

**AERONAUTICAL CHARTING MEETING**  
**Instrument Procedures Group**  
**Meeting 20-02 – October 27, 2020**

**RECOMMENDATION DOCUMENT**

**FAA Control # 20-02-354**

**Subject:**

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

**Background/Discussion:**

The FAA Aeronautical Charting Meeting has made progress on a proposal from 2013 to clarify equipment required notes on IFR procedure charts. For more information, see topic [13-02-312](#) (I am the unnamed CFI referenced in that recommendation).

Unfortunately, many pilots who have an IFR-approved GNSS (i.e., a suitable RNAV system) are still puzzled by equipment requirements on charts, and the new-format notes still don't address a key point of confusion.

For example, see the KBEH ILS or LOC RWY 28 approach chart (attached chart and the excerpt, also included below).

A long thread at the BeechTalk forum demonstrates that many folks think that *both* notes, **RNAV-1 GPS required** and **DME Required for LOC only**, apply if you're flying the LOC-only version of this procedures. That is, if you have an IFR-approved GNSS, you must also have DME to fly the non-precision version of the procedure—you can't use GNSS to substitute for the DME requirement unless you have a second GNSS that you can use to load the I-BEH localizer as a fix to provide distance information from the location of that DME transmitter.

Of course, if you load this procedure in a system such as a G1000 or Garmin GNS or GTN navigator (see attached image), the fixes you need to fly the LOC-only procedure are in the flight plan list. The MAP, at the threshold of RWY 28, is the key. You can use along track distance (ATD) as described in the AIM and other sources to keep track of your position and identify key points, such as the VDP, along the final approach segment.

But the guidance on this topic in **AIM 1-2-3 Use of Suitable Area Navigation (RNAV) Systems on Conventional Procedures and Routes** and AC 90-108 is apparently too subtle.

For example, both references above state:

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 Beacon (NDB), or compass locator

facility including locator outer marker and locator middle marker is out-of-service (that is, 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...

**NOTE–**

1. *The allowances described in this section apply even when a facility is identified as required on a procedure (for example, “Note ADF required”).*

**Recommendations:**

Update guidance in the AIM and other guidance to *explicitly* (not buried in a note) clarify that if you have GNSS (subject to limitations in the AFM supplement, etc.), procedure notes that require DME, ADF, dual VOR receivers, and the like, don’t apply. And that notes such as those on the KBEH ILS RWY 28 chart aren’t additive.

**Comments:**

**Submitted by:** Bruce Williams

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**Date:** February 18, 2020

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**Initial meeting 20-02:** Bruce Williams, Flight Instructor and FAAS Team Member, presented the [item](#), and briefed from [slides](#). This issue is related to questions he often receives in his instructional capacity regarding confusing equipment notes when the pilot has a suitable RNAV (IFR-approved) system. The issue is addressed in the AIM and AC 90-108, but is hard to locate. Bruce would like information regarding the use of a suitable RNAV system to be more prominent, and clarify that pilots can disregard notes that would no longer apply (e.g. ADF required or GPS required). Bruce said the real goal would be to clarify equipment requirement notes on the charts, but recognizes that is a difficult challenge. The alternative is to clarify the guidance on the notes in the AIM, AC, Instrument Procedures Handbook (IPH), etc. Bruce showed the location of the information via the slides, pointing out how hard it is to find in the AIM. Example approaches were shown and discussed. Joel Dickinson, FAA Flight Operations Group, said this is an area he is also concerned about, and said they standardized the requirements box nomenclature for the PBN boxes a few years ago. Joel said they are working on a draft AC that combine all existing AC 91-105/107/108 information in a single AC, to include RNAV substitution guidance. There are also adjustments to AIM/IPH guidance in progress, and will discuss with Bruce in a separate conversation. The group discussed the merits of accepting the issue for further action. John Moore, Jeppesen, suggested keeping it open since some criteria changes may occur and he would like the opportunity for the ACM to review those. Gary McMullin, Southwest Airlines, also receives this question often and wants to accept the issue and keep it open.

### **Action Items:**

- Bruce Williams will work with Joel Dickinson on the issue.
- Flight Operations Group and Flight Procedures and Airspace Group will report on any work and changes to criteria or advisory guidance material based on this issue.

**Status:** Item accepted and open

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**Meeting 21-01:** Joel Dickinson, FAA Flight Operations Group, briefed the issue [slides](#). They are consolidating the PBN guidance, including this issue, into an advisory circular. This project is ongoing, and, when published, the AIM verbiage that references this will be updated. Dan Wacker, FAA Flight Procedures and Airspace Group, inquired if this was applicable to only approaches, or if it would apply to all procedures, and Joel said it would apply to all procedures. Joel added they are working on ensuring clarity of language, and stressed this would be an operational technique, and not a TERPS protection.

### **Action Items:**

- Flight Operations Group will report on status of any possible AC changes and publication dates

**Status:** Item open

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**Meeting 21-02:** Joel Dickinson, FAA Flight Operations Group, briefed the issue [slides](#). Jeff showed an example slide from SkyVector showing unusable airway segments for V451. The airway cannot be filed, is unusable as noted, and RNAV substitution cannot be applied. A pilot can fly point-to-point, however the airway designation should not be used for filing or ATC clearances. Joel Dickinson, FAA Flight Operations Group, briefed an update to the Chart Users Guide, and said a new advisory circular (AC) will contain clarifying information to address PBN topics like this recommendation. The publication of this new AC will drive some AIM language changes, informing pilots when they may use suitable RNAV on conventional procedures. Joel added the process is ongoing, and the item will remain open. Bruce Williams, GA pilot, said the GA community needs to be kept informed on the AC, and Joel said the language in the AC and the AIM should be similar. Rich Boll, NBAA, asked if there are any Order JO 7110.65 changes anticipated, and Joel said that guidance already exists. Bennie Hutto, NATCA, said ATC can assign point-to-point navigation over these routes, and also questioned NavSpecs for waypoints on conventional procedures. Joel said the Agency is struggling with these “hybrids,” which contain both PBN NavSpecs and requirements on conventional procedures, knowing modern aircraft have greater capabilities. A waypoint on a conventional

procedure adds navigational requirements, but is still a conventional procedure. Bennie stresses point-to-point is direct and not a conventional procedure. Jeff said the original recommendation issue is being worked through the draft AC, and Joel confirmed that the AC is covering the issues brought up in the recommendation. Joel said anyone wanting a copy of the new AC draft as originally posted for comments could email him directly, adding the four-month comment period is now closed. Lev Prichard, Allied Pilots Association, said strong guidance is needed, however Joel said feedback they received from large groups suggested being less specific. Joel said the PBN procedures in the NAS are covered well and understood. The confusion comes from “weird” things on conventional procedures. Most of these get coded, which can make them look the same as PBN, yet the pilot may not be clear on the limitations and requirements. Joel agreed rule changes might be needed at some point. The group discussed the KMDW MIDWAY SIX departure procedure as an example of a conventional procedure with a published PBN requirements box.

**Actions:** The Agency will continue work on AC 90-119 and report status at the next ACM.

**Status:** Item open

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**Meeting 22-01:** Jeff Rawdon, Flight Procedures Airspace Group, FPAG, briefed the issue ([slides](#)). Review of the issue has identified the source of these charted unusable segments, and there is a plan being worked to remove the notes on the charts. Joel Dickinson, FAA Flight Operations Group, briefed that new AC 90-119 will replace AC 90-100, 90-105, 90-107 and 90-108. AC 90-108 is the specific advisory circular allowing the pilots to substitute RNAV on a conventional en route segment. The AC 90-119 draft has been through coordination, with many comments received, and those comments are being adjudicated.

**Actions:** FPAG will report on the status of removal of the unusable airway segment notes. Flight Operations Group will report status of AC 90-119.

**Status:** Item open.

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**Meeting 22-02:** Jeff Rawdon, Flight Procedures Airspace Group (FPAG), briefed the issue ([slides](#)). There are conventional routes charted as unusable, and the Flight Standard’s position is that these routes are entirely unusable, even by aircraft with RNAV systems. Valerie Watson, FAA Charting Products Integration Team (AJV-A250), said there is a Charting Group issue on unusable airways later in the meeting and wanted to avoid confusion. Joel Dickinson, FAA Flight Operations Group (FOG), said AC 90-119 is still in draft mode, has been through the PARC NAV Work Group, and has been out for public comment with many comments received. That comment review process is ongoing, and once adjudication is complete, they intend to put the AC through

coordination again. AC 90-119 consolidates the information from ACs 90-100, 90-105, 90-107, and 90-108 into a single Performance Based Navigation operation advisory circular. It will include and consolidate the technique of using RNAV systems on conventional routes and procedures.

**Actions:** FOG will provide a status update of AC 90-119 at ACM 23-01.

**Status:** Item open

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**Meeting 23-01:** Jeff Rawdon, Flight Procedures Airspace Group (FPAG), briefed the issue ([slides](#)). This RD is similar but not directly related to Charting Group RD 19-01-335, Charting of Unusable Airway Segments. Joel Dickinson, Flight Operations Group (FOG), has worked on the issue as part of the upcoming Advisory Circular AC 90-119 which combines ACs 90-100, 90-105, 90-107, and 90-108. This draft is currently under review from the first round of coordination, and the revised draft will be sent out for an additional round of coordination. Bruce Williams, CFI, is encouraged with the work on the advisory circular, and concurs with RD closure at this time. Joel advised the meeting that appropriate notifications would be sent when the draft advisory circular enters the next round of coordination.

**Actions:** Joel Dickinson, Flight Operations Group, will send out notifications when AC 90-119 enters the next round of coordination.

**Status:** Item closed