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INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASSEMBLY — 35TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 15: Environmental protection

REPORT BY THE COUNCIL ON MARKET-BASED MEASURES REGARDING AIRCRAFT ENGINE EMISSIONS

SUMMARY

This paper reports on the Council's work with regard to the application of market-based measures to limit or reduce greenhouse gas emissions from civil aviation.

Action by the Assembly is in paragraph 8.

REFERENCES

A35-WP/77

A35-WP/56

Doc 9791, *Report and Minutes of the Executive Committee of the 33rd Session of the Assembly*

Doc 9082, *ICAO's Policies on Charges for Airports and Air Navigation Services*

Doc 8632, *ICAO's Policies on Taxation in the Field of International Air Transport*

State letter AN 1/17.9-97/62 dated 11 June 1997

1. INTRODUCTION

1.1 In 2001, the 33rd Session of the Assembly gave direction to the Organization's work on aircraft engine emissions. *Inter alia*, it requested the Council "to continue to study policy options to limit or reduce the environmental impact of aircraft engine emissions and to develop concrete proposals and provide advice as soon as possible to the Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC), placing special emphasis on the use of technical solutions while continuing its consideration of market-based measures, and taking into account potential implications for developing as well as developed countries" (Assembly Resolution A33-7 , Appendix H, Clause 3 b)).

1.2 Market-based measures are policy tools that are designed to achieve environmental goals at a lower cost and in a more flexible manner than traditional regulatory measures. Three market-based measures have been under consideration by ICAO, namely voluntary measures, emission-related levies and emissions trading. Each of these measures is at a different stage of consideration by the Organization, for example in the extent to which ICAO guidance already exists. On this subject, the Assembly made a number of more detailed requests to the Council in Assembly Resolution A33-7, Appendix I, *Market-based measures regarding aircraft engine emissions*. The Assembly requested the Council “to continue to develop guidance for States on the application of market-based measures aimed at reducing or limiting the environmental impact of aircraft engine emissions, particularly with respect to mitigating the impact of aviation on climate change” (Clause 1), and “to evaluate the costs and benefits of the various measures with the goal of addressing aircraft engine emissions in the most cost-effective manner” (Clause 2).

1.3 This paper provides information relevant to all three market-based measures, summarises the progress made since the 33rd Session of the Assembly on each of these measures and outlines how the Council proposes to carry work forward in the 2005-2007 triennium.

2. INFORMATION RELEVANT TO ALL THREE MARKET-BASED MEASURES

2.1 Work on this subject has largely been undertaken through the Council’s Committee on Aviation Environmental Protection (CAEP). This committee held its sixth meeting (CAEP/6) in February 2004 and its recommendations on this subject were subsequently approved by the Council during its 172nd Session in May 2004.

2.2 While aircraft engine emissions have a potential impact both at a local level and globally, this work on market-based measures has focussed on the global impact, consistent with the emphasis contained in the Assembly Resolution. It has been assumed that the market-based measures would target carbon dioxide (CO₂) emissions, while leaving open the possibility of later extending this work to other greenhouse gas emissions from aviation.

2.3 As is explained in the preambular clauses of Assembly Resolution A33-7, Appendix H, the Kyoto Protocol to the UNFCCC calls for developed countries to pursue limitation or reduction of greenhouse gases from “aviation bunker fuels”, working through ICAO (Article 2.2). Since it was already known that some States did not intend to ratify the Kyoto Protocol, the active clauses of the resolution regarding ICAO’s future work on aircraft engine emissions refer to “the UNFCCC process”, rather than to the Kyoto Protocol. Nevertheless, developments related to the Kyoto Protocol – including the fact that it has not yet come into force, and the question of whether it will do so – have understandably influenced some States in their approach to the work on market-based measures and, as a consequence, progress on this subject has been slower than anticipated.

2.4 As required by Assembly Resolution A33-7, Appendix I, the work on market-based measures has attempted to take into account potential implications for developing as well as developed countries. In this connection, developing countries have pointed to the fact that one of the principles enshrined in the UNFCCC is that industrialised countries are required to take the lead in addressing emissions. This has given rise to questions as to whether developing countries should be given special treatment in some way in the design of market-based measures, for example by exempting the airlines of these countries and/or routes to and from these countries. This matter has remained largely unresolved at the CAEP level and the Council has

requested CAEP to give high priority to such questions in its further work on emissions trading and emission-related charges.

3. VOLUNTARY MEASURES

3.1 In 2001, the Assembly encouraged short-term action by States to limit or reduce international aviation emissions through voluntary measures and urged the Council to facilitate actions by developing guidelines, including a template voluntary agreement (Assembly Resolution A33-7, Appendix I, Clause 2 a)).

3.2 CAEP has since developed a Template Agreement - Memorandum of Understanding that States and other parties concerned could use, along with associated guidance on voluntary measures to limit or reduce CO₂ emissions. The Council has approved a CAEP/6 recommendation that this material be posted on the general ICAO web site for dissemination to States and interested organizations.

3.3 As part of its future work, CAEP will monitor the implementation of voluntary agreements.

4. EMISSIONS TRADING

4.1 In 2001, the Assembly endorsed the development of an open emissions trading system for international aviation. It requested the Council to develop as a matter of priority the guidelines for open emissions trading for international aviation focussing on establishing the structural and legal basis for aviation's participation in an open trading system, and including key elements such as reporting, monitoring, and compliance, while providing flexibility to the maximum extent possible consistent with the UNFCCC process (Assembly Resolution A33-7, Appendix I, Clause 2 c)).

4.2 Since 2001 there have been some significant developments in the emissions trading field. Within the UNFCCC process, States have agreed on some of the technical details for emissions trading schemes as they relate to greenhouse gases. Meanwhile, some States and regional bodies have announced plans to introduce emissions trading schemes. At present, none of these schemes includes emissions from international aviation.

4.3 Recognizing the complexity of the request from the Assembly in these changing circumstances, CAEP enlisted the assistance of consultants in exploring a number of different emissions trading options and their implications. The consultancy report, once it is completed, is expected to provide a valuable resource of information on the concept of emissions trading in aviation to assist the development of guidance for States and the aviation community on this subject.

4.4 In the light of this work, CAEP/6 considered three possible avenues for implementing an open emissions trading system. It recommended – and the Council has since approved – that further work should focus on two approaches. Under one approach, ICAO would support the development of a voluntary trading system that interested States and international organizations might propose. Under the other approach, ICAO would provide guidance for use by States, as appropriate, to incorporate emissions from international aviation into States' emissions trading schemes consistent with the UNFCCC process.

5. EMISSION-RELATED CHARGES

5.1 On 9 December 1996, the Council had adopted a policy statement of an interim nature on emission-related charges and taxes in the form of a resolution wherein the Council noted the differing views of States on this subject and strongly recommended that any such levies be in the form of charges rather than taxes, and that the funds collected should be applied in the first instance to mitigating the environmental impact of aircraft engine emissions (State letter AN 1/17.9-97/62). Assembly Resolution A33-7, Appendix I, further clarified the Council guidance by stating that such charges should be based on the costs of mitigating the environmental impact of aircraft engine emissions to the extent that such costs can be properly identified and directly attributed to air transport. In 2001, the Assembly recognized the continuing validity of that resolution and urged the Council to carry out further studies and develop further guidance (Assembly Resolution A33-7, Appendix I, Clause 2 b)).

5.2 In response to this Assembly request, CAEP elaborated a draft framework of further guidance to address issues that could arise if some States were to implement a charge related to CO₂ emissions. However, CAEP/6 was unable to arrive at a consensus on the use of this guidance because of a number of outstanding issues. The conclusion was reached that while scope remained for further study of points raised, it was questionable if CAEP could resolve these problems due to different views on essential aspects, without additional guidance from the Council.

5.3 The Council has since considered this matter. It was noted that when the current Council guidance was adopted in 1996, some States considered emission-related charges desirable and would consider introducing them, while other States had no intention of doing so. These different positions were recognised in the 1996 guidance. Today, this dichotomy remains, although in the intervening period a better understanding of the subject has been achieved. There have also been developments affecting some States' positions. In particular, some industrialised countries have entered into new commitments concerning greenhouse gases.

5.4 There are a number of outstanding issues that would need to be resolved if further progress is to be made. These include the following (the order in which they are listed does not necessarily reflect an order of importance):

- a) If some States were to implement CO₂ emissions charges, there might be adverse effects for other States, for example benefits accruing from air transport might be reduced and there might be increased costs for their airlines. There are particular concerns regarding impacts on developing countries (see also para. 2.4 above).
- b) Given that the justification for CO₂ emissions charges is to address a global environmental problem, the question arises as to how individual States would use the funds collected. This contrasts with environmental charges to address local problems (such as noise or local air quality) where the uses to which charges are put are better understood and more easily assessed.
- c) The relationship between possible CO₂ emissions charges and existing ICAO policies on charges in general (*ICAO's Policies on Charges for Airports and Air Navigation Services*, Doc 9082) gives rise to questions that have not been fully resolved. For example, given the basic principle in ICAO policies that a charge has to be related to the cost of either providing a facility or service or taking an action to mitigate an adverse

effect, views differ regarding the types of costs that should be considered in the cost basis (for example, the cost of actual damage, or the cost of mitigating or preventing the environmental impact).

- d) Given the global nature of greenhouse gases, it is likely to be difficult for a CO₂ emissions charge to meet the criteria that emission-related charges should be based on the costs of mitigating the environmental impact of aircraft engine emissions “to the extent that such costs can be properly identified and directly attributed to air transport” (see para. 5.1 above).
- e) As explained in paragraph 1.2 above, the Assembly has stressed the importance of addressing aircraft engine emissions in the most cost-effective manner. The studies undertaken so far of the costs and benefits of CO₂ emissions charges are open to different interpretations, but give rise to doubts about cost-effectiveness.
- f) Views differ as to whether the draft framework of further guidance that has been developed within the CAEP process is sufficiently detailed to address the various problems that States would face.

5.5 The Council recognises that resolving these complex issues is likely to be a difficult task and has also noted that some possible new approaches have been identified by CAEP, although these ideas are not mature at present and would need further elaboration. The Council has concluded that further studies are needed, but found it premature to foresee the kind of studies that would be required, pending the Assembly’s consideration of this subject. The Secretary General has been requested to present a paper to the Council during its 173rd Session in November-December 2004, outlining a programme for further development and study on this and related matters.

5.6 In the light of the outstanding issues regarding CO₂ emissions charges, the Council is proposing to the Assembly that States be discouraged from imposing such charges until ICAO has conducted these further studies. This aspect is further elaborated in paragraphs 6.2 and 6.3 below.

6. **DRAFT TEXT TO REPLACE ASSEMBLY RESOLUTION A33-7, APPENDIX I**

6.1 The present Assembly Resolution A33-7 — *Consolidated statement to continuing ICAO policies and practices related to environmental protection* is due to be reviewed and updated by this Session of the Assembly. With that task in mind, the existing Appendix I, *Market-based measures regarding aircraft engine emissions* has been reviewed and updated and is presented in the Appendix to the present paper, for the Assembly’s consideration. (Resolution A33-7 will be considered as a whole in connection with A35-WP/77).

6.2 The Council wishes to draw attention to the following amendments that are proposed to the text on emission-related levies, in the light of its consideration of this subject (see paras. 5.3 to 5.6 above):

- a) a new preambular clause recognizing that the extensive studies which have been undertaken to provide additional guidance to States have identified a large number of outstanding issues on which there are different views;

- b) a new request to the Council to carry out further studies and develop additional guidance, with a particular focus on the outstanding issues identified in earlier studies (Clause 2 b) 5));
- c) a new clause recognizing that existing ICAO guidance is not sufficient at present to implement the application of greenhouse gas emissions charges (Clause 2 b) 3)); and
- d) in order to discourage States from imposing CO₂ emissions charges (see para. 5.6 above), the existing Clause 2 b) 3), which urges States to refrain from unilateral action to introduce emission-related levies inconsistent with the present guidance, would be made more restrictive. As amended, it would simply urge States to refrain from unilateral action to introduce emission-related levies (renumbered as Clause 2 b) 4)).

6.3 While the above-mentioned amendments are supported by a majority of Council Representatives, the Representatives of several European States expressed a minority view on this subject. These States are not convinced that further studies are likely to achieve useful results. They are also unable to accept the amendments described in paragraphs 6.2 c) and d) above, preferring to maintain the existing text in Resolution A33-7 which provides scope for action consistent with the current ICAO guidance, if needed. They consider that removing this possibility would be a retrograde step for ICAO and that it could undermine ICAO's credibility in the emissions field. In these circumstances, these States have expressed reservations concerning the proposed amendments related to emission-related levies, as well as to certain other proposed amendments to Appendix I (the first sentence of Clause 2; Clause 2 a) 2); and Clause 2 c) 2)).

7. FINANCIAL IMPACT OF THE PROPOSED ACTION¹

7.1 The proposed work set out in paragraphs 3, 4 and 5 is expected to be undertaken within the resources available under Programme 3.6, Environmental Protection, of the draft Programme Budget 2005-2007. However, the extent to which the Secretariat would be called upon to contribute to the studies on emissions trading (see para. 4.4) and to any further work on CO₂ emissions charges (see para. 5.5) is difficult to determine at present and additional resources might be needed.

8. ACTION BY THE ASSEMBLY

8.1 The Assembly is invited to note this report and:

- a) offer comments and advice relevant to the Organization's work with regard to the application of market-based measures to limit or reduce greenhouse gas emissions from civil aviation; and
- b) review the draft text in the Appendix to replace the present Appendix I of Assembly Resolution A33-7, taking into account the information provided in this paper and, in particular, the issues raised in paragraphs 6.2 and 6.3 above.

¹ This information is presented only to indicate the estimated financial impact of the proposed action. The funds allocated to this proposed action will depend upon the final form of the Programme Budget for the Organization for 2005-2006-2007 approved by the Assembly.

APPENDIX

DRAFT REVISION OF APPENDIX I OF ASSEMBLY RESOLUTION A33-7

Market-based measures regarding aircraft engine emissions

Whereas Appendix H of this Resolution sets the general context in which policy options including market-based measures are considered as a means of limiting or reducing the environmental impact of aircraft engine emissions;

Whereas market-based measures are policy tools that are designed to achieve environmental goals at a lower cost and in a more flexible manner than traditional regulatory measures;

Whereas in recent years there has been increasing recognition by governments of the need for each economic sector to pay the full cost of the environmental damage it causes and the subject of market-based measures for protecting the environment, including charges or taxes on air transport, an emissions trading system or voluntary measures, has been raised, for example, in the context of controlling greenhouse gas emissions;

Whereas Principle 16 of the Rio Declaration on Environment and Development (1992) states that “National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment”;

Whereas the Kyoto Protocol treats international and domestic emissions from the aviation sector differently, the potential advantages of harmonizing treatment of the two categories of emissions have been noted and it has been acknowledged that some States or groups of States are already taking action to design options for reducing emissions from domestic sectors, including domestic aviation emissions;

Whereas ICAO policies make a conceptual distinction between a charge and a tax, in that “a charge is a levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation, and a tax is a levy that is designed to raise national or local government revenues which are generally not applied to civil aviation in their entirety or on a cost-specific basis”;

Whereas ICAO has developed policy guidance to States on taxation (*ICAO’s Policies on Taxation in the Field of International Air Transport*, Doc 8632), which recommends *inter alia* the reciprocal exemption from all taxes levied on fuel taken on board by aircraft in connection with international air services, a policy implemented in practice through bilateral air services agreements, and also calls on States to the fullest practicable extent to reduce or eliminate taxes related to the sale or use of international air transport;

Whereas Article 15 of the *Convention on International Civil Aviation* contains provisions regarding airport and similar charges, including the principle of non-discrimination, and ICAO has developed policy guidance for States regarding charges (*ICAO’s Policies on Charges for Airports and Air Navigation Services*, Doc 9082) including specific guidance on noise-related charges;

Whereas the ICAO Council has adopted on 9 December 1996 a policy statement of an interim nature on emission-related charges and taxes in the form of a resolution wherein the Council strongly recommends that any such levies be in the form of charges rather than taxes, and that the funds collected should be applied in the first instance to mitigating the environmental impact of aircraft engine emissions;

Whereas such charges should be based on the costs of mitigating the environmental impact of aircraft engine emissions to the extent that such costs can be properly identified and directly attributed to air transport;

Noting that the Council has received a reports from its Committee on Aviation Environmental Protection (CAEP) on possible options regarding the use of market-based measures to limit or reduce aircraft engine emissions, initially focussing on carbon dioxide, and that further work is planned;

Noting that analyses conducted by CAEP have shown that an open further studies and guidance are needed for the use of an emissions-trading system* was a cost effective measure to limit or reduce carbon dioxide emitted by for international civil aviation in the long-term;

Noting that in the short-term a template agreement and associated guidance has been prepared by CAEP for the use of voluntary measures* could serve as a first step towards future actions to further reduce emissions by States and interested parties in the short-term; and

Recognizing that further studies and further guidance are needed for the use of levies in the short-term;

Recognizing that the extensive studies which have been undertaken to provide additional guidance to States regarding emission-related levies have identified a large number of outstanding issues on which there are different views;

The Assembly:

1. *Requests* the Council to continue to develop guidance for States on the application of market-based measures aimed at reducing or limiting the environmental impact of aircraft engine emissions, particularly with respect to mitigating the impact of aviation on climate change; and to develop concrete proposals and provide advice as soon as possible to the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC);

2. *Encourages* States and the Council, taking into account the interests of all parties concerned, including potential impacts on the developing world, to evaluate the costs and benefits of the various measures, including existing measures, with the goal of addressing aircraft engine emissions in the most cost-effective manner and to adopt actions consistent with the framework outlined below, with States striving to take action in a consistent manner to both domestic and international aviation emissions:

a) Voluntary measures

1) *Encourages* short-term action by States, and other parties involved, to limit or reduce international aviation emissions, in particular through voluntary measures and to keep ICAO informed; and

- 2) ~~Urges the Council~~ *Requests* the Secretary General to facilitate such actions by ~~developing~~ making available guidelines (e.g., for ~~quantifying, monitoring and verifying emission reductions or actions~~) that ICAO has developed for such measures, including a template voluntary agreement, ~~as appropriate~~, and to work to ensure that those taking early action would benefit from such actions and would not subsequently be penalized for so doing;
- b) Emission-related levies
- 1) *Recognizes* the continuing validity of Council's Resolution of 9 December 1996 regarding emission-related levies;
 - 2) *Urges* States to follow the current guidance contained therein;
 - 3) *Recognizes* that existing ICAO guidance is not sufficient at present to implement the application of greenhouse gas emissions charges;
 - 3) 4) *Urges* States to refrain from unilateral action to introduce emission-related levies ~~inconsistent with the current guidance~~; and
 - 4) 5) ~~Urges the Council to carry out further studies and develop further guidance on the subject~~ *Requests* the Council to carry out further studies and develop additional guidance on the subject, with a particular focus on the outstanding issues identified in earlier studies;
- c) Emissions trading
- 1) *Endorses* the further development of an open emissions trading system for international aviation; and
 - 2) *Requests* the Council, in its further work on this subject, to focus on two approaches. Under one approach, ICAO would support the development of a voluntary trading system that interested States and international organizations might propose. Under the other approach, ICAO would provide guidance for use by States, as appropriate, to incorporate emissions from international aviation into States' emissions trading schemes consistent with the UNFCCC process. ~~to develop as a matter of priority the guidelines for open emissions trading for international aviation focussing on establishing the structural and legal basis for aviation's participation in an open trading system, and including key elements such as reporting, monitoring, and compliance, while providing flexibility to the maximum extent possible consistent with the UNFCCC process should pursue.~~ Under both approaches, the Council should ensure the guidelines for an open emissions trading system establish the structural and legal basis for aviation's participation in an open emissions trading system, including key elements such as reporting, monitoring and compliance.