EASA Safety Information Bulletin

SIB No.: **2008-73**
Issued: **11 August 2008**

Subject: **Honeywell Flight Management System (FMS) – Early Descent Behaviour.**

Ref. Publication: Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB) NM-08-39 dated 5 August 2008; and Honeywell International Inc. Technical News Letter (TNL) D200712000022, dated 04 January 2008.

Description: FAA has published the referenced advisory document (attached as page 2 of this bulletin) to inform all owners and operators of aircraft equipped with certain Honeywell FMS of recent reports concerning premature descent when the FMS is coupled to VNAV or VGP.

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After reviewing the available information, EASA concurs with the advisory and fully supports the FAA recommendations contained therein. This SIB is published to ensure that all owners and operators of the affected aircraft, registered in European Union Member States or associated countries, are aware of these recommendations.

Applicability: Honeywell FMS units, as identified in the attached FAA SAIB and the Honeywell International Inc. TNL (pages 3 through 6 of this bulletin).

These units are known to be installed on, but not limited to, Boeing 727 series, Bombardier (formerly Canadair) CL-600 series, Cessna 650, Dassault Mystère-Falcon 20, Mystère-Falcon 50, Falcon 200, Falcon 900 and Falcon 2000 series, Gulfstream Aerospace G-1159 series, G-IV and GV, Hawker Beechcraft (formerly British Aerospace, Hawker Siddeley) HS125 and BAe125 series, and Hawker 800 and 1000 series aircraft.

Contact: For further information contact the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu.

FAA
Aircraft Certification Service

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SUBJ: Navigation: Honeywell Epic and FMZ FMS VGP/VNAV Early Descent Behavior

SAIB: NM-08-39
Date: August 5, 2008

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin addresses recent reports of **aircraft equipped with Epic Integrated Avionics Flight Management System (FMS) having part numbers EB7031847, EB7033339, EB7036889, EB7034843, or EB7030192, and Honeywell Legacy Flight Management System (FMS) FMZ-2000, part numbers 7018879, 7017300 and 701770,** initiating a descent prematurely when coupled to VNAV or VGP. The vertical deviation pointers on the PFD will be incorrect and could lead the aircraft below the intended path.

Background

During an RNAV approach, an operator flying a Honeywell FMS programmed the FMS direct to a waypoint outside the Final Approach Fix (FAF). This resulted in a turn greater than 100 degrees back onto the final approach course, which if continued would turn the aircraft inside the FAF. The flightcrew subsequently turned to a downwind leg being radar vectored to intercept the final course. With no reprogramming by the flightcrew, the active leg sequenced and made the FAF the "TO" waypoint with the proper inbound course for the procedure. Although the FMS LNAV position and distances were displayed correctly, when coupled to VNAV or VGP, the aircraft initiated the descent prematurely.

Recommendations

Operators of aircraft equipped with the referenced Honeywell FMS's should provide a means to ensure their flight crews are familiar with the procedures described in the attached Honeywell Technical News Letter D200712000022, dated 04 January 2008.

For Further Information Contact

J. Kirk Baker, Aerospace Engineer, Federal Aviation Administration, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712; phone (562) 627-5345; fax: (562) 627-5210.

For Related Service Information Contact

Honeywell, 21111 North 19th Avenue, Phoeniz, AZ 85027.

Technical Newsletter

D200712000022

System:	Flight Management System (FMS)
Product:	FMZ-2000
Part Number:	7018879, 7017300, 7017000
Title/Purpose:	FMS VNAV Early Descent

Transmittal Information

Honeywell Pub. Number D200712000022

Summary

This is the initial release of Technical Newsletter Pub. Number D200712000022.

Revision History

Technical Newsletter, Pub. Number D200712000022 has had no revisions as summarized in Table 1.

Table 1. Technical Newsletter Revisions

Revision	Date of Release
Initial Release	4 January 2008

1 Background

During an RNAV approach, an operator flying a Honeywell FMS programmed the FMS direct to a waypoint outside the Final Approach Fix (FAF). This resulted in a very steep turn back onto the final approach course, which if continued would turn inside the FAF. Refer to Figure 1.

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Figure 1. Direct to Waypoint (SPLAT) Outside the Final Approach Fix (GRAFE)

The crew subsequently turned to a downwind leg being radar vectored to intercept the final approach course.

Figure 2. Radar Vectors to the Downwind Leg

With no reprogramming by the flightcrew, the active leg sequences making the final approach fix (GRAFE) the TO waypoint with the proper inbound course for the procedure.

Figure 3. FMS Automatically Sequences to make GRAFE the TO Waypoint

2 Analysis

A. NZ-2000 VNAV Equipped Aircraft

In the scenario above, the FMS LNAV lateral position and distances are displayed correctly. However, when coupled to VNAV or VGP, the aircraft will initiate the descent prematurely. The vertical deviation pointers on the PFD will be incorrect and could lead the aircraft below the intended path.

3 Prevention

A. NZ 2000 FMS Equipped Aircraft Without Vectors to Final (VTF) Capability

If intending to fly an instrument approach procedure using the FMS vertical navigation functions (VNAV or VGP) while providing own navigation to the published route to the final approach fix (FAF) or while being radar vectored, then program the FMS using one of the following functions:

- VECTORS approach transition
- ACT VECTORS
- DIRECT-TO INTERCEPT.

This will make sure that the FMS vertical navigation features (VNAV, VPTH, VGP, display of vertical deviation, etc.) will operate correctly. The flightcrew is reminded to monitor and comply with all published approach altitudes.

NOTE: When programming the NZ 4.x and 5.x versions of the Honeywell FMS using the intercept function, if the aircraft is on the FROM side of the intercept leg when it becomes active, the leg may sequence early, deleting the programmed intercept. Prior to intercepting the final approach course into the FAF, the pilot must verify the FAF is the TO waypoint with the proper course inbound displayed.

B. NZ 2000 FMS Equipped Aircraft With VTF Capability

When intending to fly an instrument approach procedure using the FMS vertical navigation functions (VNAV or VGP), and when being radar vectored or when providing own navigation to the published route to the final approach fix (FAF); program the FMS using the VECTORS approach transition or the ACT VECTOR or the DIRECT-TO INTERCEPT function(s) of the FMS. This will make sure that the FMS vertical navigation features (VNAV, VPTH, VGP, display of vertical deviation, etc.) will operate correctly. The flightcrew is reminded to monitor and comply with all published approach altitudes.

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Prepared by: Signature on File in Technical Publications
Bruce Colby
Field Service Engineer/Product Engineer

Approved by: Signature on File in Technical Publications
Eric Heinzer
Customer Service Manager

Approved by: Signature on File in Technical Publications
Rich Hesch
Customer Services Quality Manager

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