*International Civil Aviation Organization*
North American, Central American and Caribbean Office (NACC)
**Tenth Meeting of Directors of Civil Aviation of the Central Caribbean (C/CAR/DCA/10)**
Grand Cayman, Cayman Islands, 18 to 21 August 2009

**Agenda Item 8: Environment Matters**
**8.1 Operational Considerations**

# Operational Considerations

(Presented by the Secretariat)


**SUMMARY**

This paper provides an overview of the work of ICAO's Committee on Aviation Environmental Protection (CAEP) related to operational measures for reducing aviation's contribution to noise, emissions that affect local air quality, and greenhouse gas emissions.

Action by C/CAR/DCA is in paragraph 4.


**References**:

- Report of the Committee on Aviation Environmental Protection, Seventh Meeting (Doc 9886)
- Procedures for Air Navigation Services — Aircraft Operations (OPS) (Doc 8168)
- Global Air Navigation Plan for CNS/ATM Systems (Doc 9750)
- Review of Noise Abatement Procedure Research and Development and Implementation Results (Doc 9888)
- Operational Opportunities to Minimize Fuel Use and Reduce Emissions (Cir. 303)

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| ***Strategic Objectives*** | *This working paper is related to Strategic Objectives C1 and C2.* |

## 1. INTRODUCTION

1.1 Operational measures can be an effective element of limiting or reducing aviation's contribution to noise, emissions that affect local air quality, and greenhouse gas emissions. With appropriate coordination with the relevant panels, procedures can be developed that meet the dual requirement of uncompromised safety and benefits to the environment. This paper provides an overview of the work within ICAO's Committee on Aviation Environmental Protection (CAEP) related to operational measures.

## 2. CAEP'S WORK ON OPERATIONAL MEASURES FOR REDUCING AVIATION'S ENVIRONMENTAL EFFECTS

### 2.1 Environmental Management Systems (EMS)

2.1.1 CAEP is preparing a report on the use of Environmental Management Systems (EMS) that will make recommendations on how the committee could promote the use of EMS within the aviation system. This report is based on the results of a questionnaire on EMS use, which was distributed to member States and observer organizations.

2.1.2 Draft findings for the reporting indicate that approximately 50 per cent of questionnaire respondents apply EMS standards or guidelines, with a majority of them having an ISO 14001 v2004 certified EMS in place. Many of the remaining respondents use other types of environmental programmes and procedures that include some principles and practices similar to those in a formal EMS. The majority of organizations (96 per cent) that had implemented an EMS said that they would recommend that others implement one. Of the respondents without an EMS, 68 per cent plan to implement an EMS in the future. These organizations indicated that the most common reason for not implementing an EMS was a lack of familiarity with EMS approaches. As a result, aviation industry specific EMS implementation guidance was requested.

### 2.2 Noise Abatement Departure Procedures (NADP)

2.2.1 CAEP is preparing an ICAO Circular on the effects that departure thrust variation has on noise and emissions. This information complements a previously-completed study by CAEP on the effects of PANS-OPS Noise Abatement Departure Procedures (NADP) on noise and emissions.

### 2.3 Continuous Descent (CD)

2.3.1 CAEP is conducting a review of the environmental assessment methodologies and appropriate indicators for Continuous Descent (CD) Arrivals techniques (CDA or "CD Operations"). The review includes a high level global assessment of the fuel and emissions benefits from CD operations. Due to the significant effects that specific local procedures have on noise results, global CDA noise benefits will be assessed to a limited degree.

### 2.4 Circular 303

2.4.1 The ICAO guidance contained in *Operational Opportunities to Minimize Fuel Use and Reduce Emissions* (Circular 303), that identifies and reviews various operational opportunities and techniques for minimizing fuel consumption and hence $CO_2$ emissions in civil aviation operations, is being updated with new and updated information on current initiatives relating to fuel burn reduction. The new guidance replacing Circular 303 will, to the extent possible, also include new provisions covering 1) environmental impact assessment methodology, 2) guidance on computing, assessing and reporting on aviation emissions, and 3) environmental indicators. It is envisaged that this work will be finalized by February 2010. This work is being developed in coordination with ANB Sections, the Instrument Flight Procedures Panel (IFPP) and the Operations Panel (OPSP).

2.5 **Carbon Emissions Calculator**

2.5.1 Since June 2008, the ICAO public website has included a Carbon Emissions Calculator, whose impartial, peer reviewed methodology was developed through CAEP. It applies the best publicly available industry data to account for various factors such as aircraft types, route specific data, passenger load factors and cargo carried. In support of the Climate Neutral UN initiative, a special interface to the Calculator was developed by ICAO. The UN Environment Management Group (UNEMG) in April 2009 endorsed ICAO's Calculator as the official tool to compute carbon dioxide ($CO_2$) emissions from air travel for the UN system.

## 3. NEXT STEPS

3.1 ICAO's Committee on Aviation Environmental Protection (CAEP) is studying and developing guidance on operational measures for limiting or reducing aviation's contribution to noise, emissions that affect local air quality, and greenhouse gas emissions. Safety is of paramount concern for any new procedure or recommended practice and for that reason, and to ensure that no duplication of efforts exists on this subject within ICAO, CAEP's activities on operational measures are fully coordinated with the appropriate groups within the Air Navigation Bureau.

## 4. ACTION BY THE C/CAR/DCA/10 MEETING

4.1 The C/CAR/DCA/10 Meeting is invited to:

a) note the information presented in this paper;

b) coordinate with CAEP, using their expertise, on the development and assessment of operational procedures for reducing aviation's impact on the environment;

c) continue to consider environmental issues in the planning and implementation of regional air navigation systems including the development of new routes, design of terminal procedures, and ground movements; and

d) note that CAEP will continue to keep the regions informed of future developments on the subject of aviation and the environment;

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