



U.S. Department
of Transportation

**Federal Aviation
Administration**

SAFO

Safety Alert for Operators

SAFO 10004
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Flight Standards Service
Washington, DC

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo

A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO.

Subject: Contaminated Halon Fire Extinguishers

Purpose: This SAFO informs the aviation industry of possibly contaminated halon gas, used in fire extinguishers.

Background: On November 25, 2009, the European Aviation Safety Agency (EASA) published Emergency Airworthiness Directive (AD) No. 2009-0251-E stating that significant quantities of recycled halon 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 agent 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.

In addition, the International Civil Aviation Organization (ICAO) has issued a letter dated January 12, 2010, requesting that quality checks be conducted of the halon gas contained in fire extinguishers. In the interest of safety, the Federal Aviation Administration (FAA) recommends that air agencies and air agencies rated for Limited Emergency Equipment (L-EE) take measures to ascertain the quality of the halon gas.

Discussion: Due to the amount of time that has elapsed since the introduction of the contaminated halon gas, the possibility of cross contamination has increased. In addition, due to the time and significant quantity of halon affected, it would not be feasible to validate for contaminants through records research as air agencies are required to keep records of work for only two years.

With the availability of pure halon supplies 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.

Halon distributors perform quality checks by adhering to the established international standards within the ASTM D 5632-08, ASTM D5631-08, ISO 7201-1, or ISO 7201-2. Air Agencies do not necessarily follow those standards as they rely upon the distributors to perform quality checks. The probability of cross contamination when a fire extinguisher enters an air agency for maintenance is possible as the contaminated halon has been occurring for seven years.

Recommended Action: The FAA recommends that air agencies with L-EE ratings perform a quality test of the halon products currently within their facility. Verify the quality of halon in their possession or provided by suppliers through effective testing or certification attesting to the quality of halon.

Air Agencies may attest to the quality of halon by using established and recognized international standards as referenced below:

1. ASTM D5632-08 Standard Specification for Halon 1301, Bromotrifluoromethane (CF₃Br)
2. ASTM D5631-08 Standard Practice for handling. Transportation and storage of Halon 1301, Bromotrifluoromethane (CF₃Br)
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.

Contact: Questions or comments concerning this SAFO should be addressed to the Aircraft Maintenance Division, Air Carrier Maintenance Branch, AFS-330, at (202) 267-1675