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SERVICE INFORMATION LETTER

Early Turns While on Standard Terminal Arrival Route (STAR)

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Transmittal Information

Publication Number D201406000103

Summary

This revision is a FULL replacement. This revision includes the changes that follow:

- Changed part number effectivity for the Pilatus PC-12NG.
- Changed the content and format to agree with Honeywell processes in effect at the time of the release of this revision.

Revision History

This service information letter has had one revision(s) as shown in Table 1.

Table 1. Revision History

Revision Number	Revision Date
0	9 Jul 2014
1	3 Sep 2014

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1. General Information

A. Effectivity

- (1) This service information letter is applicable to the EPIC platforms identified below:
- Cessna Sovereign, PN EB7031847-00111 (Phase 5), PN EB7031847-00114 (Phase 5.2)
 - Dassault PRIMUS EPIC F900, PN EB7036889-00114 (EASy II), PN EB7036889-00117 (EASy II 2nd certification)
 - Dassault PRIMUS EPIC F2000, PN EB7036889-00207 (EASy II)
 - Dassault F7X, PN EB7034843-00104 (EASy II)
 - Embraer 170, PN PS7027709-00127 (Load 23.1), PN PS7027709-00129 (Load 23.2)
 - Embraer 190, PN PS7027709-00214 (Load 23.1), PN PS7027709-00217 (Load 23.2)
 - Embraer 170/190, PN PS7027709-00302 (Load 25.2), PN PS7027709-00303 (Load 25.1.0.1), PN PS7027709-00304 (Load 25.3), PN PS7027709-00305 (Load 25.4)
 - Gulfstream G350/450, PN EB7031236-00412 (ASC 909), PN EB7031236-00414 (ASC 908A), PN EB7031236-00415 (ASC 908B), PN EB7031236-00416 (ASC 909/909A), PN EB7031236-00417 (ASC 910), PN EB7031236-00418 (ASC 909B), PN EB7031236-00420 (ASC 911)
 - Gulfstream G500/550, PN EB7031236-00317 (ASC 909), PN EB7031236-00319 (ASC 908), PN EB7031236-00320 (ASC 908/908A), PN EB7031236-00321 (ASC 910), PN EB7031236-00322 (ASC 909B), PN EB7031236-00323 (ASC 911)
 - Hawker 4000, PN EB60000548-0114 (Load 20)
 - Pilatus PC-12NG, PN EB60000487-00111 (Build 8.8.2) and all prior versions.

B. Reason

- (1) The reason for this service information letter is to notify operators of an anomaly that exists in the EPIC flight management system (FMS) software that may result in a turn earlier than what was observed in previous software certifications.

C. References

- (1) Not applicable.

D. Summary

- (1) An operator reported that while flying the Deer Park 3 (DPK3) STAR into KBDL using the DPK transition (Figure 1), the FMS sequenced MAD approximately 13 nautical miles prior to the waypoint, and began the turn to the next waypoint (BRISS). This resulted in queries from Air Traffic Control (ATC) regarding the early turn, as they expected the turn to be initiated within 5 nautical miles of MAD.

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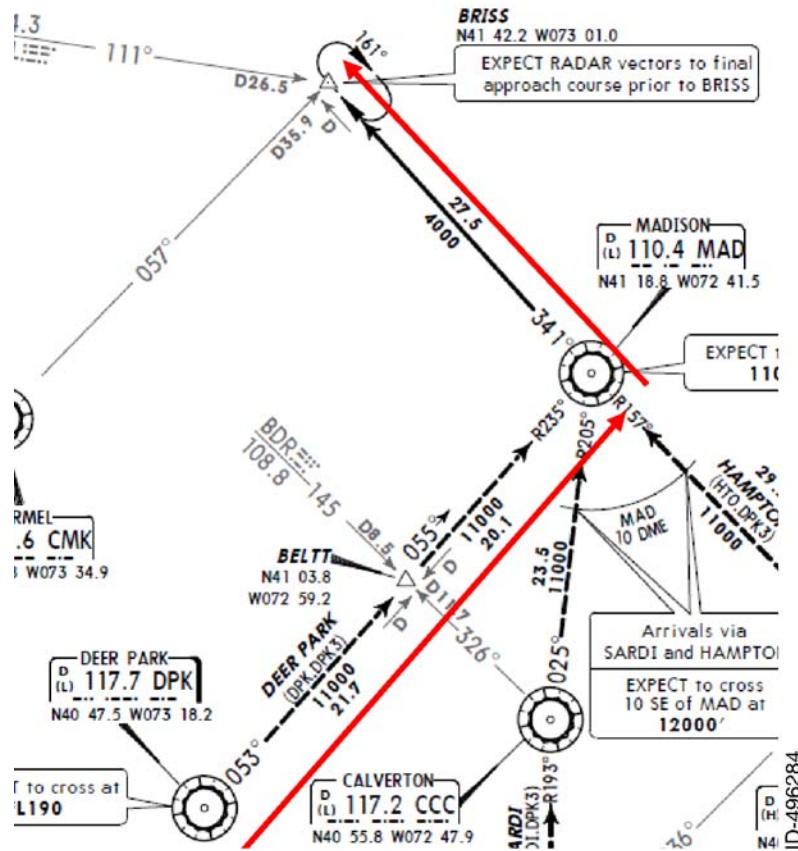


Figure 1. (Sheet 1 of 1) KBDL, DPK3 STAR

- (2) The arrival was flown at 300 knots indicated airspeed (KIAS) and the aircraft was configured with a bank factor setting of 7.
- (3) Initial troubleshooting by Honeywell revealed that changing the bank factor reduced the distance from MAD that the FMS would begin the turn to BRISS.
- (4) The root cause of this issue is that the FMS bank factor setting is expected to be overridden whenever the aircraft is within 30 nautical miles of the airport (regardless if a terminal area procedure is being flown) or whenever on a terminal area procedure. It was found that the FMS is not overriding the bank factor until 30 nautical miles from the destination, regardless if a terminal area procedure is being flown. In this example, MAD was outside of the 30 nautical miles boundary.

E. Action

- (1) Honeywell recommends setting the bank factor to 15 or as directed by the airframe manufacturer.
- (2) This issue is not observed while flying standard instrument departure (SID) procedures.
- (3) Example scenarios of turn distance:
 - (a) Groundspeed of 400 knots and course change of 70 degrees:

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- Setting the bank factor to 15 will result in a turn 6 nautical miles prior to the waypoint.
 - Setting the bank factor to 7 will result in a turn 13 nautical miles prior to the waypoint.
- (b) Groundspeed of 400 knots and course change of 45 degrees:
- Setting the bank factor to 15 will result in a turn almost 4 nautical miles prior to the waypoint.
 - Setting the bank factor to 7 will result in a turn almost 8 nautical miles prior to the waypoint.
- (4) Honeywell will make an update in a future software certification.
- (5) For more information regarding this service information letter, contact the Honeywell Aerospace Technical Support team:

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