



Explanatory Note to Decision 2015/030/R

Acceptable means of compliance (AMC) and guidance material (GM) to Commission Regulation (EU) 2015/2338 (First set)

RELATED NPA/CRD 2013-26 — OPINION No 01/2014 — RMT.0400 (OPS.090(a)) & RMT.0401 (OPS.090(b)) — 17.12.2015

EXECUTIVE SUMMARY

The objective of this Decision is to issue AMC and GM in order to complement implementing rules (IRs) of Regulation (EU) 2015/2338 amending Regulation (EU) No 965/2012 as regards requirements for flight recorders, underwater locating devices and aircraft tracking systems.

The four issues addressed are the following:

- (a) lack of operational procedures to preserve the cockpit voice recorder (CVR) recording after an accident or a serious incident;
- (b) lack of guidance on the inspection of the CVR recording for serviceability purposes;
- (c) lack of clarity on the applicability of the data link recording requirement; and
- (d) performance and installation of the long-range underwater locating device (ULD).

Regarding issues (a), (b), and (d), a first version of draft AMC and GM were proposed in NPA 2013-26, published in December 2013. Following a public consultation, CRD 2013-26 was published in May 2014, concurrently with Opinion No 01/2014. CRD 2013-26 contains a second version of the draft AMC and GM, while Opinion No 01/2014 contains a second version of the draft IRs. Issue (c) is simply addressed by a GM paragraph.

The draft AMC issued through this Decision are those which were subject to the public consultation and for which no significant change to the content was needed following the publication of CRD 2013-26. AMC and GM related to aircraft tracking, location of an aircraft in distress, protection of CVR recordings and new FDR parameters do not fall within the scope of this Decision.

Applicability		Process map	
Affected regulations and decisions:	Decision 2014/017/R (AMC/GM to Part-ORO); Decision 2014/015/R (AMC/GM to Part-CAT); Decision 2013/021/R (AMC/GM to Part-NCC); Decision 2014/018/R (AMC/GM to Part-SPO)	Concept paper:	No
Affected stakeholders:	Aircraft operators; aircraft manufacturers; flight crew members; safety investigation authorities; national aviation authorities	Rulemaking group:	No
Driver/origin:	Safety	Terms of reference:	25.9.2015
Reference:	Please see Section 3.2.	RIA type:	Full and Light
		Technical consultation during NPA drafting:	No
		Publication date of the NPA:	20.12.2013
		Duration of NPA consultation:	3 months
		Review group:	No
		Focused consultation:	No
		Publication date of the opinion:	5.5.2014
		Publication date of the decision:	2015/Q4



Table of contents

1. Procedural information 3

1.1. The rule development procedure..... 3

1.2. AMC and GM which are within the scope of this Decision 3

1.3. AMC and GM which are outside the scope of this Decision 4

1.4. The structure of this document..... 4

1.5. The next steps in the procedure..... 4

2. Explanatory Note 5

2.1. Overview of the issues to be addressed..... 5

2.2. Objectives 5

2.3. Overview of the proposed amendments 5

2.3.1. AMC and GM on the preservation of flight recorder recordings after an accident or a serious incident 5

2.3.1.1. Amendment to AMC and GM 5

2.3.1.2. Regulatory impact 7

2.3.2. AMC and GM on the serviceability of flight recorders 7

2.3.2.1. Amendment to AMC and GM 7

2.3.2.2. Regulatory impact 7

2.3.3. GM on the applicability of the data link recording requirement 8

2.3.3.1. Amendment to AMC and GM 8

2.3.3.2. Regulatory impact 8

2.3.4. AMC on long-range underwater locating device..... 9

2.3.4.1. Amendment to AMC and GM 9

2.3.4.2. Regulatory impact 9

3. References 10

3.1. Affected AMC and GM..... 10

3.2. Reference documents..... 10



1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') issued on 5 May 2014 Opinion No 01/2014¹ titled 'Amendment of requirements for flight recorders and underwater locating devices'.

Said Opinion and the associated CRD 2013-26² contained draft IRs, draft AMC and draft GM to address the following safety issues:

- (a) unreliability of obsolete recording technologies such as magnetic tape, magnetic wire and frequency modulation;
- (b) frequent cases of CVR overwriting the recordings after an accident or a serious incident;
- (c) insufficient transmission time of the ULDs fitted to flight recorders; and
- (d) insufficient detection range of the ULDs fitted to flight recorders after an accident over an oceanic area.

The committee established by Article 65 of Regulation (EC) No 216/2008³ (hereinafter referred to as the 'EASA Committee'), composed of experts of the European Commission and EU Member States, drafted a regulation based on the Agency proposals. On 9 July 2015, the EASA Committee unanimously voted in favour of this draft regulation. After a period of scrutiny by the European Parliament and the Council, Commission Regulation (EU) 2015/2338⁴ amending Regulation (EU) No 965/2012 as regards requirements for flight recorders, underwater locating devices and aircraft tracking systems, was published on 16 December 2015.

1.2. AMC and GM which are within the scope of this Decision

The AMC in the scope of this Decision are those proposed in CRD 2013-26 and for which no significant change to their content was needed after publication of CRD 2013-26. These are AMC related to preservation of the flight recorders after an accident or a serious incident, flight recorder serviceability and ULDs. The GM in the scope of this document are those which complement the same IRs as the AMC.

A first version of the draft AMC and GM was presented in NPA 2013-26 (published in December 2013). Following a three-month public consultation, an amended version of the draft AMC and GM was presented in Chapter 4 of CRD 2013-26 (published in May 2014, concurrently with Opinion 01/2014). When an IR proposed by Opinion No 01/2014 has been adopted by the EASA Committee without significant change, then the associated draft AMC and GM can also be adopted without significant change, since NPA 2013-26 has been publicly consulted.

¹ <http://easa.europa.eu/document-library/opinions/opinion-012014>

² <http://easa.europa.eu/system/files/dfu/CRD%202013-26.pdf>

³ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1).

⁴ Commission Regulation (EU) 2015/2338 of 11 December 2015 amending Regulation (EU) No 965/2012 as regards requirements for flight recorders, underwater locating devices and aircraft tracking systems (OJ L 330, 16.12.2015, p. 1).



1.3. AMC and GM which are outside the scope of this Decision

The AMC and GM associated with IRs which were introduced (following the publication of Opinion No 01/2014) in Commission Regulation (EU) 2015/2338 (such as CAT.GEN.MPA.205 or CAT.GEN.MPA.210) are out of the scope of this Decision. Likewise, the AMC and GM associated with IRs which were significantly changed after the publication of Opinion No 01/2014 (such as CAT.GEN.MPA.195(f)) are out of scope of this Decision. In particular, the AMC and GM related to aircraft tracking, location of an aircraft in distress, protection of CVR recordings and new flight data recorder (FDR) parameters are out of the present Decision's scope.

1.4. The structure of this document

Chapter 1 of this document contains the procedural information related to this consultation. Chapter 2 (Explanatory Note) explains the core technical content.

Note:

The AMC and GM are annexed to the Decision.

1.5. The next steps in the procedure

Those AMC and GM which were not presented in CRD 2013-26 or which were significantly changed after the publication of CRD 2013-26 are planned to be issued through a Decision to be published at a later stage, following consultation of interested parties.



2. Explanatory Note

2.1. Overview of the issues to be addressed

There are four issues addressed by this Decision:

- (a) Frequent cases of the CVR overwriting the recording after an accident or a serious incident (also called 'CVR overrun'), making the CVR useless for the safety investigation. One of the common causes of CVR overruns is the lack of clear operational procedures to preserve the CVR recording after an accident or a serious incident, resulting in the CVR not being deactivated after completion of the flight;
- (b) Incomplete guidance related to ensuring the serviceability of the CVR. In particular, the inspection of the CVR recording is a new task, on which the industry has limited experience ;
- (c) Lack of clarity on the applicability of the data link recording requirement, in particular when data link communication messages cannot be exchanged with ATS; and
- (d) performance and installation of the 8.8 kHz, 'long-range' ULD device introduced by Regulation (EU) 2015/2338. Reference to industry standards and basic installation principles are needed to ensure that this device will work as expected.

All four issues translate into essential recorded information or pieces of evidence being lost or recovered with very significant delay. They hinder or delay significantly the reconstruction of the sequence of events that led to an occurrence and the understanding of causes, rendering corrective actions impossible or too late.

2.2. Objectives

The specific objectives of this Decision is to issue the AMC and GM associated with the IRs of the Regulation which are addressing the issues of:

- (a) lack of operational procedures to preserve the CVR recording after an accident or a serious incident;
- (b) lack of guidance on the inspection of the CVR recording for serviceability purposes;
- (c) lack of clarity on the applicability of the data link recording requirement; and
- (d) performance and installation of the long-range ULD.

2.3. Overview of the proposed amendments

2.3.1. AMC and GM on the preservation of flight recorder recordings after an accident or a serious incident

2.3.1.1. Amendment to AMC and GM

AMC/GM to Part-ORO

- (a) AMC2 ORO.MLR.100, on the content of the OM for complex aircraft used for non-commercial operations, is amended. The amended wording of sub-paragraph (q) of AMC2 ORO.MLR.100 recommends explicitly that procedures preventing the inadvertent reactivation, repair or reinstallation of the flight recorders are inserted in the OM.



- (b) AMC3 ORO.MLR.100, on the content of the operations manual (OM) when the aircraft is used for commercial air transport, is amended. In section A of AMC3 ORO.MLR.100 (general requirements), the recommendation for the OM to contain procedures for the preservation of recordings is modified to specify that it is only necessary following an accident, a serious incident or when directed so by the investigating authority. Also, it is recommended that a paragraph mentioning the obligation of the aircraft operator to preserve the recording is quoted in the OM, and that instructions are specified to prevent any reactivation, repair or reinstallation of the flight recorders until decision is made by the investigating authority.
- (c) AMC4 ORO.MLR.100, on the content of the OM for specialised operations, is amended. The amended wording of sub-paragraph (a)(A)(11) of AMC4 ORO.MLR.100 recommends explicitly that procedures preventing the inadvertent reactivation, repair or reinstallation of the flight recorders are inserted in the OM.

AMC/GM to Part-CAT

- (d) The AMC and GM to CAT.GEN.MPA.105 (responsibilities of the commander) and to CAT.GEN.MPA.195(a) (preservation of the flight recorder recordings by the aircraft operator), are amended:
- (1) since it may be difficult for the commander to determine quickly the severity of an occurrence, reference to the definitions of an accident and a serious incident in Regulation (EU) No 996/2010 is provided in the new GM1 CAT.GEN.MPA.105(a)(10);
 - (2) AMC1 CAT.GEN.MPA.195(a) recommends that the aircraft operator has procedures in place to ensure that, in the event of an occurrence subject to an investigation by an authority (such as an accident or serious incident), flight recorders are deactivated immediately after flight completion and not reactivated without the agreement of the investigating authority. These procedures should include instructions for the flight crew which should be readily available on board (allowing the commander to comply with CAT.GEN.MPA.105(a)(10)), as well as instructions for the rest of the operator personnel to ensure that the flight recorders are not reactivated or repaired, since this could result in a partial or total loss of the recording; and
 - (3) The subtitle of GM1 CAT.GEN.MPA.195(a) is changed for consistency with the proposed changes to CAT.GEN.MPA.195(a).

AMC/GM to Part-NCC and Part-SPO

- (e) As done for Part CAT, the AMC and GM to Part-NCC and Part SPO related to the preservation of the flight recorder recordings by the flight crew and the aircraft operator are amended:
- (1) since it may be difficult for the pilot-in-command to determine quickly the severity of an occurrence, reference to the definitions of an accident and a serious incident in Regulation (EU) No 996/2010 is provided in the new GM1 NCC.GEN.106(a)(9) and GM1 SPO.GEN.107(a)(9);
 - (2) AMC1 NCC.GEN.145(a) and AMC1 SPO.GEN.145(a) recommend that the aircraft operator has procedures in place to ensure that, in the event of an occurrence subject to an investigation by an authority (such as an accident or serious incident), flight recorders are deactivated immediately after flight completion and not reactivated without the



agreement of the investigating authority. These procedures should include instructions for the flight crew which should be readily available on board, and instructions for the rest of the operator personnel; and

- (3) The subtitle of GM1 NCC.GEN.145(a) and GM1 SPO.GEN.145(a) are changed for consistency with the changes to NCC.GEN.145(a) and SPO.GEN.145(a).

2.3.1.2. Regulatory impact

The amendments to the AMC and GM presented in 2.3.1.1 were part of a set of changes presented in NPA 2013-26 to address the issue of frequent cases of the CVR overwriting the recordings after an accident or a serious incident. A regulatory impact assessment for this set of change can be found in NPA 2013-26 (see RIA B).

2.3.2. AMC and GM on the serviceability of flight recorders

2.3.2.1. Amendment to AMC and GM

- (a) The titles of AMC1 CAT.GEN.MPA.195(b), GM1 CAT.GEN.MPA.195(b), and GM2 CAT.GEN.MPA.195(b) are changed in consistency with the new title of CAT.GEN.MPA.195.
- (b) In sub-paragraph (b) of GM1 CAT.GEN.MPA.195(b), a reference is added to CAT.GEN.MPA.195(f)(1a), which is addressing the inspection of the CVR recording for ensuring the CVR serviceability.
- (c) A new GM3 CAT.GEN.MPA.195(b) is developed in order to provide reference to useful documentation on CVR audio quality.
- (d) The titles of AMC1 NCC.GEN.145(b), GM1 NCC.GEN.145(b), and GM2 NCC.GEN.145(b) are changed in consistency with the new title of NCC.GEN.145.
- (e) In sub-paragraph (b) of GM1 NCC.GEN.145(b), a reference is added to NCC.GEN.145(f)(1a), which is addressing the inspection of the CVR recording for ensuring the CVR serviceability.
- (f) A new GM3 NCC.GEN.145(b) is developed in order to provide reference to useful documentation on CVR audio quality.
- (g) The titles of AMC1 SPO.GEN.145(b), GM1 SPO.GEN.145(b), and GM2 SPO.GEN.145(b) are changed in consistency with the new title of SPO.GEN.145.
- (h) In sub-paragraph (b) of GM1 SPO.GEN.145(b), a reference is added to SPO.GEN.145(f)(1a), which is addressing the inspection of the CVR recording for ensuring the CVR serviceability.
- (i) A new GM3 SPO.GEN.145(b) is created in order to provide reference to useful documentation on CVR audio quality.

2.3.2.2. Regulatory impact

The amendments to AMC and GM presented in 2.3.2.1 were part of a set of changes presented in NPA 2013-26 to address the issue of unreliability of obsolete recording technologies. A regulatory impact assessment for this set of change can be found in NPA 2013-26: see RIA A.



2.3.3. GM on the applicability of the data link recording requirement

2.3.3.1. Amendment to AMC and GM

(a) A new GM is created to explain the meaning of 'where applicable' in CAT.IDE.A.195(a):

(1) Indeed, if an aeroplane:

- (i) is operated for commercial air transport and is first issued with an individual CofA on or after 8 April 2014;
- (ii) is required to be equipped with a CVR;
- (iii) has the capability to operate data link communications; and
- (iv) may use data link communication messages for ATS communications during parts of or the entire flight,

then this aeroplane must have a working data link recording function supported by a flight recorder (FDR, CVR or dedicated flight recorder). This is to ensure that all ATS communications are recorded, whichever the channel used (VHF/HF voice communications or data link communications).

(2) However, if it is certain that the aeroplane cannot use data link communication messages for ATS communications corresponding to any application designated by CAT.IDE.A.195(a)(1) during any part of the flight, then the data link recording requirement does not apply. As a matter of fact, data link communications remain underused in the airspace of most of the European Union Member States.

(3) Examples of cases where it can be demonstrated that the aeroplane cannot use data link communication messages for ATS communications during the flight include but are not limited to:

- (i) when the aeroplane data link communication capability is disabled permanently and in a way that it cannot be enabled again during the flight (this may be software- or hardware-related);
- (ii) when the planned route and the planned diversion routes are contained in airspace where no data link communication service is used to support ATS (e.g. only HF/VHF voice communications are used); and
- (iii) when the aeroplane data link communication equipment cannot communicate with equipment used by ATS in any of the airspace blocks crossed by the planned route and the planned diversion routes of the aeroplane (e.g. because of interoperability issues).

(b) Similar GM paragraphs are created for helicopters, as well as for Part-NCC and Part-SPO.

2.3.3.2. Regulatory impact

Since the new GM paragraphs on applicability of the data link recording requirement merely provide additional guidance, their regulatory impact is considered neutral.



2.3.4. AMC on long-range underwater locating device

2.3.4.1. Amendment to AMC and GM

- (a) AMC1 CAT.IDE.A.285(f) recommends that the 8.8 kHz ULD required by CAT.IDE.A.285(f) complies with ETSO-C200 of the Certification Specifications for European Technical Standard Orders (CS-ETSO), which is specifying the performance of such a ULD.
- (b) AMC1 CAT.IDE.A.285(f) also recommends that the 8.8 kHz ULD is not installed in the wings or empennage, because there is a higher probability that these parts are separated from the rest of the aircraft after a mid-air collision or an in-flight breakup, or that they float and drift away from the location of the point of impact with water. This is also prescribed in ICAO Annex 6 Part I, Chapter 6, Section 6.5.3.

2.3.4.2. Regulatory impact

The amendments to AMC and GM presented in 2.3.4.1 were part of a set of changes presented in NPA 2013-26 to address the issue of wreckage localisation in oceanic areas. A regulatory impact assessment for this set of change can be found in NPA 2013-26 (see RIA D).



3. References

3.1. Affected AMC and GM

- Decision 2014/017/R of the Executive Director of the European Aviation Safety Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-ORO of Regulation (EU) No 965/2012 and repealing Decision 2012/017/R of the Executive Director of the Agency of 24 October 2012 — ‘AMC and GM to Part-ORO — Issue 2’
- Decision 2014/015/R of the Executive Director of the European Aviation Safety Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-CAT of Regulation (EU) No 965/2012 and repealing Decision 2012/018/R of the Executive Director of the Agency of 24 October 2012 — ‘AMC and GM to Part-CAT — Issue 2’
- Decision 2013/021/R of the Executive Director of the European Aviation Safety Agency of 23 August 2013 adopting Acceptable Means of Compliance and Guidance Material for non-commercial operations with complex motor-powered aircraft (Part-NCC)
- Decision 2014/018/R of the Executive Director of the European Aviation Safety Agency of 24 April 2014 adopting Acceptable Means of Compliance and Guidance Material to Part-SPO of Regulation (EU) No 965/2012 — ‘AMC and GM to Part-SPO’

3.2. Reference documents

- Commission Regulation (EU) 2015/2338 amending Regulation (EU) No 965/2012 as regards requirements for flight recorders, underwater locating devices and aircraft tracking systems
- ICAO Annex 6 Part I, Amendment 38
- Investigation report of the accident to the Avions de Transport Regional (ATR) 42 registered OY-JRJ on 31 January 2005
- Investigation report of the serious incident to the Boeing 737 registered PH-BDP on 10 February 2010
- Investigation report of the accident to the Boeing 767 registered G-OOBK on 3 October 2010
- Investigation report of the accident to the Airbus A330 registered F-GZCP on 1 June 2009
- Interim Statement of the safety investigation of the accident to the Boeing 777 registered 9M-MRO on 7 March 2014
- ATSB, MH370 — Definition of Underwater Search Areas
- ATSB, MH370 — Flight Path Analysis Update
- BEA, Sea Search Operations, accident to the Airbus A330-203 registered F-GZCP on 1 June 2009

