U.S. – INDIA AVIATION PARTNERSHIP SUMMIT

Aviation Environmental Best Practices
December 7-9, 2009

DIRECTORATE GENERAL OF CIVIL AVAITION
NEW DELHI, INDIA

Aviation Environment Unit, DGCA (India)
Agenda

- Introduction
- India’s concern
- Progress since June 2009
- Future scope of improvement and Areas of common interest.
- Required cooperation
- Ultimate goal
Introduction

• Aviation sector contributes to 2% of total CO2 emissions.
• Expected to grow at a higher pace in future.
• Aviation sector has become more vulnerable to climate issues due to the sharp global growth.
• India is also witnessing tremendous growth in this sector and hence needs to address this issue.
India’s concern

• India is facing the challenge of sustaining its rapid economic growth without adverse effect on climate.

• This threat emanates from accumulated gas emissions in the atmosphere anthropogenically generated through long term and intensive growth and high consumption life styles in various sectors including aviation.
India’s concern

• With an economy closely linked to its natural resources and climate sensitive sectors such as agriculture, water and forestry, India may face severe threat because of the projected changes in the climate,

• Climate change may alter the distribution and quality of India’s natural sources and may adversely affect the livelihood of its people,
India’s concern

• Recognising that climate change is a global challenge, India is actively engaged in multilateral negotiations in the UNFCCC in a positive, constructive and forward looking manner.

• The objective is to establish an effective, cooperative and equitable global approach based on the principles of Common But Differentiated Responsibilities (CBDR),
Progress since last meeting held in June 2009

• After the last discussions on environmental protection issues, DGCA India has taken some initiatives in curbing emissions from aviation sector.
• The objective is to provide enough space to the airlines to grow without adversely affecting the environment.
• The initiatives do not harm the sustainable growth of its aviation industry.
DGCA’s Initiatives

• An Aviation Environment Unit was set up in DGCA to look into the issues.

• The main objective is
  – To provide technical guidance
  – to identify problematic areas
  – To suggest feasible ways and means
  – To guide aviation sector to reduce their carbon footprints
  – To provide full cooperation with stakeholders
DGCA’s Initiatives

• DGCA intends to establish a national inventory of carbon emissions for aviation sector with the base year as 2005 along with measurement of airport air quality.

• This will help in monitoring progress and plan in initiating further actions.

• Another study for noise value evaluation is also being initiated.
New Directions by DGCA.

- Stake holders to
  - Identify activities and sources that attribute to carbon emissions in their organisations.
  - Develop feasible measures to bring down emissions.
  - Report about the actions taken to reduce emissions
  - Report about the reduction achieved thereon.

These actions would then be monitored by DGCA.
Airline operators

• Airlines have been asked to create environment units in their organizations to deal with climate change issues.

• To improve fuel efficiency near to world average (0.40 liters/RTK) by:
  
  – Reducing fuel consumption
  – Establishing fuel management system
  – Developing in house fuel efficiency improvement programs
Fuel Efficiency Chart for Various Indian Airline Operators (International Sector)

- NACIL (A)
- Jet Airways
- Kingfisher

Aviation Environment Unit
Airline Operators

To develop green and efficient buildings to adopt waste management techniques in the hangar areas to develop weight reduction measures - cabin equipment - catering services - manuals and reading materials - extra fuel on board
Airline Operators

• To adhere to proper maintenance of aircraft.
• To adopt more efficient operational procedures:
  – Minimum usage of APU
  – Optimum flap setting during takeoff and landings
  – PBN procedures and constant descent approach
  – Usage of idle reverse thrust while landings
  – Proper flight planning system
  – Prior information about congestion at arriving airport
  – One engine off during taxiing
  – Engine off while waiting for takeoff
Air Navigation Service Providers

- ANS providers are implementing PBN procedures for optimizing airspace utilization and enhancing airport capacity by taking advantage of airborne capabilities and GNSS,

- PBN Implementation Roadmaps developed for smooth implementation of PBN procedures at all Indian airports,
Air Navigation Service Providers

- PBN implemented at 3 airports viz Delhi, Mumbai and Ahmadabad and under progress at Chennai

- Implementation of PBN procedures has helped in reducing:
  - flight distance (Great Circle Distance),
  - flight time,
  - Fuel consumed during flight,
  - Quantum of carbon dioxide

- Implementation of Satellite Based Augmented System (SBAS) underway.
Airports of India

• Airports are engaged in:

- Developing Clean and Green airports,
- Adopting Energy Efficient airport terminals and buildings,
- Exploring possibilities of using Solar Panels for interior lightings,
- Adopting Waste Water Plants for recycling of water,
- Exploring Waste Management Plants to generate electricity from wastes,
Airports of India

- The airports have been also asked to:
  - Adopt Rain Water Harvesting Facilities,
  - Explore Clean Development Mechanism (CDM) implementation opportunities at airports
  - Explore switching over to Compressed Natural Gas (CNG) options for vehicles plying inside the airport,
  - Install Noise Monitoring System,
  - Install noise complaint cell at airports,
  - Monitor Air Quality at airports, etc.
India and US have agreed to mutually cooperate in dealing with environmental issues,

We have common concerns such as ETS and have supported each other in various fora such as GIACC and CAEP under ICAO,

We had formal and informal meetings including one during the last visit of Indian delegation to US in June 2009,

Looking forward to continued cooperation and mutual understanding,
Future areas of cooperation

- Formulation of a regulatory framework
- Both countries to work together on market based measures, technology transfer for fuel efficiency and financing through banks.
• Organize a seminar on Environment best practices to be attended by all concerned stakeholders to spread awareness.

On Alternate fuels India and US to consolidate synergies between respective experts and explore areas of cooperation and technology transfer.

India to join CAAFI.
• Joint research programs to be identifies which can be funded by ADB.

Human Resources Development Program in Environment sector
India invited to participate in the work of a ‘Centre of Excellence’ under participating universities in US in March, 2010.

A program “Aviation Climate Change Research Initiative” to be undertaken in India which will focus on research to introduce best practices.
THANK YOU