



Cargo Compartment Halon Replacement Working Group (CCHRWG) Update

22 October, 2015

*International Aircraft Systems Fire Protection Working Group Meeting
Atlantic City, NJ*

By

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CCHRWG Terms of Reference

Commit Industry to Broad Stakeholder Approach

Task:

ICCAIA shall establish a working group tasked to work on Halon Replacement issues for Cargo compartments.

Under the ICCAIA-AC authority, the working group shall establish and coordinate a process to:

- Develop an industry recommendation to ICAO for a cargo compartment halon replacement deadline for new design (new aircraft types) taking into account progress towards identification of an alternative agent and/or approach to fire suppression in cargo compartments, including the state of research (available agent, viability), supply chain readiness, testing, qualification, and certification.
- To enable this deliverable, the work group will encourage/support timely research, testing and approval of a halon alternative for cargo compartments, in coordination with the relevant industry and governmental/certification entities, including:
 - Inviting non-member industry associations to participate as appropriate.
 - Facilitating the exchange of non-proprietary research data.
 - Collecting information and reporting to the ICCAIA-AC.
 - Continuing dialogue with government/certification entities.



CCHRWG continues forward with commitment

- Last Stakeholder Meeting (May 23rd) resulted in good feedback on . . .
 - Plan for developing and submitting recommendation to ICAO
 - Basis for deadline recommendation established



2015 CCHRWG PLAN

DATE	DELIVERABLE	ASSIGNED TO:
1 st Qtr 2015	Review of status and available information, internal discussions (2 teleconferences/month)	C
11 March 2015	Request support on 2015 Plan	C
March 2015	Conclusion on recommended deadline & approach	C
March/April 2015	Formulation of final Draft recommendation & Working Paper (WP)	C
April 2015	CCHRWG Update to ICCAIA Airworthiness Committee (AC) Report	C
11 May 2015	Draft WP/Recommendation CONCEPT presented to Stakeholders	C S
13 May 2015	CCHRWG Update to IASFPWG Meeting in Dresden	C
June 2015	Draft WP/Recommendation ready for review in CCHRWG Member companies	C r
June/July 2015	Draft WP/Recommendation, CCHRWG Member Companies for approval	C r
July/August 2015	Draft WP/Recommendation, CCHRWG to national associations for approval	C r
October 2015	Draft WP/Recommendation to ICCAIA Council for Approval; Stakeholder reviews @ IASFPWG, IHRCM5 & ICAO ANC Mtgs	C D r
November 2015	Formal WP and Recommendation, Submittal to ICAO	P
December 2015	Goal: ICAO's 1 st Comments on CCHRWG Recommendation	IC



Preferred Option

Preferred Option	Pros	Cons
ICCAIA requests ICAO - to acknowledge industrial development processes and constraints, <u>but without retrofit/end dates due to ICAO's stated intention to not requesting retrofit</u> , and - to implement a deadline allowing application of the CCHRWG development timeline between publication of a standard and the standard's effectivity date. - assumes that applicability is limited to NEW type design certification application submittals only – not Change Product Rule; (Assembly in 2016, Standard published in 2018, plus 4-6 years development timeline from TRL3 to status "certification ready", → Deadline application for TC after 2024 but without the 2040 EU retrofit deadline)	<ul style="list-style-type: none"> • Would restrict HR to envisaged new types. • Would give certainty for evolution of existing types. • Would emphasize Industry commitment to introduce HR while clarifying technical industry needs. • Would force EU/EASA to reconsider dates in 744/2011 • Will follow CCHRWG understanding in accordance with expected development time required for the new system. • Similar to approach for handhelds, allowing time for development and certification activity. • Responsive to ICAO request. • Allows for a realistic schedule to complete development prior to an OEM program approval for new TC. 	<ul style="list-style-type: none"> • A firm deadline may not be achievable based on other halon replacement efforts. • Deadline would be posed as soon as system is expected to be available. It does not cover any possible delay during development process of a new system. Likewise, does not allow field experience for system reliability into service. • The long implementation time may result in additional performance requirements for halon replacement. • Clarification for significant major changes not yet available. • May be politically unacceptable. • Would be ~14 years before halon replaced for cargo application impacting supply and potential increase in emissions. • Would require ensuring halon supplies for the operational life of all old program aircraft. • Most promising scenario today may add weight, increasing fuel burn, and not support industry's commitment for carbon-neutral growth. • Likely to increase operational costs.



CCHRWG progressing on 2015 Plan

- Stakeholder Meeting for broad coordination on October 23rd
- Meetings with ICAO taking place
 - October 22: IHRCM/5
 - October 26: ICAO ANC & UN HTOC
- 2016 Plan and preparation for ICAO General Assembly in-work
- ICCAIA Working Paper under final review

International Coordinating Council of Aerospace Industries Association **DRAFT**

CCHRWG Stakeholder Meeting

October 23, 2015, 8:00 – 9:30 am
Tropicana Resort, Castanet Rooms 1 & 2

AGENDA

Objective:

1. Identification of opportunities for further development of potential technical capabilities and/or solutions.
2. Status on the cargo halon replacement deadline recommendation to ICAO.

Agenda:

- Introductions (All)
- Confirm Antitrust & Intellectual Property Discussion Guidelines (All)
- Update on Potential Capabilities/Solutions (Stakeholders)
- CCHRWG Recommendation to ICAO
- Questions & Answers (All)
- Adjourn

23-Oct-15

International Civil Aviation Organization
WORKING PAPER

ASSEMBLY — 39TH SESSION
TECHNICAL COMMISSION

Agenda Item #: Aviation Safety – Emerging Issues
HALON REPLACEMENT – CHALLENGES AND SOLUTIONS
(Presented by the International Coordinating Council of Aerospace Industries Associations (ICCAIA))

EXECUTIVE SUMMARY

Action has been taken by the aerospace industry in line with previous agreements, to introduce halon alternatives for fire protection in aircraft and by engage stakeholders in finding solutions. The manufacturing industry has consistently worked toward these objectives and has been active in researching halon alternatives. Progress has been made in all areas, i.e. engine and auxiliary power units (APUs), hand held extinguishers and cargo compartments. Significant hurdles remain. This paper explains progress made and identifies the hurdles and expectations with respect to completing the work.

Action:
The Assembly is invited to:

- a) With respect to engines/APUs, note that a new industry consortium has been established which expects to complete its work in 2017 at which time recommendations could be expected.
- b) With respect to cabin-cargo hand held fire extinguishers, note that the applicability dates for alternatives in Annex E-1, Chapter 25, may not be met by States and industry, however, substitute agents have been identified and are currently undergoing a complex approval process. The total slippage from the applicability date is expected to be about two years.
- c) With respect to the cargo compartment, note that industry is committed by meeting a deadline for development of an alternative agent and/or novel fire suppression system architecture by 2024. Therefore, a deadline for new Type Certification applications submitted on or after December 31st, 2024 is recommended.
- d) Consider that the Cargo Compartment Halon Replacement deadline recommended at the time of the 39th Assembly is not yet based on a fully “conceptually validated” halon-free fire suppression system. As such, significant fire safety, technical and airworthiness risks remain and may undergo timely compliance with the recommended deadline.
- e) Taking into account the industries’ status noted above, and to implement a means to further continue exchanging progress information until, and at the 40th ICAO General Assembly in 2019, a revised date may be proposed.

Source: This working paper relates to Strategic Objectives: Safety, Environmental Protection, and Sustainable Development of Air Transport

A39-WP/Doc. 1015

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Financial implications:	See A39-WP/Doc. 1015
References:	Doc 9955, <i>Assembly Resolutions in Force</i> (as of 8 October 2010) A39-WP/6, TE-2

2. STATUS OF HALON ALTERNATIVES & STAKEHOLDER ENGAGEMENT

2.1 Lavatory systems

For aircraft designed and produced by original equipment manufacturers (OEM's), manufactured by ICCAIA members, implementation of halon free lavatory fire protection systems has now been achieved in new type designs in accordance with Annex E.

2.2 Cabin and Flight Deck Handheld Extinguishers

Development and testing has been underway for a promising replacement, however, complex approval processes are required by regulatory authorities and still pending one new, environmentally preferred alternative. This will likely lead to a delay in meeting the date established in Annex E. Total slippage is expected to be about two years.

2.3 Engine/APU Systems

After years of unsuccessful testing on previous halon alternatives, the major manufacturers agreed to cooperate in an industry effort to identify a common stakeholder effort and resources to identify a generic “best choice” for a fire extinguishing agent and system in support of both the ICAO and ETSI 2014 deadlines for halon replacement in new type certification aircraft. Follow on exploratory discussions by industry continuing through 2013 and into 2014 resulted in signature of a formal agreement between Airbus, SAS, Boeing, Bombardier, Embraer, Textron and other Aerospace Industries in October 2014 to initiate and fund activities to form the Halon Alternative for Aircraft Propulsion System (HAAPS) consortium. (See press release: http://www.iccaia.org/news/press_releases/2014/10/2014-10-20-halon_alternative_for_aircraft_propulsion_system_haaps)

Development of a formal working together agreement and technical work will underway by mid-2015 with follow-on outreach to other key stakeholders planned to occur before the end of 2015. The end of 2017 is tentatively set as a goal to complete the consortium’s activities at which time recommendations can be expected.

2.4 Cargo compartment system

Since ICCAIA has provided a status report on the work of the Cargo Compartment Halon Replacement Working Group (CCHRWG) at the last Assembly, the group has been developing documentation as part of a commitment to deliver its recommendation by the time of this Assembly. A core group and a “technical speciality” subgroup met twice per month to discuss and document the technical and regulatory basis for proposed deadline. These documents were shared with over fifty stakeholders for



Questions & Answers



Thank you!

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