

ASSEMBLY – 35TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 15: Environmental protection

ATM EFFICIENCIES AND AVIATION EMISSIONS REDUCTION

(Presented by Australia)

SUMMARY

Research by air traffic managers on various user preferred routes and other modes has led to estimates on emissions reduction which are in line with the estimates made by the Intergovernmental Panel on Climate Change (IPCC). Fuel savings and carbon dioxide emissions savings are significant.

REFERENCES

Aviation and the Global Atmosphere IPCC 1999
Operational Opportunities to Minimize Fuel Use and Reduce Emission (ICAO Circ 303)

1. INTRODUCTION

1.1 Airservices Australia's environment policy commits management and staff to work towards the achievement of world's best environment practice. The Australian Government has introduced strong environmental laws which cause all airspace change and route changes to be assessed for their environmental impact. The law also requires Airservices Australia to report to Government annually on the performance of the environmental assessment system.

1.2 These environmental obligations have provided the basis for increased awareness of the potential for ATM efficiencies that ultimately lead to fuel and emissions savings. Benefits then flow to both the industry and to the environment.

1.3 IPCC estimated that carbon dioxide savings of 6-16 % could be realised from ATM efficiencies

1.4 Airservices' Environment Management System is certified under the requirements of ISO 14001 for on-ground operations. The system documentation and risk management tool, which also applies to ATS operations, was included in the certification process.

2. SITUATION

2.1 In order to meet best practice principles, Airservices assessed user preferred routes for fuel and emissions efficiency between Australia / Singapore and Australia New Zealand in conjunction with industry. These results also gave a rough indication of possible efficiencies on Pacific and Indian Ocean routes.

2.2 Reduced Vertical Separation Minima (RVSM) efficiencies were also assessed.

2.3 A number of other technologies are responsible for fuel and emissions efficiencies but have not been assessed. They include:

- Area Navigation Routes;
- Continuous Descent Approach
- Tailored arrivals
- Global Navigation Satellite System (GNSS) navigation;
- Central Traffic Management System (CTMS) (Departure time management)
- MAESTRO tactical flow management system. (In flight speed control to avoid holding)
- ADS-B (Automatic Dependence Surveillance – Broadcast)

2.4 The Australian Government Department of Transport and Regional Development maintains a record of aviation fuel purchased. These data provide the baseline for efficiency calculations

2.5 An emerging issue is the nexus between emissions efficiency and noise impacts as some noise abatement procedures are responsible for increased gaseous emissions. There is potential for this issue to rise in prominence in the future.

3. CONCLUSION

3.1 Exact savings on the Singapore and Tasman routes remain commercially protected. However, the current estimates of fuel and emissions savings for all technological ATM options exceed 8 percent. A further 8 percent savings is projected within current technology upgrades for ADS-B and user preferred routes in current system development programming

4. FINANCIAL IMPACT OF THE PROPOSED ACTION

4.1 None

5. ACTION BY THE ASSEMBLY

5.1 The Assembly is invited to:

- (a) note the estimated fuel savings and environmental benefits that arise from user preferred routing and other improvements in ATM in Australia are significant; and
- (b) urge other States to implement similar operational measures, as outlined in *Operational Opportunities to Minimize Fuel Use and Reduce Emission* (ICAO Circ 303), to reduce fuel consumption and carbon other gaseous emissions.