



International
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Международная
организация
гражданской
авиации

منظمة الطيران
المدني الدولي

国际民用
航空组织

Tel.: +1 514-954-8219 ext. 6290

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Subject: Halon fire extinguishing system and halon contamination

Action required: To assess halon fire extinguishing supplies and take action as appropriate

Sir/Madam,

1. I have the honour to invite your attention to Assembly Resolution A36-12: *Halon replacement*, adopted by the 36th Session of the ICAO Assembly (Montreal, 2007), in which the Assembly agreed with the urgent need to develop and implement halon replacements for civil aviation.

2. ICAO urges States to advise their aircraft manufacturers, airlines, approved maintenance organizations (AMOs), chemical suppliers and fire-extinguishing companies to move forward at a faster rate in implementing halon alternatives in engine and auxiliary power units, handheld extinguishers and lavatories; and further investigate halon replacements for cargo compartments.

3. In light of recent events, further measures are needed. On 25 November 2009, the European Aviation Safety Agency (EASA) published Emergency Airworthiness Directive (AD) No. 2009-0251-E stipulating that significant quantities of contaminated Halon 1211 gas (used in handheld fire extinguishers) were determined to be outside the required specifications and have been supplied to the aviation industry. The contaminated nature of this gas when used against a fire may lead to the release of toxic fumes possibly causing injury to aircraft occupants and/or may affect its fire-fighting capabilities. ICAO considers that urgent measures should be taken to ensure that air operators comply with the EASA AD or its equivalent and any further ADs on this subject to ascertain the quality of recycled halon.

4. The Montreal Protocol on Substances that Deplete the Ozone Layer banned the production of halon and the import/export of pure halon. Consequently, States are increasingly depending on recycled halon. Halon gas should meet international standards and unless rigorously controlled, the recycling process could introduce contamination. Considering this situation ICAO recommends the following measures:

- a) States should require air operators, AMOs, aviation suppliers and manufacturers to verify the quality of halon in their possession or provided by suppliers through effective testing or certification attesting to the quality of halon to an established and recognized international standard as referenced in the attachment;
- b) States should require organizations involved in recycling of Halon 1211 or 1301 to demonstrate the quality of the recycled halon in their possession and their control of the halon purity in the recycling process; and
- c) States should require that the quality systems of air operators, AMOs, aviation suppliers and manufacturers provide a means for requesting from halon suppliers certification documentation attesting to the quality of halon to an established and recognized international standard as referenced in the attachment.

5. Given that the availability of pure halon supplies is dwindling, civil aviation will increasingly rely upon the use of recycled halon. The purity of recycled halon reserves is critical to maintaining the fire extinguishing systems installed on board aircraft today.

Accept, Sir/Madam, the assurances of my highest consideration.

A handwritten signature in black ink, appearing to read 'Raymond Benjamin', with a long, sweeping underline that extends to the right.

Raymond Benjamin
Secretary General

Enclosure: Halon testing and handling standards

HALON TESTING AND HANDLING STANDARDS

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| 1. | ASTM D5632-08 | Standard Specification for Halon 1301, Bromotrifluoromethane (CF ₃ Br) |
| 2. | ASTM D5631-08 | Standard Practice for handling, Transportation and storage of Halon 1301, Bromotrifluoromethane (CF ₃ Br) |
| 3. | ISO 7201-1 | Fire protection – Fire extinguishing media – Halogenated Hydrocarbons-Part 1: Specifications for halon 1211 and halon 1301 |
| 4. | ISO 7201-2 | Fire protection – Fire extinguishing media – Halogenated Hydrocarbons-Part 2: Code for practice for safe handling and transfer procedures of Halon 1211 and Halon 1301. |

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