



Committee on Aviation Environmental Protection (CAEP) – Topic 1

Director – Nathalie Herbelles¹

¹ This paper reflects the author's personal views and cannot be considered as the views of ICAO.

Case: “Balanced approach” to aircraft noise management

1. Introduction

Aircraft noise has been a significant concern for communities near airports and the aviation industry. Its management remains a complex issue, balancing environmental concerns, economic development, and international aviation operations. This case explores the evolution of international standards on aircraft noise, ICAO’s policy responses including the “balanced approach”, and current challenges in implementing effective noise management strategies.

2. Historical Background

The first *Standards and Recommended Practices* (SARPs) related to aircraft noise were adopted in April 1971 and designated as Annex 16 to the Chicago Convention. As the understanding of environmental impacts evolved, new SARPs addressing aircraft engine emissions were introduced. Consequently, noise-related rules became Volume I of Annex 16, which has been regularly updated—most recently in its 8th Edition (2017).

Despite noise around airports being primarily a local and national concern, ICAO’s involvement has been crucial. ICAO’s role prevents unilateral measures that could impede the growth of international civil aviation.

3. Contemporary Relevance of Aircraft Noise Issues

Far from being a resolved issue, aircraft noise remains a major concern today, particularly in some parts of the world. There have been notable improvements through the introduction of quieter aircraft and phasing out under ICAO Annex 16 of the noisier aircraft. However, the rapid air traffic growth and urban expansion / encroachment near airports continue to trigger adverse public reactions, complicating airport operations and airport development.

In response, some national and regional governments have introduced flight restrictions or curfews, often affecting all-cargo and nighttime operations. In recent cases, decisions have been taken to cap the number of aircraft movements that can take place in one airport in one year (this was the case at Amsterdam Schiphol).

Such restrictions may reduce airport connectivity and lead to adverse socio-economic impact for local communities and States.

4. ICAO’s Balanced Approach to Aircraft Noise Management

To address these challenges, ICAO’s “Balanced approach” offers a flexible, case-by-case framework for tackling airport noise problems. The approach consists of four principal elements:

1. Reduction at Source:

- Phasing out aircraft that produce excessive noise.

- Promoting technological innovations for quieter engines and aircraft designs.
- 2. Land-Use Planning and Management:**
- Implementing zoning regulations to prevent noise-sensitive developments near airports.
 - Enhancing sound insulation programs for affected communities.
- 3. Noise Abatement Operational Procedures:**
- Optimizing flight paths and takeoff/landing procedures to minimize noise impact.
- 4. Operating Restrictions:**
- As a last resort, applying operational limits (e.g., curfews) only after evaluating other options.

This cost-effective strategy ensures that noise management supports sustainable aviation growth without imposing undue burdens on international operations. However, it remains the responsibility of individual States to implement and decide between the elements of the balanced approach and develop appropriate solutions at their airports.

5. Current Challenges in Implementing the Balanced Approach

While the balanced approach provides a robust framework, implementation remains inconsistent across countries. Key challenges include:

- Lack of Harmonization:
 - Divergent programs, plans, and policies create uncertainty for international airlines.
- Transparency Issues:
 - Concerns arise over discriminatory practices, where some countries may favor national carriers by applying uneven noise-abatement measures.

To address these concerns, Assembly Resolution A41-20 urges States to:

- a) *“adopt a balanced approach to noise management, taking full account of ICAO guidance (Doc 9829), relevant legal obligations, existing agreements, current laws and established policies, when addressing noise problems at their international airports;*
- b) *b) institute or oversee a transparent process when considering measures to alleviate noise [...]”;*

Moreover, ICAO encourages community engagement and a non-discriminatory approach to the application of noise alleviation measures.

6. Discussion Points for Students

1. Balancing Growth and Sustainability:

- How can governments and the aviation industry balance the economic benefits of aviation with the need to address environmental concerns like aircraft noise?

2. Harmonizing Noise Management Policies:

- What strategies can ICAO adopt to enhance global harmonization in noise management practices?

3. Innovative Technological Solutions:

- Discuss the role of technology in reducing noise at source. What future innovations might further mitigate aircraft noise?

4. Ethical Considerations in Noise Restrictions:

- Should movement caps, nighttime curfews and operational restrictions be prioritized to address community concerns, even at the detriment of jobs and local / national economic benefit?

5. Transparency and Fair Competition:

- How can transparency in noise-abatement procedures be improved to ensure fair competition among international air carriers?

Further Reading and Resources

- ICAO Annex 16 – Environmental Protection: Volume I – Aircraft Noise
- ICAO’s Balanced Approach to Aircraft Noise Management [ICAO Website](#)
- International Environmental Law and Aviation
- ECAC News, Edition #82, article “Schiphol Airport Policy: balancing between a rock and a hard place” (page 10), available at [ECAC News](#)
- Airports Council International, Guidance on the Application of the ICAO Balanced Approach to Aircraft Noise Management, 2024, available at [Store | ACI World](#)