

Abstract of Presentation

Noise and environmental pollution from civil aviation need a deep understanding for both the polluter and the sufferer. The “polluter must pay” concept would require the developed countries to pay for most, but the high burden for the developing countries to meet the cost of pollution needs to be looked at sympathetically. The concept of a small passenger levy for all international passengers is a good idea which has been developed by ICAO in the context of an International Financial Facility for Aviation Safety (IFFAS). This fund should also cover issues under civil aviation pollution.

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Sanat Kaul holds a Ph.D. in economics from University of London and is a member of the Indian Administrative Service, which he joined in 1971.

He has held varied jobs in the federal Government, State Government and in the public sector. These include important positions in the Government of Delhi such as Secretary, Land Use Planning and Public Transportation.

Presently he is handling all issues relating to the international sector in civil aviation. This includes all bilateral service negotiations and multilateral issues, including relations with ICAO and other bodies.

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Speech by Dr. Sanat Kaul, the Indian delegate to the Colloquium on the Environmental Aspects of Aviation: 9 to 11 April 2001.

Mr. Chairman,

1. I am indeed thankful to you for inviting me to this Colloquium which has the potential to be the most important meeting on our understanding of Environmental Protection in the area of Civil Aviation and to lay down new ground rules. This would pave the way for the next Assembly Session to come out with path breaking resolutions based on the recommendations of this Colloquium.
2. Very briefly, I would like to recall that under the UN Framework, Convention on Climate Control (UNFCCC) and its KYOTO Protocol, it was decided to bring down greenhouse emissions to 1990 level by the year 2000. It also requires that the developed countries included in Annex 1 reduce their collective emissions of greenhouse gases by 5% by the period 2008-2012. When compared with the expected emission levels for 2000, this total reduction, if achieved, would actually be 10% as most of the Annex. I countries have not succeeded in meeting the target of returning their emissions to 1990 levels by the year 2001. Their emissions have, in fact, risen since 1990 and when compared with the expected emission levels by 2010, with emission control measures, the Protocol target represents 30% cut. I may also add that the Kyoto

Protocol contains a number of innovative features such as "clean development mechanism" which will enable Annex.I countries to finance emission-reduction projects in developing countries and receive credit for doing so. Further, an international "emission trading" regime will be established to allow Annex.I countries to buy and sell excess emissions credits amongst themselves. However, operational details are yet to be elaborated.

3. In so far as Civil Aviation is concerned, international aviation emissions were not included in the agreed targets and the responsibility for this was given to ICAO. The Council of ICAO set up a Committee on Aviation Environmental Protection (CAEP) which has submitted, including the most recent one, five reports covering both noise at ground level as well as aviation emissions both at the ground level as well as in the upper atmosphere.
4. On the issue of Engine emissions, the latest information provided by the Inter-Governmental Panel on Climate Change on Aviation and Global Atmosphere is rather encouraging. IPCC projection of 20% improvement in aircraft fuel efficiency between 1977 and 2015 is supported by the actual results presented by the Working Group 3 of CAEP Noise reduction technology is also progressing faster than the

IPCC scenario. However, despite promising research in the recent past, rate of progress of future research is getting doubtful due to uncertain funding. Increasing difficulty has been expressed in transforming noise reduction technology into products and also increasing expense of improving current technology. On CO₂ issue market pressures have already ensured fuel efficiency which is directly related to minimizing CO₂ emissions.

5. The Special Report on Aviation and the Global Atmosphere published in 1999 has stated that global passenger air travel is likely to grow at 5% per annum between 1990-2015 or 3% between 1990-2050. As a result, total aviation fuel may increase by 3% between 1990-2015 or 1.7% between 1990-2050. Emissions control, should in these circumstances, require some additional measures also. Notably amongst these measures ATM/CNS stands out as a major source of savings on emissions. This satellite based navigation system will improve overall fuel savings and reduce associated CO₂ emissions by 5% below 2015 project level. With the projected densities on air travel introduction of Satellite based navigation system becomes essential. But it is an expensive system, which requires huge funding.

6. Under its resolution A32/8, ICAO Assembly resolved in 1998 to meet the adverse environmental effects of Civil Aviation activities by application of integrated measures embracing technological improvements, appropriate operating procedures, proper organization of air traffic and appropriate use of airport planning and land use - control mechanism. It is worth noting that while the ozone layer problem has far wider ramifications, it is the noise problem that has taken strong roots in terms of public opposition in certain regions of the world – particularly in the developed world. As a result we now have not only curfew at airports at night time in Europe but operating restrictions are sought to be introduced by the developed countries. Restrictions on operating aircraft are being imposed not only to ensure compliance with noise certifications standards of Chapter 2 of Annex.16 but those that actually exceed the noise levels of Chapter 3 of Annex.16. ICAO has informed its members that on introduction of new noise certifications standards that are more stringent than of Chapter 3, they should not impose operating restrictions on Chapter 3 compliant aircraft. Such unilateral decisions not only inconvenience passengers coming into these countries, but also will prove very costly to their airlines.

7. The impact of operating restrictions for noise is a costly affair and States which want to impose it should consider the financial impact it will have on States which cannot afford such a standard. In an ideal situation, all operating aircraft should comply with lower noise standards. It is however, necessary to provide some comfort by permitting innovative systems to meet the new noise standards. I would like to remind this august gathering that it was only in the first few years of 1990s that airline industry lost collectively \$ 15 billion. Even now, with the tripling of oil prices, not many airlines are in profit. I may further add that while the world economy enjoyed a spectacular growth rate of almost 5% last year, the coming years do not look promising. The two biggest economies of the world i.e. U.S. and Japan, which together account for 46% of the world output could well be on the brink of a recession. Stock markets are tumbling almost everywhere and it has been estimated that in the last year nearly US\$ 10 trillion has been wiped off the global share value. It is worth considering whether in the present economic scenario, unilateral announcements by countries to apply more stringent noise standards than approved by ICAO are, in the best collective interest. Recent developments in Europe in the context acquire additional significance.

8. On the issue of noise, the 1990 ICAO resolution on world wide policy on operating restrictions is a careful balance between the developed countries and developing countries and takes into account the phasing out of Chapter 2 from 1995 till 2002 with certain exceptions. Aircraft Noise is related to the level of technological development and more stringent the condition, the higher the cost of development. No doubt, the new engines are quieter and more fuel-efficient, we have, however, to keep pace with technology development which is cost effective. Meanwhile, operational measures on new noise abatement take-off procedures and airport land use planning need to be commended and implemented.
9. From the above analysis it is clear that for both noise reduction and emission control, we require sufficient funding, especially for the developing countries. For this purpose, several market-based options have been examined by CAEP/5. These have been categorized in Taxes & Charges, Emission trading & Voluntary mechanism. These three types of market based options require an in-depth analysis.
10. Forecasting & Economic Analysis Support Group (FESG) has done a commendable task in providing CAEP members with comprehensive cost to airlines for acquiring or modifying aircraft to comply with the various noise and phase out policy options. With the help of MAGENTA (Model for Assessing Global Exposure to the Noise of Transport Aircraft) the

changes in number of people exposed to noise around airports has also been estimated. It has also provided CAEP the best benefits of various noise options to determine economic reasonableness.

11. According to FESG (Forecasting & Economic Analysis Support Group) the number of aircrafts in passenger service will increase to 19,000 in passenger service and freighter 3000 in the period 1998-2000. Of these 14,000 will be new passenger aircraft and 700 new freighters. In this scenario we have to consider the future of non-complaint aircraft based on the proposed noise strategy norms of Chapter 2 & 3. Under the replacement case non-compliant aircraft will necessarily be replaced by compliant aircraft. However, with re-certification they can continue to fly for some more time at certain costs. The airlines will be spending about US\$ 1000 billion on new aircraft between 1998-2020. If re-certification is allowed, it will cost a bit but the phase out time would get extended. It is also felt that binding engine manufactures to strict noise and emission standards could also lead to less efficient engines and heavier aircrafts. Since the progress by engine manufacturers on both counts is satisfactory, it is best not to push them.

12. It is, therefore, felt that cost implication of noise and emission levels could be very high, especially for developing countries. While polluters must pay principle is well established, the methodology to be adopted

leaves much to be desired. One concept proposed is 'Emission Trading'. Under this system an overall 'Cap' is set to limit the total amount of emissions over a specified period of time for a set of source. Each source then buys or sells the units. This creates a win-win situation. However, the allotment of units would be a problem due to quantification of emissions. Even at national level while domestic aviation emissions can be quantified, emissions due to international flights leave much to desire as they travel over countries and seas. Setting emission budgets for each participating State would, therefore, run into heavy weather.

13. The other methods of raising revenue to meet pollution standards are by voluntary mechanism. While voluntary mechanisms sound good and need to be pursued, there is little enforcement and is based only on goodwill.

14. The third option is Taxes and Charges. These charges could be levied in the form of fuel tax at point of sale, a neutral aircraft efficiency charge or en-route emission charge. All these charges have one common problem – that of implementation. It is difficult to conceive of a system, in which we need either to calculate the emission units before going in for its trade or to levy emission-related taxes. Aircraft efficiency charges proposed in CAEP-5 will need further definition of efficiency parameters.

15. In this connection, I suggest that we take a close look at the concept of International Finance Facility for Aviation Safety (IFFAS presented by the Secretary General to the Council in its 161st Session. It would be recalled that the 32nd Session of the Assembly had noted the progress made by the Council in this regard and endorsed its plan for further work on funding requirements, potential participation, structure, operation and administration of the Fund. ICAO Secretariat has now prepared a study on the International Financing Facility of Aviation Safety (IFFAS). This study proposes a charge (Passenger Safety Charge) on international passengers departing from participating states. The proposal of this facility is for safety purposes, which includes setting up of CNS/ATM under GASP (Global Aviation Safety Plan). The proposal in its present form includes:

- a) Shortcomings and deficiencies in air navigation services.
- b) Deficiencies in equipment and training identified through ICAO Universal Safety Oversight Audit Programme (IUSOAP).
- c) Capital investment requirement for the implementation of CNS/ATM systems.

The responses received so far do cover a wide cross section of States which is sufficient to carry out a broad-based analysis. The analysis of the responses do give an indication that IFFAS funds could be used

for the purposes proposed. Over half the responses were positive and include nomination of a range of applications including environmental protection. I am of the view that the scope of IFFAS could be expanded to include environmental protection which will include issue of noise and emission control. Further, while participation by States would be voluntary, in order to be a beneficiary a state must contribute directly or otherwise participate in the IFFAS. Also a state other than participating state should not be allowed to participate in projects/consultancy assignments of IFFAS.