International Civil Aviation Organization

WORKING PAPER

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ASSEMBLY — 36TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 17: Environmental protection

ENVIRONMENTAL PROTECTION IN CIVIL AVIATION

(Presented by the Arab Civil Aviation Commission)

EXECUTIVE SUMMARY

The Arab States have been working hard with the International Community on the issue of the environmental protection in Civil Aviation, in order to establish an environment which is free from harmful gazes and pollution. The Arab States have also been abiding by the International Conventions and Agreements in this context. Through this paper, the Arab States are inviting the International Community, through ICAO, to respect the above agreements and to apply the relevant Standards, by giving sufficient time and opportunities for more researches and studies. They also invite the manufacturing States to improve the performance engines to avoid the increasing costs and to provide an environmental friendly air transport product that is consistent with the specifications developed by CAEP and ICAO.

Action: The Assembly is invited to:

a) allow for sufficient time to carry out further research and studies;
b) ensure compliance with negotiated bilateral and multilateral conventions in this regard;
c) ensure an active participation by CAEP and fully support its activities;
d) reiterate the importance of provisions contained in DOC 8632 and Doc 9082 regarding fuel charges and taxation policies to avoid any potential adverse economic impact on air transport;
e) carry out a comparative study to evaluate the impact of emissions on the environment from air transport as opposed to other modes of transport, such as railroads and the maritime sector; and
f) call upon manufacturing states to seek improvements in engine performance and develop environment-friendly products in accordance with CAEP specifications.

Strategic Objectives:	This working paper relates to Strategic Objectives C (*Environmental Protection – Minimize the adverse effect of global civil aviation on the environment*).
Financial implications:	No additional financial resources required.
References:	Annex 16 – Environmental Protection

1. ICAO PROCEDURES AND POLICIES

1.1 The International Civil Aviation Organization approved, as part of its Strategic Objectives, several policies aimed at promoting civil aviation in accordance with the Chicago Convention signed in 1944.

1.2 Among these policies is the one on environmental protection, as the General Assembly adopted in 1968 a Resolution recognizing the seriousness of the noise issue, and then in 1971, it recognized the general environmental impacts. This was reflected in Annex 16, Volumes I and II, in the form of technical standards and controls in the field of environmental protection. These standards and controls are of utmost importance and need continuous monitoring. This is precisely the role played by ICAO through its efforts to reduce noise from aircraft engines on several stages, covering the following elements:

- procedures for measuring aircraft noise;
- peoples ability to withstand noise;
- aircraft noise certification;
- standards to limit aircraft noise; and
- land use control and procedures to limit noise during engine testing prior to take-off.

1.3 An ad-hoc committee was established to examine the effects on various types of aircraft. In 1983 the two committees on aircraft engine noise and emissions were merged to become the Committee on Aviation Environmental Protection (CAEP) as a subsidiary body of the ICAO Council. Since its inception, CAEP has further developed the Standards contained in Annex 16 regarding aircraft noise and aircraft engine emissions. This covers Carbon Monoxide, inflammable hydrocarbons and NO_X emissions from large turbo-jet and turbofan engines at subsonic speeds produced after 1986. These Standards are based on the landing and take-off cycles.

1.4 Annex 16, Volume II, contains details regarding measuring techniques, detailed specifications and statistical methods for evaluation as follows:

- Annex 16, Volume II – Appendix 1 on measurements
- Annex 16, Volume II – Appendix 2 on smoke emission evaluation
- Annex 16, Volume II – Appendix 3 on gaseous emissions
- Annex 16, Volume II – Appendix 4 on turbine engine emission testing
- Annex 16, Volume II – Appendix 5 on emissions from after burning gas turbine engines
- Annex 16, Volume II – Appendix 6 on compliance procedures for gaseous emissions and smoke.

1.5 Regarding aircraft emissions, there has been a change in the focus of ICAO which previously dealt with the quality of air at the vicinity of airports. In the nineties however, it expanded its work to include problems created in the global atmosphere due to aircraft engine emissions such as "climate change" in general. Therefore, it attached a greater importance to the development of ICAO

Standards regarding emissions during the cruising stage of the flight rather than the landing and take-off cycle.

1.6 In 1993 and 1999, upon the recommendations of CAEP, the ICAO Council adopted more stringent Standards to limit NO_X emissions and is still considering the development of more Standards. In the twenty first century, environmental protection has become the biggest challenge facing civil aviation, and Annex 16 was consequently updated as a response to new environmental protection requirements.

2. UNILATERAL EUROPEAN ACTION

2.1 In this regard, the European Community has taken important decisions in the field of environmental protection and they were subsequently endorsed by the European Parliament . They cover the field of aviation by Decision 11/3/2003, regarding certificates of conformity for aircraft engine emissions, fuel vents and fuel disposal known as Certificate CS - 34,1. It is issued in accordance with international specifications and standards.

2.2 Refer to the above-mentioned Decision for further information

2.3 Moreover, the European Community adopted, through the European Parliament, a document known as GREEN HOUSE-2003/87/EC on emission allowances according to Circular 96/61/EC. It was later amended in Brussels by Decision 20/12/2006. The European Community stated in its Foreword to the Amendment that growth in aviation activity has increased emissions from the year 1990 to 2003 by 87%. The European Community therefore believes that there is a serious risk to the environment until the year 2012.

2.4 It is widely recognized that civil aviation is not covered by the Kyoto Protocol, and that there is therefore no legally binding mandate for civil aviation. The European Community also found that there is a need for more research as well as legal, financial and technical studies. From the European perspective, economic, environmental and competitive evaluations show that the airlines of the world are only impacted by changes in the following operational parameters:

1) time and length of the flight;

2) age of the aircraft; and

3) payload.

2.5 This means that older aircraft, shorter flights with less passengers and smaller payloads will be more directly impacted. There will also be an effect on the usage of airports if the landings and take-offs are considered to be the cause of environmental damage. The European Community has therefore imposed quotas on every tonne-kilometre for the operators and their States for aircraft landing and taking-off in the European airspace (refer to the Decision for further clarifications). This European Decision was taking unilaterally rather than on the International level, and it has been ratified by the European Parliament. It creates an obligation outside the context of the international community where international standards and criteria should be adopted and made binding according to the Chicago Convention which, as previously noted, does not include environmental protection. For further information, please refer to the European document No. 2006/0304 COD/COM 2006-818 dated 20/12/2006. This document has identified the local European flights that will be affected in the year 2011 and the international ones in the year 2012.

3. VIEW OF THE ARAB GROUP

3.1 There is no doubt that the considerable importance given to Environmental protection by the European Community had a general positive impact and this view is shared by ACAC Members.

3.2 However, this also led to unilateral action being taken outside the context of ICAO's international forum and the context of bilateral air service agreements. The Arab Group therefore believes that there should be further discussions and deliberations in CAEP on environmental issues and on how to develop Standards and specifications, while taking advantage of technical cooperation opportunities and work with all States to ensure implementation in a timely manner. This will facilitate the work for the rest of the international community to monitor the implementation of Standards and effectively protect the environment in accordance with the international treaties, particularly the Chicago Convention. Recently, calls were made to include in it the issue of environment. The Arab Group believes that there is an economic dimension to such a step as there is a need to encourage and support the air transport sector. There is also a need to address the issue of the manufacturers of engines that produce emissions and explore ways to enhance their performance while make them more environment-friendly. In such a way, the cost will not be borne by the operator or the state of the operator alone. There is also a concern for European carriers as their operations will be adversely affected due to higher operational costs and lower profitability. Some estimates put this figure somewhere between 12.83 and 54.71 U.S. billion Dollars during the period from 2011-2022.

3.3 The cost of purchasing allowances alone could be as high as 45 billion Euros during this period.

3.4 There will also be a negative impact on cargo and passenger traffic as the options available to the consumer would be restricted. This in turn means more job losses, and some estimates put them at between 8,000 and 42,000 jobs. It should be mentioned that Arab airline aircraft fleets have an average age of nine years. This average is much higher in other regions of the world, reflecting an excellent Arab record in terms of emissions. It should also be made clear that the average capacity on Arab aircraft is 277 seats, which compares positively with the other regions of the world where this average is between 110 and 220 seats. The Arab airlines contribution to emissions per available seat is therefore much less than the world's carriers.

4. ACAC RESOLUTION

4.1 The Arab Group, working through ACAC, made considerable efforts with the International Civil Aviation Organization in the field of environmental protection to create an environment free of harmful emissions and pollution. The ACAC Assembly has therefore adopted Resolution No. 45-M P/8 stressing the utmost importance of environment and the need to limit pollution in accordance with international treaties and conventions.

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