

## COLLOQUIUM ON ENVIRONMENTAL ASPECTS OF AVIATION

(Montreal, 9 - 11 April 2001)

### BACKGROUND INFORMATION PAPER

#### ENVIRONMENTAL PROBLEMS ASSOCIATED WITH AVIATION - AN OVERVIEW

(Presented by the Secretariat)

##### SUMMARY

Aviation, like most other economic activities, can cause - or contribute to - environmental problems. This background paper provides an overview, listing environmental problems that are or may be associated with aviation activities.

The Colloquium does not attempt to cover all these environmental problems. It focuses on the two principal problems that governments have mandated ICAO to address on a worldwide basis, namely aircraft noise and the impact of aircraft engine emissions.

#### 1. AIRCRAFT NOISE

- Noise in the vicinity of airports caused by aircraft operations (approach, landing, taxiing, take-off).
- Other noise problems, including engine testing, noise away from airports caused by low-flying aircraft, and sonic boom associated with supersonic aircraft

#### 2. AIRCRAFT ENGINE EMISSIONS

- Ground level effects including the impact on air quality in the vicinity of airports and on regional air pollution (acid deposition, etc.), resulting from emissions of oxides of nitrogen (NO<sub>x</sub>) and other gases.
- Global atmospheric effects, resulting from emissions of carbon dioxide, water vapour, NO<sub>x</sub>, sulphur oxides and soot (as described in the 1999 *Special Report on Aviation and the Global Atmosphere*, prepared by the Intergovernmental Panel on Climate Change at ICAO's request).

### 3. **OTHER EMISSIONS FROM AVIATION**

- Ground level and global atmospheric effects of emissions from other aviation-related sources, such as airport installations, airport motor vehicles and access traffic.
- Aviation's use of ozone-depleting substances, such as halons (firefighting) and chlorofluorocarbons.

### 4. **OTHER ENVIRONMENTAL PROBLEMS**

- Problems arising from construction and expansion of airports or associated infrastructure, including loss of land; soil erosion; impact on water tables, river courses and field drainage; and impact on flora and fauna.
- Water and soil pollution in the vicinity of airports, caused by contaminants in airport waste water (for example, chemicals used in aircraft de-icing and runway ice prevention or removal) or by leakage from storage tanks (for example, oil-saturated soils at fuel farms).
- Management of wastes at airports, including disposal of environmentally harmful materials used in aircraft servicing and maintenance (for example, oils, cleaning fluids, paints) and disposal of waste from the airport and from incoming aircraft.
- Environmental problems arising from aircraft accidents, incidents or emergency procedures.
- Disposal of aircraft withdrawn from service, and dereliction of obsolete airport facilities.
- Aviation's possible role in the introduction of alien species that are potentially invasive.

**NOTE:** For the purposes of this overview, it has been assumed that "the environment" means all those natural and man-made surroundings which may be adversely affected by the presence of aviation, but which are not directly involved in the aviation itself. The list therefore excludes problems concerning the conditions for passengers and crew, or problems concerning the working conditions of airline or airport employees. It also excludes aircraft-manufacturing processes, because such processes fall outside ICAO's ambit.

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