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HONEYWELL FMS QUARTERLY UPDATE AND NEWSLETTER**MARCH 2011**

Attention Pilots! Honeywell Publishes Revised FMS Service Information Letters (SILs)

Honeywell published two revised SILs on February 2nd, 2011. All applicable aircraft are referenced in the Service Information Letters. Honeywell highly recommends that all pilots review the applicable SILs referenced below:

SIL Publication Number: D201011000003R001

Reduction of Navigation Database Procedures Content due to Possible LNAV Display/Guidance Issue.

Problem Statement

There have been several FMS anomalies discovered that can be caused by the conditions listed below. These may result in the autopilot/flight director commanding a turn in the opposite direction from the published procedure.

1. Procedures containing a course change near 180° or more. This excludes holding patterns and procedure turns which are flown correctly:

- Last leg of a procedure contains a course change of 180°
- Last leg has a turn direction specified by navigation database
- Last waypoint common in connecting procedures
- When common waypoint becomes the active leg, map display and lateral guidance are incorrect
- Approximately 250 procedures were removed for item 1 in 2011 cycle 04

OR

2. Procedures containing right turn arcs:

- A right turn direction arc leg terminates a procedure (e.g., STAR)
- First leg of following procedure (e.g., Approach) begins with arc termination

- When arc becomes the active leg, map display and lateral guidance are incorrect

OR

3. SID/STAR combinations containing common waypoints between departure, arrival, and/or approach segments.

OR

4. Final Approach Overshoot:

- STAR, Approach Transition and Approach contain common waypoint
- Melding of waypoints causes LNAV to not compute a transition causing an overfly of waypoint

Honeywell Action

To mitigate safety of flight issues pertaining to the flight plan melding cases 1, 2, 3 and 4 above:

- Full item 1 schedule for automated mitigation is 2011 cycle 06. Procedures reported to cause a problem have been removed from the navigation database in 2011 cycle 02.
- Approximately 400 procedures were removed for item 2 from the navigation database beginning in 2010 Cycle 12
- Approximately 250 procedures were removed for item 3 in 2011 cycle 04
- Approximately 600 approach transitions were removed for item 4 in 2011 cycle 02

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Service Information Letters (SILs)

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due to the possibility of overshooting the final approach course for a limited number of procedures

Honeywell Action

To mitigate safety of flight issues pertaining to the flight plan melding cases 1, 2, 3 and 4 above:

- Full item 1 schedule for automated mitigation is 2011 cycle 06. Procedures reported to cause a problem have been removed from the navigation database in 2011 cycle 02.
- Approximately 400 procedures were removed for item 2 from the navigation database beginning in 2010 Cycle 12.
- Approximately 250 procedures were removed for item 3 in 2011 cycle 04
- Approximately 600 approach transitions were removed for item 4 in 2011 cycle 02 due to the possibility of overshooting the final approach course for a limited number of procedures

The list of procedures impacted can be downloaded at:

<http://www.honeywellaes.com> or <http://www.epicinds.com>

Summary

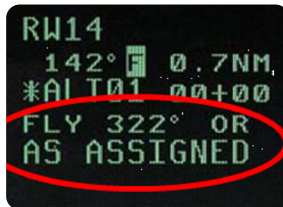
Pilots flying aircraft that are affected should consult the website to view procedures that are removed prior to flight. Pilots are advised to remember that published charts always take precedence over FMS guidance.

SIL Publication Number: D201012000014R001

Terminal Area Procedures Using Heading Legs FLY XXX OR AS ASSIGNED

Problem Statement:

Depending on the procedure, **FLY XXX OR AS ASSIGNED** legs with course changes equal to or greater than 180° degrees may result in the FMS providing guidance to turn in the wrong direction.



An FMS software anomaly has been identified which causes the FMS to turn in the shortest direction to the assigned heading ignoring the coded turn direction (L or R) from the navigation database.

Aircraft Affected:

- All NZ-2000 including NZ6.1
- All Primus Apex aircraft
- All Primus Epic aircraft

Summary:

To prevent the problem from occurring, **FLY XXX OR AS ASSIGNED** heading legs that can cause an incorrect turn have been removed from procedures in the navigation database. Approximately 600 procedures have been modified in the navigation database beginning in 2011, Cycle 02. Only procedures which contain a heading leg as the last leg in the procedure with a course change of 135° or greater will be modified by truncating the heading leg from the procedure. This guideline is used based on the use of a

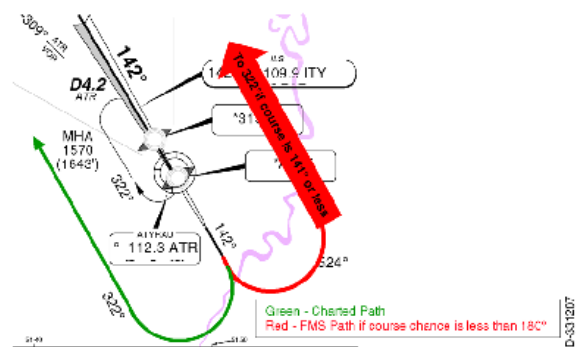
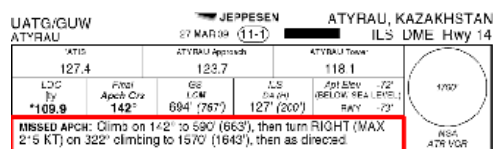
Aircraft	Software Level
Agusta AW-139	Phase 4*, Phase 5 and Phase 6
Cessna Sovereign	Phase 3*, Phase 4* and Phase 5
Dassault F900, F2000 and F7X	All Dassault EASy* aircraft prior to EASy II
Embraer 170/190	Load 21* and Load 23
Gulfstream 350/450/550	Cert Delta*, Echo* and Cert Foxtrot
Hawker 4000	All Hawker Load 19 certifications*
Pilatus PC-12/47E	Build 6.2
Pilatus PC-12/47E	Build 7.2**
Viking DHC6-400	Load 1.3
NZ-2000	All software levels and part numbers prior to NZ6.1 P/N 7018879-03034*
NZ-2000	NZ6.1 P/N 7018879-03034**

Note: Items marked with * are only impacted by item #3, which removes ~250 procedures from the navigation database to mitigate the problem beginning in 2011 Cycle 04. Items with ** are impacted by item #3 and item #4 only. Items not marked by an * have all 4 problems and the greatest number of procedures impacted in the navigation database.

turn direction in the navigation database for turns 135° or greater. Even though the issue only occurs with turns of 180° or greater, it was determined to use this criteria until a more effective solution can be identified.

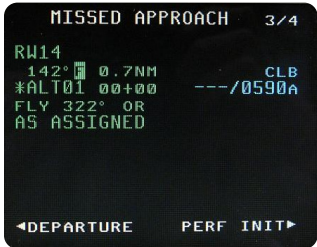
The majority of impacted procedures contain the **FLY XXX OR AS ASSIGNED** heading leg in the missed approach procedure. A small number of SIDs and STARs have been removed from the navigation database due to the **FLY XXX OR AS ASSIGNED** heading leg not being the last leg in the procedure.

Example:

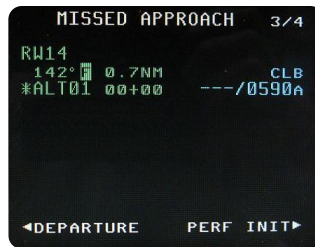


Service Information Letters (SILs)

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Before Modification



After Modification

Pilot Workaround:

When a heading leg is removed from a procedure, **FLY XXX OR AS ASSIGNED** will *not* be displayed and **LNAV will disengage prior to turning**. The pilot must engage the heading mode and manually select the heading in the correct direction of turn. The pilot should

also carefully compare the published procedure with the legs on the FMS CDU to clearly understand what the FMS will fly.

The list of procedures that have been impacted can be downloaded at: www.honeywellaes.com or www.epicinds.com

Honeywell is working closely with the aircraft manufacturers to find permanent fixes for these issues. Future FMS newsletters will contain additional information on fixes and timelines.

To download a copy of these SIL's please visit: <http://www.honeywell.com/aero/alert>

If you have any questions regarding these SIL's please contact the Honeywell Technical Operations Center (TOC) at 1-800-601-3099 (U.S.) or 1-602-365-3099 (Int'l) or send an email to aerotechsupport@honeywell.com.

Aspen Approaches

Operations into Aspen's Pitkin County Airport (ASE) can be challenging, and flight crews need as much information as possible to ensure a favorable outcome.

Many operators are confused about the discrepancies between the charts that are available from Jeppesen, and the approaches that are available in the FMS navigation database. The Technical Operations Center (TOC) has received numerous reports stating that certain charted approaches are not in the database, while other approaches found in the database have no charts at all.

At the present time, there are numerous public and special instrument approaches into Aspen. These approaches are:

Public Approaches

- LOC DME-E
- VOR/DME or GPS-C

SPECIAL Approaches

- LOC DME 15
- RNAV GPS 15
- RNAV 15

Charting

For the vast majority of operators, Jeppesen charts are available for the public approaches only. The remainder of the approaches are considered SPECIAL approaches and requires additional flight crew training. Therefore, Jeppesen provides these charts to authorized operators only per an agreement with the FAA.

Navigation Database

At the present time, circling approaches or approaches with no designated runway are selectable on most Honeywell Epic Flight Management Systems. For legacy aircraft, the only approaches that are selectable from the navigation database are all of the SPECIALS because they all terminate at a runway end.

Additionally, many legacy FMSs cannot display multiple approaches to the same runway end. As a mitigation, the approaches are renamed with different runway ends in order for all approaches to be visible. Although there is only one runway at Aspen, Pseudo runways (15C, 15R) have been created to make all of the approaches available.



Honeywell is currently pursuing two solutions to resolve these database discrepancies:

1. Within the coming months, Honeywell will remove all special approaches from the standard navigation database. Operators who possess a LOA to fly the specials may obtain a custom navigation database containing these approaches. Honeywell will provide advanced notification to operators regarding the process to include these procedures in their database.
2. Circling approaches will become available with FMS version 6.1 or 7.1. Operators who have not upgraded to the newer FMS versions must continue to use short range navigation along with the standard Jeppesen charts until operational approval to conduct any of the special approaches has been obtained. Operators wishing to fly any of these specials into Aspen should contact their respective FSDO to obtain operational approval.

Honeywell Go Direct Services FAA Adds RNP SAAAR Approaches



The FAA continues to add to the published Required Navigation Performance-Special Aircraft and Aircrew Authorization Required approach procedures. The number of published approaches in the United States is nearing 250 approach procedures serving 85 airports

in the US and Guam. An additional 60 procedures are on the drawing board serving 30 plus additional airports in the next year.

Along with the designs of the US approaches, the FAA is beginning to authorize foreign RNP approaches. Although the airlines have been flying many of the foreign RNP approaches for several years, they have always been categorized as “special” and were only available with individual authorizations and training. The Go Direct team is working to accept these international approaches into the approved operator’s LOA’s.

The Honeywell Go Direct team provides the required NDB Validation services on these RNP approaches. Our launch airframe was the Gulfstream Planeview equipped aircraft and we are working towards launching the service on other business jet and air transport aircraft. Per the FAA regulation, each operator must have a navigation database validation process in place. This includes comparing the original design material for the approach with the electronic data that is loaded in the aircraft along with ‘can this aircraft fly this approach’ verification. And just to top it off, a quality check must be accomplished each NDB cycle.

Frequently Asked Questions

Q. What are the Differences and Functions of the Navigation Database, Custom Database, and Aircraft Database?

A. The **Navigation Database** is supplied by Honeywell on a 28-day cycle. It contains the necessary detailed information on Navaids, Airports, Runways, Airways, SIDs/STARs, Approaches and Intersections that enable the FMS computers to function. Each new Navigation Database cycle that is loaded contains a copy of both the current and the upcoming cycle of the database. For example, when the upcoming Cycle 4 becomes available in early April, the NavDB that is loaded into the FMS will contain both Cycle 3 and Cycle 4. This allows the database to be loaded in advance of the activation date of the new cycle, and after the cycle changes it provides a copy of the previous cycle to use as a back-up if needed.

The NavDB can be directly cross-loaded between FMS computers. It is stored in non-volatile (Flash) memory within the FMS, so power interruptions or dead batteries have no effect on it.

The **Custom Database** contains pilot-defined and –stored waypoints and flightplans. It provides a means for pilots to save and recall commonly used flightplan routes and waypoints, saving the time and work required to re-enter the information on each flight.

The Custom Database can be directly cross-loaded between FMS computers. It is stored in battery-backed memory, and will be lost if battery power is removed. We recommend that a copy of the Custom Database be made on occasion as a back-up, by saving a copy to the Data Loader USB or floppy disk media. This will prevent having to reload the database manually if battery back-up power were to be lost.

The **Aircraft Database** contains the baseline performance information for the aircraft type (Hawker 800, Falcon 900EX, etc) as well as the learned performance (Full Perf) data specific to your aircraft. When the Aircraft Database is loaded by selecting an aircraft type, all learned performance parameters are reset to the baseline level.



All learned aircraft-specific performance data will be lost, and Full Perf will not be available until performance values are relearned. For this reason, we recommend that operators save a copy of their aircraft-specific Aircraft Database, which is stored using the aircraft tail number as its name. To do

so, from the DATA LOAD page on the CDU select AIRCRAFT DB at Line Select Key 2R, then TO LOADER at 2R. You will then see AIRCRAFT DB <your tail number> TO DATA LOADER?. Select YES at 4R. This will save a copy of your aircraft-specific database to the floppy disk or USB drive in your data loader. From there it can easily be transferred to your computer for safekeeping and reloaded into the FMS if needed.

The Aircraft Database is stored in battery-backed memory, and will be lost if battery power is removed. It cannot be directly cross-loaded between FMS computers. If a transfer from one FMS computer to another is to be done, the transfer must go from the working FMS to the Data Loader storage media, and then from the Data Loader to the other FMS.

If you have any questions please contact Honeywell Technical Operations at (800) 601-3099, Option 5, Option 3 for additional information.

Pilot Training & Operational Support

Honeywell's Customer and Product Support organization employs a group of experienced pilots dedicated to supporting fielded aircraft and providing training for the avionics and FMS installed during production or retrofit. Training is categorized into three areas 1) free seminars and webinars, 2) entry-into-service training and 3) ad-hoc training provided at a customer's location. Information and pricing is below:

- Free seminars and webinars
 - See section on training schedule
 - Bi-weekly online webinars on various subjects (FMS, avionics, product updates, GDC)
 - Six Honeywell hosted FMS Seminars (NZ2000, Epic & EASy) each year
 - Regional & Worldwide Honeywell Operators Conferences
- Free Entry-into-service (EIS) Support
 - For operators with new aircraft or new equipment (< 2 years old)
 - Include software mods and upgrades like Cert Foxtrot, Sovereign Phase 5, CDS/R installs, or Primus Elite
 - C&PS Flight Ops pilot will travel to the operator free of charge and provide any requested ground or in-flight training (FMS, VNAV, Wx Radar, GDC, etc.)
- Training at Operator's Location
 - If operators would like additional training on any Honeywell aerospace products (GDC, FMS, Weather Radar, VNAV, EGPWS, RAAS, Autopilot, etc.), an instructor will travel to the customer's location
 - Customer is billed for round trip airfare from the Honeywell pilot's base, one night hotel, \$50/day per diem, and transportation costs
 - All electronic training materials are provided free of charge
 - If paper copies of training materials are requested, printing charges are direct billed to the operator
 - Note – if operators wish to travel to a Honeywell Aerospace training location (Phoenix, Dallas or Seattle, WA) the travel fees are waived

Pilot Support Contact Information:

Pilots are aircraft manufacturer focused and can be contacted via email or phone for operational-type questions.



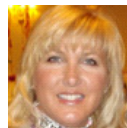
Steve Hammack, Lead Pilot

Steve supports Pilatus, Viking & HAIG
Email: stephen.hammack@honeywell.com
Phone: (602) 436-2489



Jeff Holt, Lead Pilot

Type ratings – LR-JET, F2000 EX, EMB145 & B737
Jeff supports Dassault and Embraer
Email: jeff.holt2@honeywell.com
Phone: (817) 564-3436



Pam Mannon, Flight Operations Manager & Lead Pilot

Type ratings – EMB145, CE680, BBD700 & H4000
Pam supports Bombardier and Honeywell FMS (Epic & NZ)
Email: pamela.mannon@honeywell.com
Phone: (913) 961-1901



Roger Moore, Senior Pilot

Type ratings – LR-JET, A320, A330, B777 & DC-9/MD-80
Roger supports Airbus & Boeing
Email: roger.moore@honeywell.com
Phone: (602) 436-1528



David Rogers, Lead Pilot

Type ratings – CE750, CE680, CE560
David supports Gulfstream, Cessna & Hawker Beech
Email: david.rogers@honeywell.com
Phone: (425) 516-8654

For additional information on seminars or pilot training, contact Pam Mannon at Pamela.mannon@honeywell.com or (913) 961-1901.

For field support, or to find your local Honeywell representative, consult the Business & General Aviation Customer Support and Aftermarket Sales Directory.

<http://www51.honeywell.com/aero/common/documents/BGA-Customer-Support-Aftermarket-Sales-Directory.pdf>

For FMS questions, email talkfms@honeywell.com.

2011 Honeywell Pilot Training Events and Seminars

This year's training offerings include Honeywell Operators Conferences, online Webinars, and full day FMS seminars. All sessions are free of charge and everyone is welcome to attend. These seminars are primarily for pilots, but maintenance personnel and technicians are encouraged to participate as operational tips, current issues and new products and upgrades are covered. Instructors are Honeywell Customer & Product Support training pilots who are type rated on various platforms including Gulfstream, Dassault, Bombardier, Cessna, Hawker Beech and Embraer.

Interested in attending a seminar? Most classes require advanced registration. Contact Pam Mannon at (913) 961-1901 or pamela.mannon@honeywell.com.

Schedule and location is subject to change based on registration for each event. More international dates are coming soon!

Date	Description and Duration	City/Country or Webinar
April 5	Honeywell Operators Conference All Day Pilot Breakout Session	Philadelphia, PA USA
April 7	Dassault EASy II Update (1 hr)	Online Webinar
April 19	Honeywell Operators Conference All Day Pilot Breakout Session	Chicago, IL USA
April 21	RDR-4000 IntuVue™ 3-D Weather Radar Overview (1 hr)	Online Webinar
May 3	Honeywell Operators Conference All Day Pilot Breakout Session	Columbus, OH USA
May 4	Honeywell FMS Tips & Tricks at the Cessna Ops Conference	Wichita, KS, USA
May 5	Introduction to the Honeywell Global Data Center (1 hr)	Online Webinar
May 18	Honeywell Operators Conference All Day Pilot Breakout Session	Dallas, TX USA
May 19	Upcoming Airspace & Mandates (ADS, CLDLC & SBAS) (1 hr)	Online Webinar
June TBD	Honeywell FMS Seminar (all day)	Seattle, WA USA
June 2	Bombardier Batch 3 Update (1 hr)	Online Webinar
June 16	Primus Elite / Display Unit Upgrades to LCD (1 hr)	Online Webinar
July TBD	Honeywell FMS Seminar (all day)	Van Nuys, CA USA
July 7	Introduction to the Honeywell Global Data Center (1 hr)	Online Webinar
July 21	Pilatus Build 7 Update (1 hr)	Online Webinar
Aug. 9	Honeywell FMS Seminar (all day)	Atlanta, GA USA
Aug. 10	Honeywell Operators Conference All Day Pilot Breakout Session	Sao Paulo, Brazil
Sept. 13	Honeywell FMS Seminar (all day)	Teterboro, NJ USA
Sept. 20	Honeywell FMS Seminar (all day)	Geneva, Switzerland
Sept. 21	Jet Aviation Workshop – Pilot Breakout Session	Basel, Switzerland
Oct. 18	Honeywell FMS Seminar (all day)	Dallas, TX USA

VISION

The Technical Operations Center vision is to provide timely one call resolution of customer technical issues, enabling a 24x7 proactive service approach.

- Technical expert availability
- Knowledge on demand
- Issue ownership and tracking
- Global virtual resources
- Simplified contact options

CONTACT INFORMATION

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