

Guidelines and Update for Implementing Terminal RNAV Procedures

Introduction

This document is a standardized, systematic process for the development of Terminal Area Navigation (RNAV) arrival and departure procedures. This process is designed to be used by members of project RNAV Implementation Working Group with the goal to publish an RNAV arrival or departure procedure. The guidance in this document incorporates past lessons learned and references material used to accomplish the project objectives. The process is known as The *Guidelines for Implementing Terminal RNAV Procedures (Guidelines)* must be used in conjunction with Federal Aviation Administration (FAA) Order 8260.43, Flight Procedures Management Program, and other applicable FAA orders governing Terminal RNAV procedure design.

The *Guidelines* provide the RNAV Implementation Working Group with a tracking mechanism to expedite the development, review, and implementation of a Terminal RNAV procedure. This is accomplished by providing instructions that separate design and implementation into manageable items that are mapped as closely as possible to the anticipated sequential order of RNAV procedure development. However, due to the dynamic nature of RNAV procedure development, guideline items may be completed concurrently or in an order different than that presented in the *Guidelines*.

Summary of Phase 1 RNAV Implementation Process – November 26, 2008

- On October 16, 2007, the FAA signed a Categorical Exclusion/Record of Decision to implement new and revised conventional (vector-based) and RNAV (area navigation) procedures for the BONS, Phase 1.
- Most all conventional procedures were implemented on February 14, 2008.
- The CATEX/ROD acknowledges that the RNAV procedures are subject to a more detailed review/design by the FAA prior to implementation (e.g. 18-Step process).
- The 18-Step process is a standardized, systematic process for the development of RNAV procedures (See table below for the 18 steps).
- Once the need for an RNAV procedure(s) is known, the FAA RNAV lead (Jon Harris) secures a publication date slot (August 27, 2009 for the BONS).
- The 18-step process includes timelines and submission deadlines that must be met to ensure the publication date is realized.

- If the August 09 publication date is not met, the BONS procedures would fall back into the production schedule, and if that occurred today, they would receive a December 2010 publication date.
- In general, the 18-step process starts at the ATC facility level, and ultimately culminates with an RNAV package submittal to the FAA Eastern Service Area (ESC) Flight Procedures Office (FPO) located in Atlanta, GA. It is examined and forwarded onto the FAA National FPO located in Oklahoma City, OK.
- FAA is currently finalizing the BONS RNAV procedures for review at the facility and service level (there are four departure flows designed to meet the BONS).
- The ESC FPO needs as much time as feasible, but approximately 210 days (1/29/09 to 8/27/09) prior to the publication date to finalize the procedures (this is part of the standardized process).
- As a result, FAA plans to submit the BONS package to the ESC FPO by 1/29/09.
- This is the small window of time (between facility level proposal and FPO submission in Jan) for review by the PC/IC.
- The FAA will provide the PC with the current RNAV designs within the next couple of weeks. The PC plans to coordinate these with the IC for their insight/consideration.

Efforts to develop the BOSTON BONS (Phase 1) RNAV Procedures; HYLND (flight routings to the northwest), LBSTA (flight routings to the northeast), SOXXS (flight routings to the south) and PATTS (flight routings to the southwest) began on May 28, 2008, when an 18 Step RNAV Kick Off Meeting was held at the Boston Consolidated TRACON (A90). Participants included FAA lines of business and airline users; American, Northwest and Jet Blue, and Massport. Follow up efforts have been conducted since including telecons and meetings. The BOSTON BONS RNAV procedures will be submitted to the FAA's Flight Procedures Office on or before 01/29/09 to begin formal processing. It is anticipated that the procedures will be published for use on August 27, 2009.

Guideline Item Index

| Item # | Item Name | Start Date | Close Date | Status |
|--------|--|------------|------------|------------------------|
| 1. | Kickoff Meeting | 05/28/08 | | A90, Follow-up @ A90 |
| 2. | Adapt TARGETS | 05/13/08 | | ANE AIRSPACE LAB |
| 3. | Reserve Waypoint Names | 05/28/08 | | A90/BOS TWR |
| 4. | Design the Procedure | 05/28/08 | | ANE AIRSPACE LAB |
| 5. | Simulator Evaluation | 09/23/08 | | Chg re RWY 27 |
| 6. | Working Group Reviews Procedure | 05/28/08 | | Follow up mtg 11/19.08 |
| 7. | Process Decision | | | |
| 8. | Procedure Documentation | 05/28/08 | | |
| 9. | Automation | | | |
| 10. | Environmental Review | | | |
| 11. | Advise Industry of Project Development | 05/28/08 | | |
| 12. | AVN Flight Check | | | |
| 13. | Video Maps | | | |
| 14. | Training and Notification | | | |
| 15. | Process Verification | | | |
| 16. | Lead Operator Flight Trials | | | |
| 17. | Publish Procedure for Public Use | | | |
| 18. | Post Procedure Implementation Analysis | | | |

