



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**TWENTY FIFTH MEETING OF THE
ASIA/PACIFIC AIR NAVIGATION PLANNING AND
IMPLEMENTATION REGIONAL GROUP (APANPIRG/25)**

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Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation
3.6: Other Air Navigation Matters
**RECENT DEVELOPMENTS IN ICAO
ON INTERNATIONAL AVIATION AND CLIMATE CHANGE**

(Presented by the Secretariat)

SUMMARY

ICAO and its Member States are taking concrete steps to undertake coordinated and comprehensive actions to address CO₂ emissions from international aviation, in order to reach the ultimate goal of ensuring a sustainable future for international aviation.

This paper provides a summary of the main developments on the actions requested by the 38th Session of the ICAO Assembly in the field of international aviation and climate change, in particular those actions relating to the following key areas: 1) technological and operational measures; 2) sustainable alternative fuels for aviation; 3) market-based measures; 4) States' action plans; and 5) assistance to States

Action by APANPIRG is in paragraph 8.

1. INTRODUCTION

1.1 The 38th Session of the ICAO Assembly, held from 24 September to 4 October 2013, adopted Resolution A38-18: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change*.

1.2 ICAO was able to bring its Member States together to adopt a comprehensive, global policy on how to address Greenhouse Gas (GHG) emissions from international civil aviation. Assembly Resolution A38-18 reflects the determination of ICAO's Member States to continue to play a leading role in contributing to global efforts to address climate change by working further through ICAO to limit or reduce GHG emissions from international aviation.

1.3 The Resolution builds upon the achievements of the Organization on international aviation and climate change since the last ICAO Assembly in 2010, and incorporates the following key elements:

- 1) monitor the progress for achieving collective global aspirational goals for the international aviation sector of improving 2 per cent fuel efficiency per year and keeping net CO₂ emissions from 2020 at the same levels;
- 2) further work to explore the feasibility of a long-term global aspirational goal for international aviation;
- 3) development of a global CO₂ certification Standard for aircraft, aiming for 2016;
- 4) implementation of operational improvements and further development and update of tools and guidance to assess their environmental benefits;
- 5) further facilitation of developing and deploying sustainable alternative fuels for aviation, including the consideration of methodologies to account for life-cycle CO₂ benefits and the projection of future production of such fuels;
- 6) development of a global MBM scheme for international aviation, which addresses key design elements, including a means to take into account the special circumstances and respective capabilities of States, in particular developing States, as well as the implementation mechanisms from 2020, for decision by the 39th Assembly in 2016;
- 7) voluntary preparation and update of States' action plans on CO₂ emissions reduction activities, for submission to ICAO by June 2015, and to be publically available; and
- 8) enhancement of ICAO's strategy for capacity building and assistance, including support for development and update of States' action plans, as well as the mechanisms to facilitate access to financial resources.

2. TECHNOLOGICAL AND OPERATIONAL MEASURES AND GLOBAL ASPIRATIONAL GOALS

2.1 A major area of activity in the field of international aviation and climate change is the development of a technical CO₂ certification Standard for aircraft, being undertaken by ICAO's Committee on Aviation Environmental Protection (CAEP). Significant efforts were directed for the consensus agreement of certification requirements¹ at the ninth CAEP meeting in February 2013, which allowed CAEP to move to the next stages on the analysis of an appropriate regulatory limit for the Standard, aiming for the full Standard by 2016.

2.2 Operational measures are also an important element in the basket of measures available to States to reduce aviation emissions. In order to continue informing States on the environmental benefits of implementing operational measures, CAEP has completed a preliminary analysis of fuel savings associated with Aviation System Block Upgrades (ASBU) Block 0 modules and has embarked on a more detailed evaluation. The results of the preliminary analysis are available in the 2014 Air Navigation Report. This is in addition to guidance for environmental assessment of operational improvements and the ICAO Fuel Savings Estimation Tool (IFSET)² and that have been developed.

¹ ICAO Circular 337 (CAEP/9 Agreed Certification Requirement for the Aeroplane CO₂ Emissions Standard)

² <http://www.icao.int/environmental-protection/Pages/Tools.aspx>

2.3 The 38th Assembly also considered the global CO₂ trends assessment, which reflected the consensus agreement of the ICAO Committee on Aviation Environmental Protection (CAEP) and estimated the contribution of various categories of mitigation measures to reduce aviation CO₂ emissions (technologies, operational improvements and alternative fuels) in order to measure current, and estimate future, progress toward the achievement of the global aspirational goals adopted by the 37th Assembly. It was also informed that ICAO has been developing the means to allow the Organization to regularly report CO₂ emissions from international aviation to the UNFCCC process, as agreed by the 37th Assembly.

2.4 The CO₂ trends assessment was recommended as the basis for decision-making during the 38th Assembly, which subsequently adopted the collective global aspirational goals for the international aviation sector of improving 2 per cent fuel efficiency per year and keeping net CO₂ emissions from 2020 at the same levels.

3. ICAO SEMINAR ON GREEN TECHNOLOGIES

3.1 ICAO is organizing a seminar “Fuelling Aviation with Green Technology” from 9 to 10 September 2014 in Montreal³. This seminar will provide an opportunity to gain knowledge and share information on the latest and most innovative technologies to reduce aviation emissions. The event will address topics such as next generation aircraft, airplane recycling, green operations, eco-airports, renewable energy for aviation, and financing.

3.2 Key driver of this seminar is to create a platform in ICAO, where we can bring and discuss novelty topics that would not be considered by our work programme, with a view to raising awareness, facilitating information sharing, and further discussing possible next steps on these topics.

3.3 The keynote address for the seminar will be made by Mr. Bertrand Piccard, Initiator & Chairman, Solar Impulse and André Borschberg, CEO, Solar Impulse. On 29 August 2014, ICAO announced that it has officially concluded an agreement to serve as an Institutional and Aeronautical Partner for the Solar Impulse 2015 around-the-world flight⁴.

4. SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION

4.1 The 38th Assembly highlighted the progress achieved in promoting and facilitating the development and deployment of sustainable alternative fuels for aviation, including information sharing on best practices among States and other stakeholders through ICAO’s online platform - Global Framework for Aviation Alternative Fuels (GFAAF), which integrates data of hundreds of global activities and initiatives.

4.2 To highlight ongoing initiatives by government and industry, ICAO is working with industry on the occasion of upcoming UN Climate Summit on 23 September to operate demonstration flights to New York using sustainable alternative fuels.

4.3 The Assembly also supported further work by ICAO and its Member States to address the challenges in the development and deployment of sustainable alternative fuels for aviation, including the work on sustainability criteria and the projection of future production and life-cycle environmental benefits of such fuels. Following the Assembly, CAEP established a new Alternative Fuel Task Force (AFTF) to undertake these technical tasks.

³ <http://www.icao.int/Meetings/EnvironmentalWorkshops/Pages/GreenTechnology.aspx>

⁴ <http://www.icao.int/Newsroom/Pages/ICAO-To-Support-Ground-Breaking-Solar-Impulse-Around-The-World-Flight.aspx>

5. MARKET-BASED MEASURES (MBMS)

5.1 The Assembly acknowledged the work undertaken by the Organization on MBMs in responding to the requests of the last Assembly, including the development of a framework to guide the application of national or regional MBMs, and the exploration of the feasibility of a global MBM scheme for international aviation.

5.2 The 38th Assembly, a consensus agreement was reached on the development of a global MBM scheme for international aviation, which reflects the strong support of ICAO Member States for a global solution for the international aviation industry, as opposed to a possible patchwork of different measures. The Assembly also agreed that the Council, with support of Member States, would recommend a proposal for a global MBM scheme, and major efforts will need to be undertaken in order to address key design elements, including a means to take into account the special circumstances and respective capabilities of States, in particular developing States, and the implementation mechanisms of the scheme from 2020, for decision by the 39th Assembly in 2016.

5.3 Following the Assembly, the ICAO Council agreed in February 2014 a clear process and roadmap, with expected milestones and necessary governance structure, including the establishment of the Environment Advisory Group (EAG). The EAG has been working on a global MBM scheme under the direction of the Council, using the approach of a “Strawman” which started with a simple and basic proposal for a global MBM scheme with a view to generating the discussion on advantages and disadvantages of its design elements and allowing for the improvements of the Strawman. This iterative approach will also ensure the full engagement of States and other stakeholders, taking into account inputs from different sources.

5.4 To support work on some design elements of the Strawman, a new Global Market-based Measure Technical Task Force (GMTF) was established under CAEP. In addition, the EAG’s discussion on the Strawman identified the need to undertake a series of quantitative impact analyses which are expected to be undertaken during the 2014 summer period in order to facilitate more in-depth discussion and subsequent decision-making.

6. ACTION PLANS

6.1 The 38th Assembly acknowledged the successful outcome of the ICAO initiatives with respect to the development and submission of States’ action plans on CO₂ emissions reduction from international aviation by Member States that represent over 75 per cent of global international air traffic. The Assembly encouraged Member States to submit more complete and robust data in their action plans to facilitate the compilation of global emissions data by ICAO. It also encouraged the partnerships among ICAO, States and other organizations, and emphasized the need for the Secretariat to provide further guidance and other technical assistance.

6.2 In this regard, the ICAO Secretariat has been convening a new series of seminars across the ICAO regions for 2014 and 2015 on International Aviation and Environment and on States’ Action Plans, which are to be held back-to-back. To date, four seminars have been held respectively in Mexico and Peru in April 2014, and in Cameroon and Kenya in June 2014. The seminars for the Asia Pacific region are scheduled to be held from 28 to 30 October 2014 in Kuala Lumpur, Malaysia, and will be hosted by the Government of Malaysia⁵.

6.3 Moreover, in an effort to enhance States’ capacity to develop an action plan, ICAO Doc 9988, *Guidance on the Development of States’ Action Plans on CO₂ Emissions Reduction Activities* is being refined to include new text on stakeholders’ involvement and organizational

⁵ <http://www.icao.int/Meetings/EnvironmentalWorkshops/Pages/2014-Seminars.aspx>

arrangements needed to support action plan-related activities. In addition, improvements are being made to simplify the methodologies used to assess the emissions calculation and reporting. The improved Doc 9988 is currently being used as the basis for the State Action Plan Seminars.

6.4 To date, the feedback received from participants in these seminars has been positive, and ICAO has been requested to continuously convey information on the progress of ICAO's environmental activities on a regional basis and to strengthen assistance to States in the development of action plans. National action plan focal points were provided with practical, hands-on assistance in terms of the development and enhancement of the various aspects of the action plans, and obtained further guidance and concrete examples of measures from which they may select, evaluate and prioritize to mitigate aviation CO₂ emissions.

6.5 The action plans are a key area of the Organization's work priorities, providing a unique opportunity for States to both showcase their initiatives to improve fuel efficiency and reduce emissions, and to articulate their assistance needs. The information included in the plans will allow for the assessment of potential future progress toward the achievement of global aspirational goals set forward by ICAO Assembly Resolution A38-18. The active involvement of Member States is therefore critical to the success of this initiative and to the ability of ICAO to effectively develop policies and practices toward the environmental sustainability of air transport.

7. ASSISTANCE TO STATES

7.1 The high level of interest, cooperation and engagement of Member States and other stakeholders in the action plans initiative and the substantial progress made, during the last triennium was due in large part to a robust capacity building programme. This programme needs to be continued and further strengthened.

7.2 The ICAO Secretariat continues to pursue the capacity building strategy to assist States to develop their action plans. National Action Plan Focal Points continue to consult with the ICAO Secretariat to receive information on the development and/or refinement of the action plan and ICAO's environment-related activities. The United Arab Emirates, South Africa and Mexico have sent their focal points to ICAO to obtain support for the development of their respective action plans. Other States have also contacted ICAO in order to consider receiving similar assistance.

7.3 As part of efforts to provide further assistance to States and facilitate access to financing for the development and implementation of States' action plans, ICAO established partnerships with the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP), as well as with the European Commission (EC).

7.4 The development of ICAO's joint project with the GEF-UNDP, *Transforming the Global Aviation Sector: Emission Reduction from International Aviation*, is underway. The project aims to identify and facilitate the implementation of measures to reduce international aviation emissions. It is envisaged that guidance on financing sources and supporting mechanisms to implement such measures will be developed. An important element of this project is a practical case study, consisting of the implementation of a CO₂ reduction measure that can be replicated in other States.

7.5 The *Capacity Building for CO₂ Mitigation from International Aviation* joint project between ICAO and the European Commission is also currently underway, as 14 States from the African and Caribbean regions have been selected to participate in the project. The overarching objective of the project is to contribute to international, regional and national efforts to address growing emissions from international aviation.

7.6 The Organization continues to explore further opportunities to build partnerships with other international organizations and regional development banks to facilitate greater access to financing for Member States' actions to reduce aviation emissions.

8. ACTION BY THE APANPIRG

8.1 The APANPIRG is invited to:

- a) note the information presented in this paper;
- b) continue to consider environmental issues in the planning and implementation of regional air navigation systems;
- c) bring to the attention of the ICAO Secretariat specific areas where additional guidance on environmental benefits would be valuable;
- d) promote further collaboration with State action plan national focal points for all the operational measures that States wish to develop, implement and/or include in their action plans;
- e) inform State action plan national focal points of the availability of further assistance, to be provided by the ICAO Secretariat, related to the preparation and submission of States' action plans;
- f) encourage national action plan focal points to attend the ICAO Aviation and Environment and State Action Plans Seminars in Kuala Lumpur, Malaysia, from 28 to 30 October 2014; and
- g) note that the ICAO Secretariat will keep PIRGs informed of its future activities and developments related to environmental protection.

— END —