

U.S. – India Aviation Cooperation Program



Air Traffic Management
Training Program Update
March 2009



ATMTP – Overall Objective

This ATMTP is the first project under the U.S.-India Aviation Cooperation Program (ACP). Its objective was to provide the framework for an overall air traffic management (ATM) plan and specifically provide tools to address the air space management problems at specific airports through the training of Indian air traffic controllers and/or airspace planners in “high density” operations.



ATMTP – Project Overview

- Phase I - Evaluation Visit to New Delhi & Mumbai to survey high density air traffic control operations and develop follow-on phases (February 4-8, 2008);
- Phase II - Orientation Visit to the United States to present Air Traffic Management (ATM) concepts and demonstrate procedures/regulations/rules necessary to conduct "high density" operations (May 13-23, 2008);
- Phase III - Operational Workshop in the United States to provide operational ATM training necessary to implement procedures/regulations/rules necessary to conduct "high density" operations (August 18-27, 2008);
- Phase IV (Final Phase) – Review Visit to Mumbai & New Delhi to determine what, if any, further support would be required to assist implementation of procedures/regulations/rules necessary to conduct "high density" operations. Transition to follow-on program (March 23-27, 2009)



ATMTP – Phase I

- Evaluation Visit
 - February 4 – 8, 2008
 - 6 Member Team
 - Four FAA Air Traffic Control Specialists with air traffic operational experience at high density airport operations, training, and senior ATC management experience.
 - 2 Program Coordinators
 - New Delhi & Mumbai



ATMTP – Phase I Observations

- Standardize Arrival & Departure Procedures
- Standardize Arrival & Departure Environment
- Implement Minimal Traffic Management Tools
- Implement Delhi – Mumbai “All-Radar” Coverage
- Establish Site Specific Radar Simulation Capacity

ATMTP – Phase I



ATMTP- Phase I





ATMTP – Phase II

- Orientation Visit
 - May 12 -23, 2008
 - Twelve (12) Indian Government participants
 - Ministry of Civil Aviation (MOCA); Airports Authority of India (AAI); and Directorate General of Civil Aviation (DGCA)
 - Washington, DC; Atlantic City, NJ; Orlando, FL; Daytona Beach, FL; and Atlanta, GA



ATMTP – Phase II Itinerary

1. Washington, DC

- ACP Meeting Hosted By Honeywell
- USTDA/FAA Welcome & Meetings
- Reagan National Airport Visit

2. Atlantic City, NJ

- William J. Hughes Technical Center Visit



ATMTP – Phase II Itinerary

3. Orlando, FL

- Orlando International Airport Visit

4. Daytona Beach, FL

- Embry-Riddle Aeronautical University Visit

5. Atlanta, GA

- Delta Airlines Operations Visit



ATMTP – Phase II Sponsors

- Jet Airways
- Delta Air Lines
- US-ACP (Honeywell Host Site)
- Bell Helicopter
- Embry-Riddle Aeronautical University



ATMTP – Phase II Observations

- Orientation Visit Briefed Indian Senior Aviation Officials on US aviation rules, regulations, and procedures
- Delegates observed Air Traffic Operations at selected key airports.
- FAA also briefed on the latest research in Air Traffic Efficiency being studied at the FAA Technical Center.

ATMTP – Phase II





ATMTP – Phase III

- Operational Workshop
 - August 18 – 27, 2008
 - Delegation of Twelve (12) Senior AAI Controllers
 - Representing New Delhi; Mumbai; Chennai; Ahmedabad; Hyderabad and Kolkata
 - Embry – Riddle Aeronautical University, Daytona Beach, FL Training Locations
 - Visits to Jacksonville and Orlando Airports



ATMTP – Phase III Training

- Reviewed Orlando Airspace
- Discussed Benefits of Four-Corner System
- Explained Standardized Arrival & Departure Procedures
- Utilized Hands-On Simulation Workshops and Discussions for Training
- Visited Jacksonville and Orlando Airports for Observations



ATMTP – Phase III Observations

- On a scale of 1 (poor) -5 (Excellent), majority of answers to evaluation questions were at least a 4. Faculty Rated High
- Participants responded that procedures would be useful at their airports
- Hands-on simulation and site visits especially useful

ATMTP- Phase III





ATMTP – Phase IV

- Review & Transition Visit

- March 23-27, 2009

- Team of Seven

- Four FAA Air Traffic Control Specialists with air traffic operational experience at high density airport operations and senior ATC management experience.

- Three program specialists and coordinators

- Mumbai & New Delhi

- Airports & Facilities



ATMTP – Phase IV Itinerary

1. Mumbai

- Mumbai Tower Observations
- Joint Review Meeting
- Mumbai Airlines Operator Meeting

2. New Delhi

- New Delhi Tower Observations
- Joint Review Meeting
- AAI HQ and ACP Meeting



ATMTP – 2009: A Year Later

- Great Progress in One Year
- Most Recommendations Implemented
- Good Foundation Established For The Way Forward



ATMTP – 2009: A Year Later

- Performance Analysis and System Improvement Is A Continuous Process
 - Ongoing Review & Change of Airspace Design and Utilization, Procedures, and Other Factors Affecting System Demand For Improvements
 - Results Are Operating Efficiencies, Improved Safety, and Maximum Return On Investment



ATMTP – 2009: A Year Later

■ **Four Corner Post System**

Observation: Implemented; Improvements Needed To Meet Needs of ATC and User

- Modify Airspace
- Route transition from enroute to terminal to final approach
- Proactive Air Traffic Control (Speed Control, Altitude, Route Structure, etc.)
- Internal Fix Balancing To Avoid Routine Holding



ATMTP – 2009: A Year Later

■ **Sectorization/Staffing**

Observation: During Work Day, A Controller's Area of Responsibility Is Too Broad Which Results in Inefficiencies and May Pose Safety Issues

- Based on Levels of Traffic Observed, We Believe 3 Staffed Positions Would Be Appropriate At Both Facilities (Departure, Feeder and Arrival)
- Center Should be Sectorized to Support Terminal Operations Including Stratification of Enroute Sector



ATMTP – 2009: A Year Later

■ Procedures

Observation: Radar Will Support 3 Mile Separation; Reduction Below 5 Miles On Final Will Result in Significant Delay Reductions

- New Delhi and Mumbai RNAV Procedures are Inefficient
- Incorporate VFR Operations for Efficiencies
 - Visual Separation
 - Visual Approaches
 - Helicopter Ingress and Egress Routes



ATMTP – 2009: A Year Later

- **Procedures (Con't)**

- Develop Standard Operating Procedures Which Prescribe Efficient Operations
- Establish Mechanism for Reporting, Tracking and Follow Up of Events



ATMTP – 2009: A Year Later

- **Runways**

Observation: Need to be Better Utilized
At Both Airports

- **New Delhi**

- Establish Runway Usage Procedures
- Separation Standards

- **Mumbai**

- Runway 14/32 is Underutilized
- Separation Standards



ATMTP – 2009: A Year Later

■ **Traffic Management System**

Observation: Current Implementation Has Resulted In Inefficiencies

- Stop Estimated Time of Arrival (ETA) Sequencing
- Use Positive Traffic Management Throughout Flight Regime
- Arrival Controller Should Determine Final Sequencing Based on Operational Advantage



ATMTP – 2009: A Year Later

■ **Training**

Observation: Revision of Current Training Program Should Be Considered To Accommodate the Many Changes Implemented

- Required to Enhance Controllers' Skill Set
- Recurrent Training Is Required To Maintain Skill Set
- Simulation Lab In Facilities Should Be Routinely Used for Initial and Recurrent Training



ATMTP – 2009: A Year Later

- **Proactive Supervisory Role**

Observation: Position Not Clearly In Charge of All Aspects of Daily Operation

- Establish and Document Management Philosophy on Role of Supervisor
- Duties Should Include:
 - Monitor and Make Decisions On Traffic Flows
 - Communicate With Other Facilities



ATMTP – 2009: A Year Later

■ **Equipment**

Observation: Capital Investment In Surface System Needs To Support Operational Efficiencies

- Increase Long Range Radar Coverage
- Increase Enroute Communication Coverage
- Integrate and Automate Flight Data Equipment Systemwide



ATMTP – 2009: A Year Later

■ **Industry Collaboration**

Observation: A healthy, proactive, robust partnership enhances system efficiency

- Regularly Scheduled Industry Meetings Should Be Established to Discuss Future Changes, Operations, Procedures and General Feedback
- Significant System Changes Should Include Focused User Meeting During Development



ATMTP – 2009: A Year Later

■ **Industry Collaboration (Con't)**

- Offers A Mechanism for Continuous Two Way Exchange To Share Information, Achieve Common Goals- Resulting in Win-Win Outcomes
 - Anticipated Changes
 - Operations
 - Procedures
 - General Feedback
- Recommend Facilitation to Establish a “No Blame” Meeting Environment



ATMTP – 2009: A Year Later

- **System Capacity Management**

Observation: Consider the Establishment of a Director of Systems Management

- National Airspace System Level Manager
Experienced in Air Traffic Operations
- Responsibility Includes Managing Change
- Subject Matter Expert
- Identifies Industry Best Practices for
Implementation In India



ATMTP – Next Steps

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Questions?

