

Flimsy 1

Substitution of RNAV for Conventional Aids

In AC 90-108 (attached) FAA allows the substitution of approved RNAV aircraft to fly conventional aid based enroute, terminal and approach procedures without the specific aids being either on the aircraft or in operation. However this AC does not make any reference to either the flight planning requirements or the separation standards to be applied as the controllers provide services as per the aircraft's stated intentions. The US provides the ATS service the operator requests.

Most modern RNP capable aircraft have in their Aircraft Flight Manual (AFM) the approval to conduct enroute, terminal and approach procedures based on using their RNP capabilities.

Flight Plan 2012 still requires that the flight plan contain the equipment that the aircraft carries, rather than its capabilities.

The outcome of this policy is that aircraft cannot include their capabilities to fly conventional enroute, terminal and approach procedures on the flight plan, and in turn, ATS cannot technically apply conventional aid separation standards to these aircraft. This can impose significant operational restrictions and costs on operators.

This issue was considered by the ICAO SASP, and they produced the Draft Circular 322 in 2009.

This issue was presented by the PBN TF9 to CNS/Met in July, 2012 as follows:

The meeting was apprised of the dialogue that had been on-going in Australia regarding the requirements for a conventional instrument flight procedures flown using GNSS/RNP aircraft. IATA stated that this was a complex area with possible legal implications for ATC. The meeting noted the lack of guidance on this matter and suggested that ICAO might consider developing such material, which should include guidance for ATC. The meeting agreed to the following Draft Conclusion:

Draft Conclusion 9/2: Global PBN Standards for GNSS/RNP aircraft flying conventional Instrument Flight Procedures

That, ICAO HQ review and further develop operational and guidance material for conventional instrument flight procedures flown using GNSS/RNP aircraft.

This was then presented to APANPIRG in August, 2012. The outcome was:

The PBNTF meeting was apprised of the dialogue that had been on-going in Australia regarding the requirements of conventional instrument flight procedures flown using GNSS/RNP aircraft. IATA stated that this was a complex area with possible legal implications for ATC. APANPIRG/23 noted the lack of guidance on this matter and discussed the draft Conclusion formulated by PBN/TF/9, asking ICAO to review and develop operational guidance materials for conventional instrument flight procedures flown using GNSS/RNP aircraft.

The APANPIRG/23 meeting did not adopt the draft Conclusion in order to further clarify what was expected from the Conclusion. The meeting then decided to refer the issue back to the PBNTF for further deliberation. Australia was requested to prepare a working paper in coordination with IATA for discussion at the PBN/TF/10 meeting, to be held December 2012.

The issue was referred to HQICAO by regional staff. It was also raised at ANConf/12 without outcome. Due to time constraints between these meetings, the APANPIRG requested response is contained in this flimsy.

State responsibility

The recommended draft conclusions, for consideration by CNS and then APANPIRG are:

1. That APANPIRG States adopt the intent of the US AC 90-108 and publish similar material;
2. That this material include the approval for authorised operators to include the listing of conventional navigation aids in the aircraft flight plans provided the operator has the State approval for navigation aid substitution;
3. States accept the navigation substitution approvals of foreign States;
4. States provide separation standards in accordance with the nominated flight plan capabilities;
5. ICAOHQ initiate the necessary amendments to globalise these aid substitution provisions.



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Use of Suitable Area Navigation
(RNAV) Systems on Conventional
Routes and Procedures

Date: 3/3/11

AC No: 90-108

Initiated by: AFS-400

Change:

1. **PURPOSE.** This advisory circular (AC) is intended for the following purposes.

a. Operational and Airworthiness Guidance. Provides operational and airworthiness guidance regarding the suitability and use of RNAV systems while operating on, or transitioning to, conventional, i.e., non-RNAV, routes and procedures within the United States (U.S.) National Airspace System (NAS). This guidance material applies to two broad categories:

(1) Use of a suitable RNAV system as a *Substitute Means of Navigation* when a very high frequency (VHF) Omni-directional Range (VOR), Distance Measuring Equipment (DME), Tactical Air Navigation (TACAN), VOR/TACAN (VORTAC), VOR/DME, non-directional radio beacon (NDB), or compass locator facility including locator outer marker and locator middle marker is out-of-service, i.e., the Navigation Aid (NAVAID) information is not available; an aircraft is not equipped with an automatic direction finder (ADF) or DME; or the installed ADF or DME on an aircraft is not operational. For example, if equipped with a suitable RNAV system, a pilot may hold over an out-of-service NDB.

(2) Use of a suitable RNAV system as an *Alternate Means of Navigation* when a VOR, DME, VORTAC, VOR/DME, TACAN, NDB, or compass locator facility including locator outer marker and locator middle marker is operational and the respective aircraft is equipped with operational navigation equipment that is compatible with conventional NAVAIDs. For example, if equipped with a suitable RNAV system, a pilot may fly a procedure or route based on operational VOR using that RNAV system without monitoring the VOR.

b. Qualified RNAV Systems. Describes the types of RNAV systems that qualify as “suitable RNAV systems” as adopted in the final rule titled, *Area Navigation (RNAV) and Miscellaneous Amendments*, published in the Federal Register (FR) on June 7, 2007, which amended the Title 14 of the Code of Federal Regulations (14 CFR) sections listed in paragraph 2 of this AC.

c. Operations on Certain Segments of ILS Procedures. Describes a “suitable RNAV system” for operations on published RNAV segments of certain instrument landing system (ILS) procedures.

d. Alternative Compliance Method. In lieu of following the methods described in this AC, i.e., the operating requirements detailed in this document, without deviation, operators may
