The Global Voice of Pilots

IFALPA

POSITION PAPER

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Availability of Halon for Aviation Fire Protection

INTRODUCTION

Fire protection systems are a critical safety feature of modern aircraft. For decades, halon-based fire extinguishing agents have provided highly effective fire suppression in aircraft cargo compartments, engines, auxiliary power units (APUs), lavatories, and hand-held extinguishers. Halon remains the benchmark against which all aviation fire suppression systems are measured due to its effectiveness, low weight, rapid extinguishing capability, and suitability for use in occupied aircraft environments.

IFALPA recognizes and supports global efforts under the Montreal Protocol[1] to eliminate ozone-depleting substances where safe and practical alternatives exist. However, the aviation industry continues to face significant technical, operational, and certification challenges in replacing halon, particularly in cargo compartment fire suppression applications.

AVIATION FIRE SUPPRESSION

While halon production was largely phased out under the Montreal Protocol due to its ozone-depleting properties, aviation continues to rely on recycled and banked halon supplies for several critical fire protection applications. The challenge is most acute in aircraft cargo compartment fire suppression.

Despite more than two decades of research and development, no replacement has achieved the combination of effectiveness, weight efficiency, reliability, human safety, operational suitability, and global supportability provided by halon. Current candidate systems require significant aircraft system redesign, introduce substantial weight and complexity penalties, and remain subject to ongoing certification, environmental, health, and regulatory concerns.

Emerging cargo fire threats, particularly those associated with transporting lithium battery-powered devices and lithium-ion batteries, further increase the performance demands placed on cargo fire suppression systems. Any replacement for halon must demonstrate an equivalent or higher level of safety against the full range of foreseeable fire scenarios before it can be considered an acceptable substitute.

From an operational perspective, flight crews require confidence that onboard fire protection systems will perform effectively under all circumstances. The consequences of an in-flight cargo

[1] *Montreal Protocol on Substances that Deplete the Ozone Layer* (1987https://ozone.unep.org/treaties/montreal-protocol.

fire can be catastrophic, leaving crews with limited time to react and often making successful fire suppression the determining factor in the safe outcome of the flight. Therefore, any transition away from halon must be driven by demonstrated safety performance rather than regulatory timelines alone.

IFALPA acknowledges the environmental objectives that have driven efforts to eliminate ozone-depleting substances. Nevertheless, aviation safety must remain the overriding priority. Where no certified replacement can be shown to provide an equivalent level of safety, continued use of halon remains necessary to protect passengers, crew members, and aircraft.

IFALPA POSITION

IFALPA believes that:

1. Flight safety must remain the primary consideration in all decisions regarding aviation fire suppression systems.

2. Halon should continue to be available for aviation use until a technically proven, operationally practical, globally supportable, and fully certified alternative is demonstrated to provide an equivalent or higher level of safety.

3. No aircraft operator should be required to remove or replace existing halon systems unless an approved replacement can demonstrably maintain or improve the current level of fire protection.

4. ICAO and States should support exemptions and essential-use provisions necessary to ensure the continued availability of halon for aviation applications where no acceptable alternative exists.

5. Aircraft design standards and regulatory deadlines for halon replacement should be aligned with demonstrated technological readiness.

6. Continued research, development, testing, and certification of environmentally sustainable fire suppression technologies should be actively supported by States, regulators, manufacturers, and industry stakeholders.

7. Any replacement technology must be assessed using a holistic safety approach that considers fire suppression effectiveness, aircraft integration, operational reliability, flight crew and occupant safety, maintenance implications, environmental impact, and emerging fire threats such as lithium battery fires.