

# GPS or DME?

## What's legal in that new panel?

So you're about to upgrade that panel in your trusty twin Cessna and you would like to save some space. With the new approved GPS, is it really necessary to keep DME or ADF? The answer is no, but with some reservations.

The FAA recently announced that GPS can now legally substitute for DME and ADF. While this seems like a large stride in the right direction, the feds are simply allowing what most pilots have been doing for the past few years. OK, tell me you file your flight plan with a /R and do the flying relying totally on the VOR/DME equipment in the aircraft and never look at that fancy loran or GPS.

We've all filed one way and then used the better equipment to actually fly the route. You might have fooled the FAA in doing so, but I know a couple of controllers that work in ATC and they tell me that they can tell right away if you are using GPS rather than RNAV. The line across the radar scope using GPS or even loran is nearly perfectly straight and the RNAV line always waivers slightly.

Here is the new rule according to the FAA. If you have an IFR-certified GPS approved for at least en route and terminal operations, that box is called an A2 box, and you can use it to substitute directly for DME or ADF in all circumstances with only a few exceptions.

You still can't use GPS as DME on an ILS/DME approach and you still can't fly an NDB or VOR approach if the aircraft isn't equipped with ADF or VOR. Since overlays have been in place for four plus years, this really doesn't mean any change. If you have an approach approved receiver and the NDB or VOR approach has an overlay (as most do) you can legally fly the approach without having the conventional equipment on board.

This means that you can really save room in that new panel by removing the ADF and the near future is very limited on new installations of DME because GPS is a direct substitute in nearly all cases. To legally fly ILS/DME approaches, technically, you still need DME, however, the FAA and most manufacturers are close to adding

localizer DME sources as named waypoints in IFR databases and this will, in the end, make DME obsolete for the well equipped GPS aircraft.

As of this writing, it would seem that rather than spending any money on DME, it would be wiser to buy and install an A2 certified GPS (about \$3,500.00) and get the DME and ADF substitution in the deal. Free up two holes in the radio rack for installing one, but there is a catch.

The FAA says that in order to legally substitute GPS for DME or ADF, you need to update your database every 28 days. This poses a problem for the IIMorrow line whose manuals vaguely imply that an expired database is legal for those receivers, provided that the pilot manually checks the fixes against up-to-date charts.

The new FAA policy makes the buying decision even harder. Let's say you're looking at two of the new mid-range GPS receivers, the Garmin 250XL and the IIMorrow GX65. Both are full navigators with moving maps and VHF com radios. The Garmin is VFR only and can be installed for just under \$4,000.00 by doing some wise shopping. The GX65 will cost nearly \$5,000.00 to install but it is approved for en route and terminal operations.

So what's really going on? Pilots are indeed substituting non-certified GPS (even handhelds) for DME and ADF every day. It may be illegal and it might not be safe, but, trust me, it's happening. In order to be legal to the letter in today's IFR flying world, you must pay \$800.00 to \$1,000.00 more for the installation and another \$500.00 each year for updates to the database.

If you're not confused yet, wait a few months.

There are several boxes that are just over the horizon (like the Garmin GNS 430) that will do it all. If that doesn't get you worked up, go to your local avionics guru and ask for a demonstration of the new Avidyne on board computer. There is no doubt that three weeks after you change your panel, something new will hit the shelves that does more for less money and you can overlay the color moving map with everything from engine monitors to Stormscopes. Hang in there!

According to *Aviation Consumer*, the following boxes give you current costs on GPS and databases.  
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