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Update on ICAO Activities for the Replacement of Halon in Aircraft Fire Suppression Systems

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FAA Systems Meeting

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Overview

- Status of Annex 6 & 8 implementation
 - Lavatory Extinguishers
 - Portable Extinguishers
 - Engine Nacelles / APU
- Implementation timeframe for Cargo Compartments
 - Outcome of 39th Assembly
 - ICAO mandate for target date
 - How do we achieve it?





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Status of Implementation - Lavatory

IMPLEMENTED

Annex 6 - Amendment 35

A halon replacement agent to be used in lavatory fire extinguishing systems in new production aircraft on or after **31 December 2011**





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Status of Implementation - Portable

IMPLEMENTED

Annex 6 - Amendment 41

A halon replacement agent to be used in portable fire extinguishing systems in new production aircraft on or after **31 December 2018**





Annex 6 Published Text – Parts I, II, and III

6.2.2.1 Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an aeroplane for which the individual certificate of airworthiness is first issued on or after **31 December 2011** and any extinguishing agent used in a portable fire extinguisher in an aeroplane for which the individual certificate of airworthiness is first issued on or after **31 December 2018** shall:

- a) meet the applicable minimum performance requirements of the State of Registry; and
 - b) not be of a type listed in the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer* as it appears in the Eighth Edition of the *Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer*, Annex A, Group II.
- State Letter 97 issued on 30 November 2016
 - Guidance on implementation provided in Attachment G





Status of Implementation – Engine Nacelle / APU

IMPLEMENTED

Annex 8 - Chapter 1: Type Certification

1.2.5 The approved design of an aircraft under Parts IIIB, IVB and V of this Annex shall use extinguishing agents that are not listed in the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer ...* in the aircraft fire suppression or extinguishing systems in the lavatories, engines and auxiliary power unit.

HOWEVER...

...applicable to an aircraft type for which an application for a Type Certificate is submitted to the State of Design on or after 31 December 2014.





Status of Implementation – Cargo Compartments

IMPLEMENTATION IN PROGRESS

The latest situation:

- Feedback from ICAO Assembly 39
- Establishing a target applicability date
- Identifying a suitable replacement agent / system





Outcome of the 39th Assembly – October 2016

The Assembly:

1. **Urges States** and their aviation industries to intensify development and implementation of acceptable halon alternatives for fire extinguishing and suppression systems in aircraft cargo compartments;
2. **Urges States** to determine and monitor their halon reserve and quality of halon;
3. **Encourages ICAO** to continue collaboration with the IASFP Working Group and the UN Environment Programme's Ozone Secretariat (...);
4. **Encourages States** to collaborate with the Industry Consortium for engine/APU applications and the Cargo Compartment Halon Replacement Working Group (...);
5. **Encourages States** to support measures to minimize unnecessary halon emissions that occur when there is an absence of any safety threatening fire event and to ensure the better management and preservation of existing halon reserves;
6. **Directs the Council** to **mandate the replacement of halon** in cargo compartment fire suppression systems used in aircraft for which application for type certification will be submitted after a specified date in **the 2024 timeframe**;



The ICAO Position

*Aircraft for which an application for new Type Certificate is submitted to the State of Design on or after **28 November 2024** shall use an alternative agent to halon in the aircraft fire suppression or extinguishing systems in the cargo compartment.*

Establishing an applicability date will:

- Drive the development of halon alternative for cargo compartments
- Accelerate the transition to non-halon alternative
- Raise awareness of the situation
- Minimize waste of existing reserves

State Letter 77 (issued in June 2017) with proposal:

- to be adopted by the ICAO Council in early 2018
- Incorporated in Annex 8 Amendment 106 for 2018



Annex 8





The Next Steps

Assembly Resolutions encouraged ICAO to:

- continue collaboration with relevant industry working groups
- closely monitor progress on the development of halon alternatives
- provide information back to the ANC on an annual basis

So what is industry doing to meet the key date?

1. Changes to assumptions on current Halon Reserves?
2. What is the progress in alternate agent development?

ICAO must ensure there is ample time to take corrective action if needed



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