

August 10, 2009

Ms. Margaret Gilligan
Associate Administrator for Aviation Safety
Federal Aviation Administration
800 Independence Avenue
Washington, DC 20591

Dear Peggy:

In 2008 the PARC recommended resolutions to 114 issues that had been raised by various member groups relative to RNP SAAAR operations, approvals and procedure designs. At that time, a short list of issues still had not been resolved, and the PARC RNP SAAAR Update Action Team was tasked to continue working toward a resolution. This letter addresses one of the remaining issues, the database validation requirements contained in Appendix 3 to AC 90-101.

The PARC has reviewed and agreed with the action team recommendations regarding the requirements in Appendix 3. The primary issues addressed are twofold, the operator requirements for flyability verification upon initial procedure release and for each subsequent “significant” change are extremely costly, and the requirement for validation back to “source data” for each procedure once transformed into airborne format each month is confusing regarding what is source and how such checks must be made.

With regard to the flyability verification, the PARC believes that the detailed development of the RNP SAAAR criteria which married the aircraft qualification and operation (AC 90-101) with the procedure design (Order 8260.52) is sufficient to justify removal of the flyability check by each operator for the US National Airspace System. FAA or third party vendors will still perform such a check when the procedure is developed, however repeat checks by every RNP SAAAR operator are unnecessary and the PARC is recommending removal of the requirement for NAS procedures.

With regard to the data validation required of each operator, the PARC does not believe that enough data has been gathered yet to recommend removal of the requirement. However, our detailed survey of navigation database cycles since September 2008 has shown a marked decline in issues with procedures, many of which are due to the lack of specificity in the Appendix regarding source data and comparison tolerances. While unable to recommend complete removal of the requirement for operator validation, in the interim PARC feels that FAA should continue to develop an electronic database which could be designated as official source for procedure data, and they should clarify that operators may pay third parties to validate their databases (like Jeppesen or others). PARC is continuing the action team work to define specific data which must be compared from cycle to cycle, along with tolerances for those comparisons.

The detailed recommendations are attached, one for each of the primary issues. PARC has retained a history of meetings and backup substantiation of conclusions on the PARC website.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dave Nakamura". The signature is fluid and cursive, with a long horizontal stroke at the end.

Dave Nakamura
Chairman, Performance based operations
Aviation Rulemaking Committee

Cc: J. McGraw
J. McCarthy
B. DeCleene
M. Cramer

RNP SAAAR Update Action Team Discussion / Recommendations
AC 90-101 Appendix 3 Database Validation Criteria
Definition of “Significant Change” and “Source”

October 2, 2009

As operators have begun to follow the guidance of AC 90-101 Appendix 3 for database validation, two issues have caused difficulty in understanding what to implement and how to validate airborne databases each AIRAC cycle. The Appendix calls for comparison of RNP SAAAR procedure airborne data representation to FAA “source” data, without specifically defining what source data and which parameters must be compared. It also states if there is “significant change”, the issue must be resolved and the procedure revalidated before it can be used for flight. The relevant excerpts from the AC 90-101 Appendix are the following:

Section 3.a

“Compare the navigation data for the procedure(s) to be loaded into the flight management system with the **published procedure**. **The FAA Form 8260** series is available through the National Flight Data Center.”

Section 4

“DATA UPDATES. Upon receipt of each navigation data update, and before using the navigation data in the aircraft, the operator must **compare the update to the validated** procedure. This comparison must identify and resolve any discrepancies in the navigation data. If there are **significant changes** (any change affecting the approach path or performance) to any portion of a procedure and an amended FAA Form 8260-3 or -10 verifies the changes, the operator must validate the amended procedure in accordance with paragraph 3 of this Appendix.”

The highlighted text in section 3.a shows that “source” for the published procedure is not definitive, and the highlighted text in Section 4 shows reference to “significant change” without a clear definition of the term. This led to many instances of incorrectly declaring a procedure unusable as the comparisons were made, which led this Action Team to define the terms as proposed in the attachments to this letter.

The AT (Flight Standards, AVN, operators, ALPA and MITRE) previously recommended that FAA continue to work toward an electronically usable database of the procedures. The team has now agreed and is recommending that the data contained in forms 8260-10 be used to define the “published procedure” for the purposes of Section 3.a.

For the purposes of Section 4, the team has developed both a process flow and a list of data that must be compared between airborne and published data. The process flow does not specifically call for a “validated” data base, akin to the “gold standard” that Alaska Airlines uses, but leaves the implementation of the comparison to the user so long as the data in the airborne database is validated against the published source (8260-10) data. Further the parameter list provides a comparison threshold such that if the airborne / source difference exceeds the

threshold, the procedure is not validated and the issue must be resolved. The process flow also makes note that threshold exceedances may be resolved in any of three ways,

- 1) Removal of the procedure from the airborne data in the current AIRAC cycle being compared,
- 2) Correction of the procedure (source or airborne) for the current AIRAC cycle so it can be used,
- 3) Institution of an operational mitigation for the procedure, allowing its use, i.e., not removing or correcting it this cycle.

Examples of method 3 are included within the comparison matrix, for instance, cockpit manual override of an incorrect database RNP value. This is not to be interpreted to make aircrews responsible for data comparison; it is only to mitigate an error detected during validation that might delay use of a new procedure unnecessarily.

A last note on the comparison data matrix, for all location type data (fixes, runways, turn centers) a distance criterion is specified (60 feet). To standardize computational methods the team will supply a written software requirement document that can be used to implement the calculations with a calculator to use to validate implementation. Check the notes in the matrix for further information.