



International Civil Aviation Organization

**Middle East Air Navigation Planning and
Implementation Regional Group**

**Fifteenth Meeting (MIDANPIRG/15)
(Bahrain, 8 – 11 June 2015)**

Agenda Item 5.2.3: Environmental Protection

GLOBAL AND REGIONAL DEVELOPMENTS RELATED TO ENVIRONMENT

(Presented by the Secretariat)

SUMMARY

This paper presents the Global and Regional developments related to environment.

Action by the meeting is at paragraph 3.

REFERENCES

- ANSIG/1 Report
- APM TF/2 Report
- GLAD
- MIDANPIRG/14 Report
- Seminar on International Aviation, Environment and States' Action Plans

1. INTRODUCTION

1.1 The meeting may wish to note that environmental protection to minimize the adverse environmental effects of civil aviation activities is one of the five strategic objectives of ICAO.

1.2 In general the environment issues are addressed by the Committee on Aviation Environmental Protection (CAEP), which is a technical committee of the ICAO Council established in 1983. CAEP assists the Council in formulating new policies and adopting new Standards and Recommended Practices (SARPs) related to aircraft noise and emissions, and more generally to aviation environmental impact.

1.3 The ATM Performance Measurements Task Force (APM TF) is tasked with the estimation of the environmental benefits accrued from the implementation of ATM operational improvements in the MID Region. The APM TF/2 meeting was held in the ICAO MID Regional Office Premises, 10-11 November 2014. The meeting was attended by a total of fifteen (15) participants from five (5) States (Bahrain, Egypt, Kuwait, Saudi Arabia and Sudan) and one (1) International Organization (IATA).

2. DISCUSSION

Action Plans on emissions reduction

2.1 The meeting may wish to note that the 38th Assembly highlighted the importance of reinforcing the voluntary nature of States' action plans on CO₂ emissions reduction. It encouraged Member States to voluntarily submit more complete and robust data in their action plans to facilitate the compilation of global emissions data by ICAO, and to make their action plans publically available. It also encouraged the partnerships among ICAO, States and other organizations to support the preparation of action plans, and emphasized the need for the Secretariat to provide further guidance and other technical assistance.

2.2 An action plan is a means for States to communicate to ICAO information on activities to address CO₂ emissions from international aviation. The level of information contained in an action plan should be sufficient to demonstrate the effectiveness of actions and to enable ICAO to measure progress towards meeting the global goals set by Assembly Resolution A38-18. Action plans give States the ability to: establish partnerships; promote cooperation and capacity building; facilitate technology transfer; and provide assistance.

2.3 At a minimum the following information should be contained in the plan:

- Contact information;
- Baseline (without action) fuel consumption and traffic (2010 or earlier to 2050);
- List of measures proposed to address CO₂ emission from international civil aviation;
- Expected results (fuel consumption and traffic with the actions being taken 2014 to 2050); and
- Information on any assistance needs (financial, technological, training, etc.).

N.B: States are invited to update and submit their action plans at least once every three years.

2.4 The meeting may wish to note that five (5) MID States (Bahrain, Iraq, Jordan, Sudan and UAE) have provided their action plans:

2.5 The meeting may wish to note that, the 38th Assembly through the Resolution A38-18, resolved that States and relevant organizations will work through ICAO to achieve a global annual average fuel efficiency improvement of 2 per cent until 2020 and an aspirational global fuel efficiency improvement rate of 2 per cent per annum from 2021 to 2050, calculated on the basis of volume of fuel used per revenue tonne-kilometre performed.

2.6 The meeting may wish to recall that, MIDANPIRG/14 meeting (Jeddah, Saudi Arabia, 15-19 December 2013), through MIDANPIRG Conclusion 14/29, encouraged States to develop/update their Action Plans for CO₂ emissions and submit them to the ICAO MID Regional Office or through the APER website on the ICAO Portal:

<http://www.icao.int/environmentalprotection/Pages/action-plan.asp>

2.7 The meeting may wish to note that ICAO issued State Letter Ref.: ENV 4/1-15/38 dated 27 May 2015 on ICAO Voluntary States' Action Plans (at **Appendix A**) encouraging States to:

- a) develop and update their action plans and to submit it to ICAO preferably by **30 June 2015**; and
- b) contact ICAO should technical assistance for the action plan be needed.

2.8 The meeting may wish to note that ICAO conducted MBM Global Aviation Dialogues (GLADs) in April 2015 in five ICAO Regions, including one in Cairo, Egypt from 20 to 21 April 2015, to share up-to-date information on the work of ICAO related to the development of a global MBM scheme for international aviation, and provide an important opportunity for ICAO to receive feedback from all its Member States and relevant organizations.

2.9 ICAO convened also a series of back-to-back Seminars in 2014 and 2015 on International Aviation and Environment and on States' Action Plans. In total, seven Seminars were held in Mexico and Peru in April 2014, in Cameroon and Kenya in June 2014, in Malaysia in October 2014, in the United Arab Emirates (UAE), from 10 to 12 March 2015, and in Poland in March 2015. The material presented during each Seminar is available on the ICAO action plan website: <http://www.icao.int/Meetings/EnvironmentalWorkshops/Pages/2014-Seminars.aspx>

2.10 The meeting may wish to note that ICAO issued the State Letter Ref. AN 1/17 – 14/57 dated 10 September 2014, requesting States to provide CAEP with information and data related to environmental benefits, by 31 December 2014.

2.11 The State Letter contains two (2) questionnaires on Noise certification of unmanned aircraft systems and fuel availability and composition of commercial fuel. Moreover, the State Letter includes two (2) requests for information about Radar data and Alternative Fuels.

Operational Improvements

2.12 The meeting may wish to recall that the 38th Assembly urged States to take into consideration the Global Air Navigation Plan (GANP) guidelines as an efficient operational measure for environmental protection. The GANP includes the Aviation System Block Upgrades (ASBU) global framework, developed by ICAO, to ensure that aviation safety will be maintained and enhanced, that ATM improvement programmes are effectively harmonized, and that barriers to future aviation efficiency and environmental gains can be removed at reasonable cost.

2.13 The meeting may wish to note that ICAO recognized the difficulty faced by many States in assessing the environmental benefits of their investments in operational measures to improve fuel efficiency. Accordingly, ICAO, in collaboration with subject matter experts and other international organizations, has developed the ICAO Fuel Savings Estimation Tool (IFSET).

2.14 IFSET helps to harmonize State fuel-savings assessments consistent with more advanced models already approved by the CAEP. It will estimate the difference in fuel mass consumed by comparing a pre-implementation (i.e. baseline) case against a post-implementation case (i.e. after operational improvements).

2.15 IFSET was rolled out to ICAO Member States through a series of workshops during 2012. It was developed not to replace the use of detailed measurements or modelling tools regarding fuel savings, but rather to assist those States without the facility to estimate the benefits from operational improvements in a straightforward and harmonized manner. It is to be highlighted that during the First meeting of the ATM Measurements Task Force (ATMM TF/1), Cairo, Egypt, 8-9 September 2013, participants had the opportunity to practice the IFSET and estimate the amount of fuel saved for their identified operational improvements. IFSET is available on the ICAO website through the following link: <http://www.icao.int/environmental-protection/Pages/Tools.asp>

2.16 In connection with the above, ICAO developed the Operational Opportunities to Reduce Fuel Burn and Emissions Manual (ICAO Doc 10013) and the Guidance on Environmental Assessment of Proposed Air Traffic Management Operational Changes Manual (ICAO Doc 10031).

2.17 ICAO Doc 10013 identifies and reviews various operational opportunities and techniques for minimizing fuel consumption, and therefore emissions, in civil aviation operations. It is based on the premise that the most effective way to minimize aircraft emissions is to minimize the amount of fuel used in operating each flight. This manual updates and replaces information previously provided in ICAO Circular 303 — Operational Opportunities to Minimize Fuel Use and Reduce Emissions published in 2004. This document contains information on current practices that are followed by aircraft operators, airport operators, air navigation services providers (ANSPs), other industry organizations and States, which are intended to minimize fuel use and reduce emissions from civil air transport. The manual is therefore aimed at airlines, airport operators, air traffic management and air traffic control service providers, airworthiness authorities, environmental agencies and other government bodies and interested parties.

2.18 The objectives of ICAO Doc 10013 are to:

- a) document industry experience and the benefits, in terms of emissions, resulting from optimizing the use of current aircraft and infrastructure, and the related benefits of infrastructure improvements;
- b) identify improvements that could result in measurable fuel savings; and
- c) demonstrate that a more efficient use of infrastructure is an effective means of reducing civil aviation emissions and therefore promote enhanced use of the capabilities inherent in existing aircraft, ground service equipment and infrastructure.

2.19 On the other hand, the purpose of the ICAO Doc 10031 is to provide States, airport operators, air navigation service providers (ANSPs) and other stakeholders with environmental assessment guidance to support sound and informed decision making when analyzing proposed air traffic management (ATM) operational changes. High-level principles related to the quantification of changes in aviation-related environmental impacts associated with air navigation service changes are collected in order to ensure a consistent approach to the analysis of the changes, while minimizing the risk of common assessment errors. This provides a framework within which specific, detailed assessment methodologies can be developed that meet local requirements, while facilitating global compatibility of results. It is also intended to assist with recognizing any environmental benefits associated with operational changes. While the guidance is intended to be applied broadly, it also highlights areas of priority that may need to be considered at the local level.

2.20 The ICAO Doc 10031 includes high-level principles extracted from the environmental assessment best practices of air navigation service providers, State governments and other advisory bodies. These high-level principles are not intended to override existing or future State-specific guidance, but can be used to support their development, or evolution.

2.21 The meeting may wish to note that, in 2013, a high-level analysis of the potential environmental benefits from seven ASBU Block 0 modules was undertaken by the CAEP, which estimated that up to 4 million tonnes of fuel savings could be achieved from planned Block 0 module implementation.

2.22 In view to support a comprehensive ASBU Block 0 global environmental analysis currently underway by CAEP, a questionnaire was circulated through the ICAO State Letter Ref AN 1/17 14/56 dated 10 September 2014 requesting States to submit the completed questionnaire by 31 December 2014.

2.23 The questionnaire is divided into questions per ASBU Performance Improvement Area. For each module, the operational improvement is detailed along with questions designed to obtain the information required related to possible fuel savings to advance the work described above.

2.24 It is to be highlighted that the global environmental benefits are published in the annual ICAO Air Navigation Report, which could be accessed through the following link: <http://www.icao.int/airnavigation/pages/Air-Navigation-Report.aspx>. However, the environmental benefits accrued from the implementation of operational improvements in the MID Region are published in the MID Region Air Navigation Environmental Report, which are posted on the MID Office website.

2.25 The meeting may wish to note that the APM TF/2 reviewed the above-mentioned questionnaires and urged States to provide their inputs, information and comments to ICAO by 31 December 2014. It is to be noted that only Egypt, Sudan, and UAE replied to the above-mentioned questionnaire.

2.26 The ANSIG/1 meeting noted that States were unable to answer several questions due to the lack of required information (difficulty to measure).

2.27 The ANSIG/1 meeting recognized the difficulty faced by many States in assessing the environmental benefits and urged States and Users to use the ICAO Fuel Savings Estimation Tool (IFSET) for the estimation of the CO₂ emissions accrued from the planned/implemented operational improvements.

Second MID Air Navigation Environmental Report

2.28 The ANSIG/1 meeting recalled that the implementation of operational improvements will generally have benefits in areas such as improved airport and airspace capacity, shorter cruise, climb and descent times through the use of more optimized routes and an increase of unimpeded taxi times. These improvements have the potential to reduce fuel burn and lower levels of pollutants.

2.29 The ANSIG/1 meeting was apprised of the outcome of the APM TF/2 meeting and the progress report on the development of the Draft Second MID Air Navigation Environmental Report.

2.30 The ANSIG/1 meeting noted with concern that the provisions of the MIDANPIRG/14 Conclusion 14/29 have not been implemented, despite the follow-up actions undertaken by the ICAO MID Regional Office, in particular the issuance of the State Letter Ref: AN 6/15-14/247 dated 23 September 2014, urging States and Users to provide the ICAO MID Regional Office with their data related to the environmental benefits accrued from the implementation of operational improvements, before 20 October 2014, in order to be incorporated in the Second MID Air Navigation Environmental Report, which was supposed to be developed by the APM TF/2 meeting.

2.31 In connection with the above, the ANSIG/1 meeting raised concern related to the low level of attendance to the APM TF meetings by the MID States.

2.32 It was highlighted that only Bahrain, Jordan, Kuwait, Lebanon, and UAE provided a list of their planned/implemented operational improvements. Nevertheless, it was underlined that the IFSET Reports related to these operational improvements should have been generated, which necessitates additional information to be provided by the concerned States.

2.33 Based on the above, the ANSIG/1 meeting emphasized that the contribution of States and Users to the work programme of the APM TF is essential in particular for the development of the Air Navigation Environmental Report. Accordingly, the meeting urged States and Users to support the Task Force and ensure the implementation of the provisions of the MIDANPIRG Conclusion 14/29.

2.34 Due to the low level of inputs received, the ANSIG/1 meeting agreed that the Draft Second MID Region Air Navigation Environmental Report would be consolidated by the Secretariat and presented to the MIDANPIRG/15 meeting for endorsement. Accordingly, the meeting agreed to the following Draft Conclusion:

DRAFT CONCLUSION 1/6: SECOND MID REGION AIR NAVIGATION ENVIRONMENTAL REPORT

That, States and Users be urged to provide their inputs/IFSET Reports to the ICAO MID Regional Office, before 1 April 2015, for the development of the Second MID Region Air Navigation Environmental Report to be consolidated by the Secretariat for presentation to the MIDANPIRG/15 meeting, for endorsement.

2.35 The meeting agreed that the reporting period for the development of the MID Region Air Navigation Environmental Report should be as follows:

- a) 2009-2011: just a listing of the operational improvements which have been implemented during this period and which had environmental benefits;
- b) 2012-2014: period to be used for the generation of the Second Regional IFSET Report; and
- c) 2015 and beyond: listing of planned operational improvements which will have environmental benefits.

2.36 It is to be underlined that only Sudan provided the required inputs and accordingly, the Second MID Region Air Navigation Environmental Report could be not be developed.

2.37 The ANSIG/1 meeting noted with appreciation that Bahrain issued AIP SUP Nr. 17/14 effective date 14 November 2014, related to the implementation of Single Engine Taxi Operations at Bahrain International Airport. In accordance with the survey conducted by Bahrain, emissions may vary between 22,000kg for medium category two engines aircraft and 88,000kg for heavy four engines aircraft. Accordingly, the meeting encouraged States to implement, as practicable, Single Engine Taxi Operations at their International Aerodromes and agreed to the following Draft Conclusion emanating from the APM TF/2 meeting:

Why	To reduce CO ₂ Emissions during Taxi
What	State Letter on Single Engine Taxi Operations
Who	ICAO
When	July 2015

DRAFT CONCLUSION 1/7: SINGLE ENGINE TAXI OPERATIONS

That,

- a) *States be encouraged to implement Single Engine Taxi Operations at their International Aerodromes, as practicable; as a possible measure for the reduction of CO₂ emissions; and*
- b) *Bahrain be encouraged to share their experience on the subject with other States, as required.*

2.38 The ANSIG/1 meeting encouraged States to organize at national level workshops related to the estimation of environmental benefits accrued from operational improvements with the support of ICAO and other interested stakeholders.

Climate Change

2.39 The meeting may wish to recall that the 38th Session of the ICAO Assembly requested the Council to ensure that ICAO exercise continuous leadership on environmental issues relating to international civil aviation, including greenhouse gas (GHG) emissions.

2.40 The meeting may wish to note that the ICAO Council, during its 204th Session, was informed of the results of the 20th Session of the Conference of the Parties (COP20) to the United Nations Framework Convention on Climate Change (UNFCCC).

2.41 ICAO issued State Letter Ref.: E 2/58 – 15/37 dated 27 May 2015 at **Appendix B**, encouraging the national civil aviation authorities to liaise and coordinate with their government representatives to COP21 regarding the statements and positions of their State vis-à-vis international civil aviation and the inclusion of aviation experts in their national delegations to COP21. The COP21 will be held in Paris, France from **30 November to 11 December 2015**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) urge States to use the IFSET for the estimation of the amount of fuel saved (CO₂ emissions reduction) from the implemented operational improvements;
- b) take a decision regarding the development of the MID Region Air Navigation Environmental Reports; and
- c) agree to the Draft Conclusion 1/7 emanating from the ANSIG/1 meeting;
- d) encourage States to:
 - i. develop/update their Action Plans for CO₂ emissions and submit them to the ICAO MID Regional Office and/or through the APER website on the ICAO Portal;
 - ii. respond to the State Letters Ref.: ENV 4/1-15/38 dated 27 May 2015 and Ref.: E 2/58 – 15/37 dated 27 May 2015, at **Appendices A and B**, respectively; and
 - iii. use the guidelines provided in ICAO Doc 10013 and Doc 10031, when planning for the implementation of operational improvements.



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المدني الدولي

国际民用
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Ref.: ENV 4/1 - 15/38

27 May 2015

Subject: ICAO Voluntary States' Action Plans

Action required: States are encouraged to: a) develop and update their action plans and to submit it to ICAO preferably by 30 June 2015; and b) contact ICAO should technical assistance for the action plan be needed

Sir/Madam,

Since 2010, the International Civil Aviation Organization (ICAO) has embarked on an ambitious capacity building strategy to support States in the development of actions for emissions reductions from international aviation. The 38th Session of the ICAO Assembly acknowledged the successful outcome of this capacity building initiative and further encouraged Member States to submit updated action plans by the end of June 2015.

In line with the request of the 38th Assembly to provide further assistance to States, ICAO held a series of back-to-back regional Seminars on International Aviation and Environment and on Voluntary States' Action Plans, across seven regions, between April 2014 and March 2015. These Seminars, together with Doc 9988, *Guidance on the Development of States' Action Plans on CO₂ Emissions Reduction Activities* and its interactive Action Plan on Emissions Reduction (APER) website, have provided national experts nominated as their State's action plan focal points with the information necessary to enable them to develop and further enhance their respective national action plans.

Through the support team at its Headquarters and Regional Offices (Attachment A), ICAO continues to assist States in developing and updating their action plans and facilitating their submission to ICAO, with data and specific technical support. A final one-day Training Seminar on Voluntary States' Action Plans will be held in Montréal, Canada on 18 September 2015, which will focus on providing further support to States with their action plans.

The voluntary submission of States' action plans to ICAO offers States the unique opportunity to showcase their initiatives to improve fuel efficiency and reduce aviation emissions, as well as to articulate their assistance needs. Based on this information, the Organization will be better prepared to facilitate further support and access to potential funding for the further development of the action plans and/or implementations of the measures contained therein. The active involvement of Member States is key to the success of this initiative.

Accept, Sir/Madam, the assurances of my highest consideration.

for 
Raymond Benjamin
Secretary General

Enclosure:

List of ICAO action plan support team

ATTACHMENT A to State letter ENV 4/1 – 15/38

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авиации

منظمة الطيران
المدني الدولي

国际民用
航空组织

Ref.: E 2/58 – 15/37

27 May 2015

Subject: Developments under UNFCCC related to International Civil Aviation

Action required: a) ensure that positions vis-à-vis international civil aviation and climate change agreed at ICAO are coordinated with national delegations attending COP21; and b) representatives of civil aviation authorities are encouraged to participate as part of their national delegations attending COP21

Sir/Madam,

The 38th Session of the ICAO Assembly requested the Council to ensure that ICAO exercise continuous leadership on environmental issues relating to international civil aviation, including greenhouse gas (GHG) emissions.

During its 204th Session, the ICAO Council was informed of the results of the 20th Session of the Conference of the Parties (COP20) to the United Nations Framework Convention on Climate Change (UNFCCC). Of particular relevance to international civil aviation was that international aviation continues to figure in the discussion on climate finance under the Ad-hoc Working Group on the Durban Platform for Enhanced Action (ADP). Text referring to the international aviation sector as a potential source of financing for the Adaptation Fund was retained as an option among the elements for a draft negotiating text (Attachment refers), which serves as a starting point for further negotiation in 2015.

In light of the decision of COP20, the Council urged that, pursuant to ICAO Assembly Resolution A38-18, paragraph 30, ICAO and its Member States express a serious concern, through the UNFCCC process, on the use of international aviation as a potential source for the mobilization of revenue for climate finance to the other sectors, in order to ensure that international aviation is not targeted as a source of such revenue in a disproportionate manner. The Council also emphasized that the involvement of aviation experts as part of the delegations of the Parties to the UNFCCC would be of the utmost importance in order to better inform the UNFCCC process of ICAO's achievements in international aviation and climate change.

I therefore encourage national civil aviation authorities to liaise and coordinate with their government representatives to COP21 regarding the statements and positions of their State vis-à-vis international civil aviation and the inclusion of aviation experts in their national delegations to COP21. The COP21 will be held in Paris, France from 30 November to 11 December 2015.

Accept, Sir/Madam, the assurances of my highest consideration.


for Raymond Benjamin
Secretary General

Enclosure:

Excerpt from the Annex to the COP20 decision 1/CP.20
“Lima Call for Climate Action”

ATTACHMENT to State letter E 2/58 – 15/37

**EXCERPT FROM THE UNFCCC COP20 DECISION
1/CP.20 “LIMA CALL FOR ACTION”**

“47. Financing for adaptation to be provided in the form of multilateral and/or bilateral financing, including via:

...

47.5 Option 1: Diverse sources, including private sources, engaged in the provision of financing for adaptation, with public finance to constitute the key instrument in increasing support for adaptation:

a. Identification of sources and prioritization of public funding, as well as increase of private sector financial contributions for adaptation;

b. Encourage the International Civil Aviation Organization and the International Maritime Organization to develop a levy scheme to provide financial support for the Adaptation Fund.

...”

— END —