Looking Beyond COVID-19

Build Back Better Than Before

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Today’s Focus

Synopsis
The recovery from COVID represents a unique opportunity for the aviation community. Airlines and Air Traffic are working together to take advantage of the modern aircraft capabilities and improved ATC procedures. Implementation now, during this downturn, assures seamless integration as air traffic resumes. Building back better, safer, and more efficient is the goal of all within the community.

This segment will highlight some of the many activities to achieve this goal as well as identify new areas for improvement.
The US Aviation System is Big

• 19,000+ Airports
  – 5,000 Public and 14,000 Private

• 180,000+ Aircraft
  – 160,000 GA, 7,000 Commercial, 10,000 Helicopters, 35,000 Experimental

• 600+ Staffed Air Traffic Facilities
  – 500+ Airport Towers
  – 150+ Terminal Control
  – 20+ Enroute & Oceanic Centers

• 14,000+ Controllers

• 6,000+ Technicians

• 75,000,000 KM² Airspace
  – 13M Domestic, 62M Oceanic
US Management of COVID-19

- Initial Response -?
- Preventative Measures -?
- Long Term Approach - ?
- Vaccinations - ?
- Post Pandemic Recovery – ?
- Lessons Learned - ?

FAA Staffing is a subset of the US population.
Enhancements Resulting from COVID-19

• Improved Contingency Operations
• Remote Work/Collaboration
• Divest from Obsolete Technologies
• Reduced Oceanic Separation
• User Preferred Routing and Dynamic Airborne Reroute Program (UPR/DARP)
• Trajectory Based Operations (TBO)
• Enhanced User Collaboration
• Increased use of Performance Based Navigation (PBN)
Trajectory Based Operations (TBO)

TBO is a collection of systems, capabilities, processes, and people working together to achieve operational objectives.

- **Time-Based Management (TBM)**
  - Arrival Metering
  - Surface Metering
  - Terminal Metering
  - Departure Scheduling
  - ...and more
  - Helps Manage Trajectories by Scheduling and Metering Aircraft through Constraint Points

- **Performance Based Navigation (PBN)**
  - Area Navigation (RNAV)
  - Required Navigation Performance (RNP)
  - Flight Management System (FMS)
  - STARs, SID, IAP and routes
  - ...and more
  - Enables Aircraft to Accurately Navigate along their Trajectories

- **Enterprise Enablers**
  - DataComm
  - System-Wide Information Management (SWIM)
  - Enhanced Data Exchange
  - Advanced Weather Products
  - Airborne Re-routing
  - ...and more
  - Expands and Automates Sharing of Common Information about Aircraft Trajectories

TBO is key to increasing capacity, efficiency, and improving safety!
Performance Based Navigation (PBN)

- Thousands of Procedures Already Published
- Most Aircraft are Capable
- Many Procedures Underutilized
- Should connect Runway to and from Enroute Airspace

Moving To Performance-Based Navigation

- Conventional Routes
- Limited Design Flexibility
- Current Ground NAVAIDs

- RNAV
- Increased Airspace Efficiency
- Waypoints

- RNP
- Optimized Use of Airspace
- Narrow TERPS
- "curved" paths
- Seamless Vertical Path

Moving To Performance-Based Navigation (PBN)

Federal Aviation Administration
Key Points

• Opportunity to advance in ways that were unthinkable two years ago.
  – Contingency Procedures, Remote Collaboration

• Collaborate with users and staff
  – Discuss priorities, plans, and timeline.
  – Establish frequent dialogue

• Implement and use developed procedures
  – Gain familiarity and experience for ATC and users
  – Identify and correct design errors

• If we recover quickly and plan appropriately, this pandemic will be a “Once in a Lifetime” event.
Thank you

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