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SERVICE INFORMATION LETTER

**PRIMUS Apex Build 8.6/Build 8.7 Operational Software; Longer Global Positioning System (GPS)
Initialize Times With Apex B8.6 or B8.7**

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Transmittal Information

Publication Number D201312000062

Summary

This is the INITIAL release.

Revision History

This service information letter has had no revision(s) as shown in Table 1.

Table 1. Revision History

Revision Number	Revision Date
0	21 Jan 2014

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1. General Information

A. Effectivity

- (1) This service information letter is applicable to the Pilatus PC-12/47E aircraft with the PRIMUS Apex Build 8.6/Build 8.7 operational software update.

B. Reason

(1) Reason

- (a) Some Pilatus PC-12/47E aircraft with the PRIMUS Apex Build 8.6/Build 8.7 operational software update are reporting noticeably longer time for the global positioning system (GPS) receivers (global navigation system sensor unit [GNSSU], KGS 200) to initialize.

(2) Problem

- (a) Upon start-up, the GPS receiver does not always receive the present position data needed, so the GPS initialization takes longer. The GPS position is slower to initialize on some Pilatus PC-12/47E aircraft after the PRIMUS Apex Build 8.6/Build 8.7 operational software update.

(3) Solution

- (a) An interim solution is to update flight management position (FMS) position with the airport identifier (reference waypoint), is proposed for faster GPS initialization from the GNSSU (KGS 200). This step can be taken in lieu of waiting several extra minutes for the GPS position to become active.

C. References

- (1) To find, see, and download Honeywell Technical Publications, go to www.myaerospace.com.
- (2) The document(s) that follow(s) is/are related to this service information letter. Unless specified differently, you can use subsequent revisions.
 - Pilot's Guide, Publication Number D201101000059, Revision 4, Primus Apex[®] Integrated Avionics System for the Pilatus PC-12NG (Build 8.6/Build 8.7).

D. Summary

- (1) Update FMS position with the airport identifier (reference waypoint) is an interim solution proposed for faster GPS initialization from the GNSSU (KGS 200). This step can be taken in lieu of waiting several extra minutes for the GPS position to become active. If the GPS position is not available within 10 minutes, then additional aircraft maintenance should be considered.
- (2) To update FMS position, refer to Paragraph 1.E.(2) or the Primus Apex Integrated Avionics System for the Primus Apex[®] Integrated Avionics System for the Pilatus PC-12NG (Build 8.6/Build 8.7) Pilot's Guide, Publication Number D201101000059, Pages 9-125 thru 9-127 for detailed instructions.

E. Action

- (1) Update FMS position with the airport identifier (reference waypoint) is an interim, short-term solution proposed for faster GPS initialization from the GNSSU (KGS 200).

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This step can be taken in lieu of waiting several extra minutes for the GPS position to become active. If the GPS position is not available within 10 minutes, then additional aircraft maintenance should be considered.

- (2) Figure 1 is an excerpt from the Primus Apex® Integrated Avionics System for the Pilatus PC-12NG (Build 8.6/Build 8.7) Pilot's Guide, Publication Number D201101000059, Revision 4, Pages 9-125 thru 9-127.

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The **Update FMS Position** dialog box, shown in Figure 9-74, offers the choice of four different methods to establish the current position of the aircraft. When a valid GPS position fix is available, a **GPS** radio button is automatically selected and the cursor is automatically positioned over the **APPLY** button in the lower-right corner. Pushing the **ENT** button on the MFC uses the GPS calculated position to initialize the FMS.



Figure 9-74
Position Initialization Selected

The FMS can be initialized to a known latitude and longitude if GPS reception is not available. In this case, the latitude and longitude of the present aircraft position is entered in the **Lat/Lon** field.

Figure 1. (Sheet 1 of 3) Update FMS Position

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To enter the latitude and longitude of the present aircraft position, placing the cursor over the Lat/Lon text box gives focus (as indicated by a cyan rectangle). Enter the North or South latitude in degrees, minutes, and seconds. For example, N5105.79 is entered for a North latitude of 51 degrees, 5.79 minutes. Note that minutes less than 10 are entered with a leading zero, and seconds are entered as a decimal of minutes. Next, without entering a space after the latitude, enter the longitude in the same format the latitude was entered (e.g., N5105.79W11400.99), then push **ENT** on the MFC to enter the position into the **Lat/Lon** field. Finally, pushing the **APPLY** button updates the FMS position.

NOTE: If the FMS is not initialized, the SV terrain is not displayed and the **SV FPS** annunciator is displayed.

The FMS can be initialized to a reference waypoint contained in the aircraft navigation database. This form of initialization could be used when GPS reception is not available and the aircraft is in flight. The pilot enters the name of a waypoint such as an airport, NAVAID, or fix, and then pushes the **APPLY** button at the moment the aircraft overflies that waypoint.

NOTE: Entry of a waypoint identifier for which more than one occurrence of that identifier is contained in the navigation database results in the display of the Select Object dialog box, as previously described, to permit the crew to choose the desired object.

When a latitude/longitude or a waypoint identifier has been manually entered, selecting the radio button for the corresponding manual entry displays the distance from the present computed FMS position and the pilot-entered position at the bottom of the window, below the label **Miles from FMS X Position** (X corresponds to the priority FMS). This difference in distance could arise from one of two possible circumstances.

One circumstance is when the FMS is being supplied with a valid GPS position fix, the difference in distance represents the distance between the actual GPS derived position of the aircraft and the manually-entered position supplied by the pilot. The other circumstance is when the FMS is not being supplied with a valid GPS position fix (for example, when the aircraft is in flight and the FMS is operating in dead reckoning mode), the difference in distance represents the difference between the FMS calculation using dead reckoning and the location entered by the pilot.

Figure 1. (Sheet 2 of 3) Update FMS Position

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When the GPS receivers are operating properly and are able to determine aircraft position from the signals received from the satellites in the GPS constellation, the FMS position is normally only updated by the pilot once per flight, and this is done on the ground, immediately following aircraft power-up.

Pushing the **APPLY** button updates the position of the FMS with the selected position and closes the **Update FMS Position** dialog box.

Pushing the **X** button in the upper right corner cancels this dialog box without making any changes.

The **Unable FMS-GPS MON** CAS message is displayed when the FMS position is not initialized.

Figure 1. (Sheet 3 of 3) Update FMS Position

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- (3) For more information regarding this service information letter, contact the applicable Honeywell field service engineer or the location identified below:

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