



A39-WP/476  
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**ASSEMBLY — 39TH SESSION**  
**TECHNICAL COMMISSION**

**DRAFT TEXT FOR THE REPORT**  
**ON**  
**AGENDA ITEM 35**

The attached material on Agenda Item 35 is submitted for consideration by the Technical Commission.

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**Agenda Item 35: Aviation safety and air navigation standardization****Standardization with focus on Halon and Annex 8— *Airworthiness of Aircraft***

35.1 The Commission reviewed A39-WP/35 presented by the Council, which provided a status report on standards-making activities, notably the development of an air navigation work programme and standardization roadmap, and the re-activation of a Standards Roundtable initiative, and discussed the outlook for the next triennium and beyond concerning the development of ICAO provisions. The Commission noted the work undertaken since the 38th Assembly of ICAO and that, subject to prioritization, the Council would continue to undertake Standards-making activities that evolved and matured in line with the global plans and emerging issues.

35.2 The Commission considered A39-WP/86, presented by the United States, on enhancing the implementation of international aviation provisions. The Commission supported the action proposed in the paper referring to the need to review the processes related to the development and implementation of SARPs and PANS. The paper received wide support and further discussion recognized the benefit of the new impact assessments and the need for ICAO to make maximum use of experience gained by States, industry and other stakeholders on proven concepts. This practice was used in the development of the 8th Edition of Annex 6, Part II with industry technical specifications in the standardization process. The importance of SARPs stability to implementation planning was also highlighted. The Commission recognized that several ICAO initiatives were underway that might address the issues raised in the paper and noted that ICAO would take into account A39-WP/86 when progressing those initiatives. The Commission further noted that the paper was also being considered under Agenda Item 27 and agreed to defer to the Executive Committee consideration of the proposed draft Assembly Resolution.

35.3 The Commission reviewed A39-WP/83 Revision No.1, presented by the United States, which emphasized the criticality of technical trials to the successful implementation of new air navigation procedures and recommended that guidance material on the design and execution of trials of new technologies related to civil aviation in oceanic airspace be developed. The Commission noted that an initial step could be the utilization of best practices in the various regions. The Commission supported the action proposed and recommended referral to the Council for further consideration.

35.4 A39-WP/87 was withdrawn by the presenting States (United States, Australia, New Zealand and Singapore).

35.5 An information paper was provided by the United States (A39-WP/202).

35.6 The Commission reviewed A39-WP/36, presented by the Council, that contained a progress report on the development of alternatives to halogenated hydrocarbon (halon) for use in civil aviation aircraft fire protection systems. The paper included an amendment to Resolution A38-9 — *Halon replacement* and featured a proposed timeframe for the replacement of halon in cargo compartments for new aircraft type designs from 2024.

35.7 A39-WP/90, presented by the International Coordinating Council of Aerospace Industries Associations (ICCAIA), supported the draft resolution as presented in WP/36 and emphasized the commitment by industry to meet a 2024 deadline proposed for the replacement of halon in cargo

compartment fire suppression systems. The paper also provided a report on the progress and challenges in developing viable halon alternatives for aircraft fire suppression systems. In that respect, the paper, along with A39-WP/235 Revision No. 1, presented by ICCAIA, IATA, and IBAC, informed the Assembly that States and industry might not meet the applicability date for the Standard contained in each Part of Annex 6 — *Operation of Aircraft*, regarding the replacement of halon in portable fire extinguishers, due to a lack of an alternative to halon as well as complex environmental and technical approvals needed to produce and install an alternative agent.

35.8 The Commission noted the progress made in the development of a viable alternative to halon for portable extinguishers and recognized the efforts made by ICAO to promote the development and use of non-halon alternatives in aircraft fire suppression systems. The Commission further noted that the Annex 6 Standard, if implemented, would adversely impact the operation of aircraft for which a certificate of airworthiness was first issued on, or after, 31 December 2016. In view of the discussion, the Commission agreed to recommend that, as a matter of urgency, the Council use whatever “fast-track” processes available to it to waive the consultation mechanism, shorten the publication cycle and delay the applicability date for the Annex 6 provisions that applied to aircraft for which the individual certificate of airworthiness was first issued on, or after, 31 December 2016. The Commission further agreed to a new applicability date of 31 December 2018 and recommended that the Assembly direct the Council to take action based on that date. Additionally, the Commission recommended that ICAO be directed to develop appropriate guidance to support a harmonized approach that mitigated any challenges faced by affected aircraft during the period when the current provision was applicable and before the new applicability date became effective.

35.9 There was also broad support for a Resolution to supersede Resolution A38-9, as contained in the appendix to WP/36. The importance of intensifying further development and implementation of acceptable halon replacement agents for the civil aviation fire extinguishing system was emphasized during the discussion and strong support was voiced for the strict adherence to the timeframes specified in the draft Assembly resolution. In view of the discussion, the Commission submits, for adoption by the Plenary, the following resolution:

**Resolution 35/1: Halon replacement**

*Recognizing* the importance of aircraft fire extinguishing systems to the safety of flight;

*Recognizing* that halogenated hydrocarbons (halon) have been the main fire extinguishing agent used in civil aircraft fire extinguishing systems for over fifty years;

*Whereas* halons are no longer being produced by international agreement because their release contributes to ozone depletion and climate change;

*Recognizing* that more needs to be done because the available halon supplies are decreasing and unsure and that the environmental community continues to be concerned that halon alternatives have not been developed for all fire extinguishing systems in civil aircraft;

*Recognizing* that the Minimum Performance Standard for each application of halon has been developed already by the International Aircraft Systems Fire Protection Working Group with participation by industry and regulatory authorities;

*Recognizing* that there are stringent aircraft-specific requirements for each application of halon that must be met before a replacement can be implemented;

*Recognizing* that the aircraft manufacturing industry has established mechanisms for stakeholder engagement in the development of common solutions for halon replacement in ~~engine/auxiliary power unit (APU) fire suppression applications~~ and a realistic timeframe for ~~such replacement in cargo compartment applications~~;

*Recognizing* that the production is prohibited by international agreement, halon is now exclusively obtained from recovery, reclaiming and recycling. Therefore, recycling of halon gas needs to be rigorously controlled to prevent the possibility of contaminated halon being supplied to the civil aviation industry; and

*Recognizing* that any strategy must depend on alternatives that do not pose an unacceptable environmental or health risk as compared to the halons they are replacing;

*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 ~~and engine/auxiliary power units, and to continue work towards improving halon alternatives for hand held fire extinguishers~~;
2. *Urges* States to determine and monitor their halon reserve and quality of halon;
3. *Encourages* ICAO to continue collaboration with the International Aircraft Systems Fire Protection Working Group and the United Nations Environment Programme's Ozone Secretariat through its Technology and Economic Assessment Panel's Halons Technical Options Committee on the topic of halon alternatives for civil aviation;
4. *Encourages* States to collaborate with the Industry Consortium for engine/APU applications and the Cargo Compartment Halon Replacement Working Group established by the International Coordinating Council of Aerospace Industries Associations;
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;
5. ~~*Urges* States to inform ICAO regularly of their halon reserves and directs the Secretary General to report the results to the Council;~~
6. *Directs* ~~that the Council to mandate shall report to the next ordinary session of the Assembly on a timeframe for 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;~~ and
7. *Declares* that this resolution supersedes Resolution A37-9/A38-9.

**Article 21 of the Chicago Convention, cross-border issues, air ambulance operations and Annex 1 — Personnel Licensing and Annex 5 — Units of Measurement to be Used in Air and Ground Operations**

35.10 France, in presenting A39-WP/159 on the challenges posed by the implementation of Article 21 of the Chicago Convention, indicated that the substance of the paper related to legal matters which would be considered in the Legal Commission. Consequently, the paper was not discussed in the Technical Commission.

35.11 The Commission considered A39-WP/81, presented by the United States, and A39-WP/237, presented by the Aviation Working Group, which addressed issues related to the increase in cross-border transfers of aircraft. The actions proposed in these working papers were linked to the work considered in A39-WP/159, presented by France, and in A39-WP/123, presented by International Air Transport Association (IATA). In light of the discussion, the Commission acknowledged the complexity of safety oversight obligations by all participants due to the rapid evolution of global aircraft leasing operations. The Commission supported the actions proposed in A39-WP/81 and A39-WP/237. With respect to a proposal for developing mechanisms to assess and recognize the programmes and products of States, international organizations and aviation stakeholders that improve SARPs implementation, the Commission agreed that ICAO should take on this work after conducting further analysis. The Commission recognized that the aforementioned mechanisms could reduce oversight burden for States.

35.12 The Commission agreed to recommend that ICAO continue the work related to cross-border transferability, while ensuring a high level of safety. This work should involve expertise from all stakeholders, including the operator industry organizations.

35.13 An information paper was provided by the International Air Transport Association (IATA) (A39-WP/166).

35.14 A39-WP/199, presented by South Africa, addressed the need for research and development of medical SARPs, as well as the establishment of a global air ambulance data collection and analysis system. While the Commission supported the need for research on the safety-related and communicable disease aspects of air ambulance operations, the feasibility of developing air ambulance SARPs and a data collection and analysis system would be referred to the Council for further consideration, taking into account existing priorities funded through the 2017-2019 Budget and the availability of extra-budgetary resources.

35.15 The Commission discussed A39-WP249, presented by Brazil, that provided a case for a revision of the ICAO language proficiency requirements. While the paper presented perspectives that could be taken into account in future revisions of the provisions, the Commission was of the view that it did not present sufficient evidence that existing language proficiency requirements posed a safety threat. It might also be premature to undertake such a revision during the upcoming triennium. Implementation of the language proficiency provisions had required extensive efforts from the States and that changing the requirements at this point would add to the administrative burden since it would require retesting all licence holders in accordance with a revised rating scale. Ongoing support to States was still required and more data on the status of implementation of the language provisions was needed before they could be reviewed. It was determined that the need to revise the language proficiency requirements could be considered once additional implementation data was collected through the different initiatives of ICAO.

When that occurred, the opportunity to consider provisions applying to emerging technologies should also be taken.

35.16 The Commission reviewed A39-WP/186, presented by Argentina, and A39-WP/334, presented by China, encouraging ICAO to analyse the feasibility of implementing an electronic personnel licensing system in Annex 1 — *Personnel Licensing* with the objective of improved efficiency. While the Commission acknowledged that work relating to this issue was of a long-term nature, and might require mitigations for potential security concerns, the Commission agreed to recommend referral to the Council the matter of electronic personnel licensing as an alternative option to paper or other suitable material in Annex 1.

35.17 The Commission considered A39-WP/160 presented by United Arab Emirates, which recalled current Annex 5 — *Units of Measurement to be Used in Air and Ground Operations* provisions, providing Contracting States the option of using International System of Units (SI) or, in some cases non-SI units. The paper encouraged States and international organizations to consider the need for a singular set of units of measurement. In light of the discussion, the Commission agreed that no consensus had been reached on the need for a reconsideration of the current Annex 5 provisions and, consequently, the actions proposed in the working paper were not supported.

35.18 The Commission reviewed A39-WP/104, presented by New Zealand, Australia and Singapore, which recommended that ICAO specify the role of colour recognition in aviation and clarify the application of Standards for the assessment for colour vision deficiency. The Commission acknowledged the complexity of colour vision assessment and its uniform application, which would require ICAO to review the feasibility of harmonization. The Commission supported the paper and agreed that the issue should be referred to the Council for further consideration taking into account existing priorities funded through the 2017-2019 Budget and the availability of extra-budgetary resources.

### **Annex 13 — Aircraft Accident and Incident Investigation**

35.19 A39-WP/257, presented by Argentina, called for the accident investigation authority to have a focal point during investigations for the provision of assistance to aircraft accident victims and their families. The Commission, in noting that the *ICAO Policy on Assistance to Aircraft Accident Victims and their Families* (Doc 9998) and the *Manual on Assistance to Aircraft Accident Victims and their Families* (Doc 9973) already provided guidance for such a focal point, agreed to recommend that the need for the development of associated SARPs be referred to the Council for further consideration.

35.20 A39-WP/255, also presented by Argentina, raised the need for ICAO provisions and guidance material, as necessary, on accident investigation procedures to address environmental care at the site of an accident. The Commission agreed to recommend that the proposal be referred to Council for further consideration.

35.21 The Commission reviewed A39-WP/268, presented by the Republic of Korea, which recalled that within the framework of the State Safety Programme “accident and incident investigation” was one element of the “State safety risk management” component and that, in this respect, the scope of application, purpose, and authority for investigation should be better articulated by ICAO for more effective implementation. The Commission agreed to recommend referral of this task, along with the need

for guidance material on the distinct responsibilities in accident investigation between the investigation authority and the State aviation authority, to the Council for further consideration.

35.22 The Commission, in reviewing A39-WP/272 presented by the Air Crash Victims' Families' Federation International (ACVFFI), noted that, consistent with Annex 13 — *Aircraft Accident and Incident Investigation*, safety recommendations addressed to ICAO were sent directly to the Organization, whereas other safety recommendations of global interest were not sent to ICAO. The Commission was informed that the issue of safety recommendations of global concern (SRGC) was first discussed in ICAO during the AIG Divisional Meeting in 2008. Following the development of guidance material in 2011, States were encouraged to submit such recommendations to ICAO where they would be published on an ICAO website now developed and envisaged to be launched in 2017. Mindful that there were no SARPs addressing SRGC in Annex 13 and that relevant ICAO guidance had been published, the Commission agreed to recommend that the proposal be referred to the Council for further consideration. The Commission also noted that A39-WP/94 (Slovakia on behalf of the EU and ECAC States and EUROCONTROL), concerning the need for a more efficient processing and monitoring of actions taken related to safety recommendations would be discussed under Agenda Item 37.

#### **Annex 14 — Aerodromes**

35.23 A39-WP/339, presented by the Dominican Republic, described national regulations on aircraft ground handling at airports and invited ICAO to develop related SARPs and guidance material. The Commission, in noting the proactive regulatory measures taken by the Dominican Republic and that the development of guidance material on ground handling was already being progressed by ICAO, agreed that the contents of WP/339 should be brought to the attention of the appropriate expert group.

35.24 The Commission reviewed A39-WP/167, presented by IATA, describing the ongoing work IATA and other industry stakeholders were carrying out to safeguard fuel quality and to promote dissemination of information on fuel quality occurrences among stakeholders. The Commission noted that the multidisciplinary nature of this issue would need to be taken into account in the development of related ICAO provisions in the future.

35.25 The Commission considered A39-WP/282, presented by ACI, CANSO and ICCAIA, that proposed support for the current work being progressed by ICAO on the review of aerodrome design specifications with a focus on sharing of safety data, and acknowledged the need for the sharing of safety information between States, airports, and other organizations to achieve this. The Commission noted that the work being progressed might eventually form the basis for provisions in Annex 14, providing additional efficiency without compromising safety.

35.26 An information paper was provided by the Interstate Aviation Committee (A39-WP/307).

#### **GNSS, high altitude airports, space weather, RPAS SMS, Remote ATS**

35.27 The Commission reviewed A39-WP/333, presented by China, and noted the ongoing deployment of China's Beidou Global Navigation Satellite System (GNSS) and the services Beidou was committed to offering to civil aviation users, including a plan to provide global services by 2020. The Commission also noted that multi-frequency, multi-constellation (MFMC) GNSS, as supported by Beidou and other GNSS core constellations and augmentation systems, would help aviation face the challenges that the single-frequency, single-constellation GNSS encountered today. The Commission was informed

that work in support of the introduction of MFMC GNSS was already included in the ICAO work programme.

35.28 The Commission reviewed A39-WP/336 Revision No. 1, also presented by China, that outlined China's regulatory approach to managing challenging flight operations at high altitude airports, often in mountainous terrain. The Commission recalled that Standards existed in Annex 6 — *Operation of Aircraft* for flight crew qualifications regarding route and aerodromes and, consequently, additional Standards might not be necessary. The Commission acknowledged that, except for flight crew qualification training at difficult aerodromes, States should not impose other requirements on foreign operators and potentially infringe upon the authority or oversight obligations of the State of the Operator. The Commission agreed to recommend referral of the proposal in the paper to the Council for further consideration.

35.29 An information paper was provided by the Republic of Korea (A39-WP/421).

35.30 The Commission reviewed A39-WP/161, presented by United Arab Emirates (UAE), which described the national regulatory framework developed and implemented by the UAE with respect to safety oversight of heliports, and noted the proactive measures taken by the UAE.

35.31 The United States amended A39-WP/121 as an information paper and consequently there was no discussion of the paper.

35.32 The Commission reviewed A39-WP/302, presented by Venezuela (Bolivarian Republic of), describing lessons learned from the implementation of a safety management systems (SMS) approach to remotely piloted aircraft systems (RPAS). The Commission agreed on the importance of applying safety management processes to RPAS operations and on the need for a pragmatic and realistic approach to achieve SMS implementation and acceptance. The Commission was informed that the development of SARPs and guidance material, as well as work on the collection and sharing of best practices to support this approach, was already in progress.

35.33 The Commission reviewed A39-WP/263, presented by the International Transport Worker's Federation, which invited ICAO to commence work on a comprehensive global regulation for the implementation and operation of remote towers. The Commission noted that the existing ICAO work programme already included remote ATS. Consequently, the Commission agreed that the matters raised in the working paper should be provided to the relevant group of experts. Any review should take into account human factors principles and the potential for the utilization of performance-based provisions and guidance. The Commission also recalled that Annex 1 — *Personnel Licensing* outlined the knowledge, experience and skill requirements for an aerodrome control rating, and that the competency-based approach to ATC training was detailed in the *Manual on Air Traffic Controller Competency-based Training and Assessment* (Doc 10056) and was designed to ensure appropriate knowledge and skill requirements were met.

35.34 France, on behalf of the 44 Member States of ECAC, drew the attention of the Technical Commission to the importance of investigating the resilience of modern aviation to exceptionally strong space weather events. France offered to provide ICAO with an initial contribution on this topic.

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