



Terms of Reference

for a rulemaking task

Halon: Update of Part-26 to comply with ICAO Standards

RMT.0560 — ISSUE 2— 18.09.2014

	Applicability	Process map	
Affected regulations and decisions:	Part-26 CS-26	Rulemaking group	Yes
		RIA type	Full
		Technical consultation during NPA drafting	No
Affected stakeholders:	Aircraft manufacturers	Publication date of 1 st NPA	2015/Q1
		Publication date of 2 nd NPA	2016/Q1
Driver/origin:	ICAO standards	Duration of NPA consultation	2 months
Reference:	Amendment 35 to Part I of Annex 6 to the Chicago Convention applicable 15 December 2011 and similar amendment 30 to Part II and 16 to part III	Review group	Yes
		Focused consultation	No
		Publication date of the 1 st Opinion (including CRD)	2015/Q3
		Publication date of the 2 nd Opinion (including CRD)	2016/Q3
		Publication date of the 1 st Decision	2016/Q3
		Publication date of the 2 nd Decision	2017/Q3

1. Issue and reasoning for regulatory change

Background

Halon 1211, halon 1301, and halon 2402, successfully used for decades by civil aviation for fire extinguishing purposes, are ozone-depleting substances.

Their production (or import) in the EU Member States has been limited since 1985 and banned since 1994, in line with the Vienna Convention for the protection of the ozone layer and the subsequent Montreal Protocol¹ on the substances that deplete the ozone layer.

However, the use of halons in aviation has been allowed to continue for certain 'critical uses' (i.e. those for which a safe and feasible alternative for replacement was not yet available) under the exemption of Article 13(1) of Regulation (EC) No 1005/2009². Aviation is considered 'critical use' and, therefore, halon is still used today in civil aircraft for fire protection of:

- portable firefighting extinguishers in cabin and crew compartments;
- fire extinguishers in lavatory disposal receptacles;
- cargo compartments; and
- engines and auxiliary power units.

EU Regulations on substances depleting the ozone layer

In 2010, European Commission adopted Commission Regulation (EU) No 744/2010, which establishes, for each application:

- **cut-off dates** (see attachment) after which the use of halon for new equipment or facilities (i.e. related to new applications for aircraft type certification) would no longer be permitted; and
- **end dates** (see attachment) after which the use of halon would no longer be permitted: i.e. all aircraft halon fire extinguishers and fire protection systems should be decommissioned (= retrofit on the fleet).
- The 'end date' indirectly implies that halon can no longer be implemented on newly produced aircraft, on the basis of existing type certificates (= forward fit on aircraft not yet delivered to operators).

However, Commission Regulation (EU) No 744/2010 does not explicitly mention a termination date for installation or use of halon in newly produced aircraft (i.e. forward fit), according to an existing type certificate before the end dates.

ICAO Standards

ICAO Annex 6 standards adopted in 2011 (i.e. Amendment 35 to Part I, 30 to Part II, and 16 to Part III) have established dates for the replacement of halon in lavatory fire extinguishing systems and in handheld fire extinguishers in aircraft for which individual certificate of airworthiness is issued after the established

¹ <http://ozone.unep.org/pdfs/Montreal-Protocol2000.pdf>.

² Regulation (EC) 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer, Article 13 – Critical uses of halons and decommissioning of equipment containing halons.



dates, but for which a model type certificate already exists (i.e. forward fit) as defined by 'New Product' in the table attached to these ToR.

However, the newly proposed SARPs do not contain 'end dates' for the removal of halon from aircrafts already in service (i.e. retrofit).

It also to be noted that ICAO standards apply to 'international' aviation, including intra-EU cross-border flights. Part-26 provisions addressed to manufacturers have instead to be linked to a specific airworthiness code (e.g. CS-23 or CS-25). In principle even CS-23 aeroplanes or CS-27 light rotorcraft are technically able to cross intra-EU borders or to fly into or out of the airspace under sovereignty of the EU member States.



Available alternatives for halon fire extinguishing systems

At present, halon alternatives certified under the US EPA Significant New Alternatives Programme (SNAP) are available for lavatory extinguishing systems (i.e. FM-200 and FE-36) and handheld fire extinguishers for use in aircraft (i.e. HCFC Blend B (Halotron 1), HFC-227ea (FM-200) and HFC-236fa (FE-36)).

In conclusion,

- given the considerable time gap between the ‘end’ dates in the EU Regulation No 744/2010 (i.e. 2020 for lavatories and 2025 for handheld fire extinguishers respectively) and ICAO SARPs (i.e. 2011 for lavatories and 2016 for handheld fire extinguishers respectively) for newly produced aircraft, it is necessary to align Part-26/CS-26 with the latest ICAO Amendments to Annex 6;
- the proposed update to Part-26 is expected to have a low impact as it is addressed to newly produced aircraft only and not to aircraft already in service.

2. Objectives

Publish a first Opinion and ED Decision amending Part-26 and CS-26 (which was proposed by NPA 2012-13) in order to comply with the ICAO Amendments to Annex 6 for lavatory disposal receptacles and handheld fire extinguishers in cabins and crew compartments, from the date specified in the foreseen Commission Regulation and not earlier than the publication of such Regulation in the Official Journal of the EU (no retroactivity)³ and affecting large aeroplanes (i.e. CS-25) and large rotorcraft (i.e. CS-29).

Thereafter, consider possible extension to some CS-23 aeroplanes and CS-27 rotorcraft, for a possible 2nd Opinion and Decision.

3. Specific tasks and deliverables

3.1. Tasks

In order to achieve the above mentioned objective, the following tasks will be performed :

- amendment to Part-26: Additional airworthiness requirements for operations in order to comply with ICAO Amendments 35, 30, and 16 to Annex 6; and
- amendment to CS-26: Additional airworthiness specifications for operations in order to comply with ICAO Amendments 35, 30, and 16 to Annex 6.

3.2. Deliverables

Issue :

- an Opinion to amend Commission Regulation (EU) No.../201X of [...] on additional airworthiness requirements for operations and its Annex I — Part-26: Additional airworthiness requirements for operations (NPA 2012-13), in relation to CS-25 (large aeroplanes) and CS-29 (large rotorcraft);
- a Decision to amend CS-26: Additional airworthiness requirements for operations (NPA 2012-13), again limited to CS-25 and CS-29 aircraft;
- a second Opinion covering some CS-23 aircraft and some CS-27 rotorcraft⁴; and

³ This would inevitably lead to late compliance of Agency with ICAO Annex 6 whose related amendments are applicable since 2011.

⁴ The Group will support the Agency for proposing in the second NPA which CS-23/27 should be affected, considering mass, performance and type of operations.



- a second Decision related to these smaller airframes.

3.3. Interface issues

The scope of Annex 6 to the Chicago Convention is limited to international civil aviation, whether by general/business aviation, helicopters or commercial air transport by aeroplanes. From the societal point of view operations by large aircraft are more relevant. The scope of the first NPA would, therefore, be limited to:

- Large aeroplanes whose certification basis was built starting from CS-25; and
- Large rotorcraft (CS-29).

Later, consideration would be given to smaller aeroplanes (i.e. CS-23) and smaller rotorcraft (i.e. CS-27), also able to cross national borders, through a second NPA.

Rulemaking Task RMT.0273 (MDM.071) already removed any mention to halon from Book 1 of CS-25⁵, of CS-23⁶, and of CS-29⁷, adding in parallel Guidance Material in the three related 'Book 2'. These amendments brought Agency's rules in compliance with amendment 103 to ICAO Annex 8, applicable to new aircraft models. But they have effect only on new applications for type certificates.

The Agency plans to issue a specific ETSO on halon-free portable fire extinguishers to be used in aircraft cabins, based on industry standard SAE AS 6271 (Halocarbon Clean Agent Handheld Fire Extinguisher), but this will be progressed through RMT.0206 (ETSO.011).

This task does not include development by the Agency of any rules on engine/APU or cargo compartments. However, Commission Regulation (EU) No 744/2010, independently from any Agency rule, prohibits halon in new applications for type certificate in relation to engine nacelles and APU (from 2014) and to normally unoccupied cargo compartments (from 2018). In any case, Article 13.4 of EU Regulation 1005/2009 allows industry to apply for a 'derogation', when technically and economically, feasible alternatives do not exist.

3.4. Focused consultation

No focused consultation is deemed necessary at this point in time.

4. Profile and contribution of the rulemaking group

Manufacturers able to provide data on the economic impact of forward fit of halon in lavatories and portable fire extinguishers, on large aircraft models currently in production, based on existing Type Certificate, are already represented in the Rulemaking Group (RMG).

Additional nominations are invited from industry manufacturing CS-23 aeroplanes and CS-27 rotorcraft.

⁵ Amendment 12 to CS-25 (including halon) published on 6 July 2012.

⁶ Amendment 3 to CS-23 (only on halon matters), published on 13 Jul 2012

⁷ Amendment 3 to CS-29 (including halon) published on 11 December 2012.



5. Annex I: Reference documents

5.1. Affected regulations

Draft Commission Regulation (EU) No .../201X of [...] on additional airworthiness requirements for operations — (NPA 2012-13).

Draft Annex I — Part-26 : Additional airworthiness requirements for operations — (NPA 2012-13).

5.2. Affected Decisions

Draft CS-26: Additional airworthiness requirements for operations — (NPA 2012-13).

5.3. Reference documents

EASA/ European Commission

Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

Commission Regulation (EU) No 744/2010 of 18 August 2010 amending Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer, with regard to the critical uses of halons.

ICAO

ICAO Assembly Resolution A38-9: Halon Replacement;

State Letter 11/44 on adoption of Amendment 35 to Annex 6 — Operation of Aircraft, Part I — International Commercial Air Transport – Aeroplanes, regarding halon replacement.

State Letter 11/45 on adoption of Amendment 30 to Annex 6 — Operation of Aircraft, Part II — International General Aviation — Aeroplanes, regarding halon replacement.

State Letter 11/45 on adoption of Amendment 16 to Annex 6 — Operation of Aircraft, Part III — International Operations — Helicopters, regarding halon replacement.

HTOC

2012 Halons Technical Options Committee (HTOC) Progress Report; and

2010 UNEP Report of the Halons Technical Options Committee (HTOC) – 2010 Assessment.



Attachment

Commission Regulation (EU) No 744/2010 ⁸				ICAO standards ⁹		
Purpose	Type of extinguisher	Type of halon	Dates		Dates	
			Cut-off ¹⁰	End	New products ¹¹	Cut-off ¹²
Normally unoccupied cargo compartments	Fixed	1301 1211 2402	2018	2040	N.A.	N.A.
Cabins and crew compartments	Portable (Handheld)	1211 2402	2014	2025	2016	N.A.
Engine nacelles and APU	Fixed	1301 1211 2402	2014	2040	N.A.	2014
Lavatory waste receptacles	Fixed	1301 1211 2402	2011	2020	2011	2014

⁸ Commission Regulation (EU) No 744/2010 does not mention a date for newly produced aircraft, according to an existing type certificate.

⁹ ICAO SARPs do not contain end dates for removal of halon from aircraft already in service.

¹⁰ Applicable to newly designed aircraft models.

¹¹ I.e. aircraft for which individual certificate of airworthiness is issued after the stated date, but for which model type certificate already exists.

¹² For aircraft whose application for type certification will be submitted on or after 31 December of that year.

