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INTERNATIONAL CIVIL AVIATION ORGANIZATION

**SIXTH MEETING OF DIRECTORS GENERAL OF CIVIL AVIATION (DGCA/6)
(Brazzaville, Congo, 2 – 4 November 2016)**
Agenda Item 7: Environmental Protection**INTERNATIONAL CIVIL AVIATION AND THE ENVIRONMENT***(Presented by the Secretariat)*

SUMMARY
This paper provides a summary of the main developments on the actions requested by the 39th Session of the ICAO Assembly in the field of international aviation and environmental protection, in particular those actions relating to the following key areas: 1) technological and operational measures and global aspirational goals; 2) sustainable alternative fuels for aviation; 3) market-based measures; 4) States' action plans; and 5) assistance to States. Action by the meeting is in paragraph 7.
REFERENCE(S): A39 Resolutions
Related ICAO Strategic Objective(s): Environmental Protection

1. INTRODUCTION

1.1 The 39th Session of the ICAO Assembly, held from 27 September to 7 October 2016, adopted Resolutions A39-xx: *Consolidated Statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality*; A39: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change*; and A39-xx *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme*. The Assembly Resolutions reflect the determination of ICAO's Member States to continue to play a leading role in limiting or reducing the number of people affected by significant aircraft noise, the impact of aviation emissions on local air quality, and the impact of aviation greenhouse gas emissions on the global climate.

1.2 In 2010 with the adoption of Resolution A37-19, the Assembly defined a basket of measures designed to help achieve ICAO's global aspirational goals of 2 per cent fuel efficiency improvement per annum and carbon neutral growth from 2020. Progress on the implementation of all elements of the basket of measures were reported to the 39th Session of the Assembly, namely technological improvement, operational measures, sustainable alternative fuels and a global market–

based measure scheme for international aviation. The 39th Assembly supported the ICAO global aspirational goals on CO₂ emissions from international aviation.

1.3 The Assembly recognized the important progress made by ICAO in addressing the impact of noise, local air quality and global emissions and supported the continued work of ICAO on civil aviation and the environment.

2. TECHNOLOGICAL AND OPERATIONAL MEASURES AND GLOBAL ASPIRATIONAL GOALS

2.1 A major area of activity in the field of international aviation and environment is the development of Environmental Standards for civil aircraft, which aim to ensure the implementation of new technologies into aircraft designs that contribute to the reduction of civil aviation environmental impacts. The 39th Session of the ICAO Assembly welcomed the recent ICAO achievements on this area, specifically, the development of the first-ever new global CO₂ emissions certification Standard for New Type and In-production aeroplanes, and a new non-volatile Particulate Matter (nvPM) emissions Standard for aircraft engines.

2.2 The Assembly recognized the progress achieved in all elements of aircraft noise and reaffirmed the commitment to the Balanced Approach to aircraft noise management. The development of a new supersonic noise Standard for future aircraft is also progressing, and the Assembly recognized that the airworthiness certification of a supersonic aeroplane could occur in the 2020-2025 timeframe.

2.3 The Assembly recognized the environmental benefits resulting from the implementation of Aviation System Block Upgrade (ASBU) Block 0. The update to Doc 9184, *Airport Planning Manual*, Part 2, *Land-use and Environmental Control*, was recognized, as was the development of a new Circular, *Community Engagement for Aviation Environmental Management*, which complements the current policy of aircraft noise management at and around airports.

2.4 The use of the ICAO global environmental trends as the basis for decision-making on international aviation environmental matters was endorsed by the Assembly. This included updated trends for aircraft noise and aircraft engine emissions, and an update to the trends on net CO₂ emissions from international aviation to include the use of sustainable alternative fuels.

2.5 The Assembly recognized work on emerging issues being undertaken to consider the environmental aspects of aircraft end-of-life, such as through aircraft recycling, and to identify the potential impacts of climate change on international aviation operations and related infrastructure and to identify adaptation measures to address the potential climate change impacts.

3. SUSTAINABLE ALTERNATIVE FUELS FOR AVIATION

3.1 The 39th Assembly highlighted the progress achieved in 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, the Global Framework for Aviation Alternative Fuels (GFAAF), which integrates data on hundreds of global activities and initiatives.

3.2 The Assembly 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. Many Member States requested policy guidance on Alternative Fuels.

3.3 There will be an Alternative Fuel Seminar to be held from 8-9 February at ICAO Headquarters in Montreal.

4. MARKET-BASED MEASURE (MBM)

4.1 The ICAO Assembly, at its 38th Session, adopted Resolution A38-18 which requested the Council, with support of Member States, to recommend a proposal for a global market-based measure (MBM) scheme for international aviation, for decision by the 39th Session of the Assembly.

4.2 The ICAO Assembly, at its 39th Session, adopted Resolution A39-xx *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme*. By adopting this Resolution, the Assembly decided to implement a global MBM scheme in the form of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). CORSIA complements the broader package in the basket of measures designed to help achieve the ICAO's global aspirational goal of carbon neutral growth from 2020.

4.3 CORSIA has a phased-in implementation approach with a pilot phase from 2021 through 2023, a first phase from 2024 through 2026, and a second phase from 2027 through 2035; for the first two phases, participation is voluntary. By the end of the 39th Session of the Assembly, 65 States – representing about 86.5 per cent of international traffic – had announced their decision to participate in the CORSIA from 2021. At the 39th Assembly, States intending to voluntarily participate in the CORSIA were invited to confirm their participation as soon as possible with the ICAO Secretariat, so that the Secretariat can provide these States with a confirmation document to be filled and returned to the Secretariat.

4.4 Resolution A39-xx requests the Council to take necessary action to expand the provision of capacity building and assistance for the preparation and implementation of States' action plans, in order to accommodate assistance for the establishment of elements needed for the implementation of the CORSIA, namely: monitoring, reporting and verification (MRV) systems; criteria for emissions units to be purchased by aircraft operators; and registries. ICAO is working on the design of a comprehensive technical assistance and capacity building programme to support implementation of the CORSIA (see Section 6 "Assistance to States" for further information).

5. STATES' ACTION PLAN INITIATIVE

5.1 As of 28 September 2016, 100 States representing over 90 percent of the global international air traffic submitted action plans to ICAO. The voluntary submission of new or updated action plans to ICAO is expected by the end of June 2018, as encouraged by the 39th Session of the ICAO Assembly.

5.2 The 39th Assembly noted that a substantial strategy for capacity building and other technical and financial assistance was undertaken by ICAO to assist the preparation and submission of States' action plans, including the holding of regional seminars, the development and update of ICAO Doc 9988, *Guidance on the development of States' Action Plans on CO2 Emissions Reduction Activities*, an interactive web-interface, the ICAO Fuel Savings Estimation Tool (IFSET) and the ICAO Environmental Benefits Tool (EBT).

6. ASSISTANCE TO STATES

6.1 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.

6.2 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 European Union (EU), as well as with the United Nations Development Programme (UNDP) with the Global Environment Facility (GEF) financing.

6.3 The 39th Assembly encouraged ICAO to facilitate access to financing from its Member States on Environmental Protection through renewed partnerships. A Declaration of Intent was signed on 27 September 2013 with the European Union to extend EU financing to environmental capacity-building activities during the next triennium. The Assembly was informed of the new assistance partnerships related to environment, with Germany, ACI, and the World Bank.

6.3.1 ICAO Assistance Project with the European Union

6.3.1.1 The ICAO assistance project with the EU funding, *Capacity Building for CO₂ Mitigation from International Aviation*, is a project to assist fourteen selected States from Africa and the Caribbean in the development of voluntary action plans, setup Aviation Environmental Systems (AES) to establish emission inventories and monitor CO₂ emissions from aviation, and implement measures to reduce aviation emissions.

6.3.1.2 As of June 2016, the two Caribbean States and the twelve African States had submitted action plans to ICAO, fully compliant with ICAO Guidance on the Development of States Action Plans on CO₂ emissions Reduction Activities Doc. 9988. In addition, the fourteen States have been equipped with the Aviation Environmental System (AES), a monitoring, reporting and verification (MRV) software developed under the project to collect and monitor environmental aviation data. Through the AES, the beneficiaries States are able to assess, monitor and report CO₂ emissions from international aviation including the monthly reporting process to ICAO.

6.3.3 With the completion of the first and second objectives, ICAO is currently supporting some of the selected States in the third objective of the project which aims at implementing pilot mitigation measures and feasibility studies included in the Action Plans. In this phase, the project will establish pilot projects designed to reduce fuel consumption and emissions, including the installation of solar power and gate electrification systems in two States and implementation of a Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO) in two States. The project will as well support the development of feasibility studies on the use of renewable energy to power aircraft operations in one State and on the use of development of sustainable alternative fuels in four States. It is expected that these pilot projects would be replicated in other Member States.

6.3.2 ICAO Assistance Project with UNDP and the GEF Funding

6.3.2.1 In November 2014, a second partnership was signed with the United Nations Development Programme (UNDP) with financing from the Global Environment Facility (GEF) to undertake a global Capacity Building Project *Transforming the Global Aviation Sector: Emission Reduction from International Aviation* including the implementation of a pilot project on renewable energy in a Small Island State.

6.3.2.2 An important element of this project is the development of a practical pilot project in Jamaica, consisting of the implementation of a renewable energy project to reduce emissions from international aviation that could be replicated in other Developing States and SIDs. The project is to support the installation of solar panels feeding the airport electricity grid.

6.3.2.3 Another element is the development of four guidance documents on the Use of Drop-in Biofuels for the aviation sector for Developing States and SIDs, on Renewable Energy at airports, Governance, and on Financing of Clean energy projects for aircraft and airport.

7. ICAO ENVIRONMENTAL REPORT

7.1 The 2016 ICAO Environmental Report¹ highlights the progress of ICAO's environmental activities over the last three years. This fourth edition of the report provides an update on the current state of aviation and the environment. The full report is available free of charge on the ICAO website at the link provided below.

8. ACTION BY THE MEETING

8.1 The meeting is invited to:

- a) encourage States in the region to update and submit their quantified action plans by the end of June 2018;
- b) continue to consider environmental issues in the planning and implementation of regional air navigation systems;
- c) promote the use of ICAO Environment Tools estimate the emissions reductions from the implementation of the mitigation measures as part of the development of States' action plans; and
- d) note the availability of further assistance by ICAO in the preparation and submission of States' action plans.

— END —

¹ <http://www.icao.int/environmental-protection/Pages/ENV2016.aspx>