

# **MK VI EGPWS Changes from Software –020 to Software -024**

**965-1180/1190-020 to 965-1180/1190-022**

**Service Bulletin 012-0709-133 (965-1180/1190/1210/1220/1610-XXX-34-33)**

The Application Software and Configuration Database modifications include:

- Revised existing I/O Category 10 (Attitude) ID 100 (No Connection) to apply to the MK VI EGPWS. This will enable a Pseudo Roll calculation that allows the EGPWS functions to operate on aircraft without a compatible roll source. Note that Bank Angle alerting is not supported with Pseudo Roll, and also requires a GPS input that provides North/South and East/West velocity labels.
- Reduced nuisance Mode 2 alerts where radar vectoring regularly places aircraft within Mode 2 warning boundary. When GPS position is of high integrity and terrain data is of high quality, the Mode 2 boundary will be limited to a maximum of 950 feet.  
**NOTE:** When active, this change maintains an equivalent level of safety and provides a reduced nuisance alert rate as provided for in TSO-C151b under Section 1.3, Paragraph e.
- Increased Terrain Awareness Look-up warning time. Revised both the caution and warning look-up envelopes. Increased look-ahead distance and terrain clearance values. Added adjustment for ground speed effect based on high descent rates.
- Revised Terrain Awareness Alerting and Display cut-off altitude. Improved caution and warning times for particular scenarios by making the alerting cut-off altitude a function of runway quality and VFOM/HFOM.
- Added Terrain Clearance Floor improvements. Moved the Terrain Clearance Floor curve in closer to the runway and added an additional breakpoint on the curve, in close to the runway, with a 200-foot minimum slope to provide additional protection for shallow approaches.
- Added Terrain Clearance Floor lateral curve expansion improvement. Change reduces potential nuisance Terrain Clearance Floor alerts by moving the lateral area of curve expansion out 1.0 nautical mile to facilitate maneuvering near a runway.
- Improved radio altitude reasonableness logic. Reduced nuisance basic GPWS alerts due to false radio altimeter tracking by enabling Radio Altimeter reasonableness testing when TAD is available and operating with high integrity and aircraft is at least 2500 feet above terrain (was 4000 feet). Radio Altitude is set invalid temporarily when the selected source shows a terrain clearance significantly less than the computed terrain clearance.
- Improved monitoring of GPS position data by adding GPS horizontal step change detection logic and increasing recovery time from invalid GPS signals
- Revised GPS reasonableness and vertical step change logic to reduce nuisance alerts caused by GPS altitude step changes.
- Added Dead Reckoning function for all GPS interfaces. Improves system availability by providing short-term position data during times when the GPS receiver transitions to dead reckoning mode.

**965-1180/1190-022 to 965-1180/1190-024**  
**Service Bulletin 012-0709-136 (965-1180/1190/1210/1220/1610-XXX-34-36)**

The Application Software and Configuration Database modifications include:

- Added Category 2 (Air Data) ID 14 - Single *high-speed* ARINC 429.
- Added Category 3 (Position) ID 14 – Support for HT-1000 GPS with N/S and E/W velocities on labels 366/367.
- Added Category 4 (Altitude Callouts) ID 16: MINIMUMS-MINIMUMS, 200, 50, 40, 30, 20, 10.
- Revised the horizontal integrity limit (HIL) logic to eliminate intermittent external faults.
- Set GPS true track invalid below 10 knots groundspeed. This change is needed to address GPS that transmit a valid but random track when stationary. This change will prevent loading terrain maps inconsistent with current heading, which has led to terrain display truncation or resolution changes when the aircraft is stationary.