



Air Traffic Management: Dealing With the Impact of Weather

Mark Libby Manager, International Operations
and FAA CDM Lead

January 24, 2011

ICAO/WMO ASIA/PAC MET/ATM Seminar
Fukuoka, Japan



Federal Aviation
Administration 1



ATO Mission

Provide a safe, efficient, responsive
air transportation system that serves
the nation and supports the global
aviation community



Federal Aviation
Administration 2



ATO Vision

Give the world *new ways to fly*—
through people, technology and innovation



Federal Aviation
Administration

3



ATO Performance-Based Organization *“Results Driven”*

The organization commits to:

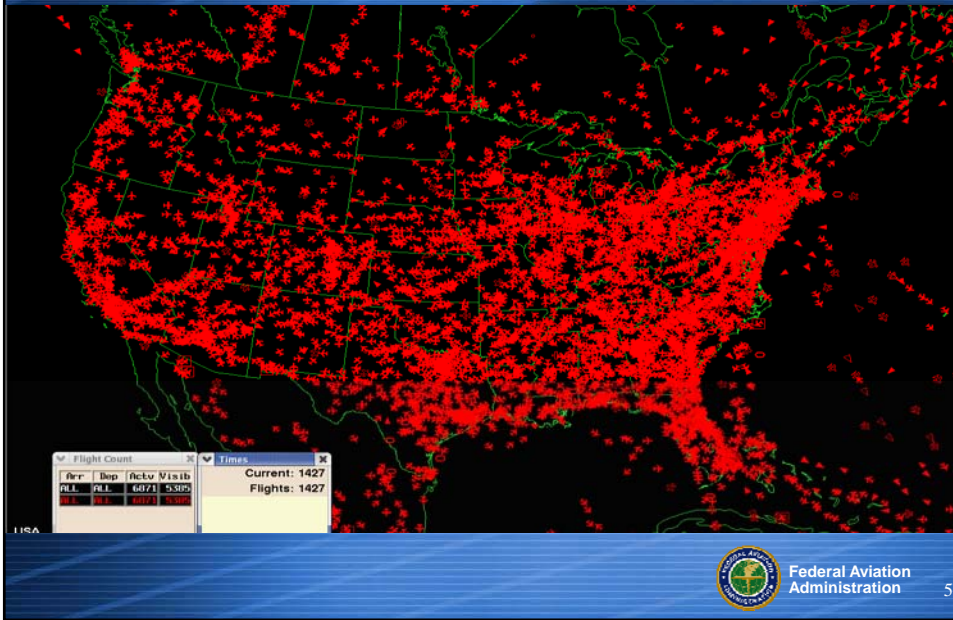
- Clear objectives
- Specific measurable goals
- Customer service standards
- Targets for improved performance



Federal Aviation
Administration

4

During peak periods there are typically 6,000-7000 aircraft operating in the National Airspace System (NAS); about 55,000 aircraft operations daily



Impact of Aviation on the U.S. Economy

Aviation accounts for:

- 11 million aviation-related jobs
- \$1.2 trillion in economic activity
- 5.6 percent contribution to GDP
- Adds \$61 billion to the US trade balance



***In 2008, 33% of all commercial NAS traffic went through New York, and New York delays impacted an estimated 75% of all delayed flights in the NAS**

Source: Partnership for NYC report
http://gothamist.com/2009/02/25/air_traffic_delays_are_costing_new.php



ATO Operations Service Units

- En Route & Oceanic Services
- System Operations Services
- Technical Operations Services
- Terminal Services



Federal Aviation
Administration

7



System Operations Services

System Operations Services provides overall national guidance for air traffic procedures, airspace issues and traffic flow management for the National Airspace System (NAS)



Federal Aviation
Administration

8

System Operations Services supports the ATO mission as a service provider for:

- Traffic Flow Management (TFM) and Tactical Operations
- Flight Services Operations
- Emergency Operations and Airspace Security
- Program Management of TFM Technologies
- Airspace and Aeronautical Information Management (AIM)
- Litigation Support
- FOIA Coordination
- Air Traffic Procedures Development
- Planning for NextGen
- Safety Risk Management (SRM)



Traffic Flow Management

Traffic Flow Management (TFM) is the process used to balance air traffic demand with airspace capacity





Traffic Management Units (TMU)

Balance air traffic demand with system capacity to ensure the safe and maximum efficient use of our national airspace system



Federal Aviation Administration

11



TMU Structure

Coordination process

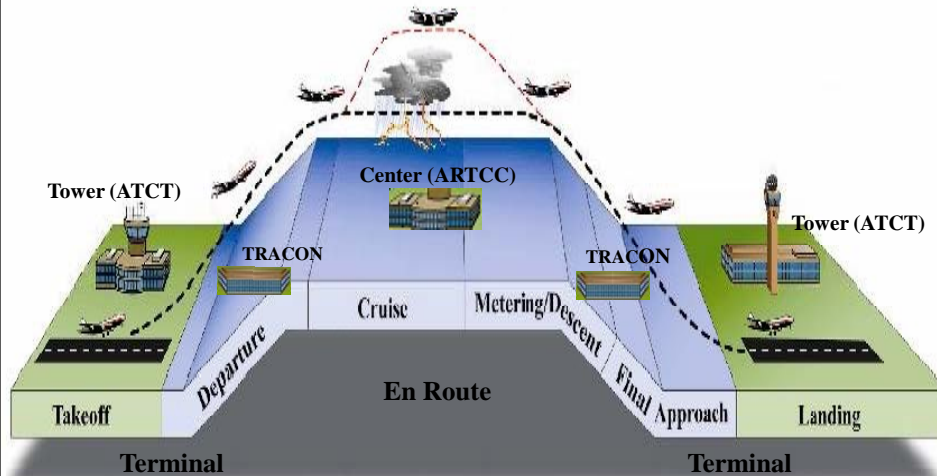
- Towers work through approach controls
- Approach controls work through overlying ARTCCs
- ARTCCs work directly with ATCSCC
- ATCSCC coordination assures the safe and efficient management of the NAS



Federal Aviation Administration

12

Phases of Flight



Federal Aviation
Administration

13

Air Traffic Control System Command Center



➤ Manages and monitors the flow of air traffic throughout the nation and adjacent countries producing a safe and orderly flow while minimizing delays

➤ Informs ATO senior leadership of system impacts to the NAS



Federal Aviation
Administration

14



Traffic Management Initiatives (TMI)

- TMIs are used to balance demand with capacity
- Always seek the least restrictive TMI
- Any TMI creates an impact on our stakeholders



Federal Aviation
Administration

15



Traffic Management Initiatives (TMI)

- Ground Delay Programs
- Ground Stops
- Air Space Flow Programs



Federal Aviation
Administration

16



Weather Delays

- Approximately 70% of delays in the National Airspace System (NAS) are attributed to weather

- **Leading causes:**

- Thunderstorms
- Winds
- Ceiling and Visibility
- Snow
- Hurricanes



Federal Aviation
Administration

17



- **Severe Weather Avoidance Plan (SWAP)**

- A formalized program
- Use in areas particularly susceptible to severe weather
- May be implemented in conjunction with other TMI

- **Coded Departure Routes (CDRs)**

- General used in conjunction with SWAP program

- **Route Advisories**

- Required (RQD): Stakeholders must take action to comply
- Recommended (RMD): Stakeholders should consider TMI in advisory
- Planned (PLN): TMIs may be implemented
- For Your Information (FYI): Advisories requiring no action
- User Preferred Trajectory (UPT): Route user requests based on existing conditions



Federal Aviation
Administration

18



Collaborative Decision Making (CDM)

Collaborative Decision Making is a joint government/industry initiative to improve “**System**” management through increased information exchange



Federal Aviation
Administration

19



CDM Objectives

- To establish a goal-oriented forum between government and industry to address issues within air traffic management system
- To facilitate information exchange and common situational awareness between all stakeholders for more effective decision making
- To facilitate an effective communications path for increased system safety and efficiency

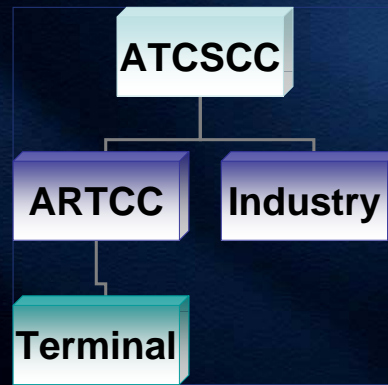


Federal Aviation
Administration

20

Air Traffic Control System Command Center

- National oversight for all TFM and NAS operations
- Coordinates and implements all national TMIs
- Focal point for stakeholder coordination



Federal Aviation
Administration

21



Operational Objectives

- System safety
- System efficiency
- System optimization
- System support of **NextGen**



Federal Aviation
Administration

22

International Operations and Collaboration

- Canada
- Mexico
- Dominican Republic
- COCESNA
- Panama
- Chile
- Colombia
- EUROCONTROL
- United Kingdom



Federal Aviation
Administration

23

International Operations and Collaboration

Progress

- Japan

Future Expansion

- Australia
- Brazil
- Argentina
- Chile
- Peru



Federal Aviation
Administration

24