TERMS OF REFERENCE

Task Nr:	MDM.071
Issue:	1
Date:	18 April 2011
Regulatory references:	1. Article 2.2(d) of EASA Basic Regulation[1] 2. Regulation No 1005/2009[2] 3. Commission Regulation No 744/2010[3]
Additional references:	1. Montreal Protocol on the substances that deplete the ozone layer[4] 2. UNEP 2010 Report of the Halons Technical Options Committee – 2010 Assessment[5] 3. ICAO Assembly Resolution A37-9[6] 4. ICAO State Letter Type I AN 3/25.1-10/75 of 17 December 2010 5. FAA AC 20-42D of 14 January 2011 on hand fire extinguishers for use in aircraft

1. Subject: Update of CS-23, CS-25 and CS-29 to eliminate references to halon

2. Problem / Statement of issue and justification; reason for regulatory evolution (regulatory tasks):

Halon 1301, halon 1211 and halon 2402 (hereinafter referred to as 'halons') are ozone-depleting substances. Their production in Member States has been banned since 1994, in line with the Montreal Protocol. However, their use continues to be permitted for certain 'critical uses' (ref. 3) including aviation.

In particular, halons are presently used in civil aircraft for fire protection of:

- Cargo compartments;
- Portable fire extinguishers in cabin and crew compartments;
- Engine nacelles and APU;
- Lavatory waste receptacles.

The Montreal Protocol, in existence since 1987, is an international agreement to phase out production of ozone-depleting substances, including halons. Such Protocol prohibits the manufacture or import of new halons in all developed countries as of January 1, 1994.
The International Halon Replacement Working Group was established in October 1993. This group was tasked to work towards the development of minimum performance standards and test methodologies for non-halon aircraft fire suppression agents/systems in cargo

[1] 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 of 19 March 2008, pages 1-28*). Regulation as last amended by Regulation 1108/2009 of the European Parliament and of the Council of 21 October 2009 (OJ L 309, 24.11.2009, p. 51).

[2] Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (*OJ L 286 of 31 October 2009, pages 1-30*).

[3] 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 (*OJ L 218 of 19 August 2010, pages 2-8*).

[4] http://www.unep.org/ozone/pdfs/montreal-protocol2000.pdf

[5] http://ozone.unep.org/teap/Reports/TEAP_Reports/teap-2010-progress-report-volume2-May2010.pdf

[6] http://www.icao.int/icao/en/assembl/A37/Docs/a37_res_prov_en.pdf

compartments, engine nacelles, hand held extinguishers, and lavatory waste receptacles. The International Halon Replacement Working Group has been expanded to include all system fire protection R&D for aircraft and now carries the name, International Aircraft Systems Fire Protection Working Group.

A review carried by the European Commission (EC) has shown that, with few exceptions, including commercial aircraft, halons are no longer necessary to meet fire protection needs in new designs of equipment and new facilities, and that alternatives are now routinely being implemented. However, halon extinguishers and fire protection systems continue to be necessary in some equipment or products that are, or will be, produced to existing designs.

In the case of aircraft, research is still underway to identify suitable alternatives for engine/APU, cargo and cabin applications that will meet all performance and certification requirements by the appropriate cut-off and end-dates.

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

- **cut-off dates** after which the use of halons for new equipment or products (e.g. related to new applications for type certification) would no longer be permitted;
- **end dates** after which the use of halons would no longer be permitted: i.e. all halon fire extinguishers and fire protection systems should be replaced, converted or decommissioned by the end date(i.e. retrofit required).

Furthermore, during the recent 37th Session of its General Assembly (October 2010), ICAO has adopted Resolution A37-9 which called ICAO Council to mandate the replacement of halons before given dates. The resulting standards to be included in Annexes 6 and 8 to the Chicago Convention have been proposed by referenced ICAO State Letter, whose applicability is envisaged in December 2011 in lavatory fire extinguishers, for newly produced aircraft and later for other equipment.

In conclusion:

- it is necessary to align EASA specifications to the EU rules in order to avoid that the Agency would require something illegal to applicants for new type certificates (i.e. the certification basis for new applications could still contain requirements to use Halon, if the references were not removed from CSs);
- The earliest cut-off date (i.e. for portable fire extinguishers in the cabin) in the EU legislation is 2020: out of scope of present ToR which hence affect only manufacturers and not aircraft operators;
- The proposed ICAO standards in Annex 8 are identical to the EU law, while the schedule for Annex 6 is more ambitious, but in any case impacting on newly produced aircraft and not to aircraft already in the fleet. Also in this case air operators are not affected.

3. Objective:

Publish an ED Decision amending existing CSs and AMC/GMs in order to:

- remove requirements to use Halon for future applications (e.g. from CS-25 Book 1), for type certificates in order to comply with the cut-off dates in Regulation 744/2010 (no alternative mandatory extinguishing agents will be mentioned in Book 1);
- allow suitable alternative specifications for fire extinguishing agents to be used in aeronautical products (including where Halon is still necessary in 2011/13), by issuing AMC/GM (e.g. in CS-25 Book 2), giving notice of the halon cut-off and end dates and indicating that the extinguishing agents, for specific aeronautical applications, should meet appropriate standards;
- be possibly compliant with emerging ICAO standards on the matter, in Annexes 6 and 8, whose applicability is envisaged in December 2011, in any case without impacting on the aircraft already in the fleet.

4. Specific tasks and interface issues (Deliverables):

The dates mandated for phasing out halons are presented in attachment.

Any change in the above adopted phasing out dates, will be taken into account before adoption of the ED Decision.

The present first edition of this ToR for rulemaking task MDM.071 covers amendment of:

Certification Specification		Paragraphs	Notes
CS-23	Normal, utility, aerobatic and commuter aeroplanes	TBD	
CS-25	Large aeroplanes	25.851 Appendix F part II AMC 25.851(b) AMC 25.855 and AMC 25.857.	Further paragraphs may be added if necessary during the execution of the task
CS-29	Large rotorcraft	TBD only in Book 2	

Development of necessary Guidance Material (AMC or GM) to manufacturers and maintenance organisations to allow verification of the quality of halon in their possession through testing and internal procedures is out of scope of this ToR, since this is covered by task MDM.091.

No amendment is necessary to any other EASA CS and in particular no amendment is necessary in:

- CS-22 (Sailplanes and Powered Sailplanes);
- CS 27 (Small rotorcraft);
- CS-31 HB (Hot air Balloons)
- CS-APU;
- CS-E (Engines);
- CS-VLA (Very Light Aeroplanes); and
- CS-VLR (Very Light Rotorcraft).

In the future a new MDM.XXX rulemaking task may include:

- Amendment of CS-26 or Implementing Rules which are not yet published, in order to comply with the EU end dates (earliest in 2020);
- Amendment to CS-ADR or Part-ADR (aerodromes) which are presently under development, following the second extension of the EASA mandate, should this be necessary[7].

5. Working Methods (in addition to the applicable Agency procedures)**:** Agency

The proposed working method for this proposal, which essentially consists of the implementation of existing law, is: Agency, using the work of the International Aircraft Systems Fire Protection Working Group (IASFPWG) and considering relevant FAA guidance material.

Due to the low level of impacts expected (i.e. apply only already available solutions and only to new applications for type certificate, with no impact at all on air operators), the task should be accompanied by a 'light' Regulatory Impact Assessment, in particular covering those cases for which immediate compliance with the ICAO standards may not be feasible.

6. Time scale, milestones:

Publication of the NPA (including light RIA): 2011/Q2

CRD: 2012/Q1

ED Decision (including a summary of the comments and responses): 2012/Q3

[7] Presently Article 8a of EASA Basic Regulation is not yet in force and therefore responsibility for implementing Commission Regulation 744/2010, for the aerodrome aspects, in the exclusive competence of Member States.

Attachment

Halon phase out dates

Commission Regulation 744/2010[8]					ICAO Proposed ICAO standards[9]	
Purpose	Type of extinguisher	Type of halon	Dates		Dates	
			Cut-off[10]	End	New products[11]	Cut-off
Normally unoccupied cargo compartments	Fixed	1301 1211 2402	2018	2040		
Cabins and crew compartments	Portable	1211 2402	2014	2025	31 Dec. 2016	
Engine nacelles and APU	Fixed	1301 1211 2402	2014	2040		2014 for aircraft whose application for type certification will be submitted in that year or after
Lavatory waste receptacles	Fixed	1301 1211 2402	2011	2020	31 Dec. 2011	
Crash rescue vehicles	Portable	1211	2010	2016		
Hangars and maintenance areas at aerodromes	Portable	1211	2010	2016		

[8] Regulation 744/2010 does NOT mention a date for newly produced aircraft, according to an existing type certificate.

[9] Proposed ICVAO SARPs do not contain end dates for removal of Halon from aircraft already in service.

[10] No new application for Type Certificates possible, if Halon is present in the design.

[11] E.g. aircraft for which individual certificate of airworthiness is issued after the stated date, but for which model type certificate already exists.