



TruTrak Flight Systems, Inc.

Springdale, AR

Phone

FAX

Minimum Airspeed in ADI Pilot II

This document composed in response to Mr. Timothy Monville's request for additional information regarding the minimum airspeed setting in the customer unit S/N 108460 in regards to FAA accident # AEA2314004.

Mr. Monville asked the following questions in regards to the minimum airspeed value being "set to a value of zero, which would have disabled the minimum airspeed alert"

1. Who can set this value (mechanic, or only at your facility)
2. Whether there was any correspondence with the owner or person that sent this item to your facility about what it should be returned with that value set to
3. Whether there is any internal procedure with the company to set that value in the absence of instructions from an owner or mechanic
4. Whether you provided guidance to the owner / mechanic when the unit was returned about "minimum airspeed value" being set to 0.

I feel as though an explanation of the minimum airspeed feature / function in the ADI Pilot II is necessary prior to answering the above questions.

The minimum airspeed feature in the ADI Pilot II is NOT designed as an autopilot limiting function. Setting a minimum speed will ONLY give the pilot a flashing visual alert when the airspeed is below the set value. The ADI Pilot II autopilot will engage and function at all airspeeds. It is designed as a simple system with limited control authority and does not have an autopilot disable or lockout speed setting, nor does it have any sort of envelope protection.

The excerpt below is from page six of the ADI Pilot I & II installation and users guide:

The seventh setup screen, with a flashing “7” is used to set the minimum airspeed. A setting of “- -” shows up when the lower right knob is rotated CCW. This setting means, “no minimum airspeed check is done.” Turning the lower right knob CW from here means, “below this airspeed, flash “A_S”. Since the first column is flashing the digit “7”, only the least significant two digits of minimum airspeed are shown, but a leading “1” is implied any time the second two digits are showing a value less than fifty. Once the minimum airspeed is done, press and release the lower right knob to enter that value and advance to the next setup screen.

NOTE: THE MINIMUM AIRSPEED SETTING ONLY APPLIES TO THE WARNING DISPLAY, NOT TO THE ALTITUDE HOLD AUTOPILOT ITSELF! THE AUTOPILOT WILL FLY AIRCRAFT DOWN TO A STALL, SO DO NOT LET THIS HAPPEN.

In response to the above questions:

1. The procedure is to set the minimum airspeed value to 50 when the product leaves our factory when NEW. Although, it cannot be verified that this particular unit had a minimum airspeed set to 50 when it was originally shipped. The mechanic and owner both have the ability to adjust this, and all other autopilot, settings.
2. We did not and do not alert end users to changes in the minimum airspeed alert for ADI Pilot II controllers. We will contact users about incorrect settings that may cause the system to fly poorly, but especially in the ADI Pilot II where the minimum airspeed alert does not impact that autopilot in any way, we do not do this.
3. We do not change customer settings in a unit when it is in our facility for repair. Our procedure requires, recording all customer unit settings prior to beginning any work on that unit. Once all testing is complete, the customer settings are re-entered so that they do not have to go through the setup / tuning process again.
4. The minimum airspeed feature guidance is located in the installation and users guide for the ADI Pilot II. We do not communicate this information again, as our policy is not to adjust customer settings.

Regards,

Andrew Barker / President