

DRAFT ACTION PLAN ON AIRCRAFT ENGINE EMISSIONS

Background

1. Aircraft engines burn fuel, producing emissions that are similar to other emissions resulting from fossil fuel combustion. However, aircraft emissions are unusual in that a significant proportion is emitted at altitude. These emissions give rise to important environmental concerns regarding their global impact and their effect on local air quality.
2. At a global level, the principal concern is aviation's contribution to climate change. The Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) requires developed countries to reduce their collective emissions of greenhouse gases by approximately 5 per cent by the period 2008 – 2012, compared to 1990. These targets do not apply to emissions from international aviation. Instead, Article 2, paragraph 2 of the Kyoto Protocol states that the responsibility for limiting or reducing emissions from international aviation shall fall to the UNFCCC Parties, working through ICAO.
3. At ICAO's request, the Intergovernmental Panel on Climate Change (IPCC) has prepared a *Special Report on Aviation and the Global Atmosphere*. This estimates that aircraft contribute about 3.5 per cent of the total radiative forcing¹ by all human activities. The emissions from aircraft of relevance for climate change include carbon dioxide (CO₂), water vapour, nitrogen oxides (NO_x), sulphur oxides and soot, although CO₂ is the only one covered by the targets established in the Kyoto Protocol. Earlier concerns regarding aviation's possible role in depletion of the ozone layer are not borne out by this report, although this could become an issue if a significant fleet of supersonic civil aircraft were to be developed.
4. The 32nd Session of the ICAO Assembly, in September/October 1998, requested the Council of ICAO, through its Committee on Aviation Environmental Protection (CAEP), to "study policy options to limit or reduce the greenhouse gas emissions from civil aviation, taking into account the IPCC special report and the requirements of the Kyoto Protocol", and to report to the next ordinary session of the Assembly in late 2001.²
5. At ground level, in the immediate vicinity of airports, and regionally, concerns focus on the potential health and environmental effects of emissions such as NO_x, volatile organic compounds and particulates. States are increasingly taking action across a broad spectrum of industries to address such issues. ICAO has adopted a number of measures that directly address local air quality concerns, and indirectly address regional concerns, such as developing engine emissions certification standards (see para 9b) below).
6. Future concerns about aviation's role in both climate change and local air quality are largely due to the projected continued growth in this sector. While past technological improvements have reduced the growth rate of emissions and this progress is expected to continue into the future, total emissions will continue to increase. For example, the IPCC's report projects growth in the sector of 5 per cent per year between 1990 and 2015 with CO₂ emissions growing at 3 per cent annually over the same period.
7. Against this background, ICAO's Committee on Aviation Environmental Protection (CAEP) has developed this Action Plan on aircraft engine emissions. While the Action Plan addresses all aspects of these emissions, particular emphasis is placed on greenhouse gas emissions including the development of policy options for consideration at the next CAEP meeting (CAEP/5) in early 2001 and by the ICAO Assembly in late 2001.