



International Civil Aviation Organization

Tenth Meeting of the APIRG Air Traffic Services, Aeronautical Information Services and Search and Rescue Sub-Group

[Dakar, Senegal 12 – 15 May 2009]

Agenda Item 3: Review of outstanding Conclusions and Decisions of APIRG, as well as those of the ATS/AIS/SAR/SG/9.

Managing Fuel Savings and Environmental Issues of Air Transportation

(Presented by the International Air Transport Association)

Summary

This paper highlights the increased importance of CNS/ATM activities in the management of aviation's environmental impacts. Against the background of the ICAO goal of limiting or reducing the impact of aviation emissions on the global climate, it discusses responsibility in environmental matters. Air Navigation Service Providers need to consider environmental benefits when defining systems for air traffic services, including the environmental savings of new routes, terminal procedures and ground movements.

This paper calls for all stakeholders to take a more proactive approach to environmental management and pursue the use of operational measures that can limit or reduce the environmental impact of aircraft engine emissions.

References:

- APIRG/16 Report
- ALLPIRG/4 and ALLPIRG/5 Reports
- ICAO Special AFI RAN 08 Report

1. Introduction

1.1. The ICAO 36th General Assembly requested the Council to encourage Contracting States to improve air traffic efficiency, which leads to emissions savings, to report on progress in this area, and requests the States to accelerate the development and implementation of fuel efficient routings and procedures to reduce aviation emissions.

1.2. The ICAO Committee on Aviation Environmental Protection (CAEP) developed the Operational Opportunities to Minimize Fuel Use and Reduce Emissions (Circular 303/AN/176).

2. Discussion

2.1 The Fourth Meeting of the ALLPIRG/Advisory Group (ALLPIRG/4) addressed environmental issues and concluded "ICAO Regional Offices and PIRGs support ICAO/CAEP efforts to expand the methodology for the quantification of CNS/ATM environmental benefits to each region by collecting data".

2.2 The Fifth Meeting of ALLPIRG/Advisory Group (ALLPIRG/5) (March 2006) adopted the following Conclusions related to Environmental Benefits:

- Conclusion 5/7 — Environmental benefits of CNS/ATM systems;
- Conclusion 5/8 — Globally coordinated air traffic services (ATS) routes; and
- Conclusion 5/9 — Terminal area (TMA) structure and area navigation.

2.3 The Fifteenth Meeting of the AFI Planning and Implementation Regional Group (APIRG/15, September 2007) adopted its Conclusion 15/28, requesting States to:

- a) Identify, with IATA and local airlines, actions related to ATM that would reduce fuel burn;
- b) Establish and promulgate a program to implement fuel efficiency measures; and
- c) Nominate a “fuel champion” who would liaise with IATA, airlines, ANS providers and other stakeholders to ensure that all possible fuel conservation strategies are evaluated and implemented.

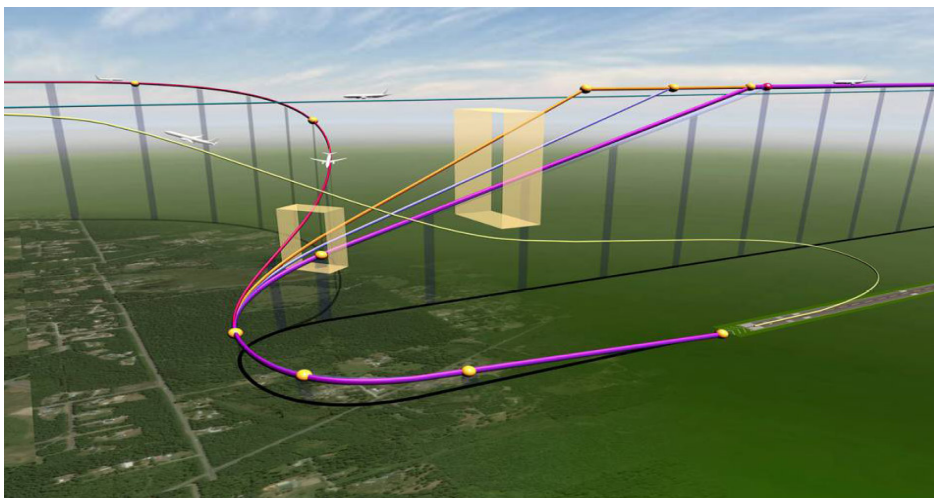
2.4. Considering the importance of addressing the environment when planning air navigation systems, the ICAO SP AFI RAN (24-29 November 2008) recommended that APIRG adopt an approach to the planning and implementation of ATM systems and ATM improvements that supports collaboration and considers best outcomes and the environment (Recommendation 6/26 refers), and develop relevant indicators such as CO2 burn to attached to the performance framework forms (PFFs).

2.5. The ICAO air navigation planning and implementation regional groups (PIRGs) are tasked to monitor implementation of air navigation facilities and services, taking into account environmental matters. It is clear that ICAO, the formal and informal airspace planning groups, international organisations and contracting States have a valuable role to play to address and minimise the use of fuel and its associated gaseous emissions.

2.6. Therefore, it is important that States and Air Navigation Service Providers (ANSPs) take on a proactive role on implementation programmes that are “pro-environment”. The ICAO airspace planning forums need to aggressively promote awareness of environment issues, establish baselines against which to measure the impact of future initiatives, pursue environmental saving initiatives, document environment benefits, promote environmental saving programmes and implement measures to reduce emissions.

2.7. Although much has been done, there is room for significant improvement in the management of aircraft in-flight operations. The UN Intergovernmental Panel on Climate Change (IPCC) estimates 6-12% inefficiency in the management of air traffic by air traffic control (ATC). Operational improvements that should be more vigorously pursued include the following items, which have been covered under IATA Save One Minute Campaign:

- a) Shortening air routes,
- b) Promoting flexible flight planning,
- c) Promoting RNAV and RNP over continental airspace,
- d) Complete expansion of RVSM,
- e) Pursuing reduced separation minimums,
- f) Promote dynamic sharing of airspace between civil and military (when not being used by military),
- g) Promoting flex-tracks, dynamic reroutes and user preferred routes (UPRs) in oceanic airspace
- h) Promoting RNAV and RNP procedures in TMAs,
- i) Promoting Continuous Descent Arrivals (which can save 50-200 kg fuel per flight),
- j) Promoting Collaborative Decision Making (CDM) to reduce ground delays and reroutes,
- k) Promoting cruise climbs and oceanic step climbs.



Example: Los Angeles RNAV STARs + CDAs – 10% less fuel + 40% less noise USD 124M per annum.

2.8. In order to promote awareness, environmental savings of CNS/ATM should be addressed and environmental benefits documented. Where simple formulas or tables exist, environmental savings should be quantified to routes in the air navigation plan, proposals to airspace planning forums and in report documentation. IATA will do its part in documenting environmental savings to its proposals. Common methodology and standardisation of benefit analysis is important and the determination of environment benefits should not be a costly exercise but to the greatest extent possible it should be a simple and cost effective methodology to assess environmental benefits.

2.9. In summary, it is important for the ICAO Regional Offices, States, ANSPs, the airspace planning forums and other associated bodies assess the environmental impact of specific implementation plans and promote those benefits to the government policy makers faced with making the necessary commitments to CNS/ATM systems implementation.

3. Conclusion

3.1 The meeting is requested to:

- a) Recognise ICAO's efforts in addressing the potential environmental impacts that may be related to civil aviation activity and acknowledge its responsibility and that of its Contracting States to achieve maximum compatibility between the safe and orderly development of civil aviation and the quality of the environment;
- b) Recognise APIRG's role to address environmental matters, and therefore the need to consider the environmental issues when defining CNS/ATM systems, including the environment savings of new routes, terminal procedures and ground movements;
- c) Note the need to document environmental benefits to airspace and CNS/ATM planning initiatives; and
- d) Commit to a proactive approach by promoting the use of air traffic operational measures that can limit or reduce the environmental impact of aircraft engine emissions.
- e) Urge AFI States and Air Navigation Service Providers to implement APIRG Conclusion 15/28, including:
 - 1) Identification, with IATA and local airlines, of actions related to ATM that would reduce fuel burn;
 - 2) Establishment and promulgation of a program to implement fuel efficiency measures; and
 - 3) Nomination of a "fuel champion" who would liaise with IATA, airlines, ANS providers and other stakeholders to ensure that all possible fuel conservation strategies are evaluated and implemented.

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