP.225 Approach and landing conditions — aeroplanes**
- Before commencing an approach to land, the pilot-in-command shall be satisfied that, according to the information available, the weather at the aerodrome or the operating site and the condition of the runway intended to be used would not prevent a safe approach, landing or missed approach.;
- (d) the following point NCC.OP.226 is inserted:
- NCC.OP.226 Approach and landing conditions — helicopters**
- Before commencing an approach to land, the pilot-in-command shall be satisfied that, according to the information available, the weather at the aerodrome or the operating site and the condition of the final approach and take-off area (FATO) intended to be used would not prevent a safe approach, landing or missed approach.;
- (7) Annex VII (Part-NCO) is amended as follows:
- (a) point NCO.OP.205 is replaced by the following:
- NCO.OP.205 Approach and landing conditions — aeroplanes**
- Before commencing an approach to land, the pilot-in-command shall be satisfied that, according to the information available, the weather at the aerodrome or the operating site and the condition of the runway intended to be used do not prevent a safe approach, landing or missed approach.;
- (b) the following point NCO.OP.206 is inserted:

NCO.OPA.106 Approach and landing conditions — helicopters

Before commencing an approach to land, the pilot-in-command shall be satisfied that, according to the information available, the weather at the aerodrome or the operating site and the condition of the final approach and take-off area (FATO) intended to be used do not prevent a safe approach, landing or missed approach.;

- (c) point NCO.SPEC.MCF.105(a) is replaced by the following:
- (b) By way of derogation from point NCO.GEN.105(a)(4) of this Annex, a maintenance check flight may be conducted with an aircraft that has been released to service with incomplete maintenance in accordance with points M.A.801(f) of Annex I (Part-M), 145.A.50(e) of Annex II (Part-145) or ML.A.801(f) of Annex Vb (Part-ML) to Commission Regulation (EU) No 1321/2014.;

- (d) point NCO.SPEC.MCF.130 is replaced by the following:

NCO.SPEC.MCF.130 Simulated abnormal or emergency procedures in flight

By way of derogation from point NCO.SPEC.145, a pilot-in-command may simulate situations that require the application of abnormal or emergency procedures with a task specialist on board if the simulation is required to meet the intention of the flight and if it has been identified in the check list referred to in point NCO.SPEC.MCF.110 or in operating procedures.;

- (8) Annex VIII (Part-SPO) is amended as follows:

- (a) Point SPO.GEN.140(A)(10) is replaced by the following:

- (10) the aircraft technical log, in accordance with to Regulation (EU) No 1321/2014, if applicable;;

- (b) point SPO.GEN.145 is replaced by the following:

SPO.GEN.145 Handling of flight recorder recordings: preservation, production, protection and use

- (a) Following an accident, a serious incident or an occurrence identified by the investigating authority, the operator of an aircraft shall preserve the original recorded data of the flight recorders for a period of 60 days or until otherwise directed by the investigating authority.

- (b) The operator shall conduct operational checks and evaluations of recordings to ensure the continued serviceability of the flight recorders which are required to be carried.

- (c) The operator shall ensure that the recordings of flight parameters and data link communication messages required to be recorded on flight recorders are preserved. However, for the purpose of testing and maintaining those flight recorders, up to 1 hour of the oldest recorded data at the time of testing may be erased.

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- (d) The operator shall keep and maintain up to date documentation that presents the necessary information to convert raw flight data into flight parameters expressed in engineering units.
- (e) The operator shall make available any flight recorder recordings that have been preserved, if so determined by the competent authority.
- (f) Without prejudice to Regulations (EU) No 996/2010 and (EU) 2016/679, and except for ensuring flight recorder serviceability:
 - (1) audio recordings from a flight recorder shall not be disclosed or used unless all the following conditions are fulfilled:
 - (i) a procedure related to the handling of such audio recordings and of their transcript is in place;
 - (ii) all crew members and maintenance personnel concerned have given their prior consent;
 - (iii) such audio recordings are used only for maintaining or improving safety.
 - (1a) When flight recorder audio recordings are inspected for ensuring flight recorder serviceability, the operator shall protect the privacy of those audio recordings and make sure that they are not disclosed or used for purposes other than ensuring flight recorder serviceability.
 - (2) Flight parameters or data link messages recorded by a flight recorder shall not be used for purposes other than for the investigation of an accident or an incident that is subject to mandatory reporting. That limitation shall not apply, unless such recordings meet any of the following conditions:
 - (i) are used by the operator for airworthiness or maintenance purposes only;
 - (ii) are de-identified;
 - (iii) are disclosed under secure procedures.
 - (3) Except for ensuring flight recorder serviceability, images of the flight crew compartment that are recorded by a flight recorder shall not be disclosed or used unless all of the following conditions are fulfilled:
 - (i) a procedure related to the handling of such image recordings is in place;
 - (ii) all crew members and maintenance personnel concerned have given their prior consent;

- (iii) such image recordings are used only for maintaining or improving safety.
- (3a) When images of the flight crew compartment that are recorded by a flight recorder are inspected for ensuring the serviceability of the flight recorder, then:
 - (i) those images shall not be disclosed or used for purposes other than ensuring flight recorder serviceability;
 - (ii) if body parts of crew members are likely to be visible on the images, the operator shall ensure the privacy of those images.;
- (c) point SPO.OP.210 is replaced by the following:

SPO.OP.210 Approach and landing conditions — aeroplanes

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

- (d) the following point SPO.OP.211 is inserted:

SPO.OP.211 Approach and landing conditions — helicopters

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

- (e) the following point SPO.IDE.A.146 is inserted:

SPO.IDE.A.146 Light flight recorder

- (a) Turbine-engined aeroplanes with an MCTOM of 2 250 kg or more and aeroplanes with an MOPSC of more than 9 shall be equipped with a flight recorder if all the following conditions are met:
 - (1) they are not within the scope of point SPO.IDE.A.145(a);
 - (2) they are used for commercial operations;
 - (3) they are first issued with an individual CofA on or after 5 September 2022.
- (b) The flight recorder shall record, by means of flight data or images, information that is sufficient to determine the flight path and aircraft speed.
- (c) The flight recorder shall be capable of retaining the flight data and the images recorded during at least the preceding 5 hours.
- (d) The flight recorder shall automatically start to record prior to the aeroplane being capable of moving under its own power and

shall stop automatically after the aeroplane is no longer capable of moving under its own power.

- (e) If the flight recorder records images or audio of the flight crew compartment, then a function shall be provided which can be operated by the pilot-in-command and which modifies image and audio recordings made before the operation of that function, so that those recordings cannot be retrieved using normal replay or copying techniques.;
- (f) the following point SPO.IDE.H.146 is inserted:
- SPO.IDE.H.146 weight flight recorder**
- (a) Turbine-engined helicopters with an MCTOM of 2 250 kg or more shall be equipped with a flight recorder if all the following conditions are met:
- (1) they are within the scope of point SPO.IDE.H.145(a);
 - (2) they are used for commercial operations;
 - (3) they are first issued with an individual CofA on or after 5 September 2022.
- (b) The flight recorder shall record, by means of flight data or images, information that is sufficient to determine the flight path and aircraft speed.
- (c) The flight recorder shall be capable of retaining the flight data and the images recorded during at least the preceding 5 hours.
- (d) The flight recorder shall automatically start to record prior to the helicopter being capable of moving under its own power and shall stop automatically after the helicopter is no longer capable of moving under its own power.
- (e) If the flight recorder records images or audio of the flight crew compartment, then a function shall be provided which can be operated by the pilot-in-command and which modifies image and audio recordings made before the operation of that function, so that those recordings cannot be retrieved using normal replay or copying techniques.;
- (g) point SPO.SPE.MCF.100(a) is replaced by the following:
- (a) “Level A” maintenance check flight for a flight where the use of abnormal or emergency procedures, as defined in the aircraft flight manual, is expected, or where a flight is required to prove the functioning of a backup system or other safety devices.;

- (1) [OJ L 212, 22.8.2018, p. 1.](#)
- (2) Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council ([OJ L 296, 25.10.2012, p. 1.](#)).
- (3) Commission Regulation (EU) No 1321/2014 of 26 November 2014 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks ([OJ L 362, 17.12.2014, p. 1.](#)).
- (4) Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) ([OJ L 119, 4.5.2016, p. 1.](#));'