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signed by Mrs Patricia BUGNOT, Director

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to: Mr Javier SOLANA, Secretary-General/High Representative

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Impact of International Aviation on Climate Change: Preparations for the
35th Assembly of the International Civil Aviation Organisation (ICAO)

Delegations will find attached Commission document SEC(2004) 923.

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COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMISSION STAFF WORKING DOCUMENT

**Impact of International Aviation on Climate Change: Preparations for the 35th
Assembly of the International Civil Aviation Organisation (ICAO)**

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1. INTRODUCTION

In 1999 the Intergovernmental Panel on Climate Change (IPCC) concluded that aviation emissions significantly alter atmospheric composition thereby affecting global climate. They noted that unless action is taken the adverse effect of climate change was likely to grow given the projected increase in air traffic¹. Since then the events of 11 September 2001, the SARS epidemic and the second Gulf War have to some extent reduced demand for air travel. But now the signs are that demand is increasing and that strong growth in aviation is again likely with clear implications for climate change and its adverse impacts². Moreover, the latest results EU-sponsored research indicate that the IPCC may have underestimated the atmospheric radiative forcing caused by aircraft emissions, resulting in enhanced warming effects at the earth's surface³.

The EU has consistently demonstrated leadership and commitment in international efforts to counter the effects of global warming, not least in its full participation in the work being done under the United Nations Framework Convention on Climate Change (UNFCCC) and the early ratification of the Kyoto Protocol. Despite this, no specific harmonised measures to deal with aviation's climate change impact have yet been included in the EU's policies to address climate change. Hence action is necessary.

This Working Document is concerned with the use of economic instruments, sometimes referred to as market-based measures, to limit or reduce the impact of aviation on climate. Such measures are consistent with the endeavour, agreed in Principle 16 of the Rio Declaration on Environment and Development (1992) reaffirmed by the Johannesburg World Summit on Sustainable Development (2002) and referred to also in the existing environmental Resolution (A33-7) of the International Civil Aviation Organisation (ICAO)

...to promote the internalisation 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.

The use of market-based measures in aviation directly concerns the EU, as it may affect the international competitiveness of its aviation industry. It is also a key issue for consideration at the forthcoming ICAO Assembly (September/October 2004) and for this reason it is very important to formulate a commonly shared EU position upon it.

¹ IPCC Special Report, *Aviation & the Global Atmosphere*, 1999.

² According to ICAO analysis presented in February 2004, the world passenger aircraft fleet could double by 2020 - an increase from 12317 in 2002 to roughly 25000 aircraft in 2020.

³ *TRADEOFF Aircraft emissions: Contributions of various climate compounds to changes in composition and radiative forcing – tradeoffs to reduce atmospheric impact*, Environment & Sustainable Development Programme EC, Research DG, Contract no. EVK2-CT-1999-0030.

2. THE PRESENT SITUATION

2.1. Action by the International Aviation Community

Climate change is a global problem and ideally any solution would be agreed and applied globally. ICAO has been studying the possible use of market-based measures to tackle the impact of international aviation on climate change since 1991. Basically, three types of measures are envisaged – **emissions trading** and **emissions levies** (taxes or charges) – either of which could possibly be preceded by or introduced in combination with some form of **voluntary agreement** to limit emissions.

Emissions trading essentially involves placing a limit ('cap') upon the emission of greenhouse gases, thereby mitigating climate change. Allowances may be issued to participants covering a percentage of the total emissions permitted – this percentage would depend on the stringency of the cap and on other factors such as projected growth rates. Participants must either reduce emissions to the level set by the allowances they hold or buy further allowances to cover the difference. If participants reduce their impact *below* the level set by their holding, they can bank or sell the excess allowances. To demonstrate compliance every participant must hold allowances at least equal to their climate change impact. The market price for allowances reflects the marginal cost of reducing emissions across the scheme. Thus allowances could be bought from whichever sectors in the scheme find it cheapest to reduce their emissions. Participants have a direct incentive to innovate and invest in cleaner technologies to reduce their compliance costs. Emission trading is generally regarded as more flexible and cost-effective than conventional 'command and control' regulatory regimes and more or less equivalent to the imposition of levies (taxes and charges).

An emission levy, i.e. the imposition of a tax or a charge at a level varying with the volume of gas actually emitted, while conceptually simpler than trading could give rise to international legal and political issues, including for example the question of equity with carriers operating in but not registered in the state imposing the levy. Given that the proceeds of a charge, unlike those of a tax, could remain within the sector and be applied to fund action to mitigate the environmental damage, a charge may be more desirable than a tax from the EU aviation industry's viewpoint. From a wider EU point of view, however, a tax has advantages in terms of equity across economic sectors since, with very few exceptions, energy consumption is exposed to excise duties.

In February 2004, ICAO's Committee for Aviation Environmental Protection (CAEP) considered the issues of emissions trading and levies. Concerning **emissions trading** CAEP agreed that the idea of an aviation specific system based on a new legal instrument under ICAO auspices was unattractive and should not be pursued further. Instead, CAEP recommended that ICAO should prepare guidance for states wishing to incorporate international aviation in their emission trading schemes established in order to tackle climate change and to meet their commitments under the UNFCCC and Kyoto process. It also recommended that ICAO should support the development of a voluntary emission trading regime that states or international organisations might propose.

On the subject of **emission levies** ICAO makes a distinction between taxes and charges. Existing ICAO policy does not favour the imposition of taxes in international aviation. However, CAEP as the competent technical body of ICAO could also not agree on further guidance to states wishing to introduce a CO₂-related charge aimed at countering the climate change impact of aviation. The ICAO Council, which is preparing for the 35th ICAO General Assembly in September/October 2004, has therefore been asked to advise on what should be done about this issue. Work to review and update ICAO's environmental policies is expected before and during the Assembly and the issue of appropriate modalities for the use of charges

targeting the global impact of international aviation is likely to be particularly difficult to agree upon within ICAO.

In parallel, aviation is attracting increasing attention within the UNFCCC. At the 9th Conference of the Parties in December 2003 it was noted that emissions of Annex I Parties from international aviation had increased by more than 40 per cent by the end of the period 1990–2000⁴. However, the Parties of the UNFCCC have not yet been able to agree on how to include emissions from international aviation in national inventories. These emissions therefore continue to be reported separately and consequently remain outside the scope of the quantitative commitments made by Annex B Parties to the Kyoto Protocol.

Thus to date no international action to deal with the problem of emissions effectively has been agreed at global level.

2.2. Action by the European Union

Since the Commission's Communication on Air transport and the Environment in 1999, recognition of the need for action at EU level has been consistently underscored by Council conclusions and European Parliamentary resolutions on the Communication itself, on the taxation of aircraft fuel, on the Commission's Transport White Paper, on the European Climate Change Programme, and on the Integration of Environment and Sustainable Development into Transport Policy⁵. Most recently, when preparing for the Ninth Meeting of the Conference of the Parties to the UN Framework Convention on Climate Change, the Council of Ministers concluded:

Considering the significant increase of GHG emissions related to the use of the international bunker fuels since 1990, the Council believes that specific measures to reduce these emissions are of the utmost importance. The Council recalls the need for urgent action to reduce GHG emissions related to the use of international bunker fuels, taking into account the agreement in the 6th Environmental Action Programme that the European Community has approved, from which specific action to deal reduce GHG emissions from aviation and marine transportation should have been identified within ICAO by 2002 and within IMO by 2003. The Council reiterates its invitation to the Commission of December 2001 and October 2002 to consider in a timely fashion such action and to make proposals before 2005. In addition the Council considers that the discussion on the future climate change regime should address the treatment of emissions from international aviation and marine transportation, and that the European Community and its Member States should work to this end in UNFCCC, ICAO and IMO⁶.

⁴ Decision 1/CP.9 (FCCC/CP/2003/6/Add.1).

⁵ Communication Air Transport & the Environment, 1 December 1999 – COM (1999) 640. European Parliament Resolution on COM (1999) 640, 7 September 2000 – A5-0187/2000. Council Conclusions on COM (1999) 640, 28 March 2001 – Adopted 2252nd Council meeting – TRANSPORT – Brussels. European Parliament Resolution on taxation of aircraft fuel, 14 December 2000 – A5-0334/2000. Council Conclusions on Taxation of aircraft fuel, 29 June 2000 – Adopted 2281st Council meeting – HEALTH – Luxembourg. Commission White Paper *European transport policy for 2010: time to decide* - COM (2001) 370. European Parliament Resolution on COM (2001) 370, 12 February 2003 – PT-TA(2003) 054. Council Conclusions on European Climate Change Programme, 12 December 2001 – Adopted 2399th Council meeting – ENVIRONMENT – Brussels. Council Conclusions on 2nd review of its strategy on integrating environment and sustainable development into transport policy, 13 December 2002 – TRANSPORT – Brussels.

⁶ Council Conclusions on Ninth Conference of Parties, 1 December 2003 – Adopted at 2549th Council meeting, Brussels.

To date, however, the EU has taken no policy decision on the implementation of specific measures and therefore this issue will have to be addressed soon.

3. EUROPEAN UNION OBJECTIVES AT ICAO

Given the broad international agreement to take action against global climate change, expressed through the UNFCCC and Kyoto Protocol, the EU had reason to expect constructive support and swift progress from the international aviation community. However the very different positions now taken by ICAO contracting states have effectively prevented any significant progress since.

The unwillingness of developing countries to commit themselves to more demanding policies before they see clear leadership from industrialised countries, combined with the lack of such action from several important industrialised partners such as Australia and the United States, makes it unlikely that significant progress through ICAO can be expected in the foreseeable future. Indeed, current ICAO policy as formulated by the ICAO Council in 1996⁷ explicitly recognises that

“...the development of an internationally agreed environmental charge or tax on air transport that all States would be expected to impose would appear not to be practicable at this time given the differing views of States and the significant organizational and practical implementation problems that would be likely to arise”

The continuing validity of this assertion was confirmed by Contracting States at the 33rd Assembly in 2001, and the CAEP meeting in February 2004 clearly showed that this still accurately reflects the situation.

Therefore, consistent with existing ICAO environmental policy⁸, EU should seek decisions at ICAO to confirm that, in discharging their obligation to work through ICAO to limit and reduce emissions from international aviation⁹, states should be able to act – and act effectively – to deal with these emissions. Indeed the EU believes that ICAO, as a member of the UN ‘family’ of which UNFCCC is a key element, itself has a responsibility to support its members in taking such action.

The Commission believes that the EU needs a policy framework that allows action to deal with emissions from international aviation, ***without precluding at this stage any market-based measures*** – taxes, charges or emissions trading. This flexibility is necessary *inter alia* to allow equity in relation to the treatment of other transport modes and to enable action or further action to be taken in response to improvements in scientific knowledge about climate change and aviation’s impact upon it and to developments in the sector itself.

There is no certainty at present that one measure will suffice. To close any options at this stage when the impact of aviation on climate is far from stable let alone decreasing would be unacceptable. Moreover, while the intention would be to use only the most cost-effective option or combination of options necessary on grounds of environmental need, this option or combination of options cannot be divined in advance. For these reasons the Commission believes that it is essential that all options are kept open for action by ICAO contracting states until there is consensus among the international scientific community that the impact of aviation emissions on climate change is acceptable and adequately under control.

⁷ ICAO Council Resolution on Environmental Charges and Taxes, 9 December 1996.

⁸ Appendix I, ICAO Resolution A33-7 (2001).

⁹ Article 2.2 of the Kyoto Protocol.

Given that Member States and virtually all other ICAO Contracting States have ratified the UNFCCC and thus committed themselves to “...take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse impacts...”, the Commission further believes that ICAO should focus on aligning its policies to facilitate the efforts of its members in fulfilling this commitment, with particular attention on the phases of flight in international airspace .

4. ACTION THE EUROPEAN UNION MIGHT TAKE

The EU greenhouse gas (GHG) emissions trading scheme formally commences on 1 January 2005 and will cover GHG emissions from the energy and industry sectors.¹⁰ Some EU states have expressed an interest in pursuing the possibility of extending the scheme to cover emissions from aviation. However the Commission needs first to examine a number of technical and legal issues relating to the possible inclusion of aviation in the scheme. These issues include how to treat the climate change impact from international flights and how to address the full climate change impacts from aviation.

The EU could also pursue the possibility of a tax or charge.¹¹ A key consideration would be the need to avoid distortions of competition. As well as to EU carriers, any such tax or charge would need to be applicable on the same basis to non-EU carriers. The principle of non-discrimination is also reflected in Articles 11 and 15 of the Chicago Convention.

Lastly, as mentioned earlier, there is the possibility of these measures being introduced in association with, or complemented by, some form of voluntary agreement by the industry to limit its emissions. While it remains prepared to consider serious proposals for voluntary agreements, the Commission does not believe that such agreements alone will be sufficient to achieve the necessary effect and, given the many different stakeholders in aviation, is of the opinion that they would be difficult to implement.¹²

The precise choice as to which of these different market-based options should be implemented is a matter for further consideration. That consideration will need to take into account the following

- environmental effectiveness
- policy consistency
- equity with other modes of transport
- availability of alternative transport modes
- cost-effectiveness

¹⁰ This scheme is established under the provisions of the European Parliament and Council Directive 2003/87/EC of 13 October 2003.

¹¹ Following the adoption of Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity, aviation fuel continues to be exempt from taxes but Member States have the option to waive this exemption for fuel used both for domestic flights and, subject to mutual agreement, flights between EU Member States. It remains to be seen what use Member States make of this possibility; their scope to tax all carriers may be constrained by existing air service agreements with third countries. The Commission therefore believes that provisions requiring the mandatory exemption of aviation fuel should be removed from air service agreements when they are renegotiated.

¹² This view has been confirmed by recent OECD research which concluded that the environmental effectiveness of voluntary approaches is often questionable, and their economic efficiency is generally low (Voluntary Approaches for Environmental Policy: Effectiveness, Efficiency and Usage in Policy Mixes, OECD June 2003, ISBN 9264101772).

- potential distortions of competition.

The effect on competition is a particular concern of the industry. In principle, if aircraft operators are required to make a contribution, all operators should do so, irrespective of their state of registration. Not only will this avoid unfair competition it will reduce the risk of undermining the environmental integrity of the measure.

Regardless of which measures are eventually applied, it is important that the full climate change impact is addressed. The IPCC Special Report¹³ highlighted that, in contrast to many other sources, the total radiative forcing and thus the contribution to global warming from aviation is substantially higher than the effect of CO₂ emissions alone.

5. CONCLUSION AND RECOMMENDATION

Given its commitments the EU must be able to pursue policies that allow this region to incorporate the aviation sector properly in its overall approach to addressing climate change. In deciding what environmental action is appropriate and adequate for the aviation sector the EU and its Member States must be able to exert their powers in this field fully and without hindrance. But the key concern at this juncture is that there should be available the widest possible internationally accepted range of policy measures from which to choose.

The Commission therefore recommends that, in participating in the forthcoming ICAO Assembly, the EU Member States should seek an outcome that

- keeps all options for market-based measures open so enabling EU to apply whatever market-based measures environmental necessity requires,
- accepts the principle that measures applied to EU carriers should be applicable on an equal basis to non-EU carriers for reasons of environmental integrity and fair competition,
- acknowledges the need for ICAO policies to help the majority of Contracting States discharge their commitments as parties to the UNFCCC to take precautionary measures to combat climate change.

The Commission, in consultation with EU Member States and stakeholders, will then seek to agree and announce a package of proposals to deal with the full impact of aviation on climate change in 2005.

The Commission proposes that the Council should prepare for a resolution from the 35th Assembly of ICAO reflecting the foregoing objectives.

¹³ Ibid footnote 1.