October 31, 2006

Mr. Nicholas Sabatini
Associate Administrator for Regulation and Certification
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Dear Nick:

On behalf of the PARC, I am pleased to provide the recommendations of the RNP Procedure Criteria Action Team. This team has been working to extend and clarify the RNAV recommendations you received in my letter dated February 16, 2005. Based on international harmonization and earlier PARC decisions, these recommendations now will constitute basic (or non-SAAAR) RNP procedure design criteria. Necessary and sufficient equipage for basic RNP will consist of single-thread GNSS with no allowance for DME/DME/IRU in the procedure design. Minimums for baro-VNAV will be provided, but VNAV is optional, not required.

Following the February 2005 letter, AFS-400 reviewed the recommendations and accepted 10 of 16 items while requesting clarification on the remainder. The RNP Action Team has finalized recommendations on the remaining items are described below.

Secondary Obstacle Surfaces

Unlike SAAAR, basic RNP will be predicated on greater protection from procedure design. The team recommends a 0.3 nm sloping surface on the final approach. The team also recommends course widths on other approach segments sufficient to achieve the target level of safety without operational mitigation. AFS- 420 has agreed to evaluate other segments and determine secondary widths, if required. The team feels that GNSS navigation with a 2 nm half-width may be sufficient for other segments without secondary surfaces.

Radius-To-Fix (RF) Path Terminators

The team recommends that RF legs be allowed in any procedure segment. It is recognized that there may be restrictions on RF legs when compared to SAAAR, primarily regarding use on the final segment. The recommendations include a proposed implementation policy. Attachment 1 contains specific recommendations.

Performance-based Landing Category

Some airspace users originally recommended steeper descent angles for Category C and D airplanes. It was determined that these needs could be met by revising the Aeronautical Information Manual to allow flight crews to use current performance data to adjust minimums. The team feels that this is method is consistent with the evolution of a performance-based NAS when compared to the existing proscriptive definitions of landing categories as applied to approach minimums.

Attachment 2 contains recommended text for an AIM revision.

Missed Approach Climb Gradients

In a manner similar to landing category, the team feels that airplanes with higher climb performance should be provided additional flexibility and benefit. Attachment 3 contains recommended text that would provide for up to 3 lines of minima on basic RNP procedures that represent varying degrees of climb performance.

Cold Temperature Policy

Current procedure design policy uses the controlling obstacle on the final approach segment as the basis for calculating minimum temperature for the procedure. The team recommends that this policy be reviewed so that obstacle clearance on any segment would be maintained. Attachment 4 contains proposed text for a revised policy.

RPAT authorization

The team recommends that basic-RNP airplanes be allowed to participate in RPAT operations as proposed by the PARC's RPAT Working Group. The airplanes would be required to have RF legs and VNAV capability, and radar would be required.

The team recognizes that significant follow-on work must occur in preparation for basic-RNP operations. These include decisions on charting, databases, and creation of an Advisory Circular. In addition, PARC was not able to perform any comparative assessment of application of SAAAR and basic RNP criteria to determine if the application of both in environments such as complex or high density operations will affect implementation of optimal operations or airspace design. Any FAA insights or feedback on this point would be appreciated. PARC and the action team would like to remain involved in these follow-on actions.

Sincerely,

Dave Nakamura
Chairman
Performance-based operations Aviation
Rulemaking Committee

Cc: PARC Members
R. Burns
B. DeCleene
J. McGraw
J. Williams

Attachments

Attachment 1--RF Legs

The committee recommends that RF legs be allowed in "basic" RNP procedures under the following guidelines:

- Use RF legs to allow for more efficient routings or lateral/vertical paths that would otherwise be unavailable when compared to use of TF legs only.

- RF legs are allowed in any segment provided extraction can be achieved with single thread equipment

- Manufacturers will be responsible for ensuring that procedures with RF legs are not in databases for aircraft that cannot fly them

The committee further recommends the following implementation policy:

Runways that currently have an RNAV(GPS) procedure will retain that procedure, but are candidates for an additional procedure if RF legs provide benefit

Procedures at runways with no existing RNAV(GPS) procedure would be based solely on the new criteria (including RF if beneficial)

Attachment 2 --Recommended Revision to AIM Paragraph 5-4-7(a)
(Changes in bold text)

"Aircraft approach category means a grouping of aircraft based on a speed of VREF, if specified, or if VREF not specified, 1.3 VSO **at the time that the approach is initiated. Pilots knowing the current valid Vref or Vso, as appropriate, may use the corresponding charted category minimums.** Pilots are responsible for determining and briefing which category minimums will be used for each instrument approach.

Alternatively, if the current valid Vref is not available, the Vref / Vso at the maximum certificated landing weight as established for the aircraft by the certification authority of the country of registry **must be used**. If a higher approach speed is used on final that places the aircraft in a higher approach category, the minimums for the higher category must be used. Helicopters are Category A aircraft. Approaches made with inoperative flaps, circling approaches at higher-than normal straight-in approach speeds, and approaches made in icing conditions for some types of airplanes are all examples of situations that can necessitate the use of a higher approach category."

Note: Deleted "An aircraft must fit in only one category."

Attachment 3--Missed Approach Climb Gradients

The RNP Action Team believes provision for multiple climb gradients would significantly lower minimums. Specifically, the AT recommends:

1) Where the climb gradient would not exceed 300 feet per mile, there should be two lines of minima; one for 200 feet per mile (40:1 slope plus standard FAA margin), and one with lower minima predicated on the CG.

2) Where a significant reduction in minima can be achieved with a CG greater than 300 feet per mile, but not to exceed 425 feet per mile, then 3 lines of minima should be published:

200 feet per mile
300 feet per mile, and
between 301-425 feet per mile.

Attachment 4--Cold Temperature Policy

The team recommends that the criteria for establishing the charted cold temperature limit be changed to analyze the appropriateness of that limit in all segments of the approach rather than only the final segment. While this recommendation is applicable to all approaches, not just basic RNP, the team recommends that the criteria be developed first for basic RNP and then applied to TERPs for all procedures."