

G1000[®] NXi

Cockpit Reference Guide



Cessna NAV III
System Software Version 2501.09 or later

FLIGHT INSTRUMENTS

ENGINE INDICATION SYSTEM (EIS)

NAV/COM/TRANSPONDER/AUDIO PANEL

FLIGHT MANAGEMENT SYSTEM

HAZARD AVOIDANCE

AUTOMATIC FLIGHT CONTROL SYSTEM

ADDITIONAL FEATURES

ABNORMAL OPERATION

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This manual reflects the operation of System Software version 2501.09 or later for the Cessna Nav III. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

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WARNING: Do not operate this equipment without first obtaining qualified instruction.



WARNING: Always refer to current aeronautical charts and NOTAMs for verification of displayed aeronautical information. Displayed aeronautical data may not incorporate the latest NOTAM information.



WARNING: Do not use geometric altitude for compliance with air traffic control altitude requirements. The primary barometric altimeter must be used for compliance with all air traffic control altitude regulations, requirements, instructions, and clearances.



WARNING: Do not use basemap information (land and water data) as the sole means of navigation. Basemap data is intended only to supplement other approved navigation data sources and should be considered only an aid to enhance situational awareness.



WARNING: Do not rely solely upon the display of traffic information to accurately depict all of the traffic within range of the aircraft. Due to lack of equipment, poor signal reception, and/or inaccurate information from aircraft or ground stations, traffic may be present that is not represented on the display.



WARNING: Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.



WARNING: Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be older than the indicated weather product age.



WARNING: Do not use terrain avoidance displays as the sole source of information for maintaining separation from terrain and obstacles. Garmin obtains terrain and obstacle data from third party sources and cannot independently verify the accuracy of the information.



WARNING: Do not rely on the displayed minimum safe altitude (MSAs) as the sole source of obstacle and terrain avoidance information. Always refer to current aeronautical charts for appropriate minimum clearance altitudes.



WARNING: Do not use GPS to navigate to any active waypoint identified as a 'NON WGS84 WPT' by a system message. 'NON WGS84 WPT' waypoints are derived from an unknown map reference datum that may be incompatible with the map reference datum used by GPS (known as WGS84) and may be positioned in error as displayed.



WARNING: Do not rely on the autopilot to level the aircraft at the MDA/DH when flying an approach with vertical guidance. The autopilot will not level the aircraft at the MDA/DH even if the MDA/DH is set in the altitude preselect.



WARNING: Do not rely on the accuracy of attitude and heading indications in the following geographic areas (due to variations in the earth's magnetic field): North of 72° North latitude at all longitudes; South of 70° South latitude at all longitudes; North of 65° North latitude between longitude 75° W and 120° W. (Northern Canada); North of 70° North latitude between longitude 70° W and 128° W. (Northern Canada); North of 70° North latitude between longitude 85° E and 114° E. (Northern Russia); South of 55° South latitude between longitude 120° E and 165° E. (Region south of Australia and New Zealand).



WARNING: Use appropriate primary systems for navigation, and for terrain, obstacle, and traffic avoidance. Garmin SVT is intended as an aid to situational awareness only and may not provide either the accuracy or reliability upon which to solely base decisions and/or plan maneuvers to avoid terrain, obstacles, or traffic.



WARNING: Do not use the Garmin SVT runway depiction as the sole means for determining the proximity of the aircraft to the runway or for maintaining the proper approach path angle during landing.



WARNING: Do not rely on information from a lightning detection system display as the sole basis for hazardous weather avoidance. Range limitations and interference may cause the system to display inaccurate or incomplete information. Refer to documentation from the lightning detection system manufacturer for detailed information about the system.



WARNING: Do not rely solely upon the display of traffic information for collision avoidance maneuvering. The traffic display does not provide collision avoidance resolution advisories and does not under any circumstances or conditions relieve the pilot's responsibility to see and avoid other aircraft.



WARNING: Do not use TAWS information for primary terrain or obstacle avoidance. TAWS is intended only to enhance situational awareness.



WARNING: Do not use QFE altimeter setting outside of the terminal environment for the corresponding issuing airport to ensure adequate obstacle clearance.



WARNING: Do not fly QFE procedures above the Transition Altitude or when navigating to a waypoint that contains a QNE (flight level) altitude constraint.



WARNING: Always fly a procedure that provides terrain and obstacle clearance from the reference airfield when operating in IMC while conducting QFE procedures.



WARNING: Do not use SurfaceWatch™ information as the primary method of flight guidance during airborne or ground operations. SurfaceWatch does not have NOTAM or ATIS information regarding the current active runway, condition, or information about the position of hold lines.



CAUTION: Do not clean display surfaces with abrasive cloths or cleaners containing ammonia. They will harm the anti-reflective coating.



CAUTION: Do not allow repairs to be made by anyone other than an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and affect the airworthiness of the aircraft.



CAUTION: Never disconnect power to the system when loading a database. Power interruption during the database loading process could result in maintenance being required to reboot the system.



NOTE: All visual depictions contained within this document, including screen images of the system panel and displays, are subject to change and may not reflect the most current system and aviation databases. Depictions of equipment may differ slightly from the actual equipment.



NOTE: Do not rely solely upon data link services to provide Temporary Flight Restriction (TFR) information. Always confirm TFR information through official sources such as Flight Service Stations or Air Traffic Control.



NOTE: The United States government operates the Global Positioning System and is solely responsible for its accuracy and maintenance. The GPS system is subject to changes which could affect the accuracy and performance of all GPS equipment. Portions of the system use GPS as a precision electronic NAVigation AID (NAVAID). Therefore, as with all NAVAIDs, information presented by the system can be misused or misinterpreted and, therefore, become unsafe.



NOTE: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



NOTE: Use of polarized eyewear may cause the flight displays to appear dim or blank.



NOTE: This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our web site at www.garmin.com/prop65.



NOTE: Operating the system in the vicinity of metal buildings, metal structures, or electromagnetic fields can cause sensor differences that may result in nuisance miscompare annunciations during start up, shut down, or while taxiing. If one or more of the sensed values are unavailable, the annunciation indicates no comparison is possible.



NOTE: The system responds to a terminal procedure based on data coded within that procedure in the Navigation Database. Differences in system operation may be observed among similar types of procedures due to differences in the Navigation Database coding specific to each procedure.



NOTE: The pilot/operator must review and be familiar with Garmin's database exclusion list as discussed in SAIB CE-14-04 to determine what data may be incomplete. The database exclusion list can be viewed at flygarmin.com by selecting 'Database Exclusions List.'



NOTE: The pilot/operator must have access to Garmin and Jeppesen database alerts and consider their impact on the intended aircraft operation. The database alerts can be viewed at flygarmin.com by selecting 'Aviation Database Alerts.'



NOTE: The FAA has asked Garmin to remind pilots who fly with Garmin database-dependent avionics of the following:

- It is the pilot's responsibility to remain familiar with all FAA regulatory and advisory guidance and information related to the use of databases in the National Airspace System.
- Garmin equipment will only recognize and use databases that are obtained from Garmin or Jeppesen. Databases obtained from Garmin or Jeppesen are assured compliance with all data quality requirements (DQRs) by virtue of a Type 2 Letter of Authorization (LOA) from the FAA. A copy of the Type 2 LOA is available for each database and can be viewed at <http://fly.garmin.com> by selecting 'Type 2 LOA Status.'
- Use of a current Garmin or Jeppesen database in your Garmin equipment is required for compliance with established FAA regulatory guidance, but does not constitute authorization to fly any and all terminal procedures that may be presented by the system. It is the pilot's responsibility to operate in accordance with established AFM(S) and regulatory guidance or limitations as applicable to the pilot, the aircraft, and installed equipment.



NOTE: If the pilot/operator wants or needs to adjust the database, contact Garmin Product Support.



NOTE: Garmin requests the flight crew report any observed discrepancies related to database information. These discrepancies could come in the form of an incorrect procedure; incorrectly identified terrain, obstacles and fixes; or any other displayed item used for navigation or communication in the air or on the ground. Go to FlyGarmin.com and select 'Aviation Data Error Report'.



NOTE: Electronic aeronautical charts displayed on this system have been shown to meet the guidance in AC 120-76D as a Type B Electronic Flight Bag (EFB) for FliteCharts and ChartView. The accuracy of the charts is subject to the chart data provider. Own-ship position on airport surface charts cannot be guaranteed to meet the accuracy specified in AC 120-76D. Possible additional requirements may make a secondary source of aeronautical charts, such as traditional paper charts or an additional electronic display, necessary on the aircraft and available to the pilot. If the secondary source of aeronautical charts is a Portable Electronic Device (PED), its use must be consistent with the guidance in AC 120-76D.



NOTE: The navigation databases used in Garmin navigation systems contain Special Procedures. Prior to flying these procedures, pilots must have specific FAA authorization, training, and possession of the corresponding current, and legitimately-sourced chart (approach plate, etc.). Inclusion of the Special Procedure in the navigation database DOES NOT imply specific FAA authorization to fly the procedure.



NOTE: Terrain and obstacle alerting is not available north of 89° North latitude and south of 89° South latitude. This is due to limitations present within the Terrain database and the system's ability to process the data representing the affected areas.



NOTE: The nose of the 'own ship' symbol represents the location of the aircraft. The center of any traffic symbol represents the location of that traffic. The traffic and own ship symbols are an abstract representation and do not reflect the physical extent of the aircraft/traffic, and should not replace other methods for identifying traffic.



NOTE: Intruder aircraft at or below 500 ft. AGL may not appear on the Garmin SVT display or may appear as a partial symbol.



NOTE: When using Stormscope, there are several atmospheric phenomena in addition to nearby thunderstorms that can cause isolated discharge points in the strike display mode. However, clusters of two or more discharge points in the strike display mode do indicate thunderstorm activity if these points reappear after the screen has been cleared.



NOTE: ESP is designed to discourage exceeding the normal flight envelope. It is not designed or capable of performing the necessary recovery procedures due to encounters with adverse flight conditions and environments.



NOTE: Interference from GPS repeaters operating inside nearby hangars can cause an intermittent loss of attitude and heading displays while the aircraft is on the ground. Moving the aircraft more than 100 yards away from the source of the interference should alleviate the condition.



NOTE: Operate G1000 NXi system power through at least one cycle in a period of four days of continuous operation to avoid an autonomous system reboot.



NOTE: The purpose of this Cockpit Reference Guide is to provide the pilot a resource with which to find operating instructions on the major features of the system more easily. It is not intended to be a comprehensive operating guide. Complete operating procedures for the system are found in the Pilot's Guide for this aircraft.

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190-02178-00	A	November 2016	All	Initial release at GDU 20.00 Added CAS Messages Added SurfaceWatch Alerts Added AFCS Alerts Updated other messages
	B	December 2016	All	
	C	May 2017	All	Updated Annunciations and Alerts Updated Warnings/Cautions/Notes Updated SurfaceWatch Information Other clerical updates
190-02178-01	A	May 2018	All	Production release at GDU 20.83 Updated EIS Information Added WireAware Added Visual Approaches Added Baro QFE Altimeter settings Added Connex Weather Updated Audio Panel Information Added Electronic Stability and Protection
	B	November 2019	All	Updated AFCS and ESP information Added QFE Constraints Updated Approach information Added Transition to Approach Updated Temperature Compensation Added CAS Messages Fixed clerical errors
190-02178-02	A	December 2019	All	Production Release at GDU 20.83 Updated AFCS and ESP information Updated Voice Alerts Updated CAS Messages

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FLIGHT INSTRUMENTS

ENABLING/DISABLING OR MODIFYING INDIVIDUAL VSPEED REFERENCE BUGS

- 1) Press the **TMR/REF** Softkey.
- 2) Turn the large **FMS** Knob to highlight the desired Vspeed value.
- 3) Use the small **FMS** Knob to change the Vspeed in 1-kt increments (when a speed has been changed from a default value, an asterisk appears next to the speed).
- 4) Press the **ENT** Key or turn the large **FMS** Knob to highlight the On/Off field
- 5) Turn the small **FMS** Knob clockwise to 'On' or counterclockwise to 'Off'.
- 6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

ENABLING/DISABLING VSPEED REFERENCE BUGS AS A GROUP OR RESTORING ALL DEFAULT SETTINGS

- 1) Press the **TMR/REF** Softkey.
- 2) Press the **MENU** Key.
- 3) Turn the **FMS** Knob to scroll as needed to highlight 'All References On', 'All References Off' or 'Restore Defaults'.
- 4) Press the **ENT** Key.
- 5) To remove the References Window, press the **CLR** Key or the **TMR/REF** Softkey.

SELECTING THE ALTITUDE DISPLAY UNITS

- 1) Turn the **FMS** Knobs to select the 'Aux - System Setup 1' Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the 'ALT, VS' datafield in the 'Display Units' Window.
- 4) Turn the small **FMS** Knob to highlight either 'Feet(FT,FPM)' or 'Meters(MT,MPS)' and press the **ENT** Key. This setting affects altitude displays system-wide, in addition to those shown on the PFD.

SETTING THE SELECTED ALTITUDE

Turn the **ALT** Knob to set the Selected Altitude. Turn the large knob for 1000-ft increments, small knob for 100-ft increments. If set to Metric mode, the large knob adjusts the Selected Altitude in 500-meter increments; the small knob adjusts the Selected Altitude in 50-meter increments..

If a Minimum Descent Altitude/Decision Height (MDA/DH) value has been set, this altitude is also available for the Selected Altitude while turning the **ALT** Knob.

ENABLING ALTITUDE UNITS OVERLAYS

- 1) Press the **PFD Opt** Softkey to display the second-level softkeys.
- 2) Press the **ALT Units** Softkey.
- 3) Press the **Meters** or **Feet** Softkey to enable/disable the altitude overlays .
- 4) Press the **Back** Softkey twice to return to the top-level softkeys.

SELECTING THE ALTIMETER BAROMETRIC PRESSURE SETTING

Turn the **BARO** Knob to select the desired setting.

SELECTING STANDARD BAROMETRIC PRESSURE (29.92 IN HG)

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **STD Baro** Softkey to set standard barometric pressure.

CHANGE ALTIMETER BAROMETRIC PRESSURE SETTING UNITS

- 1) Press the **PFD Opt** Softkey to display the second-level softkeys.
- 2) Press the **ALT Units** Softkey.
- 3) Press the **IN** Softkey to display the barometric pressure setting in inches of mercury (in Hg).

Or:

Press the **HPA** Softkey to display the barometric pressure setting in hectopascals.

- 4) Press the **Back** Softkey twice to return to the top-level softkeys.

SETTING THE BARO QFE

Setting BARO QFE while on the ground:

- 1) Set the appropriate QFE BARO setting on the PFD.
- 2) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page on the MFD.
- 3) Push the **FMS** Knob to activate the cursor.
- 4) Turn the large **FMS** Knob to select the 'REF' field in the 'BARO QFE' Box.
- 5) Use the small **FMS** Knob to select 'Manual' or 'FMS ORIG', and press the **ENT** Key to accept.
- 6) If 'Manual' was selected, use the **FMS** Knobs to enter the field elevation of the departure airport in the 'ELEV' field and press the **ENT** Key.
- 7) If 'FMS ORIG' was selected, the field elevation of the selected departure airport/runway from the flight plan will be shown in the 'BARO QFE' Box. Verify this information is correct.
- 8) The 'On/Off' Field will automatically highlight, turn the small **FMS** Knob to change the selection from 'Off' to 'On'.
- 9) Push the **FMS** Knob to deactivate the cursor. QFE mode is now active. Change the BARO setting to STD BARO to disable BARO QFE.

Setting BARO QFE while in flight:

- 1) Set the BARO setting to STD BARO on the PFD.
- 2) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page on the MFD.
- 3) Push the **FMS** Knob to activate the cursor.
- 4) Turn the large **FMS** Knob to select the 'REF' field in the BARO QFE Box.
- 5) Use the small **FMS** Knob to select 'Manual' or 'FMS DEST', and press the **ENT** Key to accept.
- 6) If 'Manual' was selected, use the **FMS** Knobs to enter the field elevation of the destination airport in the 'ELEV' field and press the **ENT** Key.
- 7) If 'FMS DEST' was selected, the field elevation of the selected destination airport/runway from the flight plan will be shown in the BARO QFE Box. Verify this information is correct.
- 8) The 'On/Off' Field will automatically highlight, turn the small **FMS** Knob to change the selection from 'Off' to 'On'.

- 9) Push the **FMS** Knob to deactivate the cursor. BARO QFE mode is now armed.
- 10) Enter the reference field QFE BARO setting. As soon as barometric settings change from STD BARO, QFE mode activates.

Change the BARO setting to STD BARO to disable BARO QFE. The desired BARO setting can now be entered.

DISPLAYING THE METRIC ALTITUDE OVERLAY

- 1) Press the **PFD Opt** Softkey to display the second-level softkeys.
- 2) Press the **ALT Units** Softkey
- 3) Press the **Meters** Softkey to enable metric altitude overlays.
- 4) Press the **Back** Softkey twice to return to the top-level PFD softkeys.

SETTING BARO TRANSITION ALERTS

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) To enable/disable the Baro Transition Alert based on altitude, turn the large **FMS** Knob to highlight the 'On' or 'Off' field for the BARO Transition Alert Altitude in the BARO Transition Alert Box.
- 4) If desired, turn the small **FMS** Knob to set the BARO Transition Alert Altitude On or Off.
- 5) Turn the large **FMS** Knob to highlight the Altitude field.
- 6) Use the **FMS** Knobs to change the altitude and press the **ENT** Key to accept or press the **CLR** Key to return to the previous altitude selection.
- 7) Turn the large **FMS** Knob to highlight the 'On' or 'Off' field for the BARO Transition Alert Level.
- 8) If desired, turn the small **FMS** Knob to set the BARO Transition Alert Flight Level On or Off.
- 9) Turn the large **FMS** Knob to highlight the Flight Level field.
- 10) Use the **FMS** Knobs to change the Flight Level for the alert and press the **ENT** Key to accept or press the **CLR** Key to return to the previous altitude selection.
- 11) Push the **FMS** Knob to deactivate the cursor.

CHANGE NAVIGATION SOURCES

- 1) Press the **CDI** Softkey to change from GPS to VOR1 or LOC1. This places the cyan tuning box over the NAV1 standby frequency in the upper left corner of the PFD.
- 2) Press the **CDI** Softkey again to change to VOR2 or LOC2. This places the cyan tuning box over the NAV2 standby frequency.
- 3) Press the **CDI** Softkey a third time to return to GPS.

ENABLING/DISABLING THE HSI MAP ON THE PFD

- 1) Press the **Map/HSI** Softkey.
- 2) Press the **Layout** Softkey.
- 3) Press the **HSI Map** Softkey to enable the HSI Map.

Or:

Press the **Map Off** Softkey to disable the HSI Map.

- 4) Press the **Back** Softkey twice to return to the top-level PFD Softkeys.

ADJUSTING THE SELECTED HEADING

Turn the **HDG** Knob to set the Selected Heading.

Press the **HDG** Knob to synchronize the bug to the current heading.

ADJUSTING THE SELECTED COURSE

Turn the **CRS** Knob to set the Selected Course.

Press the **CRS** Knob to re-center the CDI and return the course pointer to the bearing of the active waypoint or navigation station.

CHANGING THE NAVIGATION ANGLE TRUE/MAGNETIC SETTING

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the NAV Angle setting in the 'Display Units' box.

- Turn the small **FMS** Knob to highlight the desired setting and press the **ENT** Key.
 - 'Magnetic(°)' - Angles corrected to the computed magnetic variation (Mag Var)
 - 'True(°T)' - References angles to true north

SELECTING BEARING DISPLAY AND CHANGING SOURCES

- Press the **PFD Opt** Softkey.
- Press either **Bearing 1** or **Bearing 2** Softkey to display the desired bearing pointer and information window with the NAV 1 source.
- Press the bearing softkey again to display the bearing pointer with the NAV 2 source.
- Press the bearing softkey again to display the bearing pointer with GPS as the source.
- Press the bearing softkey again to display the bearing pointer with the optional ADF as the source.
- To remove the bearing pointer and information window, press either **Bearing 1** or **Bearing 2** Softkey again.

CHANGING THE SELECTED GPS CDI SETTING

- Use the **FMS** Knob to select the 'Aux - System Setup 1' Page on the MFD.
- Press the **FMS** Knob to activate the cursor.
- Turn the large **FMS** Knob to highlight the Format Allowed selection in the 'GPS CDI' box.
- Turn the small **FMS** Knob to highlight the desired setting and press the **ENT** Key.
- To cancel the selection, press the **FMS** Knob or the **CLR** Key.

ENABLE/DISABLE OBS MODE WHILE NAVIGATING WITH A GPS FLIGHT PLAN

- Press the **OBS** Softkey to select OBS Mode.
- Turn the **CRS** Knob to select the desired course to/from the waypoint. Press the **CRS** Knob to synchronize the Selected Course with the bearing to the next waypoint.
- Press the **OBS** Softkey again to return to automatic waypoint sequencing.

DISPLAYING THE DME INFORMATION WINDOW

- 1) Press the **PF D Opt** Softkey.
- 2) Press the **DME** Softkey to display the DME Information Window above the BRG1 Information Window.
- 3) To remove the DME Information Window, press the **DME** Softkey again.

USING THE GENERIC TIMER

- 1) Press the **TMR/REF** Softkey.
- 2) Turn the large **FMS** Knob to select the timer field (HH:MM:SS).
- 3) Use the **FMS** Knob to enter the desired time.
- 4) Press the **ENT** Key. The Up/Dn field is now highlighted.
- 5) Turn the small **FMS** Knob to display the Up/Dn Window.
- 6) Turn the small **FMS** Knob to select 'Up' or 'Dn'.
- 7) Press the **ENT** Key. 'Start?' is now highlighted.
- 8) Press the **ENT** Key to start the timer. The field changes to 'Stop?'. If the timer is counting down, it will start counting up after reaching zero.
- 9) To stop the timer, press the **ENT** Key with 'Stop?' highlighted. The field changes to 'Reset?'.
- 10) To reset the timer, press the **ENT** Key with 'Reset?' highlighted. The field changes back to 'Start?' and the digits are reset.
- 11) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

CHANGING THE TEMPERATURE DISPLAY UNITS

- 1) Select the 'Aux - System Setup 1' Page.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the Temperature units field.
- 4) Turn the small **FMS** Knob to highlight 'Celsius°C' or 'Fahrenheit(°F)' and press the **ENT** Key.
- 5) Press the **FMS** Knob to deactivate the cursor.

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DISPLAYING WIND DATA

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **Wind** Softkey to display wind data to the left of the HSI.
- 3) Press one of the numbered **Option** softkeys to change how wind data is displayed:
 - **Option 1:** Headwind/tailwind and crosswind arrows with numeric speed components
 - **Option 2:** Wind direction arrow and speed
 - **Option 3:** Wind direction arrow with numeric direction and speed
- 4) To remove the window, press the **Off** Softkey.

SETTING THE BARO TRANSITION ALERTS

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page on the MFD.
- 2) Push the **FMS** Knob to activate the cursor.
- 3) To enable/disable the Baro Transition Alert based on altitude, turn the large **FMS** Knob to highlight the 'On' or 'Off' field for the BARO Transition Alert Altitude in the BARO Transition Alert Box.
- 4) If desired, turn the small **FMS** Knob to set the BARO Transition Alert Altitude On or Off.
- 5) Turn the large **FMS** Knob to highlight the Altitude field.
- 6) Use the **FMS** Knobs to change the altitude and press the **ENT** Key to accept or press the **CLR** Key to return to the previous altitude selection.
- 7) Turn the large **FMS** Knob to highlight the 'On' or 'Off' field for the BARO Transition Alert Level.
- 8) If desired, turn the small **FMS** Knob to set the BARO Transition Alert Flight Level On or Off.
- 9) Turn the large **FMS** Knob to highlight the Flight Level field.
- 10) Use the **FMS** Knobs to change the Flight Level for the alert and press the **ENT** Key to accept or press the **CLR** Key to return to the previous altitude selection.
- 11) Push the **FMS** Knob to deactivate the cursor.

SET BARO/TEMP COMP MINIMUM ALTITUDE ALERT AND BUG

- 1) Press the **TMR/REF** Softkey.
- 2) Turn the large **FMS** Knob to highlight the MINS field.
- 3) Turn the small **FMS** Knob to select 'BARO' or 'TEMP COMP'. 'Off' is selected by default. Press the **ENT** Key or turn the large **FMS** Knob to highlight the next field.
- 4) Use the small **FMS** Knob to enter the desired altitude (from zero to 16,000 feet).
- 5) If 'TEMP COMP' was selected, press the **ENT** Key or turn the large **FMS** Knob to highlight the next field and then enter the temperature (-59°C to 59°C)
- 6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

SYNTHETIC VISION



WARNING: Use appropriate primary systems for navigation, and for terrain, obstacle, and traffic avoidance. SVT is intended as an aid to situational awareness only and may not provide the accuracy and/or fidelity upon which to solely base decisions and/or plan maneuvers to avoid terrain, obstacles, or traffic.



WARNING: Do not use SVT runway depiction as the sole means for determining the proximity of the aircraft to the runway or for maintaining the proper approach path angle during landing.

SVT is primarily comprised of a computer-generated forward-looking, attitude aligned view of the topography immediately in front of the aircraft from the pilot's perspective. SVT information is shown on the primary flight display (PFD).

In addition to SVT enhancement to the PFD, the following features have been added to the PFD:

- Pathways
- Flight Path Marker
- Horizon Heading Marks
- Terrain Alerting
- Obstacle Alerting including Wire obstacles
- Traffic Display
- Airport Signs
- Runway Display

Flight Instruments

Toggling SVT depiction:

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Terrain** Softkey.

EIS

Toggling Airport Signs depiction:

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **APT Sign** Softkey.

Nav/Com/XPDR/Audio

Toggling Horizon Headings depiction:

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **HDG LBL** Softkey.

Flight Management

Toggling Pathways depiction:

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Pathways** Softkey.

Hazard Avoidance

Toggling WireAware depiction:

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Wire** Softkey.

Additional Features

Abnormal Operation

CONFIGURING FIELD OF VIEW

- 1) While viewing the 'Map - Navigation Map' Page, press the **MENU** Key to display the 'Page Menu'.
- 2) Turn the large **FMS** Knob to highlight 'Map Setting's and press the **ENT** Key.
- 3) Turn the **FMS** Knob to select the 'Map' Group and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to scroll through the Map Group options to Field of View.
- 5) Turn the small **FMS** Knob to select On or Off.
- 6) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

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ENGINE INDICATION

ENGINE DISPLAYS

Engine displays for the 172R, 172S, 182T, T182T, 206H & T206H variants are shown on the subsequent pages.

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Nav/Com/XPDR/Audio

Flight Management

Hazard Avoidance

AFCs

Additional Features

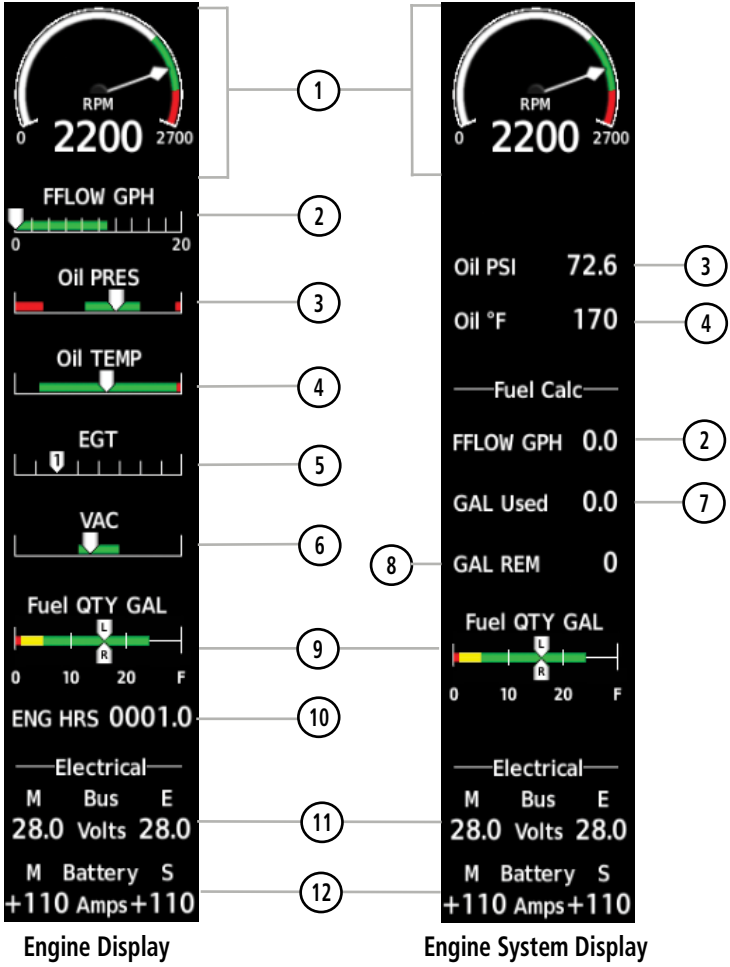
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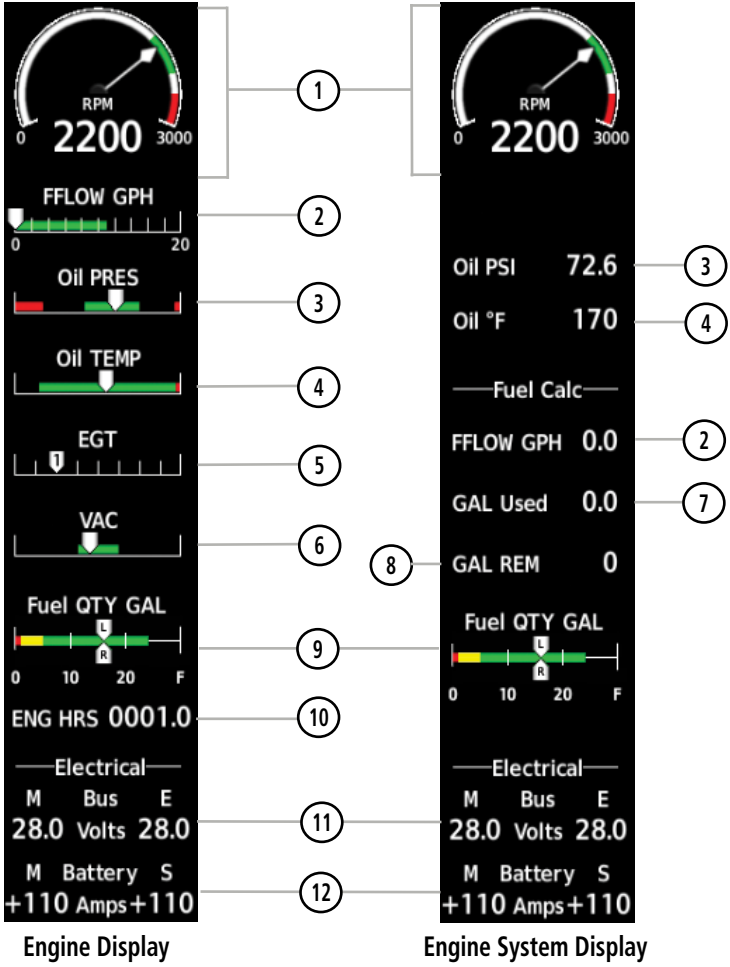
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Model 172R

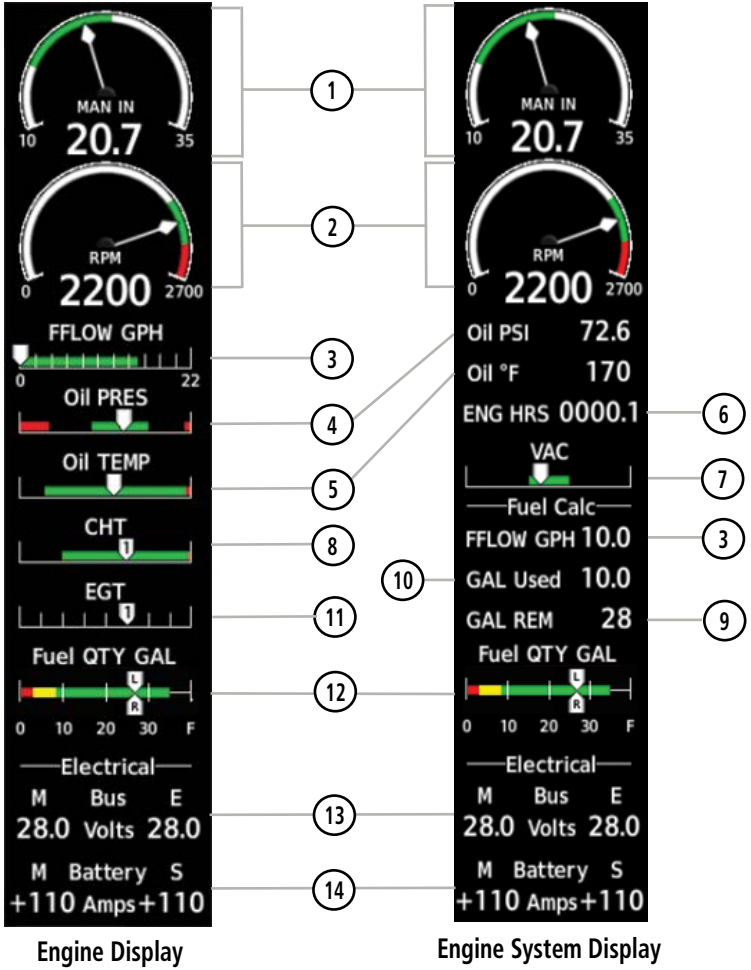
- | | |
|---|---|
| <p>① Tachometer Indicator (RPM)</p> | Displays engine tachometer in revolutions per minute (RPM) |
| <p>② Fuel Flow Indicator (FFLOW GPH)</p> | Displays fuel flow in gallons per hour (gph) |
| <p>③ Oil Pressure Indicator (OIL PSI)</p> | Displays oil pressure in pounds per square inch (psi) |
| <p>④ Oil Temperature Indicator (OIL °F)</p> | Displays oil temperature in degrees Fahrenheit (°F) |
| <p>⑤ Exhaust Gas Temperature Indicator (EGT)</p> | Displays exhaust gas temperature in degrees Fahrenheit (°F) |
| <p>⑥ Vacuum Pressure Indicator (VAC)</p> | Displays standby vacuum pump pressure) |
| <p>⑦ Calculated Fuel Used (GAL Used)</p> | Displays fuel used in gallons, based on fuel flow |
| <p>⑧ Calculated Fuel Remaining (GAL REM)</p> | Displays the totalizer-based fuel remaining in gallons, adjusted using the DEC FUEL and INC FUEL Softkeys |
| <p>⑨ Fuel Quantity Indicator (Fuel QTY GAL)</p> | Displays the amount of fuel in gallons (gal) for each side of a standard fuel tank |
| <p>⑩ Engine Hour Indicator (ENG HRS)</p> | Displays a numeric readout for the time in hours (hrs) the engine has been in service |
| <p>⑪ Voltmeter (M, E Bus Volts)</p> | Displays the main and essential bus voltages |
| <p>⑫ Ammeter (M, S Battery Amps)</p> | Displays the main and standby battery load in amperes |

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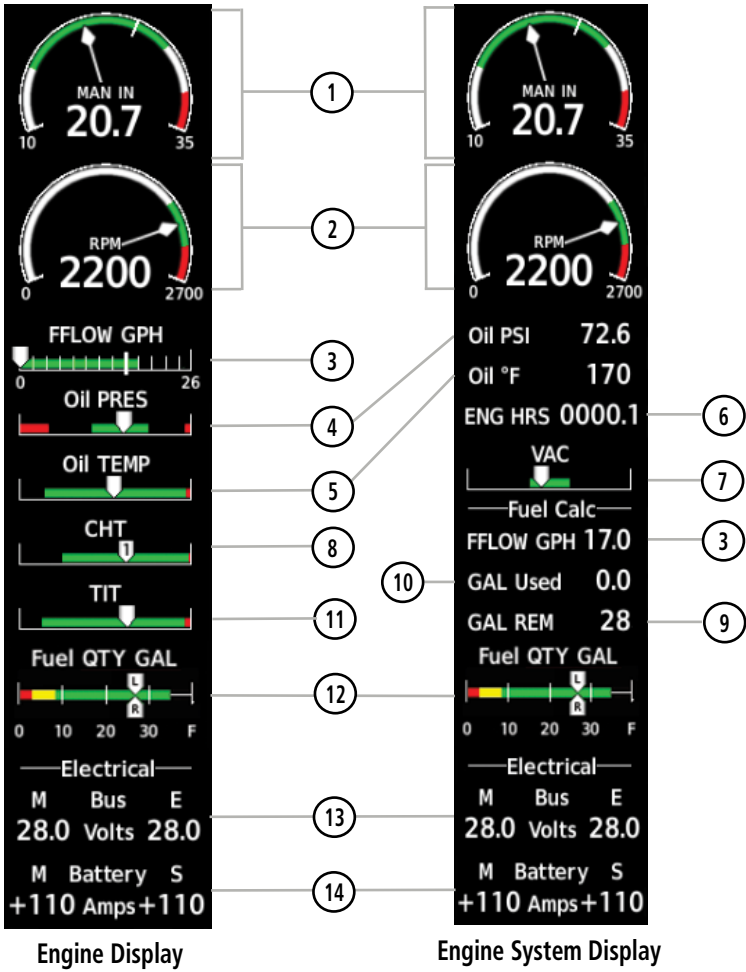
- | | | | |
|---|--|---|---------------------|
| ① | Tachometer Indicator (RPM) | Displays engine tachometer in revolutions per minute (RPM) | Flight Instruments |
| ② | Fuel Flow Indicator (FFLOW GPH) | Displays fuel flow in gallons per hour (gph) | EIS |
| ③ | Oil Pressure Indicator (OIL PSI) | Displays oil pressure in pounds per square inch (psi) | Nav/Com/XPDR/Audio |
| ④ | Oil Temperature Indicator (OIL °F) | Displays oil temperature in degrees Fahrenheit (°F) | Flight Management |
| ⑤ | Exhaust Gas Temperature Indicator (EGT) | Displays exhaust gas temperature in degrees Fahrenheit (°F) | Hazard Avoidance |
| ⑥ | Vacuum Pressure Indicator (VAC) | Displays standby vacuum pump pressure) | AFCS |
| ⑦ | Calculated Fuel Used (GAL Used) | Displays fuel used in gallons, based on fuel flow | Additional Features |
| ⑧ | Calculated Fuel Remaining (GAL REM) | Displays the totalizer-based fuel remaining in gallons, adjusted using the DEC FUEL and INC FUEL Softkeys | Abnormal Operation |
| ⑨ | Fuel Quantity Indicator (Fuel QTY GAL) | Displays the amount of fuel in gallons (gal) for each side of a standard fuel tank | Annun/Alerts |
| ⑩ | Engine Hour Indicator (ENG HRS) | Displays a numeric readout for the time in hours (hrs) the engine has been in service | Appendix |
| ⑪ | Voltmeter (M, E Bus Volts) | Displays the main and essential bus voltages | Index |
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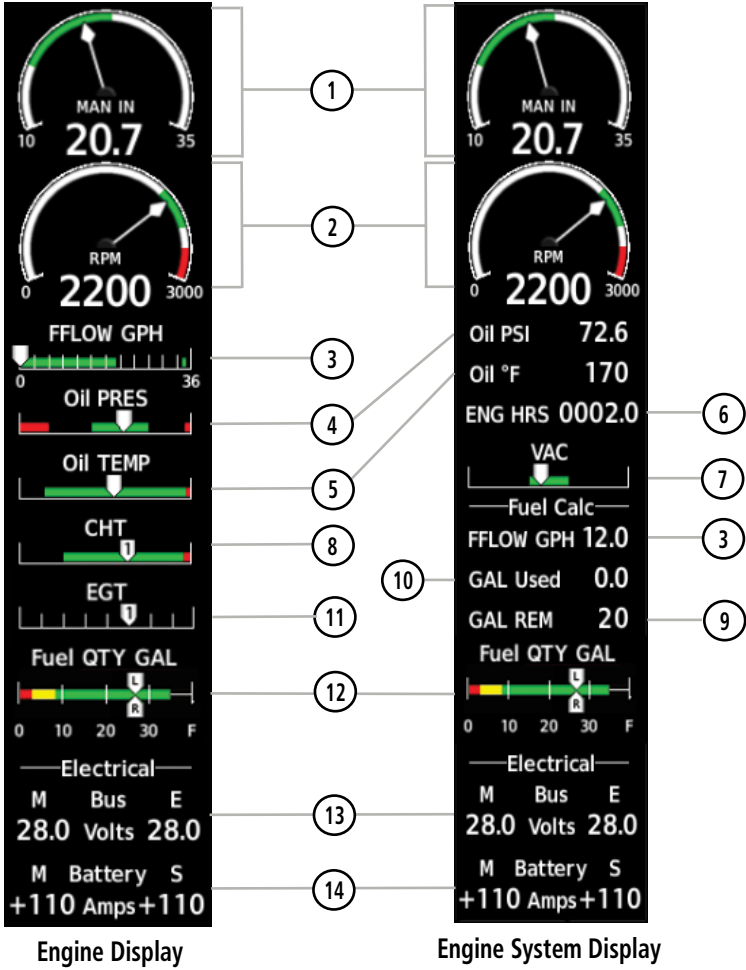
1	Manifold Pressure Indicator (IN HG)	Displays engine manifold pressure inches of mercury (IN HG)	Flight Instruments
2	Tachometer Indicator (RPM)	Displays engine tachometer in revolutions per minute (RPM)	EIS
3	Fuel Flow Indicator (FFLOW GPH)	Displays fuel flow in gallons per hour (gph)	Nav/Com/XPDR/Audio
4	Oil Pressure Indicator (OIL PSI)	Displays oil pressure in pounds per square inch (psi)	Flight Management
5	Oil Temperature Indicator (OIL °F)	Displays oil temperature in degrees Fahrenheit (°F)	Hazard Avoidance
6	Engine Hour Indicator (ENG HRS)	Displays a numeric readout for the time in hours (hrs) the engine has been in service	AFCs
7	Vacuum Pressure Indicator (VAC)	Displays standby vacuum pump pressure)	Additional Features
8	Cylinder Head Temperature Indicator (CHT)	Displays cylinder head temperature in degrees Fahrenheit (°F)	Abnormal Operation
9	Calculated Fuel Remaining (GAL REM)	Displays the totalizer-based fuel remaining in gallons, adjusted using the DEC FUEL and INC FUEL Softkeys	Annun/Alerts
10	Calculated Fuel Used (GAL Used)	Displays fuel used in gallons, based on fuel flow	Appendix
11	Exhaust Gas Temperature Indicator (EGT)	Displays exhaust gas temperature in degrees Fahrenheit (°F)	Index
12	Fuel Quantity Indicator (Fuel QTY GAL)	Displays the amount of fuel in gallons (gal) for each side of a standard fuel tank.	
13	Voltmeter (M, E Bus Volts)	Displays the main and essential bus voltages	
14	Ammeter (M, S Battery Amps)	Displays the main and standby battery load in amperes	

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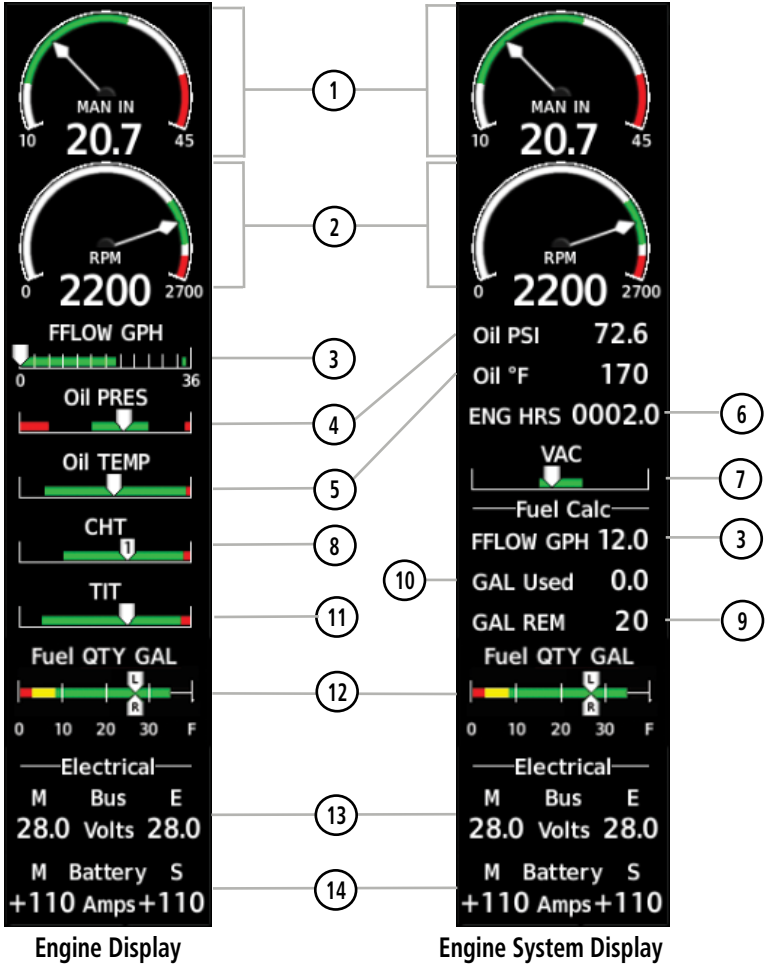


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|---|--|---|---------------------|
| ① | Manifold Pressure Indicator (IN HG) | Displays engine manifold pressure inches of mercury (IN HG) | Flight Instruments |
| ② | Tachometer Indicator (RPM) | Displays engine tachometer in revolutions per minute (RPM) | EIS |
| ③ | Fuel Flow Indicator (FFLOW GPH) | Displays fuel flow in gallons per hour (gph) | Nav/Com/XPDR/Audio |
| ④ | Oil Pressure Indicator (OIL PSI) | Displays oil pressure in pounds per square inch (psi) | Flight Management |
| ⑤ | Oil Temperature Indicator (OIL °F) | Displays oil temperature in degrees Fahrenheit (°F) | Flight Management |
| ⑥ | Engine Hour Indicator (ENG HRS) | Displays a numeric readout for the time in hours (hrs) the engine has been in service | Hazard Avoidance |
| ⑦ | Vacuum Pressure Indicator (VAC) | Displays standby vacuum pump pressure) | Hazard Avoidance |
| ⑧ | Cylinder Head Temperature Indicator (CHT) | Displays cylinder head temperature in degrees Fahrenheit (°F) | AFCS |
| ⑨ | Calculated Fuel Remaining (GAL REM) | Displays the totalizer-based fuel remaining in gallons, adjusted using the DEC FUEL and INC FUEL Softkeys | Additional Features |
| ⑩ | Calculated Fuel Used (GAL Used) | Displays fuel used in gallons, based on fuel flow | Abnormal Operation |
| ⑪ | Turbine Inlet Temperature Indicator (TIT) | Displays turbine inlet temperature in degrees Fahrenheit (°F) | Annun/Alerts |
| ⑫ | Fuel Quantity Indicator (Fuel QTY GAL) | Displays the amount of fuel in gallons (gal) for each side of a standard fuel tank. | Annun/Alerts |
| ⑬ | Voltmeter (M, E Bus Volts) | Displays the main and essential bus voltages | Appendix |
| ⑭ | Ammeter (M, S Battery Amps) | Displays the main and standby battery load in amperes | Index |

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4	Oil Pressure Indicator (OIL PSI)	Displays oil pressure in pounds per square inch (psi)	Flight Management
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9	Calculated Fuel Remaining (GAL REM)	Displays the totalizer-based fuel remaining in gallons, adjusted using the DEC FUEL and INC FUEL Softkeys	Annun/Alerts
10	Calculated Fuel Used (GAL Used)	Displays fuel used in gallons, based on fuel flow	Appendix
11	Exhaust Gas Temperature Indicator (EGT)	Displays exhaust gas temperature in degrees Fahrenheit (°F)	Index
12	Fuel Quantity Indicator (Fuel QTY GAL)	Displays the amount of fuel in gallons (gal) for each side of a standard fuel tank.	
13	Voltmeter (M, E Bus Volts)	Displays the main and essential bus voltages	
14	Ammeter (M, S Battery Amps)	Displays the main and standby battery load in amperes	



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①	Manifold Pressure Indicator (IN HG)	Displays engine manifold pressure inches of mercury (IN HG)	Flight Instruments
②	Tachometer Indicator (RPM)	Displays engine tachometer in revolutions per minute (RPM)	EIS
③	Fuel Flow Indicator (FFLOW GPH)	Displays fuel flow in gallons per hour (gph)	Nav/Com/XPDR/Audio
④	Oil Pressure Indicator (OIL PSI)	Displays oil pressure in pounds per square inch (psi)	Flight Management
⑤	Oil Temperature Indicator (OIL °F)	Displays oil temperature in degrees Fahrenheit (°F)	Hazard Avoidance
⑥	Engine Hour Indicator (ENG HRS)	Displays a numeric readout for the time in hours (hrs) the engine has been in service	AFCs
⑦	Vacuum Pressure Indicator (VAC)	Displays standby vacuum pump pressure)	Additional Features
⑧	Cylinder Head Temperature Indicator (CHT)	Displays cylinder head temperature in degrees Fahrenheit (°F)	Abnormal Operation
⑨	Calculated Fuel Remaining (GAL REM)	Displays the totalizer-based fuel remaining in gallons, adjusted using the DEC FUEL and INC FUEL Softkeys	Annun/Alerts
⑩	Calculated Fuel Used (GAL Used)	Displays fuel used in gallons, based on fuel flow	Appendix
⑪	Turbine Inlet Temperature Indicator (TIT)	Displays turbine inlet temperature in degrees Fahrenheit (°F)	Index
⑫	Fuel Quantity Indicator (Fuel QTY GAL)	Displays the amount of fuel in gallons (gal) for each side of a standard fuel tank.	
⑬	Voltmeter (M, E Bus Volts)	Displays the main and essential bus voltages	
⑭	Ammeter (M, S Battery Amps)	Displays the main and standby battery load in amperes	

ENGINE PAGE

In all cases green indicates normal operation, amber indicates caution, and red indicates warning.

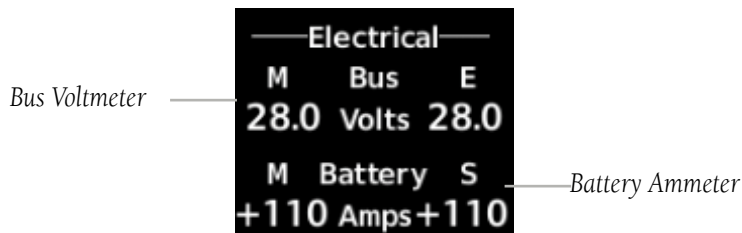
Pressing the **ENGINE** Softkey, makes available the **LEAN** and **SYSTEM** softkeys that provides access to the Lean Page and the System Page.



Engine Page

Electrical

Current for the battery (Battery Amps) and bus voltage (Bus Volts) are displayed in numerical digits and are located on the Engine System Page.



Electrical Group

TURBINE INLET TEMPERATURE

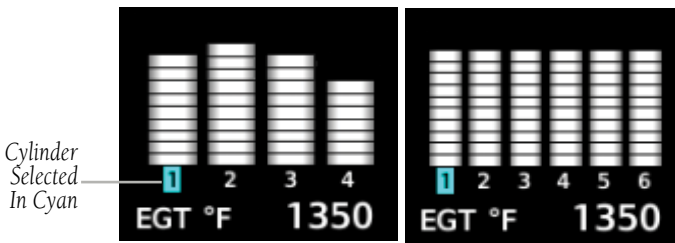
Turbine Inlet Temperature (TIT) horizontal bar indicators is displayed on the main Engine Page and on the Engine Lean page. The Engine Lean page also displays the numerical temperature in degrees of Fahrenheit (°F).



Turbine Inlet Temperature

EXHAUST GAS TEMPERATURE

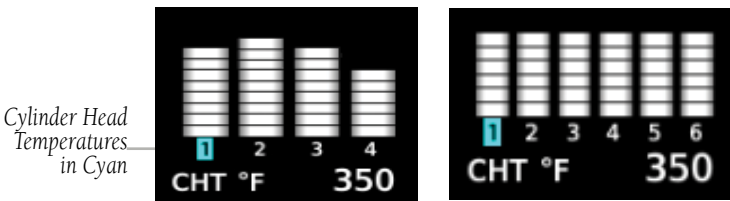
Exhaust Gas Temperature (EGT) readout for the selected cylinder is displayed on the Engine Lean Page. The temperature readout is displayed in degrees of Fahrenheit (°F).



Exhaust Gas Temperatures (Normal)

CYLINDER HEAD TEMPERATURE

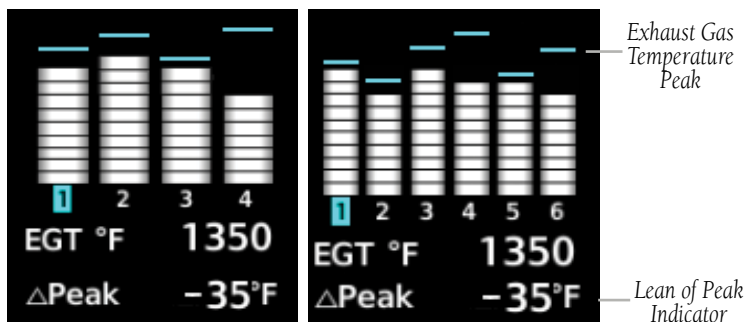
Cylinder Head Temperature (CHT) readout is shown near the bottom Engine Lean Page.



Cylinder Head Temperatures (CHT)

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LEAN ENGINE PAGE



Exhaust Gas Temperatures (Lean Assist)

Accessing the EIS Lean Display:

- 1) On the MFD, press the **Engine** Softkey.
- 2) Press the **Engine** softkey.
- 3) Press the **Lean** softkey.

From the Lean Page, the **CYL SLCT** and **Assist** Softkeys can be utilized to obtain information about specific cylinders on both the EGT and CHT graphs. Pressing the **CYL SLCT** Softkey cycles through the cylinders; the selected cylinder number is displayed in cyan. The **CYL SLCT** Softkey is disabled during warning or caution conditions or when the **ASSIST** Softkey is pressed.

Monitoring the desired cylinder's EGT and CHT:

From the Lean Page, press the **CYL SLCT** Softkey to cycle through each cylinder and view its EGT and CHT. The selected cylinder is shown in cyan.

When the **ASSIST** Softkey is selected, the system initially highlights and selects the cylinder number with the hottest EGT and displays its temperature below the EGT bar graph. A readout showing the difference between peak (Δ PEAK) and the current temperature for the selected cylinder is displayed the EGT numerical temperature indication.

As the mixture is leaned, a cyan line will appear above each cylinder to indicate EGT peak. Refer to the POH and AFM for the recommended mixture adjustment procedures.

Monitoring of the cylinder continues until the **ASSIST** Softkey is pressed again which disables lean assist and removes the peak lines from the bar graph and the temperature deviation from peak (Δ PEAK). The system then returns to seeking the hottest cylinder.

FUEL CALCULATIONS



NOTE: Fuel calculations do not use the aircraft fuel quantity indicators and are calculated from the last time the fuel was reset.

Fuel used (GAL Used) and range (in nautical miles) are calculated based on the displayed fuel remaining (GAL REM) and the fuel flow totalizer. The calculated range also takes into account the aircraft's heading and the wind direction and speed.

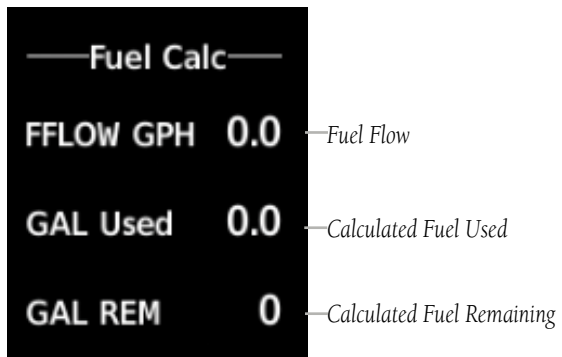
Adjusting the fuel totalizer quantity:

- 1) From the MFD Navigation Map Page.
- 2) Press the **Engine** softkey.
- 3) Press the **System** softkey.
- 4) Press the **GAL REM** softkey.

Select the softkey that best describes the current fuel load desired Once selected, press the **BACK** softkey.

Resetting the fuel totalizer:

On the Engine System Page, press the **RST Fuel** Softkey; this resets displayed fuel remaining (GAL REM) to the maximum fuel capacity for the aircraft and fuel used to zero.



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A map feature related to the EIS Fuel Calculations is the Fuel Range Ring, which graphically illustrates the aircraft's remaining range based on heading, groundspeed, and current calculated wind direction and speed. The solid green circle represents the range until all the remaining fuel is depleted. The dashed green circle indicates the aircraft range until only reserve fuel remains. Once on reserve fuel, the range is indicated by a solid amber circle.

The Fuel Range Ring shifts position in relation to the aircraft according to wind effects. For example, more fuel is required for flying into a headwind, and the aircraft's decreased range in that direction is indicated by the Fuel Range Ring shifting toward the tail of the Aircraft Symbol.

The amount of reserve fuel (only for purposes of the Fuel Range Ring) is set on the Navigation Map Page Setup Menu in terms of remaining flight time. When enabled the Fuel Range Ring appears on the Navigation Map Page, the Weather Data Link Page, and PFD Inset Map.

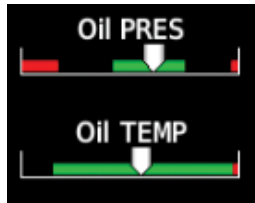
Enabling/disabling the Fuel Range Ring and selecting a reserve fuel time:

- 1) Display the Navigation Map Page (press and hold the **CLR** Key for 2 seconds to quickly select this map).
- 2) Press the **MENU** Key.
- 3) Highlight 'Map Settings' and press the **ENT** Key. The Map Settings Menu is displayed.
- 4) Use the small **FMS** Knob to select the 'Map' group and press the **ENT** Key.
- 5) Highlight the 'FUEL RNG (RSV)' field.
- 6) Turn the small **FMS** Knob to select 'On' or 'Off'.
- 7) Turn the large **FMS** Knob to highlight the reserve fuel time, how long the aircraft can fly after reaching the reserve fuel.
- 8) Enter the desired reserve fuel time (00:00 to 23:59; hours:minutes) and press the **ENT** Key.
- 9) Press the **FMS** Knob to return to the Navigation Map Page.

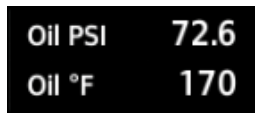
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OIL PRESSURE AND TEMPERATURE GAUGES

Engine oil pressure and temperature are shown along horizontal bar indicators on the MFD, and are shown in numerical digit readouts when Engine System is displayed. Oil pressure is shown in pounds per square inch (psi) and temperature in degrees of Fahrenheit (°F).. If the oil pressure pointer enters the amber band, a caution is issued. If the oil pressure or oil temperature pointers enter the red band, a warning is issued.



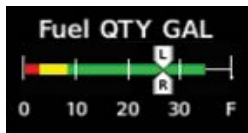
Engine Displayed Oil Pressure and Temperature Gauges Displayed on MFD



Engine System Displayed Oil Pressure and Temperature Gauges

FUEL QUANTITY

The fuel display shows the fuel quantity in each tank in gallons (gal). Fuel quantity for each tank is normally shown along a horizontal bar indicator. A caution or warning is issued for low fuel quantity.



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Blank Page

NAV/COM/TRANSPONDER/AUDIO PANEL

ENTER OR CHANGE A FLIGHT ID (OPTIONAL)

- 1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to highlight the Flight ID field.
- 2) Turn the small **FMS** Knob to enter the first character.
- 3) Turn the large **FMS** Knob to select the next field.
- 4) Turn the small **FMS** Knob to enter the next desired character.
- 5) Repeat steps 3 and 4 until the desired Flight ID is entered.
- 6) Press the **ENT** Key to update the Flight ID. Do not perform any other system functions until 'updating' is no longer displayed.

ADF TUNING (OPTIONAL)

Tune the ADF using the remote ADF control head.

DME TUNING (OPTIONAL)

- 1) Press the **DME** Softkey.
- 2) Turn the large **FMS** to select the DME source field.
- 3) Turn the small **FMS** Knob to select the desired Nav radio.
- 4) Press the **ENT** Key to complete the selection.

SELECTING TRANSPONDER MODE

- 1) Press the **XPDR** Softkey to display the Transponder Mode Selection Softkeys.
- 2) Select the desired softkey to activate the transponder mode.

ENTER A TRANSPONDER CODE

- 1) Press the **XPDR** Softkey to display the transponder mode selection softkeys.
- 2) Press the **Code** Softkey to display the transponder code selection softkeys, for digit entry.
- 3) Press the digit softkeys to enter the code in the code field. When entering the code, the next key in sequence must be pressed within 10 seconds, or the entry is cancelled and restored to the previous code. Five seconds after the fourth digit has been entered, the transponder code becomes active.

SELECTING A COM RADIO

Transmit/Receive

Press the **COM1 MIC** or **COM2 MIC** Key on the audio panel.

Receive Only

Press the **COM1** or **COM2** Key on the audio panel.

SELECTING A NAV RADIO

- 1) To begin navigating using a navigation radio, press the **CDI** Softkey on the PFD to select VOR1/LOC1 (NAV1) or VOR2/LOC2 (NAV2).
- 2) Press the **NAV1**, **NAV2**, **DME**, or **ADF** Key on the audio panel to select or deselect the navigation radio audio source. All radio keys can be selected individually or together.

NAV/COM TUNING

- 1) Press the small tuning knob to select the desired radio for tuning. A cyan box highlights the radio frequency to be tuned.
- 2) Turn the respective tuning knobs to enter the desired frequency into the standby frequency field. The large knob enters MHz and the small knob enters kHz.
- 3) Press the Frequency Transfer Key to place the frequency into the active frequency field.

AUTO-TUNING RADIOS ON THE PFD

- 1) Press the **Nearest** Softkey to display the Nearest Airports Window.
- 2) Turn either **FMS** Knob to highlight the desired frequency.
- 3) Press the **ENT** Key to place the frequency in the standby field of the active COM.
- 4) Press the Frequency Transfer Key to place the frequency in the active field.

NAV frequencies are entered automatically in the NAV frequency active or standby field (depending in CDI selection) upon approach loading or approach activation.

AUTO-TUNING FROM THE MFD

Frequencies can be automatically loaded into the COM Frequency Box from pages in the NRST or WPT page group by highlighting the frequency and pressing the **ENT** Key.

Auto-tuning a COM frequency from the NRST and WPT Pages:

- 1) From any page the COM frequency can be auto-tuned, activate the cursor by pushing the **FMS** Knob or selecting the appropriate softkey.
- 2) Turn the large **FMS** Knob to place the cursor on the desired COM frequency.
- 3) Press the **ENT** Key to display the 'Load Frequency' Screen.
- 4) Turn the **FMS** Knob to select the desired COM1 or COM2 active or standby location.
- 5) Press the **ENT** Key to load the frequency.

Frequencies can be automatically loaded into the NAV Frequency Box from pages in the NRST or WPT page group by highlighting the frequency and pressing the **ENT** Key.

Auto-tuning a NAV frequency from the WPT and NRST Pages:

- 1) From any page the NAV frequency can be auto-tuned, activate the cursor by pushing the **FMS** Knob or the appropriate softkey.
- 2) Turn the large **FMS** Knob to place the cursor on the desired NAV identifier or NAV frequency.

- 3) On the Nearest VOR and Nearest Airports pages, press the **FREQ** Softkey to place the cursor on the NAV frequency.
- 4) Press the **ENT** Key to display the 'Load Frequency' Window.
- 5) Turn the **FMS** Knob to select the desired NAV1 or NAV2 active or standby location.
- 6) Press the **ENT** Key to load the frequency into the selected NAV frequency field.

DIGITAL CLEARANCE RECORDER AND PLAYER



NOTE: Only the audio for the selected **COM MIC** Key is recorded.

The **PLAY** Key controls the play function. Pressing the **PLAY** Key once plays the last recorded memory block and then returns to normal operation. Each subsequent **PLAY** Key press while recorded audio is playing will play the previously recorded block. The **PLAY** annunciation remains illuminated when play is in progress and extinguishes when play is finished.

Play will stop at the end of the recording, upon receiving an audio transmission, or when PTT is pressed. If equipped with the GMA 1347, pressing the **MKR/MUTE** Key will also stop play.

Powering off the unit automatically clears all recorded blocks.




INTERCOM SYSTEM (ICS) ISOLATION (GMA 1347)




Press the **PILOT** and/or **COPLT** Key to select those isolated from hearing the Nav/Com radios and music.

PILOT KEY Annunciation	COPLT KEY Annunciation	Pilot Hears	Copilot Hears	Passenger Hears
OFF	OFF	Selected radios, aural alerts, pilot, copilot, passengers, MUSIC INPUT #1	Selected radios, aural alerts, pilot, copilot, passengers, MUSIC INPUT #1	Selected radios, aural alerts, pilot, copilot, passengers, MUSIC INPUT #2

PILOT KEY Annunciation	COPLT KEY Annunciation	Pilot Hears	Copilot Hears	Passenger Hears
ON	OFF	Selected radios, aural alerts, pilot	Copilot, passengers, MUSIC INPUT #1	Copilot, passengers, MUSIC INPUT #2
OFF	ON	Selected radios, aural alerts, pilot; passengers, MUSIC INPUT #1	Copilot	Selected radios, aural alerts, pilot, passengers, MUSIC INPUT #2
ON	ON	Selected radios, aural alerts, pilot, copilot	Selected radios, aural alerts, pilot, copilot	Passengers; MUSIC INPUT #2

INTERCOM SYSTEM (ICS) ISOLATION (GMA 1360)

Audio Panel	Pilot Hears	Copilot Hears	Passenger Hears
	Selected Radios Aural Alerts	Selected Radios Aural Alerts	Passenger MIC
	Selected Radios Aural Alerts	Selected Radios Aural Alerts	Selected Radios Aural Alerts Passenger MIC
	Selected Radios Aural Alerts Copilot MIC	Selected Radios Aural Alerts Pilot MIC	Passenger MIC

	Audio Panel	Pilot Hears	Copilot Hears	Passenger Hears
Flight Instruments		Selected Radios Aural Alerts	Selected Radios Aural Alerts Passenger MIC	Selected Radios Aural Alerts Copilot MIC Passenger Mic
EIS				
Nav/Com/XPDR/Audio		Selected Radios Aural Alerts Passenger MIC	Selected Radios Aural Alerts	Selected Radios Aural Alerts Pilot MIC Passenger MIC
Flight Management				
Hazard Avoidance		Selected Radios Aural Alerts Copilot MIC Passenger MIC	Selected Radios Aural Alerts Pilot MIC Passenger MIC	Selected Radios Aural Alerts Pilot MIC Copilot MIC Passenger MIC
AFCS				

3D AUDIO (GMA 1360)

3D Audio is useful when multiple COM audio sources are present. By using different responses in each ear, 3D audio processing creates the illusion that each COM audio source is coming from a unique location on the horizontal plane.

Enabling/Disabling 3D Audio:

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 2' Page.
- 2) Push the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the 'Pilot 3D Audio' or 'Copilot 3D Audio' 'On/ Off' Field in the Audio Box.
- 4) Turn the small **FMS** Knob clockwise to turn 3D Audio On or counterclockwise to turn Off.

Swapping left/right audio in a headset:

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 2' Page.
- 2) Push the **FMS** Knob momentarily to activate the flashing cursor.

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- 3) Turn the large **FMS** Knob to highlight the 'Pilot L-R Swap' or 'Copilot L-R Swap' 'On/ Off' Field in the Audio Box.
- 4) Turn the small **FMS** Knob clockwise to turn the Swap On or counterclockwise to turn Off.

BLUE-SELECT MODE (TELEPHONE/ENTERTAINMENT DISTRIBUTION) (GMA 1360)

The music and telephone (**TEL**, **MUS1**, and **MUS2**) audio are distributed using the Blue-Select Mode.

The Blue-Select Mode is entered by pressing the small knob when the volume control cursor (flashing white annunciator) is not active. If the volume control cursor is active, press the small knob twice. The first press will cancel the volume control cursor, the second will activate Blue-Select Mode.

The annunciator over the **TEL** Button will be flashing blue. Any combination of the annunciators over the **PILOT ICS**, **COPLT ICS**, and **PASS ICS** buttons may be blue. Select the desired button to turn the blue annunciator on or off to distribute the telephone audio to selected crew/passenger positions. Turn the large knob to select **MUS1** or **MUS2**, and select the crew/passenger positions to receive the music audio.

Selecting any button other than **PILOT ICS**, **COPLT ICS**, **PASS ICS**, **TEL**, **MUS1**, or **MUS2** will cancel Blue-Select Mode. Pressing the small knob will also cancel Blue-Select Mode. After approximately ten seconds with no input, the Blue-Select Mode will automatically cancel.

BLUETOOTH® (GMA 1360)



NOTE: Pairing is only necessary during the first attempt to connect a Bluetooth device to the audio panel. Once paired, the audio panel and the device will connect automatically.

Pairing a Bluetooth Device With The Audio Panel

Press and hold the inner knob for two seconds. The Bluetooth Annunciator flashes to indicate the unit is discoverable and the aural message “**Bluetooth discoverable**” is heard. The audio panel will remain discoverable for 90 seconds or until a successful pair is established. Once paired, the Bluetooth Annunciator turns steady blue and the aural message “**Bluetooth paired**” is heard.

Assigning An Audio Source To The Bluetooth Device

Press the **TEL**, **MUS1**, or **MUS2** key until the annunciator turns blue (the audio from the Bluetooth source will not be heard until this step is complete). The key annunciator cycles OFF-WHITE-BLUE. WHITE selects the wired audio source. BLUE selects the Bluetooth audio source. The BLUE source assignment will persist through Bluetooth audio connection disruptions.



NOTE: *The Bluetooth audio can only be assigned to one source at a time. Once the Bluetooth audio is assigned to an audio source, the remaining entertainment audio sources will only cycle between OFF and WHITE.*

Bluetooth audio will maintain a separate volume level and Blue Select distribution from the wired audio source. If the Bluetooth connection is supporting a phone call, all intercom positions listening to that source can also speak on the call through the headset MICs.

Additional Bluetooth Control Functions

When the Audio Panel detects a recording device as the Bluetooth connected device, the Pilot ICS Annunciator will turn blue. All audio heard by the Pilot will be recorded. Press and hold the PILOT ICS Key to enable/disable Bluetooth recording mode.

FLIGHT MANAGEMENT

Changing A Field In The MFD Navigation Status Box

- 1) Select the 'Aux - System Setup 1' Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the desired field number in the 'MFD Data Bar Fields' Box.
- 4) Turn the small **FMS** Knob to display and scroll through the data options list to select the desired data.
- 5) Press the **ENT** Key. Pressing the **Defaults** Softkey returns all fields to the default setting.

USING MAP DISPLAYS

CHANGING THE NAVIGATION MAP ORIENTATION

- 1) With the 'Map - Navigation Map' Page displayed, press the **MENU** Key. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key to display the 'Map Settings' Window.
- 3) Select the 'Map' Group.
- 4) Press the **ENT** Key
- 5) Turn the large **FMS** Knob, or press the **ENT** Key once, to select the 'Orientation' Field.
- 6) Turn the small **FMS** Knob to select the desired orientation.
- 7) Press the **ENT** Key to select the new orientation.
- 8) Press the **FMS** Knob to return to the base page.

ENABLING/DISABLING AUTO NORTH UP AND SELECTING THE MINIMUM SWITCHING RANGE:

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Menu is displayed.
- 3) Select the 'Map' group.

- 4) Press the **ENT** Key.
- 5) Highlight the 'North Up Above' Field.
- 6) Select 'On' or 'Off' using the small **FMS** Knob.
- 7) Press the **ENT** Key to accept the selected option. The flashing cursor highlights the range field.
- 8) Use the small **FMS** Knob to select the desired range.
- 9) Press the **ENT** Key to accept the selected option.
- 10) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

CONFIGURING AUTOMATIC ZOOM

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Menu is displayed.
- 3) Turn the small **FMS** Knob to select the 'Map' group.
- 4) Press the **ENT** Key.
- 5) Turn the large **FMS** Knob to highlight the 'Auto Zoom' On/Off Field, and select 'Off' or 'On' using the small **FMS** Knob.
- 6) Press the **ENT** Key to accept the selected option. The flashing cursor highlights the 'Auto Zoom' display selection Field.
- 7) Select 'MFD', 'PFD', or 'All' using the small **FMS** Knob.
- 8) Press the **ENT** Key to accept the selected option. The flashing cursor highlights the 'Max Look FWD' Field. Times are from zero to 999 minutes.
- 9) Use the **FMS** Knobs to set the time. Press the **ENT** Key.
- 10) Repeat step 9 for 'Min Look FWD' (zero to 99 minutes) and 'Time Out' (zero to 99 minutes).
- 11) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

PANNING THE MAP

- 1) Press the **Joystick** to display the Map Pointer.
- 2) Move the **Joystick** to move the Map Pointer around the map.
- 3) Press the **Joystick** to remove the Map Pointer and recenter the map on the aircraft's current position.

REVIEWING INFORMATION FOR AN AIRPORT, NAVAID, OR USER WAYPOINT

- 1) With the desired map page displayed on the MFD, push the **Joystick** to display the Map Pointer and place the Map Pointer on a waypoint.
- 2) Press the **ENT** Key to display the 'WPT - Waypoint Information' Page for the selected waypoint.
- 3) Press the **Go Back** Softkey, the **CLR** Key, or the **ENT** Key to exit the 'WPT - Waypoint Information' Page and return to the 'Map - Navigation Map' Page showing the selected waypoint.

VIEWING AIRSPACE INFORMATION FOR A SPECIAL-USE OR CONTROLLED AIRSPACE

- 1) Place the Map Pointer on the boundary of an airspace.
- 2) Push the **Joystick** to remove the Map Pointer and center the map on the aircraft.

MEASURING BEARING AND DISTANCE BETWEEN ANY TWO POINTS

- 1) Press the **MENU** Key (with the Navigation Map Page displayed).
- 2) Highlight the 'Measure Bearing/Distance' field.
- 3) Press the **ENT** Key. A Measure Pointer is displayed on the map at the aircraft's present position.
- 4) Move the **Joystick** to place the reference pointer at the desired location. The bearing and distance are displayed at the top of the map. Elevation at the current pointer position is also displayed. Pressing the **ENT** Key changes the starting point for measuring.
- 5) To exit the Measure Bearing/Distance option, push the **Joystick**; or select 'Stop Measuring' from the Page Menu and press the **ENT** Key.

DISPLAYING/REMOVING TOPOGRAPHIC DATA ON ALL MFD PAGES DISPLAYING NAVIGATION MAPS

- 1) Press the **Map Opt** Softkey.
- 2) Press the **TER** Softkey until 'Topo' is shown on the softkey to display topographic data.

- 3) Press the **TER** Softkey until 'Off' is shown on the softkey to remove topographic data from the navigation map. When topographic data is removed from the page, all navigation data is presented on a black background.

DISPLAYING/REMOVING TOPOGRAPHIC DATA ON THE PFD INSET MAP OR THE HSI MAP

- 1) Press the **Map/HSI** Softkey .
- 2) Press the **Topo** Softkey.
- 3) Press the **TER** Softkey until 'Off' is shown on the softkey to remove topographic data from the navigation map. When topographic data is removed from the page, all navigation data is presented on a black background.

DISPLAYING/REMOVING TOPOGRAPHIC DATA USING THE 'MAP - NAVIGATION MAP' 'PAGE MENU' WINDOW

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Window is displayed.
- 3) Turn the small **FMS** Knob to select the 'Map' Group.
- 4) Press the **ENT** Key.
- 5) Turn the large **FMS** Knob to highlight the 'Terrain Display' Field.
- 6) Turn the small **FMS** Knob to select 'Topo' or 'Off'.
- 7) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

SELECTING A TOPOGRAPHICAL DATA RANGE (TERRAIN DISPLAY)

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Menu is displayed.
- 3) Turn the small **FMS** Knob to select the 'Map' Group.
- 4) Press the **ENT** Key.
- 5) Use the large **FMS** Knob to highlight the 'Terrain Display' range field. Ranges are from 1 nm to 1000 nm.

- 6) To change the Terrain Display range setting, turn the small **FMS** Knob to display the range list.
- 7) Select the desired range using the small **FMS** Knob.
- 8) Press the **ENT** Key.
- 9) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

DISPLAYING/REMOVING THE TOPOGRAPHIC SCALE (TOPO SCALE)

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Menu is displayed.
- 3) Turn the small **FMS** Knob to select the 'Map' group and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the 'Topo Scale' Field.
- 5) Turn the small **FMS** Knob to select 'On' or 'Off'.
- 6) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

SETTING UP THE 'LAND', 'AVIATION' OR 'AIRSPACE' GROUP ITEMS

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Menu is displayed.
- 3) Turn the small **FMS** Knob to select the desired group.
- 4) Press the **ENT** Key. The cursor flashes on the first field.
- 5) Turn the large **FMS** Knob to select the desired option.
- 6) Turn the small **FMS** Knob to select the desired setting (e.g. On/Off or maximum range).
- 7) Press the **ENT** Key to accept the selected option and move the cursor to the next item.
- 8) Repeat steps 5-7 as necessary.
- 9) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

DECLUTTERING THE MFD NAVIGATION MAP

Press the **Detail** Softkey with the 'Map - Navigation Map' Page displayed. The current declutter level is shown. With each softkey press, another level of map information is removed.

DECLUTTERING THE PFD MAP

- 1) Press the **Map/HSI** Softkey.
- 2) Press the **Detail** Softkey. The current declutter level is shown. With each selection, another level of map information is removed.

DISPLAYING/REMOVING AIRWAYS

- 1) Press the **Map Opt** Softkey.
- 2) Press the **AWY** Softkey. Both High and Low Altitude Airways are displayed (AWY On).
- 3) Press the softkey again to display Low Altitude Airways only ('AWY LO').
- 4) Press the softkey again to display High Altitude Airways only ('AWY HI').
- 5) Press the softkey again to remove High Altitude Airways. No airways are displayed ('AWY Off').

SELECTING AN AIRWAY RANGE (LOW ALT AIRWAYS OR HIGH ALT AIRWAYS)

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Window is displayed.
- 3) Turn the small **FMS** Knob to select the 'Airways' Group, and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the 'Low ALT Airways' or 'High ALT Airways' range field.
- 5) To change the range setting, turn the small **FMS** Knob to display the range list.
- 6) Select the desired range using the small **FMS** Knob.
- 7) Press the **ENT** Key.
- 8) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

SETTING UP ADDITIONAL 'MAP' GROUP ITEMS

- 1) Press the **MENU** Key with the Navigation Map Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The Map Settings Menu is displayed.
- 3) Turn the small **FMS** Knob to select the 'Map' group.

- 4) Press the **ENT** Key. The cursor flashes on the first field.
- 5) Turn the large **FMS** Knob to select the desired option.
- 6) Turn the small **FMS** Knob to select 'On' or 'Off'.

WAYPOINTS

SELECTING AN AIRPORT FOR REVIEW BY IDENTIFIER, FACILITY NAME, OR LOCATION

- 1) From the 'WPT - Airport Information' Page (**Info 1** Softkey), press the **FMS** Knob.
- 2) Use the **FMS** Knobs and enter an identifier, facility name, or location within the 'Airport' Box.
- 3) Press the **ENT** Key.
- 4) Press the **FMS** Knob to remove the cursor.

SELECTING A RUNWAY

- 1) With the 'WPT - Airport Information' Page (**Info 1** Softkey) displayed, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to place the cursor in the 'Runways' Box, on the runway designator.
- 3) Turn the small **FMS** Knob to display the desired runway (if more than one) for the selected airport.
- 4) To remove the flashing cursor, press the **FMS** Knob.

VIEWING A DESTINATION AIRPORT

From the 'WPT - Airport Information' Page (**Info 1** Softkey) press the **MENU** Key. Select 'View Destination Airport'. The Destination Airport is displayed.

VIEWING INFORMATION FOR A NEAREST AIRPORT ON THE PFD

- 1) Press the **Nearest** Softkey to display the 'Nearest Airports' Window. Press the **FMS** Knob to activate the cursor.
- 2) Highlight the airport identifier with the **FMS** Knob and press the **ENT** Key to display the 'Airport Information' Window.
- 3) To return to the 'Nearest Airports' Window press the **ENT** Key (with the cursor on 'Back') or press the **CLR** Key. The cursor is now on the next airport in the nearest airports list. (Repeatedly pressing the **ENT** Key moves through the airport list, alternating between the 'Nearest Airports' Window and the 'Airport Information' Window.)
- 4) Press the **CLR** Key or the **Nearest** Softkey to close the PFD 'Nearest Airports' Window.

VIEWING INFORMATION FOR A NEAREST AIRPORT ON THE MFD

- 1) Turn the large **FMS** Knob to select the 'NRST' Page Group.
- 2) Turn the small **FMS** Knob to select the 'NRST - Nearest Airports' Page (it is the first page of the group, so it may already be selected). If there are no Nearest Airports available, "None Within 200nm" is displayed.
- 3) Press the **APT** Softkey; or press the **FMS** Knob; or press the **MENU** Key, highlight 'Select Airport Window' and press the **ENT** Key. The cursor is placed in the 'Nearest Airports' Box. The first airport in the nearest airports list is highlighted.
- 4) Turn the **FMS** Knob to highlight the desired airport. (Pressing the **ENT** Key also moves to the next airport.)
- 5) Press the **FMS** Knob to remove the flashing cursor.

VIEWING RUNWAY INFORMATION FOR A SPECIFIC AIRPORT

- 1) With the 'NRST - Nearest Airports' Page displayed, press the **RNWX** Softkey; or press the **MENU** Key, highlight 'Select Runway Window'; and press the **ENT** Key. The cursor is placed in the 'Runways' Box.
- 2) Turn the small **FMS** Knob to select the desired runway.
- 3) Press the **FMS** Knob to remove the flashing cursor.

SELECTING NEAREST AIRPORT SURFACE AND MINIMUM RUNWAY LENGTH MATCHING CRITERIA

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the 'Runway Surface' Field in the 'Nearest Airport' Box.
- 4) Turn the small **FMS** Knob to select the desired runway option (Any, Hard Only, Hard/ Soft).
- 5) Press the **ENT** Key. The cursor moves to the 'Minimum Length' Field in the 'Nearest Airport' Box.
- 6) Use the **FMS** Knob to enter the minimum runway length (zero to 25,000 feet) and press the **ENT** Key.
- 7) Press the **FMS** Knob to remove the flashing cursor.

VIEWING NON-AIRPORT WAYPOINTS

- 1) Turn the large **FMS** Knob to select the 'WPT' Page Group.
- 2) Turn the small **FMS** Knob to select the 'WPT - Intersection, NDB, VOR, VRP, or User WPT Information' Page.
- 3) Press the **FMS** Knob to display the flashing cursor in the 'Intersection, NDB, VOR, VRP, or User Waypoint' Box.
- 4) Use the **FMS** Knobs and enter an identifier, facility name, or location.
- 5) Press the **ENT** Key, if needed.
- 6) Press the **FMS** Knob to remove the flashing cursor.

VIEWING NEAREST NON-AIRPORT WAYPOINTS

- 1) Turn the large **FMS** Knob to select the 'NRST' Page Group.
- 2) Turn the small **FMS** Knob to select the 'NRST - Nearest Intersections, NDB, VOR, VRP, or User WPTS' Page.
- 3) Press the **FMS** Knob to display the flashing cursor in the 'Nearest INT, NDB, VOR, VRP, or User' Box,

Or:

If the 'NRST - Nearest VOR' Page is displayed, to display the flashing cursor:

Press the **VOR** Softkey.

Or:

- a) Press the **MENU** Key
 - b) Highlight 'Select VOR Window', and press the **ENT** Key.
- 4) If needed, press the **ENT** Key or turn either **FMS** Knob as needed to select an identifier.
 - 5) Press the **FMS** Knob to remove the flashing cursor.

CREATING USER WAYPOINTS FROM THE 'WPT - USER WPT INFORMATION' PAGE

- 1) Press the **New** Softkey, or press the **MENU** Key and select 'Create New User Waypoint'.
- 2) Enter a user waypoint name (up to six characters).
- 3) Press the **ENT** Key. The current aircraft position is the default location of the new waypoint.
- 4) If desired, define the type and location of the waypoint in one of the following ways:

Select "RAD/RAD" using the small **FMS** Knob, press the **ENT** Key, and enter the two reference waypoint identifiers and radials into the 'Reference Waypoints' Window using the **FMS** Knobs.

Or:

Select "RAD/DIS" using the small **FMS** Knob, press the **ENT** Key, and enter the reference waypoint identifier, the radial, and the distance into the 'Reference Waypoints' Window using the **FMS** Knobs.

Or:

Select "LAT/LON" using the small **FMS** Knob, press the **ENT** Key, and enter the latitude and longitude into the 'Information' Window using the **FMS** Knobs.

- 5) Press the **ENT** Key to accept the new waypoint.
- 6) If desired, change the storage method of the waypoint to temporary or normal by moving the cursor to "Temporary" and pressing the **ENT** Key to check or uncheck the box.
- 7) Press the **FMS** Knob to remove the flashing cursor.

CREATING A USER WAYPOINT FROM THE 'FPL – ACTIVE FLIGHT PLAN' PAGE

- 1) Press the **FPL** Key.
- 2) Push the **FMS** Knob to activate the cursor (not required on the PFD).
- 3) Select the point in the flight plan before which to add the new user waypoint. The new waypoint is placed directly in front of (above) the highlighted waypoint.
- 4) Turn the small **FMS** Knob to display the 'Waypoint Information' Window. (Turning it clockwise displays a blank 'Waypoint Information' Window, turning it counter-clockwise displays the 'Waypoint Information' Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
- 5) Enter the name of the new user waypoint (a waypoint that does not match any existing waypoint in the database) and press the **ENT** Key.
- 6) The message 'AAAAA does not exist. Create User Waypoint?' is displayed. Press the **ENT** Key with 'Yes' highlighted.
- 7) The 'WPT – User WPT Information' Page is displayed. If desired, define the type and location of the waypoint in one of the following ways:

Select "RAD/RAD" using the small **FMS** Knob, press the **ENT** Key, and enter the two reference waypoint identifiers and radials into the 'Reference Waypoints' Window using the **FMS** Knobs.

Or:

Select "RAD/DIS" using the small **FMS** Knob, press the **ENT** Key, and enter the reference waypoint identifier, the radial, and the distance into the 'Reference Waypoints' Window using the **FMS** Knobs.

Or:

Select "LAT/LON" using the small **FMS** Knob, press the **ENT** Key, and enter the latitude and longitude into the 'Information' Window using the **FMS** Knobs.

- 8) Press the **ENT** Key to accept the new waypoint.

- 9) If desired, change the storage method of the waypoint to temporary or normal by moving the cursor to "Temporary" and pressing the **ENT** Key to check or uncheck the box.
- 10) Turn the large **FMS** Knob to highlight 'Load WPT to FPL' and press the **ENT** Key. The 'FPL – Active Flight Plan' Page is displayed with the new user waypoint added to the flight plan.

CREATING USER WAYPOINTS FROM MAP PAGES

- 1) Push the **Joystick** to activate the panning function and pan to the map location of the desired user waypoint.
- 2) Press the **ENT** Key. The 'WPT - User WPT Information' Page is displayed with the captured position.
- 3) Enter a user waypoint name (up to six characters).
- 4) Press the **ENT** Key to accept the selected name.
- 5) If desired, define the type and location of the waypoint in one of the following ways:

Select "RAD/RAD" using the small **FMS** Knob, press the **ENT** Key, and enter the two reference waypoint identifiers and radials into the 'Reference Waypoints' Window using the **FMS** Knobs.

Or:

Select "RAD/DIS" using the small **FMS** Knob, press the **ENT** Key, and enter the reference waypoint identifier, the radial, and the distance into the 'Reference Waypoints' Window using the **FMS** Knobs.

Or:

Select "LAT/LON" using the small **FMS** Knob, press the **ENT** Key, and enter the latitude and longitude into the 'Information' Window using the **FMS** Knobs.

- 6) Press the **ENT** Key to accept the new waypoint.
- 7) If desired, change the storage method of the waypoint to temporary or normal by moving the cursor to "Temporary" and pressing the **ENT** Key to check or uncheck the box.
- 8) Press the **FMS** Knob to remove the flashing cursor.
- 9) Press the **Go Back** Softkey to return to the map page.

EDITING A USER WAYPOINT COMMENT OR LOCATION

- 1) With the 'WPT - User WPT Information' Page displayed, press the **FMS** Knob to activate the cursor.
- 2) Select a user waypoint in the 'User Waypoint List' Box, if required, and press the **ENT** Key.
- 3) Move the cursor to the desired field.
- 4) Turn the small **FMS** Knob to make any changes.
- 5) Press the **ENT** Key to accept the changes.
- 6) Press the **FMS** Knob to remove the flashing cursor.

CHANGING THE USER WAYPOINT STORAGE DURATION DEFAULT SETTING

- 1) With the 'WPT – User WPT Information' Page displayed, press the **MENU** Key.
- 2) Move the cursor to select 'Waypoint Setup', and press the **ENT** Key.
- 3) Select 'Normal' or 'Temporary' as desired, and press the **ENT** Key.
- 4) Push the **FMS** Knob to remove the flashing cursor and return to the 'WPT – User WPT Information' Page.

DELETING A SINGLE USER WAYPOINT

- 1) With the 'WPT - User WPT Information' Page displayed, highlight a User Waypoint in the 'User Waypoint List' Box, or enter a waypoint in the 'User Waypoint' Box.
- 2) Press the **Delete** Softkey or press the **CLR** Key. 'YES' is highlighted in the confirmation window.
- 3) Press the **ENT** Key.
- 4) Press the **FMS** Knob to remove the flashing cursor.

DELETING ALL USER WAYPOINTS

- 1) With the 'WPT - User WPT Information' Page displayed, highlight a User Waypoint in the 'User Waypoint List' Box.
- 2) Press the **MENU** Key.

- Flight Instruments
- FIS
- Nav/Com/XPDR/Audio
- Flight Management
- Hazard Avoidance
- AFCS
- Additional Features
- Abnormal Operation
- Annun/Alerts
- Appendix
- Index

- 3) Select 'Delete All User Waypoints.'
- 4) Press the **ENT** Key twice to confirm the selection.
- 5) Press the **FMS** Knob to remove the flashing cursor.

AIRSPACES

DISPLAYING AND REMOVING AIRSPACE ALTITUDE LABELS

- 1) Press the **MENU** Key with the 'Map - Navigation Map' Page displayed. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The 'Map Settings' Window is displayed.
- 3) Turn the small **FMS** Knob to select the 'Airspace' Group, if necessary, and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to select the 'Airspace ALT LBL' Field.
- 5) Turn the small **FMS** Knob to select 'On' to display labels and 'Off' to remove labels.
- 6) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

TURNING AN AIRSPACE ALERT ON OR OFF

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page (**Setup 1** Softkey).
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the desired field in the 'Airspace Alerts' Box.
- 4) Turn the small **FMS** Knob clockwise to turn the airspace alert On or counterclockwise to turn the alert Off.
- 5) Press the **FMS** Knob to remove the flashing cursor.

CHANGING THE ALTITUDE BUFFER DISTANCE SETTING

- 1) Use the **FMS** Knob to select the 'Aux - System Setup 1' Page (**Setup 1** Softkey).
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the 'Altitude Buffer' Field in the 'Airspace Alerts' Box.

- 4) Use the **FMS** Knob to enter an altitude buffer value and press the **ENT** Key.
- 5) Press the **FMS** Knob to remove the flashing cursor.

SELECTING AND VIEWING AN AIRSPACE ALERT WITH ITS ASSOCIATED INFORMATION

- 1) Use the **FMS** Knob to select the 'NRST - Nearest Airspaces' Page.
- 2) Press the **Alerts** Softkey on the MFD; or press the **FMS** Knob; or press the **MENU** Key, highlight 'Select Alerts Window', and press the **ENT** Key. The cursor is placed in the 'Airspace Alerts' Box.
- 3) Select the desired airspace.
- 4) Press the **FMS** Knob to remove the flashing cursor.

TURNING SMART AIRSPACE ON OR OFF

- 1) Use the **FMS** Knob to select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key, and press the **ENT** Key. The 'Map Settings' Window is displayed
- 3) Turn the small **FMS** Knob to highlight the 'Airspace' and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the 'Smart Airspace' Field.
- 5) Turn the small **FMS** Knob clockwise to turn smart airspace On or counterclockwise to turn smart airspace Off.
- 6) Press the **FMS** Knob to remove the flashing cursor.

DIRECT-TO NAVIGATION

ENTERING A WAYPOINT IDENTIFIER, FACILITY NAME, OR CITY AS A DIRECT-TO DESTINATION

- 1) Press the **Direct-to** Key. The 'Direct To' Window is displayed (with the active flight plan waypoint as the default selection or a blank waypoint field if no flight plan is active).

- 1) Turn the small **FMS** Knob clockwise to begin entering a waypoint identifier (turning it counter-clockwise brings up the waypoint selection submenu - press the **CLR** Key to remove it), or turn the large **FMS** Knob to select the facility name, or city field and turn the small **FMS** Knob to begin entering a facility name or city. If duplicate entries exist for the entered facility or city name, additional entries can be viewed by turning the small **FMS** Knob during the selection process.
- 2) Press the **ENT** Key. 'Activate?' is highlighted.
- 3) Press the **ENT** Key to activate the direct-to.

SELECTING AN ACTIVE FLIGHT PLAN WAYPOINT AS A DIRECT-TO DESTINATION

- 1) While navigating an active flight plan, press the **Direct-to** Key. The 'Direct To' Window is displayed with the active flight plan waypoint as the default selection.
- 2) Turn the small **FMS** Knob counter-clockwise to display a list of flight plan waypoints (turning the knob counter-clockwise displays the waypoint submenu window).
- 3) Select the desired waypoint.
- 4) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
- 5) Press the **ENT** Key again to activate the direct-to.

SELECTING A NEAREST, RECENT OR USER WAYPOINT AS A DIRECT-TO DESTINATION

- 1) Press the **Direct-to** Key. The 'Direct To' Window is displayed (with the active flight plan destination as the default selection or a blank destination if no flight plan is active).
- 2) Turn the small **FMS** Knob counter-clockwise to display the waypoint submenu window.
- 3) Turn the small **FMS** Knob clockwise to display the Nearest, Recent or User waypoints.
- 4) Turn the large **FMS** Knob clockwise to select the desired waypoint.
- 5) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
- 6) Press the **ENT** Key again to activate the direct-to.

SELECTING ANY WAYPOINT AS A DIRECT-TO DESTINATION

- 1) Select the page or window containing the desired waypoint type and select the desired waypoint.
- 2) Press the **Direct-to** Key to display the 'Direct To' Window with the selected waypoint as the direct-to destination.
- 3) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
4) Press **ENT** again to activate the direct-to.

SELECTING A NEARBY AIRPORT AS A DIRECT-TO DESTINATION

- 1) Press the **Nearest** Softkey on the PFD; or turn the **FMS** Knob to display the 'NRST - Nearest Airports' Page on the MFD and press the **FMS** Knob.
- 2) Use the **FMS** Knob to select the desired airport (the nearest one is already selected).
- 3) Press the **Direct-to** Key.
- 4) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
5) Press the **ENT** Key again to activate the direct-to.

SELECTING A MANUAL DIRECT-TO COURSE

- 1) Press the **Direct-to** Key. The 'Direct To' Window is displayed.
- 2) Turn the large FMS Knob to highlight the 'CRS' or 'Course' Field.
- 3) Use the small FMS Knob to enter the desired course.
- 4) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
5) Press the **ENT** Key again to activate the direct-to.

RESELECTING THE DIRECT COURSE FROM THE CURRENT POSITION

- 1) Press the **Direct-to** Key. The 'Direct To' Window is displayed.
- 2) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
3) Press the **ENT** Key again to activate the direct-to.

SELECTING A WAYPOINT AS A DIRECT-TO DESTINATION USING THE POINTER

- 1) From a navigation map page, push the **Joystick** to display the pointer.
- 2) Move the **Joystick** to place the pointer at the desired destination location.
- 3) If the pointer is placed on an existing airport, NAVAID, VFRP, or user waypoint, the waypoint name is highlighted.
- 4) Press the **Direct-to** Key to display the 'Direct To' Window with the selected point entered as the direct-to destination.
- 5) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
- 6) Press the **ENT** Key again to activate the direct-to.

CANCELLING A DIRECT-TO

- 1) Press the **Direct-to** Key to display the 'Direct To' Window.
- 2) Press the **MENU** Key.
- 3) With 'Cancel Direct-To NAV' highlighted, press the **ENT** Key. If a flight plan is still active, the system resumes navigating the flight plan along the closest leg.

FLIGHT PLANNING

CHANGING THE FLIGHT PLAN VIEW

- 1) Press the **FPL** Key on the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Press the **View** Softkey to display the **Wide**, **Narrow**, **Leg-Leg**, and **CUM** Softkeys.
- 3) Press the **CUM** Softkey to view cumulative waypoint distance, or press the **Leg-Leg** Softkey to view leg-to-leg waypoint distance.
- 4) Press the **Wide** Softkey to display the wide view, or press the **Narrow** Softkey to display the narrow view.
- 5) Press the **Wide** Softkey to display the wide view, or press the **Narrow** Softkey to display the narrow view.
- 6) Press the **Back** Softkey to return to the top level active flight plan softkeys..

VIEWING CHARTS AND 'FPL - ACTIVE FLIGHT PLAN' PAGE IN SPLIT SCREEN MODE

- 1) Press the **FPL** Key for the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Press the **Charts** Softkey. If necessary, press the **CHRT Opt** Softkey and press the **Full SCN** Softkey to disable full screen mode. Split screen mode is now enabled showing two display panes. The Chart Pane is highlighted by a cyan box indicating it is the active pane.
- 3) To quickly view the chart corresponding to the active flight plan leg, press the **Sync** Softkey.

DISPLAYING THE FLIGHT PLAN MAP ON THE 'FPL - ACTIVE FLIGHT PLAN' PAGE IN SPLIT SCREEN MODE

- 1) Press the **FPL** Key for the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) If necessary, press the **CHRT Opt** Softkey and press the **Full SCN** Softkey to disable full screen mode. Split screen mode is now enabled showing two display panes. The Chart Pane is highlighted by a cyan box indicating it is the active pane.
- 3) Move the **Joystick** to select the 'Active Flight Plan' Pane as the active display pane.
- 4) Press the **MENU** Key. 'Show Flight Plan Map' is highlighted. Press the **ENT** Key.
- 5) To remove the Flight Plan Map, press the **MENU** Key and select 'Hide Flight Plan Map'. Press the **ENT** Key.

CREATING AN ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key. Press the small **FMS** Knob to activate the cursor (not required on PFD).
- 2) If the system correctly auto-designated (populated) the Origin, proceed to Step 3.

Or:

Select the origin airport and runway as follows:

- a) Highlight the field below the Origin header to enter the origin airport identifier using the **FMS** Knob.
 - b) Use the **FMS** Knob or the waypoint submenu to enter the identifier, facility, or city name of the origin waypoint.
 - c) Press the **ENT** Key. The 'Set Runway' Window is displayed with the 'Runway' Field highlighted.
 - d) Turn the small **FMS** Knob to select the runway, and press the **ENT** Key.
 - e) Press the **ENT** Key again to add the origin airport/runway to the flight plan.
- 3) Select the destination airport and runway by highlighting the field below the Destination header and completing steps 2b - 2e.
- 4) Select the enroute waypoints.
- a) Highlight the location to insert the waypoint using the **FMS** Knob (If the enroute header is selected, the new waypoint is placed following the header. If an enroute waypoint or the dashes are selected, the new waypoint will be placed ahead of the selected item).
 - b) Use the **FMS** Knob or the waypoint submenu to enter the identifier, facility, or city name of the waypoint. The active flight plan is modified as each waypoint is entered.
- 5) Repeat step number 4 to enter each additional enroute waypoint.
- 6) When all waypoints have been entered, press the **FMS** Knob to remove to deactivate the cursor.

CREATING A STORED FLIGHT PLAN

- 1) Press the **FPL** Key for the MFD.
- 2) Turn the small **FMS** Knob clockwise to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **New** Softkey; or press the **MENU** Key, highlight 'Create New Flight Plan', and press the **ENT** Key to display a blank flight plan for the first empty storage location.
- 4) Select the origin airport and runway.
 - a) Highlight the field below the Origin header to enter the origin airport identifier using the **FMS** Knob.

- b) Use the **FMS** Knob or the waypoint submenu to enter the identifier, facility, or city name of the origin waypoint.
 - c) Press the **ENT** Key. The 'Set Runway' Window is displayed with the 'Runway' Field highlighted.
 - d) Turn the small **FMS** Knob to select the runway.
 - e) Press the **ENT** Key to add the origin airport/runway to the flight plan.
- 5) Select the destination airport and runway by highlighting the field below the Destination header and completing steps 4b - 4e.
- 6) Select the enroute waypoints.
- a) Highlight the location to insert the waypoint using the **FMS** Knob (If the enroute header is selected, the new waypoint is placed following the header. If an enroute waypoint or the dashes are selected, the new waypoint will be placed ahead of the selected item.)
 - b) Use the **FMS** Knob or the waypoint submenu to enter the identifier, facility, or city name of the waypoint.
 - c) Press the **ENT** Key. The stored flight plan is modified as each waypoint is entered.
- 7) Repeat step number 6 to enter each additional enroute waypoint.
- 8) When all waypoints have been entered, press the **FMS** Knob to deactivate the cursor.

ADDING A WAYPOINT TO THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key.
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD).
- 3) Select the point in the flight plan before which to add the new waypoint. The new waypoint is placed directly in front of the highlighted waypoint.
- 4) Turn the small **FMS** Knob to display the 'Waypoint Information' Window. (Turning it clockwise displays a blank 'Waypoint Information' Window, turning it counter-clockwise displays the 'Waypoint Information' Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
- 5) Enter the identifier, facility, or city name of the waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The active flight plan is modified as each waypoint is entered.

CREATING AND ADDING USER WAYPOINTS TO THE ACTIVE FLIGHT PLAN USING THE MAP POINTER

- 1) Press the **FPL** Key
- 2) Press the **FMS** Knob on the MFD to activate the cursor.
- 3) Select the point in the flight plan to add the new waypoint.
- 4) Push the **Joystick** on the MFD to activate the panning function on the 'FPL - Active Flight Plan' Page and pan to the map location of the desired user waypoint.
- 5) Press the **LD WPT** Softkey; or press the **MENU** Key, select 'Load Waypoint', and press the **ENT** Key. The user waypoint is created with a name of USRxxx (using the next available in sequence) and is added to the active flight plan.

ADDING A WAYPOINT TO AN EXISTING STORED FLIGHT PLAN

- 1) On the 'FPL - Flight Plan Catalog' Page, press the **FMS** Knob to activate the cursor.
- 2) Highlight the desired flight plan.
- 3) Press the **EDIT** Softkey; or press the **ENT** Key, turn the large **FMS** Knob clockwise to select "EDIT" and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 4) Select the point in the flight plan to add the new waypoint. The new waypoint is placed directly in front of the highlighted waypoint.
- 5) Turn the small **FMS** Knob to display the 'Waypoint Information' Window. (Turning it clockwise displays a blank 'Waypoint Information' Window, turning it counter-clockwise displays the 'Waypoint Information' Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
- 6) Enter the identifier, facility, or city name of the waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The new waypoint now exists in the flight plan.

REMOVING AN INDIVIDUAL WAYPOINT FROM THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the waypoint to be removed.

- 3) Press the **CLR** Key. The 'Remove XXXXX?' window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
- 5) Press the **FMS** Knob to remove the flashing cursor.

REMOVING AN INDIVIDUAL WAYPOINT FROM A STORED FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page.
- 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the flight plan to be edited.
- 4) Press the **Edit** Softkey; or press the **MENU** Key, select 'Edit Flight Plan' and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 5) Turn the large **FMS** Knob to highlight the waypoint to be removed.
- 6) Press the **CLR** Key. The 'Remove XXXXX?' window is displayed.
- 7) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
- 8) Press the **FMS** Knob to remove the flashing cursor.

DESIGNATING A FLY-OVER WAYPOINT

- 1) For the active flight plan, press the **FPL** Key and press the **FMS** Knob to activate the cursor (not required on the PFD).

Or:

For a stored flight plan, highlight the desired flight plan on the 'FPL - Flight Plan Catalog' Page' and press the **Edit** Softkey.

- 2) Highlight the desired waypoint.
- 3) Press the **MENU** Key, highlight 'Set Fly-Over Waypoint', and press the **ENT** Key. The 'Set <waypoint> to be a fly-over waypoint?' Window is displayed.

- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'Cancel' and press the **ENT** Key.
- 5) To change the waypoint back to a fly-by waypoint, highlight the desired waypoint. Press the **MENU** Key, highlight 'Set Fly-By Waypoint', and press the **ENT** Key. The 'Set <waypoint> to be a fly-by waypoint?' Window is displayed. With 'OK' highlighted, press the **ENT** Key.

ADDING AN AIRWAY TO THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key.
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD).
- 3) Turn the large **FMS** Knob to move the cursor below the airway entry waypoint for the insertion point. If there is no valid airway entry waypoint in the flight plan, one must be entered first.
- 4) Turn the small **FMS** Knob for the MFD one click clockwise and press the **LD AIRWY** Softkey, or press the **MENU** Key for the and select "Load Airway" (PFD or MFD). The **LD AIRWY** Softkey or the "Load Airway" menu item is available only when a valid airway entry waypoint has already been entered in the flight plan.
- 5) Turn the **FMS** Knob to highlight the desired airway from the list, and press the **ENT** Key. Low altitude airways are shown first in the list, followed by "all" altitude airways, and then high altitude airways.
- 6) Turn the **FMS** Knob to highlight the desired airway exit point from the list, and press the **ENT** Key. 'Load?' is highlighted.
- 7) Press the **ENT** Key. The system returns to editing the flight plan with the new airway inserted.

ADDING AN AIRWAY TO A STORED FLIGHT PLAN

- 1) On the 'FPL - Flight Plan Catalog' Page, press the **FMS** Knob to activate the cursor.
- 2) Highlight the desired flight plan.
- 3) Press the **EDIT** Softkey; or press the **ENT** Key, turn the large **FMS** Knob clockwise to highlight "EDIT" and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.

- 4) Turn the large **FMS** Knob to move the cursor below the airway entry waypoint for the insertion point. If there is no valid airway entry waypoint in the flight plan, one must be entered first.
- 5) Turn the small **FMS** Knob one click clockwise and press the **LD AIRWY** Softkey (MFD only), or press the **MENU** Key and select "Load Airway". The **LD AIRWY** Softkey or the "Load Airway" menu item is available only when a valid airway entry waypoint has already been entered in the flight plan.
- 6) Turn the **FMS** Knob to highlight the desired airway from the list, and press the **ENT** Key. Low altitude airways are shown first in the list, followed by "all" altitude airways, and then high altitude airways.
- 7) Turn the **FMS** Knob to highlight the desired airway exit point from the list, and press the **ENT** Key. 'Load?' is highlighted.
- 8) Press the **ENT** Key. The system returns to editing the flight plan with the new airway inserted

REMOVING AN ENTIRE AIRWAY FROM THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the header of the airway to be removed.
- 3) Press the **CLR** Key. The 'Remove <airway name> from flight plan?' window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
- 5) Press the **FMS** Knob to remove the flashing cursor.

REMOVING AN ENTIRE AIRWAY FROM A STORED FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page.
- 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the flight plan to be edited.

- 4) Press the **Edit** Softkey; or press the **MENU** Key, select 'Edit Flight Plan' and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 5) Turn the large **FMS** Knob to highlight the white header of the airway to be removed.
- 6) Press the **CLR** Key. The 'Remove <airway name> from flight plan?' window is displayed.
- 7) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
- 8) Press the **FMS** Knob to remove the flashing cursor.

COLLAPSE/EXPAND AIRWAYS IN THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Collapse Airways' or 'Expand Airways', and press the **ENT** Key. The airways are collapsed/expanded.

ACTIVATING A FLIGHT PLAN LEG

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the end waypoint for the desired leg.
- 3) Press the **ACT Leg** Softkey (MFD only); or press the **MENU** Key, highlight 'Activate Leg', and press the **ENT** Key. A confirmation window is displayed with 'Activate' highlighted.
- 4) Press the **ENT** Key to activate the flight plan leg. To cancel, press the **CLR** Key, or highlight 'Cancel' and press the **ENT** Key.
- 5) Press the **FMS** Knob to deactivate the flashing cursor.

ENTERING AN ALONG TRACK OFFSET DISTANCE

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the waypoint for the along track offset.

- 3) Press the **ATK OFS** Softkey (MFD only); or press the **MENU** Key, highlight 'Create ATK Offset Waypoint', and press the **ENT** Key.
- 4) Enter a positive or negative offset distance in the range of +/- 1 to 999 nm (limited by leg distances).
- 5) Press the **ENT** Key to create the offset waypoint.
- 6) Press the **FMS** Knob to deactivate the flashing cursor.

ENTERING A VNV ALTITUDE AND ALONG-TRACK OFFSET FOR THE WAYPOINT

- 1) Press the **→** Key to display the 'Direct To' Window.
- 2) Turn the large **FMS** Knob to place the cursor in the altitude field ('VNV' or 'ALT').
- 3) Enter the desired altitude.
- 4) Press the **ENT** Key to accept the altitude constraint; if the selected waypoint is an airport without a runway selected, an additional choice is displayed. Turn the small **FMS** Knob to choose 'MSL' or 'AGL', and press the **ENT** Key to accept the altitude.
- 5) The cursor is now flashing in offset distance field.
- 6) Enter the desired along-track distance before the waypoint.
- 7) Press the **ENT** Key. 'Activate?' is highlighted.
- 8) Press the **ENT** Key to activate.

ACTIVATING PARALLEL TRACK

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Parallel Track', and press the **ENT** Key. The 'Parallel Track' Window is displayed with the 'Direction' Field highlighted.
- 3) Turn the small **FMS** Knob to select 'LEFT' or 'RIGHT' and press the **ENT** Key. The 'Distance' Field is highlighted.
- 4) Turn the small **FMS** Knob to enter a distance from 1-99 nm and press the **ENT** Key. 'Activate Parallel Track' is highlighted.
- 5) Press the **ENT** Key to activate parallel track. Press the **FMS** Knob or the **CLR** Key to cancel the parallel track activation.

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CANCELLING PARALLEL TRACK

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Parallel Track', and press the **ENT** Key. The 'Parallel Track' Window is displayed with 'Cancel Parallel Track?' highlighted.
- 3) Press the **ENT** Key.

DETERMINING THE CLOSEST POINT ALONG THE ACTIVE FLIGHT PLAN TO A SELECTED WAYPOINT

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the Active 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Closest Point Of FPL', and press the **ENT** Key. A window appears with the reference waypoint field highlighted.
- 3) Enter the identifier of the reference waypoint and press the **ENT** Key. The system displays the bearing (BRG) and distance (DIS) to the closest point along the flight plan to the selected reference waypoint and creates a user waypoint at this location. The name for the new user waypoint is derived from the identifier of the reference waypoint.

CREATING A USER-DEFINED HOLD AT AN ACTIVE FLIGHT PLAN WAYPOINT

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the waypoint for the hold.
- 3) Press the **MENU** Key, highlight 'Hold At Waypoint', and press the **ENT** Key. The 'Hold at' Window appears with the course field highlighted.
- 4) Use the **FMS** Knobs to edit the course, and press the **ENT** Key.
- 5) Use the small **FMS** Knob to select 'Inbound' or 'Outbound' course direction, and press the **ENT** Key.
- 6) Use the small **FMS** Knob to select 'Time' or 'Distance' length mode, and press the **ENT** Key.
- 7) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.
- 8) Use the small **FMS** Knob to select 'Right' or 'Left' turn direction, and press the **ENT** Key.

- 9) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC Time), and press the **ENT** Key.
- 10) Press the **ENT** Key while 'Load?' is highlighted to insert the hold into the flight plan.

CREATING A USER-DEFINED HOLD AT THE AIRCRAFT PRESENT POSITION

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Hold At Present Position', and press the **ENT** Key. The 'Hold at' Window appears with the course field highlighted.
- 3) If desired, use the **FMS** Knobs to edit the course, and press the **ENT** Key.
- 4) Use the small **FMS** Knob to select 'Inbound' or 'Outbound' course direction, and press the **ENT** Key.
- 5) Use the small **FMS** Knob to select 'Time' or 'Distance' length mode, and press the **ENT** Key.
- 6) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.
- 7) Use the small **FMS** Knob to select 'Right' or 'Left' turn direction, and press the **ENT** Key.
- 8) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC Time), and press the **ENT** Key.
- 9) Press the **ENT** Key while 'Activate?' is highlighted to create an Offroute Direct-to hold waypoint at the aircraft present position and activate the hold.

CREATING A USER-DEFINED HOLD AT A DIRECT-TO WAYPOINT

- 1) Press a **Direct-to** Key and set up the direct-to waypoint as desired, but select 'Hold?' instead of 'Activate?' when finished.
- 2) Use the **FMS** Knobs to edit the course, and press the **ENT** Key.
- 3) Use the small **FMS** Knob to select 'Inbound' or 'Outbound' course direction, and press the **ENT** Key.
- 4) Use the small **FMS** Knob to select 'Time' or 'Distance' length mode, and press the **ENT** Key.
- 5) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.

- 6) Use the small **FMS** Knob to select 'Right' or 'Left' turn direction, and press the **ENT** Key.
- 7) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC Time), and press the **ENT** Key.
- 8) Press the **ENT** Key while 'Activate?' is highlighted to activate the direct-to with the user-defined hold defined at the direct-to waypoint. (If the direct-to waypoint is part of the active flight plan, 'HOLD' is inserted into the active flight plan. If the direct-to waypoint is not part of the active flight plan, an off-route direct-to hold is created.)

EXITING A USER-DEFINED HOLD INSERTED INTO THE ACTIVE FLIGHT PLAN

Press the **SUSP** Softkey. The system will provide guidance to follow the holding pattern to the inbound course and resume automatic waypoint sequencing.

REMOVING A USER-DEFINED HOLD INSERTED INTO THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight 'HOLD' in the flight plan.
- 3) Press the **CLR** Key. A 'Remove Holding Pattern?' confirmation window is displayed.
- 4) Select 'OK' and press the **ENT** Key. The holding pattern is removed from the active flight plan. Select 'CANCEL' and press the **ENT** Key to cancel the removal of the holding pattern.

REMOVING A USER-DEFINED HOLD AT AN OFF-ROUTE DIRECT-TO

- 1) Press a **Direct To** Key to display the 'Direct To' Window.
- 2) Press the **MENU** Key to display the 'Page Menu' Window with the cursor on the 'Cancel Direct-To NAV' selection.
- 3) Press the **ENT** Key. The holding pattern is removed.

IGNORING A FLIGHT PLAN TRANSFER FROM A WIRELESS CONNECTION

- 1) When a flight plan transfer has been initiated from a mobile device, a 'PENDING FLIGHT PLAN' pop-up alert appears in the lower right corner of the MFD, and an Connex announcement appears to the right of the MFD page title.
- 2) Press the **CLR** Key to remove the pop-up alert and ignore the pending flight plan. The pending flight plan will still be available on the 'FPL - Flight Plan Catalog' Page.

PREVIEWING A FLIGHT PLAN TRANSFER FROM A WIRELESS CONNECTION:

- 1) When a flight plan transfer has been initiated from a mobile device, a 'PENDING FLIGHT PLAN' pop-up alert appears in the lower right corner of the MFD, and an Connex announcement appears to the right of the MFD page title.
- 2) Press the **ENT** Key to display the 'FPL - Preview Flight Plan' Page on the MFD.

STORING A PENDING FLIGHT PLAN

- 1) Press the **FPL** Key.
- 2) Turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor, and
- 4) Turn the **FMS** Knob to highlight the pending flight plan.
- 5) Press the **ENT** Key to display the 'FPL - Preview Flight Plan' Page on the MFD.
- 6) Press the **Store** Softkey to store the flight plan. The pending flight plan is stored and the pending announcement is removed.

ACTIVATING A PENDING FLIGHT PLAN

- 1) Press the **FPL** Key and turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **FMS** Knob to activate the cursor, and turn the **FMS** Knob to highlight the pending flight plan.
- 3) Press the **ENT** Key to display the 'FPL - Preview Flight Plan' Page on the MFD.

- 4) Press the **Activate** Softkey. The 'Activate Flight Plan?' window is displayed.
- 5) With 'OK' highlighted, press the **ENT** Key to activate the pending flight plan. The pending flight plan becomes the active flight plan and is removed from the 'FPL - Flight Plan Catalog' Page. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

DELETING A PENDING FLIGHT PLAN:

- 1) Press the **FPL** Key.
- 2) Turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor.
- 4) Turn the **FMS** Knob to highlight the desired pending flight plan.
- 5) Press the **Delete** Softkey. The 'Delete Flight Plan XX?' window is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key to delete the pending flight plan. The pending flight plan is removed from the 'FPL - Flight Plan Catalog' Page. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

DELETING ALL PENDING FLIGHT PLANS

- 1) Press the **FPL** Key.
- 2) Turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **MENU** Key.
- 4) Turn the **FMS** Knob to highlight 'Delete All Pending'.
- 5) Press the **ENT** Key. A 'Delete all pending flight plans?' confirmation window is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key to delete all pending flight plans. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

IMPORTING A FLIGHT PLAN FROM AN SD CARD

- 1) Insert the SD card containing the flight plan in the top card slot on the MFD.
- 2) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page on the MFD.
- 3) Turn the small **FMS** Knob to select the 'FPL - Flight Plan Catalog' Page.
- 4) Press the **FMS** Knob to activate the cursor.

- 5) Turn either **FMS** Knob to highlight an empty or existing flight plan.
- 6) Press the **Import** Softkey; or press the **MENU** Key, select "Import Flight Plan", and press the **ENT** Key.

If an empty slot is selected, a list of the available flight plans on the SD card will be displayed.

Or:

If an existing flight plan is selected, an "Overwrite existing flight plan? OK or CANCEL" prompt is displayed. Press the **ENT** Key to choose to overwrite the selected flight plan and see the list of available flight plans on the SD card. If overwriting the existing flight plan is not desired, select "CANCEL" using the **FMS** Knob, press the **ENT** Key, select another flight plan slot, and press the **Import** Softkey again.

- 7) Turn the small **FMS** Knob to highlight the desired flight plan for importing.
- 8) Press the **ENT** Key to initiate the import.
- 9) Press the **ENT** Key again to confirm the import.

EXPORTING A FLIGHT PLAN TO AN SD CARD

- 1) Insert the SD card into the top card slot on the MFD.
- 2) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page on the MFD.
- 3) Turn the small **FMS** Knob to select the 'FPL - Flight Plan Catalog' Page.
- 4) Press the **FMS** Knob to activate the cursor.
- 5) Turn the large **FMS** Knob to highlight the flight plan to be exported.
- 6) Press the **Export** Softkey; or press the **MENU** Key, select "Export Flight Plan".
- 7) If desired, change the name for the exported file by turning the large **FMS** Knob to the left to highlight the name, then use the small and large **FMS** knobs to enter the new name, and press the **ENT** Key.
- 8) Press the **ENT** Key to initiate the export.
- 9) Press the **ENT** Key to confirm the export.

INVERTING THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Invert Flight Plan', and press the **ENT** Key. An 'Invert Active Flight Plan?' confirmation window is displayed.
- 3) Highlight 'OK'.
- 4) Press the **ENT** Key to invert and activate the active flight plan. To cancel, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

DELETING THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the Active 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, highlight 'Delete Flight Plan', and press the **ENT** Key. The 'Delete all waypoints in flight plan?' window is displayed.
- 3) With 'OK' highlighted, press the **ENT** Key to delete the active flight plan. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

VIEWING INFORMATION ABOUT A STORED FLIGHT PLAN:

- 1) Press the **FPL** Key on the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the desired flight plan.
- 4) Information is displayed in the 'Flight Plan Info' Box showing departure, destination, total distance, and enroute safe altitude information for the selected Flight Plan.
- 5) Press the **Edit** Softkey to open the 'FPL - Stored Flight Plan' Page and view the waypoints in the flight plan.
- 6) Press the **FMS** Knob to exit the 'FPL - Stored Flight Plan' Page.

STORING AN ACTIVE FLIGHT PLAN FROM THE 'FPL - ACTIVE FLIGHT PLAN' PAGE OR THE 'FLIGHT PLAN' WINDOW

- 1) Press the **MENU** Key.
- 2) Highlight 'Store Flight Plan'.
- 3) Press the **ENT** Key.
- 4) With 'OK' highlighted, press the **ENT** Key. The flight plan is stored in the next available position in the flight plan list on the 'FPL - Flight Plan Catalog' Page.

ACTIVATING A STORED FLIGHT PLAN ON THE MFD

- 1) Press the **FPL** Key and turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **FMS** Knob to activate the cursor, and turn the **FMS** Knob to highlight the desired flight plan.
- 3) Press the **Activate** Softkey; or press the **ENT** Key twice; or press the **MENU** Key, highlight 'Activate Flight Plan', and press the **ENT** Key. The 'Activate stored flight plan?' window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

INVERTING AND ACTIVATING A STORED FLIGHT PLAN ON THE MFD

- 1) Press the **FPL** Key and turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **FMS** Knob to activate the cursor, and turn the **FMS** Knob to highlight the desired flight plan.
- 3) Press the **Invert** Softkey; or press the **MENU** Key, highlight 'Invert & Activate FPL?', and press the **ENT** Key. The 'Invert and activate stored flight plan?' window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

COPYING A STORED FLIGHT PLAN TO ANOTHER FLIGHT PLAN MEMORY SLOT, ON THE MFD

- 1) Press the **FPL** Key and turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **FMS** Knob to activate the cursor, and turn the **FMS** Knob to highlight the desired flight plan.
- 3) Press the **Copy** Softkey; or press the **MENU** Key, highlight 'Copy Flight Plan', and press the **ENT** Key. The 'Copy to Flight Plan XX?' window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key to copy the flight plan. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

DELETING A STORED FLIGHT PLAN

- 1) Press the **FPL** Key and turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **FMS** Knob to activate the cursor, and turn the **FMS** Knob to highlight the desired flight plan.
- 3) Press the **Delete** Softkey; press the **CLR** Key; or press the **MENU** Key, highlight 'Delete Flight Plan', and press the **ENT** Key. The 'Delete Flight Plan #' window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key to delete the flight plan. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

NOTE: *The option to delete all stored flight plans is not available while the aircraft is in flight.*

DELETING ALL STORED FLIGHT PLANS

- 1) Press the **FPL** Key and turn the small **FMS** Knob to display the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **MENU** Key.

- 3) Highlight 'Delete All' and press the **ENT** Key. A 'Delete all flight plans?' confirmation window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key to delete all flight plans. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.

CHANGING THE ACTIVE FLIGHT PLAN COMMENT

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the comment field.
- 3) Use the **FMS** Knobs to edit the comment.
- 4) Press the **ENT** Key to accept the changes.
- 5) Press the **FMS** Knob to deactivate the flashing cursor.

CHANGING A STORED FLIGHT PLAN COMMENT

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page.
- 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the flight plan to be edited.
- 4) Press the **Edit** Softkey; or press the **MENU** Key, select 'Edit Flight Plan' and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 5) Turn the large **FMS** Knob to highlight the comment field.
- 6) Use the **FMS** Knobs to edit the comment.
- 7) Press the **ENT** Key to accept the changes.
- 8) Press the **FMS** Knob to remove the flashing cursor.

VERTICAL NAVIGATION

ENABLING AND DISABLING VNV GUIDANCE

- 1) Press the **FPL** Key on the MFD to display the 'FPL- Active Flight Plan' Page.
- 2) Press the **ENBL VNV** Softkey; or press the **MENU** Key, highlight 'Enable VNV', and press the **ENT** Key. Vertical navigation is enabled, and vertical guidance begins with the waypoint shown in the 'Active VNV Profile' Box (defaults first waypoint in the active flight plan with an altitude enabled for vertical navigation (e.g., FALUR)).
- 3) To Disable VNV guidance, press the **Cncl VNV** Softkey; or press the **MENU** Key, highlight 'Cancel VNV', and press the **ENT** Key. Vertical navigation is disabled.

ALTITUDE CONSTRAINTS

The system can use altitude constraints associated with lateral waypoints to give guidance for vertical navigation. These altitudes are, depending on the specific instance, manually entered or retrieved from the published altitudes in the navigation database.

Active Flight Plan
KMKC / KCOS

	DTK	DIS	ALT
KCOS-RNAV_{GPS} Y 35R LPV			
HABUK iaf	012°	12.8NM	11010FT
FALUR	290°	6.8NM	9200FT
CEGIX faf	352°	6.5NM	8100FT
RW35R map	352°	6.1NM	6600FT
ADANE mahp	055°	15.4NM	9000FT
HOLD	296°	7.0NM	

Destination - KCOS - RW35R


Displayed Text Examples

- System Calculated Altitude (White Text)
- Edited Altitude Constraint (Cyan Text with Pencil Icon)
- Designated Altitude Constraint (Cyan Text)
- White Text with Altitude Restriction Bar

Altitude Constraint Examples

<p>2300FT</p> <p>Cross AT 2,300 ft</p>	<p>5000FT</p> <p>Cross AT or ABOVE 5,000 ft</p>
<p>3000FT</p> <p>Cross AT or BELOW 3,000 ft</p>	<p>6646FT ❄️</p> <p>Temperature Compensated</p>

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White Text	Cyan Text
<p style="text-align: center;">5000FT</p> <p>Altitude calculated by the system estimating the altitude of the aircraft as it passes over the navigation point. No white line above or below to indicate a potential constraint.</p> <p style="text-align: center;">5000FT</p> <p>Altitude retrieved from the navigation database. White line above or below indicates the type of constraint, as shown in the preceding figure. These altitudes are provided as a reference, and are not designated to be used in determining vertical guidance.</p>	<p style="text-align: center;">8100FT </p> <p>Altitude is designated for use in determining vertical guidance. A pencil icon indicates manual designation or manually edited data entry.</p> <p style="text-align: center;">8100FT</p> <p>The system cannot use this altitude in determining vertical guidance because of an invalid constraint condition.</p>

An altitude constraint is invalid if:

- Meeting the constraint requires the aircraft to climb
- Meeting the constraint requires the maximum flight path angle or maximum vertical speed to be exceeded
- The altitude constraint results in a TOD behind the aircraft present position
- The constraint is within a leg type for which altitude constraints are not supported
- The altitude constraint is added to the FAF of an approach that provides vertical guidance (i.e., ILS or GPS SBAS approach)
- The altitude constraint is added to a waypoint past the FAF

Altitude constraints can be modified or deleted after having been added to the flight plan. In the event an altitude constraint is deleted and the navigation database contains an altitude restriction for the lateral waypoint, the system displays the altitude restriction from the database provided no predicted altitude can be provided. The system also provides a way to reinstate a published altitude constraint that has been edited.

ENTERING/DESIGNATING OR MODIFYING A WAYPOINT ALTITUDE CONSTRAINT TO BE USED FOR VERTICAL GUIDANCE

- 1) Press the **FPL** Key on the MFD to display the 'FPL – Active Flight Plan' Page.
- 2) Push the **FMS** Knob, and turn to highlight the desired waypoint altitude constraint.
- 3) Enter an altitude constraint value using the **FMS** Knobs. To enter altitudes as a flight level, turn the small **FMS** Knob counter-clockwise past zero or clockwise past 9 on the first character, and the system automatically changes to show units of Flight Level. Turn the large **FMS** Knob clockwise to highlight the first zero and enter the three digit flight level.
- 4) Press the **ENT** Key to accept the altitude constraint; if the selected waypoint is an airport without a runway selected, an additional choice is displayed. Turn the small **FMS** Knob to choose 'MSL' or 'AGL', and press the **ENT** Key to accept the altitude.

REMOVING/UNDESIGNATING AN ALTITUDE CONSTRAINT

- 1) Press the **FPL** Key on the MFD to display the 'FPL – Active Flight Plan' Page.
- 2) Push the **FMS** Knob, and turn to highlight the desired waypoint altitude constraint.
- 3) Press the **CLR** Key. A 'Remove VNV altitude?' confirmation window is displayed.
- 4) Select 'OK' and press the **ENT** Key.

REVERTING A MANUALLY ENTERED ALTITUDE CONSTRAINT BACK TO THE NAVIGATION DATABASE VALUE

- 1) Press the **FPL** Key on the MFD to display the 'FPL – Active Flight Plan' Page.
- 2) Push the **FMS** Knob, and turn to highlight the desired waypoint altitude constraint.
- 3) Press the **CLR** Key. A 'Remove or Revert to published VNV altitude of nnnnnFT?' confirmation window is displayed.

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- 4) Select 'REVERT' and press the **ENT** Key. The altitude is changed to the navigation database value.
- 5) Push the **FMS** Knob to remove the flashing cursor.

ENTERING OR MODIFYING A BARO QFE ALTITUDE CONSTRAINT



WARNING: Do not fly QFE procedures above the Transition Altitude or when navigating to a waypoint that contains a QNE (flight level) altitude constraint.



WARNING: Always fly a procedure that provides terrain and obstacle clearance from the reference airfield when operating in IMC while conducting QFE procedures.

- 1) With Baro QFE enabled, press the **FPL** Key for the MFD to display the 'FPL – Active Flight Plan' Page.
- 2) Push the **FMS** Knob, and turn the large **FMS** Knob to highlight the desired waypoint altitude constraint ('ALT').
- 3) Turn the small **FMS** Knob to begin entry of the altitude constraint, and use the **FMS** Knobs to enter the constraint in reference to Baro QFE. If modifying an existing Baro QFE altitude constraint, turning the small **FMS** Knob displays the existing constraint in MSL in the entry field. If adding a new altitude constraint, turning the small **FMS** Knob displays '00000FT' in the entry field.
- 4) Press the **ENT** Key. Turn the small **FMS** Knob to highlight 'QFE' and press the **ENT** Key to accept the altitude constraint. The constraint is shown in parenthesis indicating it is based on the Baro QFE setting.

MODIFYING THE VS TGT AND FPA


- 1) Press the **FPL** Key for the MFD to display the 'FPL – Active Flight Plan' Page.
- 2) Press the **VNV Prof** Softkey; or press the **MENU** Key, highlight 'Select VNV Profile Window', and press the **ENT** Key. The cursor is now located in the 'Active VNV Profile' Box.
- 3) Turn the **FMS** Knobs as needed to edit the values.
- 4) Push the **FMS** Knob to remove the flashing cursor.

ACTIVATING A VERTICAL NAVIGATION DIRECT-TO


- 1) Press the **FPL** Key for the MFD to display the 'FPL – Active Flight Plan' Page.
- 2) Push the **FMS** Knob to activate the cursor and turn the large **FMS** Knob to highlight the desired waypoint.



NOTE: *The selected waypoint must have a designated altitude constraint (cyan number) to be used. If not, the first waypoint in the flight plan with a designated altitude constraint is selected.*

- 3) Press the **VNV**  Softkey; or press the **MENU** Key, highlight 'VNV Direct-To', and press the **ENT** Key. An 'Activate vertical Direct-to to: NNNNNFT at XXXXXX?' confirmation window is displayed.
- 4) Press the **ENT** Key. Vertical guidance begins to the altitude constraint for the selected waypoint.
- 5) Push the **FMS** Knob to remove the flashing cursor.

REMOVING A VNV DIRECT-TO ALTITUDE CONSTRAINT

- 1) Press the  Key to display the 'Direct To' Window.
- 2) Press the **MENU** Key.
- 3) With 'Clear Vertical Constraints' highlighted, press the **ENT** Key.

ENABLING THE VERTICAL SITUATION DISPLAY

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.
- 3) Press the **Inset** Softkey.
- 4) Press the **VSD** Softkey to enable the Vertical Situation Display.
- 5) Press the VSD Mode softkey to choose between **Auto**, **FPL**, or **TRK**.

DISABLING THE VERTICAL SITUATION DISPLAY

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.

- 3) Press the **Inset** Softkey
- 4) Press the **Off** Softkey.

PROCEDURES

VIEWING AVAILABLE PROCEDURES AT AN AIRPORT

- 1) From the 'WPT - Airport Information' Page (first page in the 'WPT' Page Group):
Press the **DP** Softkey. The 'WPT - Departure Information' Page is displayed, defaulting to the airport displayed on the 'WPT - Airport Information' Page.
Or.
Press the **STAR** Softkey. The 'WPT - Arrival Information' Page is displayed, defaulting to the airport displayed on the 'WPT - Airport Information' Page.
Or.
Press the **APR** Softkey. The 'WPT - Approach Information' Page is displayed, defaulting to the airport displayed on the 'WPT - Airport Information' Page.
- 2) Press the **FMS** Knob to activate the cursor. To select another airport, enter an identifier/facility name/city, and press the **ENT** Key.
- 3) Turn the large **FMS** Knob to highlight the desired procedure. The procedure is previewed on the map.
- 4) Turn the small **FMS** Knob to scroll through the available procedures. Press the **ENT** Key to select the procedure. The cursor moves to the next box (runway or transition). The procedure is previewed on the map.
- 5) Turn the **FMS** Knobs, as required, to highlight a runway or transition. Press the **ENT** Key to select the runway or transition. The cursor moves to the next box. The procedure is previewed on the map.
- 6) Repeat Step 5, until desired information has been viewed for the chosen procedure.
- 7) Press the **FMS** Knob to deactivate the flashing cursor.

LOADING A DEPARTURE INTO THE ACTIVE FLIGHT PLAN USING THE PROC KEY

- 1) Press the **PROC** Key. The 'Procedures' Window is displayed.
- 2) Highlight 'Select Departure'.
- 3) Press the **ENT** Key. The 'PROC - Departure Loading' Page is displayed.
- 4) Use the **FMS** Knob to select an airport and press the **ENT** Key.
- 5) Select a departure from the list and press the **ENT** Key.
- 6) Select a runway (if required) and press the **ENT** Key.
- 7) Select a transition (if required) and press the **ENT** Key. 'Load?' is highlighted.
- 8) Press the **ENT** Key to load the departure procedure.

LOADING A DEPARTURE INTO THE ACTIVE FLIGHT PLAN FROM THE 'WPT - DEPARTURE INFORMATION' PAGE

- 1) From the 'WPT - Airport Information' Page (first page in the 'WPT' Page Group), press the **DP** Softkey. The 'WPT - Departure Information' Page is displayed, defaulting to the airport displayed on the 'WPT - Airport information' Page.
- 2) To select another airport, press the **FMS** Knob to activate the cursor, enter an identifier/facility name/city, and press the **ENT** Key.
- 3) Select a different departure, if desired.
 - a) Turn the large **FMS** Knob to highlight the Departure. The departure is previewed on the map.
 - b) Turn the small **FMS** Knob to view the available departures. Press the **ENT** Key to select the departure. The cursor moves to the 'Runway' Box. The departure is previewed on the map.
 - c) Turn the small **FMS** Knob to view the available runways. Press the **ENT** Key to select the runway. The cursor moves to the 'Transition' Box (only if there are available transitions). The departure is previewed on the map.
 - d) Turn the small **FMS** Knob to view the available transitions. Press the **ENT** Key to select the transition. The cursor moves to the 'Sequence' Box. The departure is previewed on the map.
- 4) Press the **MENU** Key to display the 'Page Menu' Window.

- 5) Turn the **FMS** Knob to highlight 'Load Departure'.
- 6) Press the **ENT** Key to load the departure procedure into the active flight plan.

LOADING A DEPARTURE PROCEDURE INTO A STORED FLIGHT PLAN

- 1) Select a stored flight plan from the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **Edit** Softkey; or press the **MENU** Key, select 'Edit Flight Plan', and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 3) Press the **LD DP** Softkey; or press the **MENU** Key, select "Load Departure", and press the **ENT** Key. The 'PROC - Departure Loading' Page is displayed.
- 4) Select a departure. Press the **ENT** Key.
- 5) Select a runway served by the selected departure, if required. Press the **ENT** Key.
- 6) Select a transition for the selected departure. Press the **ENT** Key.
- 7) Press the **ENT** Key to load the selected departure procedure.

REMOVING A DEPARTURE PROCEDURE FROM THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, and highlight 'Remove Departure'.
- 3) Press the **ENT** Key. A confirmation window is displayed listing the departure procedure.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the removal request, highlight 'CANCEL' and press the **ENT** Key.

REMOVING A DEPARTURE FROM A STORED FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page.
- 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the flight plan to be edited.
- 4) Press the **EDIT** Softkey; or press the **MENU** Key, select 'Edit Flight Plan' and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.

- 5) Highlight and remove the departure:
 - a) Turn the large **FMS** Knob to highlight the white header of the departure.
 - b) Press the **CLR** Key. The 'Remove <procedure name> from flight plan?' window is displayed.

Or:

 - a) Press the **MENU** Key to display the 'Page Menu' Window and turn the **FMS** Knob to highlight 'Remove Departure'.
 - b) Press the **ENT** Key. The 'Remove <procedure name> from flight plan?' window is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
- 7) Press the **FMS** Knob to remove the flashing cursor.

LOADING AN ARRIVAL INTO THE ACTIVE FLIGHT PLAN USING THE PROC KEY

- 1) Press the **PROC** Key. The 'Procedures' Window is displayed.
- 2) Highlight 'Select Arrival'.
- 3) Press the **ENT** Key. The 'PROC - Arrival Loading' Page is displayed.
- 4) Use the **FMS** Knob to select an airport and press the **ENT** Key.
- 5) Select an arrival from the list and press the **ENT** Key.
- 6) Select a transition (if required) and press the **ENT** Key.
- 7) Select a runway (if required) and press the **ENT** Key. 'Load?' is highlighted.
- 8) Press the **ENT** Key to load the arrival procedure

LOADING AN ARRIVAL INTO THE ACTIVE FLIGHT PLAN FROM THE 'WPT - ARRIVAL INFORMATION' PAGE

- 1) From the 'WPT - Airport Information' Page (first page in the WPT group), press the **STAR** Softkey. The 'WPT - Arrival Information' Page is displayed, defaulting to the airport displayed on the 'WPT - Airport Information' Page.
- 2) To select another airport, press the **FMS** Knob to activate the cursor, enter an identifier/facility name/city, and press the **ENT** Key.

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- 3) Select a different arrival, if desired.
 - a) Turn the large **FMS** Knob to highlight the arrival. The arrival is previewed on the map.
 - b) Turn the small **FMS** Knob to view the available arrivals. Press the **ENT** Key to select the arrival. The cursor moves to the 'Transition' Box (only if there are available transitions). The arrival is previewed on the map.
 - c) Turn the small **FMS** Knob to view the available transitions. Press the **ENT** Key to select the transition. The cursor moves to the 'Runway' Box. The arrival is previewed on the map.
 - d) Turn the small **FMS** Knob to view the available runways. Press the **ENT** Key to select the runway. The cursor moves to the 'Sequence' Box. The arrival is previewed on the map.
- 4) Press the **MENU** Key to display the Arrival Information 'Page Menu' Window.
- 5) Turn the **FMS** Knob to highlight 'Load Arrival'.
- 6) Press the **ENT** Key to load the arrival procedure into the active flight plan.

LOADING AN ARRIVAL PROCEDURE INTO A STORED FLIGHT PLAN

- 1) Select a stored flight plan from the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **Edit** Softkey; or press the **MENU** Key, select 'Edit Flight Plan', and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 3) Press the **LD STAR** Softkey; or press the **MENU** Key, select "Load Arrival", and press the **ENT** Key. The 'PROC - Arrival Loading' Page is displayed.
- 4) Select an arrival. Press the **ENT** Key.
- 5) Select a transition for the selected arrival. Press the **ENT** Key.
- 6) Select a runway served by the selected arrival, if required. Press the **ENT** Key.
- 7) Press the **ENT** Key to load the selected arrival procedure.

REMOVING AN ARRIVAL FROM THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, and highlight 'Remove Arrival'.

- 3) Press the **ENT** Key. A confirmation window is displayed listing the arrival procedure.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the removal request, highlight 'CANCEL' and press the **ENT** Key.
Or:
- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **FMS** Knob, and turn to highlight the arrival header in the active flight plan.
- 3) Press the **CLR** Key. A confirmation window is displayed listing the arrival procedure.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the removal request, highlight 'CANCEL' and press the **ENT** Key.
- 5) Press the **FMS** Knob to remove the flashing cursor.

REMOVING AN ARRIVAL FROM A STORED FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page.
- 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
- 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the flight plan to be edited.
- 4) Press the **EDIT** Softkey; or press the **MENU** Key, select 'Edit Flight Plan' and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 5) Highlight and remove the arrival:
 - a) Turn the large **FMS** Knob to highlight the white header of the arrival.
 - b) Press the **CLR** Key. The 'Remove <procedure name> from flight plan?' window is displayed.**Or:**
 - a) Press the **MENU** Key to display the 'Page Menu' Window and turn the **FMS** Knob to highlight 'Remove Arrival'.
 - b) Press the **ENT** Key. The 'Remove <procedure name> from flight plan?' window is displayed.

- 6) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
- 7) Press the **FMS** Knob to remove the flashing cursor.

APPROACH SERVICE LEVELS

HSI Annunciation	Description
LNAV	RNAV GPS approach using published LNAV minima
LNAV+V	RNAV GPS approach using published LNAV minima. Advisory vertical guidance is provided
L/VNAV	RNAV GPS approach using published LNAV/VNAV minima (downgrades to L/VNAV (Baro VNAV) if SBAS unavailable)
LP (available only if SBAS available)	RNAV GPS approach using published LP minima (downgrades to LNAV if SBAS unavailable)
LP+V (available only if SBAS available)	RNAV GPS approach using published LP minima Advisory vertical guidance is provided (downgrades to LNAV if SBAS unavailable)
LPV (available only if SBAS available)	RNAV GPS approach using published LPV minima (downgrades to L/VNAV (Baro VNAV) if SBAS unavailable)

LOADING AN APPROACH INTO THE ACTIVE FLIGHT PLAN USING THE PROC KEY

- 1) Press the **PROC** Key. The 'Procedures' Window is displayed.
- 2) Highlight 'Select Approach', and press the **ENT** Key. The 'PROC - Approach Loading' Page is displayed.
- 3) Select the airport and approach:
 - a) Use the **FMS** Knob to select an airport and press the **ENT** Key.
 - b) Select an approach from the list and press the **ENT** Key.

Or:

- a) If necessary, push the **FMS** Knob to exit the approach list, and use the large **FMS** Knob to move the cursor to the 'Channel' Field.
 - b) Use the **FMS** Knob to enter the approach channel number, and press the **ENT** Key to accept the approach channel number. The airport and approach are selected.
- 4) Select a transition (if required) and press the **ENT** Key.
 - 5) Minimums
 - a) To set approach minimums, turn the small **FMS** Knob to select 'BARO' or 'TEMP COMP' and press the **ENT** Key. Turn the small **FMS** Knob to select the altitude, and press the **ENT** Key.
 - b) If 'TEMP COMP' was selected, the cursor moves to the temperature field. Turn the small **FMS** Knob to select the temperature, and press the **ENT** Key.

Or:

To skip setting minimums, select 'OFF' and press the **ENT** Key.

- 6) Press the **ENT** Key with 'Load?' highlighted to load the approach procedure; or turn the large **FMS** Knob to highlight 'Activate' and press the **ENT** Key to load and activate the approach procedure.

When GPS is not approved for the selected final approach course, the message '- NOT APPROVED FOR GPS - GPS guidance is for monitoring only. Load approach?' is displayed. With 'Yes' highlighted, press the **ENT** Key.

When a visual approach is selected, the message 'Obstacle clearance is not provided for visual approaches' is displayed. With 'OK' highlighted, press the **ENT** Key.

LOADING AN APPROACH INTO THE ACTIVE FLIGHT PLAN FROM THE 'NRST - NEAREST AIRPORT' PAGE

- 1) Select the 'NRST - Nearest Airports' Page.
- 2) Press the **FMS** Knob, then turn the large **FMS** Knob to highlight the desired nearest airport. The airport is previewed on the map.
- 3) Press the **APR** Softkey; or press the **MENU** Key, highlight 'Select Approach Window', and press the **ENT** Key.
- 4) Turn the **FMS** Knob to highlight the desired approach.
- 5) Press the **LD APR** Softkey; or press the **MENU** Key, highlight 'Load Approach', and press the **ENT** Key. The 'PROC - Approach Loading' Page is displayed with the 'Transition' Field highlighted.

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- 6) Turn the **FMS** Knob to highlight the desired transition, and press the **ENT** Key.
- 7) Minimums
 - a) To set 'Minimums', turn the small **FMS** Knob to select 'BARO' or 'TEMP COMP' and press the **ENT** Key. Turn the small **FMS** Knob to select the altitude, and press the **ENT** Key.
 - b) If 'TEMP COMP' was selected, the cursor moves to the temperature field. Turn the small **FMS** Knob to select the temperature, and press the **ENT** Key.

Or:

To skip setting minimums, press the **ENT** Key. The 'Load?' field is highlighted.

- 8) Press the **ENT** Key with 'Load?' highlighted to load the approach procedure; or turn the large **FMS** Knob to highlight 'Activate?' and press the **ENT** Key to load and activate the approach procedure.

When GPS is not approved for the selected final approach course, the message '- NOT APPROVED FOR GPS - GPS guidance is for monitoring only. Load approach?' is displayed. With 'Yes' highlighted, press the **ENT** Key.

When a visual approach is selected, the message 'Obstacle clearance is not provided for visual approaches' is displayed. With 'OK' highlighted, press the **ENT** Key.

LOADING AN APPROACH PROCEDURE INTO A STORED FLIGHT PLAN

- 1) Select a stored flight plan from the 'FPL - Flight Plan Catalog' Page.
- 2) Press the **Edit** Softkey; or press the **MENU** Key, select 'Edit Flight Plan', and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
- 3) Press the **LD APR** Softkey; or press the **MENU** Key, select "Load Approach", and press the **ENT** Key. The 'PROC - Approach Loading' Page is displayed.
- 4) Select the airport and approach:
 - a) Use the **FMS** Knob to select an airport and press the **ENT** Key.
 - b) Select an approach from the list and press the **ENT** Key.

Or:

- a) If necessary, push the **FMS** Knob to exit the approach list, and use the large **FMS** Knob to move the cursor to the Approach 'Channel' Field.
 - b) Use the **FMS** Knob to enter the approach channel number, and press the **ENT** Key to accept the approach channel number. The airport and approach are selected.
- 5) Select a transition for the selected approach. Press the **ENT** Key.
 - 6) Press the **ENT** Key to load the selected approach procedure.

ACTIVATING A PREVIOUSLY LOADED APPROACH

- 1) Press the **PROC** Key. The 'Procedures' Window is displayed with 'Activate Approach' highlighted.
- 2) Press the **ENT** Key to activate the approach.

ACTIVATING A PREVIOUSLY LOADED APPROACH WITH VECTORS TO FINAL

- 1) Press the **PROC** Key to display the 'Procedures' Window.
- 2) Highlight 'Activate Vector-to-Final' and press the **ENT** Key.

LOADING AND ACTIVATING AN APPROACH USING THE MENU KEY

- 1) Press the **PROC** Key.
- 2) Use the large **FMS** Knob to highlight 'Select Approach' and press the **ENT** Key.
- 3) From the 'PROC - Approach Loading' Page, press the **MENU** Key on the MFD. The 'Page Menu' Window is displayed with 'Load & Activate Approach' highlighted.
- 4) Press the **ENT** Key.

When GPS is not approved for the selected final approach course, the message '- NOT APPROVED FOR GPS - GPS guidance is for monitoring only. Load approach?' is displayed. With 'Yes' highlighted, press the **ENT** Key.

When a visual approach is selected, the message 'Obstacle clearance is not provided for visual approaches' is displayed. With 'OK' highlighted, press the **ENT** Key.

REMOVING AN APPROACH FROM THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page (MFD) or the 'Flight Plan' Window (PFD).
- 2) Press the **MENU** Key, and highlight 'Remove Approach'.
- 3) Press the **ENT** Key. A confirmation window is displayed listing the approach procedure.
- 4) With 'OK' highlighted, press the **ENT** Key. To cancel the removal, highlight 'CANCEL' and press the **ENT** Key.

REMOVING AN APPROACH FROM A STORED FLIGHT PLAN

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page.
 - 2) Turn the small **FMS** Knob clockwise one click to display the 'FPL - Flight Plan Catalog' Page.
 - 3) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the flight plan to be edited.
 - 4) Press the **EDIT** Softkey; or press the **MENU** Key, select 'Edit Flight Plan' and press the **ENT** Key. The 'FPL - Stored Flight Plan' Page is displayed.
 - 5) Highlight and remove the approach:
 - a) Turn the large **FMS** Knob to highlight the header of the approach.
 - b) Press the **CLR** Key. The 'Remove <procedure name> from flight plan?' window is displayed.
- Or:**
- a) Press the **MENU** Key to display the 'Page Menu' Window and turn the **FMS** Knob to highlight 'Remove Approach'.
 - b) Press the **ENT** Key. The 'Remove <procedure name> from flight plan?' window is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key. To cancel the request, press the **CLR** Key, or highlight 'CANCEL' and press the **ENT** Key.
 - 7) Press the **FMS** Knob to remove the flashing cursor.

ACTIVATING A MISSED APPROACH IN THE ACTIVE FLIGHT PLAN

- 1) Press the **PROC** Key.
- 2) Turn the **FMS** Knob to highlight 'Activate Missed Approach'.
- 3) Press the **ENT** Key. The aircraft automatically sequences to the MAHP.

Or:

Press the Go-Around Button.

MANUALLY ENABLING/DISABLING TEMPERATURE COMPENSATION FOR APPROACH WAYPOINT ALTITUDES

- 1) From the 'FPL – Active Flight Plan' Page, press the **MENU** Key. The 'Page Menu' Window is displayed.
- 2) Turn the **FMS** Knob to highlight 'Temperature Compensation'.
- 3) Press the **ENT** Key. The 'Temperature Compensation' Window is displayed with the temperature highlighted.
- 4) Use the small **FMS** Knob to change the 'Temperature at <airport>' Field. The compensated altitude is computed as the temperature is selected.
- 5) Press the **ENT** Key. 'Activate Compensation?' is highlighted.
- 6) Press the **ENT** Key. The compensated altitudes for the approach are shown in the flight plan.

ENTERING A TEMPERATURE COMPENSATED MINIMUM INTO AN APPROACH

- 1) From the 'FPL – Active Flight Plan' Page, press the **PROC** Key. The 'Procedures' Window is displayed.
- 2) If necessary, turn the large **FMS** Knob to highlight 'Select Approach'. Press the **ENT** Key.
- 3) If necessary, use the **FMS** Knob and the **ENT** Key to select the desired airport, approach, and transition.
- 4) Use the **FMS** Knob to place the flashing cursor in the 'Minimums' Box. Turn the small **FMS** Knob to select 'TEMP COMP'. Press the **ENT** Key.
- 5) Turn the small **FMS** Knob to enter the minimums altitude. Press the **ENT** Key. The cursor is placed in the 'TEMP AT <destination airport>' Field.

- 6) Turn the small **FMS** Knob to enter the temperature at the destination. Press the **ENT** Key.
- 7) Press the **ENT** Key with either 'Load' or 'Activate?' highlighted. The approach is added to the active flight plan, and the temperature compensated minimums are displayed on the PFD.

TRIP PLANNING

SELECTING AUTOMATIC OR MANUAL PAGE MODE

From the 'Aux - Trip Planning' Page, press the **Auto** Softkey or the **Manual** Softkey; or press the **MENU** Key, highlight 'Auto Mode' or 'Manual Mode', and press the **ENT** Key.

SELECTING FLIGHT PLAN OR WAYPOINT MODE

From the 'Aux - Trip Planning' Page, press the **FPL** Softkey or the **WPTs** Softkey; or press the **MENU** Key, highlight 'Flight Plan Mode' or 'Waypoints Mode', and press the **ENT** Key.

SELECTING A FLIGHT PLAN AND LEG FOR TRIP STATISTICS

- 1) From the 'Aux - Trip Planning' Page, press the **FMS** Knob to activate the cursor in the 'FPL' Field.
- 2) Turn the small **FMS** Knob to select the desired flight plan number.
- 3) Turn the large **FMS** Knob to highlight 'CUM' or 'REM'. The statistics for each leg can be viewed by turning the small **FMS** Knob to select the desired leg. The Trip Planning Map also displays the selected data.

SELECTING WAYPOINTS FOR WAYPOINT MODE

- 1) From the 'Aux - Trip Planning' Page, press the **WPTs** Softkey; or press the **MENU** Key, highlight 'Waypoints Mode', and press the **ENT** Key. The cursor is positioned in the waypoint field directly below the FPL Field.
- 2) Turn the **FMS** knobs to select the desired waypoint (or select from the Page Menu 'Set WPT to Present Position' if that is what is desired), and press the **ENT** Key. The cursor moves to the second waypoint field.
- 3) Turn the **FMS** knobs to select the desired waypoint, and press the **ENT** Key. The statistics for the selected leg are displayed.

ENTERING MANUAL DATA FOR TRIP STATISTICS CALCULATIONS

- 1) From the 'Aux - Trip Planning' Page, press the **Manual** Softkey or select 'Manual Mode' from the Page Menu, and press the **ENT** Key. The cursor may now be positioned in any field in the top right two boxes.
- 2) Turn the **FMS** Knobs to move the cursor onto the 'Departure Time' Field and enter the desired value. Press the **ENT** Key. The statistics are calculated using the new value and the cursor moves to the next entry field. Repeat until all desired values have been entered.

RAIM PREDICTION

PREDICTING RAIM AVAILABILITY AT A SELECTED WAYPOINT

- 1) Select the 'Aux - GPS Status' Page.
- 2) If necessary, press the **RAIM** Softkey.
- 3) Press the **FMS** Knob. The 'Waypoint' Field is highlighted.
- 4) Turn the small **FMS** Knob to display the 'Waypoint Information' Window.
- 5) Enter the desired waypoint:

Use the **FMS** Knob to enter the desired waypoint by identifier, facility, or city name and press the **ENT** Key. Refer to Section 1.7 for instructions on entering alphanumeric data into the system.

Or:

- a) Turn the small **FMS** Knob counter-clockwise to display a list of flight plan waypoints (the FPL list is populated only when navigating a flight plan).
 - b) Turn the small **FMS** Knob clockwise to display the Flight Plan, Nearest, Recent, or User waypoints, if required.
 - c) Turn the large **FMS** Knob clockwise to select the desired waypoint. The system automatically fills in the identifier, facility, and city fields with the information for the selected waypoint.
 - d) Press the **ENT** Key to accept the waypoint entry.
- 6) Use the **FMS** Knob to enter an arrival time and press the **ENT** Key.

- 7) Use the **FMS** Knob to enter an arrival date and press the **ENT** Key.
- 8) With the cursor highlighting 'Compute RAIM?', press the **ENT** Key. Once RAIM availability is computed, one of the following is displayed:
 - 'Compute RAIM?'—RAIM has not been computed for the current waypoint, time, and date combination
 - 'Computing Availability'—RAIM calculation in progress
 - 'RAIM Available'—RAIM is predicted to be available for the specified waypoint, time, and date
 - 'RAIM not Available'—RAIM is predicted to be unavailable for the specified waypoint, time, and date

PREDICTING RAIM AVAILABILITY AT THE AIRCRAFT PRESENT POSITION

- 1) Select the 'Aux - GPS Status' Page.
- 2) If necessary, press the **RAIM** Softkey.
- 3) Press the **FMS** Knob. The 'Waypoint' Field is highlighted.
- 4) Press the **MENU** Key.
- 5) With 'Set WPT to Present Position' highlighted, press the **ENT** Key.
- 6) Press the **ENT** Key to accept the waypoint entry.
- 7) Use the **FMS** Knob to enter an arrival time and press the **ENT** Key.
- 8) Use the **FMS** Knob to enter an arrival date and press the **ENT** Key.
- 9) With the cursor highlighting 'Compute RAIM?', press the **ENT** Key. Once RAIM availability is computed, one of the following is displayed:
 - 'Compute RAIM?'—RAIM has not been computed for the current waypoint, time, and date combination
 - 'Computing Availability'—RAIM calculation in progress
 - 'RAIM Available'—RAIM is predicted to be available for the specified waypoint, time, and date
 - 'RAIM not Available'—RAIM is predicted to be unavailable for the specified waypoint, time, and date

ENABLING/DISABLING SBAS

- 1) Select the 'Aux - GPS Status' Page.
- 2) If necessary, press the **SBAS** Softkey.
- 3) Press the **FMS** Knob, and turn the large **FMS** Knob to highlight 'EGNOS', 'MSAS' or 'WAAS'.
- 4) Press the **ENT** Key to uncheck the box.
- 5) Press the **FMS** Knob to remove the cursor.

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HAZARD AVOIDANCE

Customizing the Hazard Displays on the 'Map - Navigation Map' Page

- 1) With the 'Map - Navigation Map' Page displayed, press the **MENU** Key to display the 'Map - Navigation Map' Page Menu. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The Map Settings Menu is displayed. Turn the small **FMS** Knob to select 'Weather' to customize the display of weather features. Select 'Traffic' to customize the display of traffic.
- 3) Press the small **FMS** Knob to return to the "Map - Navigation Map" Page.

STORMSCOPE® (OPTIONAL)



WARNING: Do not rely on information from the lightning detection system display as the sole basis for hazardous weather avoidance. Range limitations and interference may cause the system to display inaccurate or incomplete information. Refer to documentation from the lightning detection system manufacturer for detailed information about the system.



NOTE: Stormscope lightning information cannot be displayed simultaneously on the same map as lightning information from data link lightning sources.

Displaying Stormscope Lightning Data on the 'Map - Navigation Map' Page

- 1) Select the **Map Opt** Softkey.
- 2) Select the **STRMSCP** Softkey.

Enabling/Disabling Stormscope Information on PFD Maps

- 1) On the PFD, press the **Map/HSI** Softkey.
- 2) Press the **Lightning** Softkey.
- 3) Press the **STRMSCP** Softkey to enable Stormscope lightning information, or press the **LTNG Off** Softkey to disable Stormscope lightning information.

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Lightning Age	Symbol
Strike is less than 6 seconds old	
Strike is between 6 and 60 seconds old	
Strike is between 1 and 2 minutes old	
Strike is between 2 and 3 minutes old	

Change the Stormscope Lightning Mode Between 'Cell' and 'Strike'

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Stormscope Page.
- 2) Press the **Mode** Softkey. The **Cell** and **Strike** Softkeys are displayed. Press the **Cell** Softkey to display 'CELL' data or press the **Strike** Softkey to display 'STRIKE' data. 'CELL' or 'STRIKE' is displayed in the mode box located in the upper right corner of the Stormscope Page.



NOTE: "Cell mode" uses a clustering program to identify clusters of electrical activity that indicate cells.

Manually Clearing Stormscope Data on the Stormscope Page

Press the **Clear** Softkey.

Manually Clearing Stormscope Data on the 'Map - Navigation Map' Page

- 1) Press the **MENU** Key.
- 2) Turn the **FMS** Knob to highlight 'Clear Stormscope® Lightning'.
- 3) Press the **ENT** Key.

DATA LINK WEATHER



WARNING: Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.










WARNING: Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be older than the indicated weather product age.

WEATHER PRODUCT AGE

The weather product age is shown automatically for weather products displayed on MFD maps. For PFD maps, the pilot can manually enable/disable the age information.

Enabling/Disabling the Weather Product Age for PFD Maps

- 1) With the PFD Inset Map or HSI Map displayed, press the **Map/HSI** Softkey.
- 2) Press the **WX LGND** to show/remove the weather product age information for PFD maps.




SiriusXM Weather Product	Symbol	Expiration Time (Minutes)
NEXRAD		30
Cloud Top (CLD TOP)		60
Echo Top (ECHO TOP)		30
SiriusXM Lightning (LTNG)		30
Cell Movement		30
SIGMETs/AIRMETs		60
METARs		90






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SiriusXM Weather Product	Symbol	Expiration Time (Minutes)
City Forecast		90
Surface Analysis		60
Freezing Levels		120
Winds Aloft		90
County Warnings		60
Cyclone Warnings		60
Icing Potential (CIP and SLD)		90
Pilot Weather Report (PIREP)		90
Air Report(AIREP)		90
Turbulence		180
Radar Coverage Not Available	No product image	30
Temporary Flight Restriction (TFR)	TFR	60
Terminal Aerodrome Forecast (TAF)	No product image	60

FIS-B Weather Product	Symbol	Expiration Time (Minutes)	Broadcast Rate (Minutes)
NEXRAD Composite (US)		30	15
NEXRAD Composite (Regional)		30	2.5

FIS-B Weather Product	Symbol	Expiration Time (Minutes)	Broadcast Rate (Minutes)
METARs		90	5
Pilot Weather Report (PIREP)		90	10
Winds Aloft		90	10
SIGMETs/AIRMETs	SIG AIRM	60	5
No Radar Coverage	no product image	30	2.5
Terminal Aerodrome Forecast (TAF)	no product image	60	10
Temporary Flight Restriction (TFR)	TFR	60	10

Garmin Connex Weather Product	Symbol	Expiration Time (Minutes)	Refresh Rate (Minutes)
Radar Precipitation		30	U.S.: 3* Canada: 3*† Europe: 15 Australia: 15*
Infrared Satellite		60	30
Datalink Lightning		30	Continuous
SIGMETs/AIRMETs	SIG AIRM	60	Continuous
METARs		90	Continuous
Winds Aloft		90	Continuous

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Garmin Connex Weather Product	Symbol	Expiration Time (Minutes)	Refresh Rate (Minutes)
Pilot Weather Report (PIREPs)		90	Continuous
Temporary Flight Restrictions (TFRs)	TFR	60	Continuous
Terminal Aerodrome Reports TAFs)	no product image	60	Continuous

* The composite precipitation image is updated every 3 minutes, but individual radar sites may take between 3 and 10 minutes to provide new data.

† Canadian radar precipitation data provided by Environment Canada.

^ Australian radar precipitation data provided by the Australian Bureau of Meteorology.

DISPLAYING DATA LINK WEATHER PRODUCTS

Viewing the Weather Data Link Page and Changing the Data Link Weather Source, If Applicable:

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Weather Data Link (XM or CNXT or FIS-B) Page. The currently selected data link weather source appears in the page title.
- 3) If the page title does not contain the desired weather source, press the **MENU** Key.
 - a) Turn the **FMS** Knob to highlight 'Display XM Weather', 'Display Connex Weather' or 'Display FIS-B Weather' (choices may vary depending on the installed equipment).
 - b) Press the **ENT** Key.

Viewing Legends for displayed weather products on the Weather Data Link Page:

- 1) Select the Weather Data Link Page.
- 2) Press the **Legend** Softkey to display the legends for the displayed weather products.
- 3) Turn the **FMS** Knob to scroll through the legends if more are available than fit in the window.
- 4) To remove the XM Weather Legends Window, press the **Legend** Softkey, the **ENT** or the **CLR** Key, or press the **FMS** Knob.

Setting up and customizing the Weather Data Link Page:

- 1) Select the Weather Data Link Page.
- 2) Press the **MENU** Key.
- 3) Turn the **FMS** Knob to highlight 'Weather Setup', then press the **ENT** Key.
- 4) Turn the small **FMS** Knob to select 'Product Group 1' or 'Product Group 2', and press the **ENT** Key.
- 5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
- 6) Turn the small **FMS** Knob to scroll through options for each product (On/Off, range settings, etc.).
- 7) Press the **ENT** Key to select an option.
- 8) Press the **FMS** Knob or the **CLR** Key to return to the Weather Data Link (XM) Page with the changed settings.

Selecting a map orientation for the Weather Data Link Page:

- 1) Select the Weather Data Link Page.
- 2) Press the **MENU** Key.
- 3) Turn the **FMS** Knob to highlight 'Weather Setup'.
- 4) Turn the small **FMS** Knob to display the Group options.
- 5) If SiriusXM is the selected data link weather source, turn the small **FMS** Knob to highlight the 'Map' Group and press the **ENT** Key.

Or:

If FIS-B or Garmin Connex is the selected data link weather source, turn the large **FMS** Knob to highlight the 'Orientation' field at the bottom of the Product Group 1 list.

- 6) Turn the small **FMS** Knob to highlight the desired map orientation: North up, Track up, HDG up, or SYNC, then press the **ENT** Key.

Restoring Default Weather Data Link Page settings

- 1) Select the Weather Data Link Page.
- 2) Press the **MENU** Key.
- 3) Turn the **FMS** Knob to highlight 'Weather Setup', then press the **ENT** Key.

- 4) Press the **MENU** Key.
- 5) Highlight the desired default(s) to restore (all or for selection) and press **ENT** Key.
- 6) When finished, press the **FMS** Knob or press the **CLR** Key.

Displaying Data Link Weather Products on the 'Map - Navigation Map' Page:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.
- 3) Press the softkey to enable/disable the desired weather product.

Showing/removing the weather legend on the 'Map - Navigation Map' Page:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.
- 3) Press the **Legend** Softkey to show the weather legends window.
- 4) When finished, press the **Legend** Softkey again, or press the **FMS** Knob or the **CLR** Key to remove the window.

Setting up and customizing weather data for the 'Map - Navigation Map's:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the small **FMS** Knob to select the 'Weather' Group and press the **ENT** Key.
- 5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
- 6) Turn the small **FMS** Knob to scroll through options for each product (On/Off, range settings).
- 7) Press the **ENT** Key to select an option.
- 8) Press the **FMS** Knob or **CLR** Key to return to the Navigation Map Page with the changed settings.

Displaying Data Link Weather products on the PFD:

- 1) On the PFD, press the **Map/HSI** Softkey.
- 2) Press the desired weather product softkey(s) to enable/disable the display of data link products on the PFD map.
- 3) To enable/disable a data link lightning weather product on a PFD, press the **Lightning** Softkey.
 - a) Press the **Datalink** Softkey to enable data link lightning or press the **LTNG Off** Softkey.
 - b) Press the **Back** Softkey twice to return to the top-level PFD Softkeys.

Enabling/disabling the weather product icon and age display (PFD maps):

- 1) On the PFD, press the **Map/HSI** Softkey.
- 2) Press the **Layout** Softkey.
- 3) Press the **WX LGND** Softkey to enable/disable the weather product age, source, and icon box display on PFD Maps.

CONNEXT DATA REQUESTS

Manually Requesting Garmin Connex Weather information:

- 1) Select the 'Map - Weather Data Link (CNXT)' Page.
- 2) Press the **MENU** Key.
- 3) With 'Connex Data Request' highlighted, press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the desired coverage option(s) and press the **ENT** Key to show or hide a green check mark to select one of more of the following coverage selections:
 - Present Position – Requests data based on current location.
 - Destination – Requests data based on the active flight plan destination (Direct-To destinations excluded). See the Flight Management section for more information about entering and activating flight plans.
 - FPL – Requests data along an active flight plan, if one currently exists. Turn the small **FMS** Knob to select the desired flight plan look-ahead distance option (or choose 'Remaining FPL' to request weather data for the remainder of the flight plan), then press the **ENT** Key.

- Waypoint – Requests data based on a waypoint (which may be off-route). Turn the large and small **FMS** Knobs to enter a waypoint, then press the **ENT** Key.
- 5) Turn the large **FMS** Knob highlight to the ‘Diameter / Route Width’ distance field and turn the small **FMS** Knob to select the desired diameter and route width of the request, then press the **ENT** Key.
 - 6) Turn the large **FMS** Knob until the ‘Send Request’ field is highlighted. Press the **ENT** Key to initiate the request immediately or press the **FMS** Knob to return to the Weather Data Link (CNXT) Page without requesting weather data.

Cancelling a Connex Data Request in Progress:

- 1) Select the ‘Map - Weather Data Link (CNXT)’ Page.
- 2) Press the **MENU** Key.
- 3) With ‘Connex Data Request’ highlighted, press the **ENT** Key.
- 4) Turn the large **FMS** Knob to select the ‘Cancel Request’ field and press the **ENT** Key. The request status box indicates ‘Request Cancelled’.
- 5) Press the **FMS** Knob to return to the Weather Data Link (CNXT) Page.

Enabling/disabling automatic Connex Data Requests:

- 1) Select the ‘Map - Weather Data Link (CNXT)’ Page.
- 2) Press the **MENU** Key.
- 3) With ‘Connex Data Request’ highlighted, press the **ENT** Key.
- 4) Choose the desired weather coverage options.
- 5) Turn the large **FMS** Knob to select the ‘Update Rate’ field. Then turn the small **FMS** Knob to highlight the desired automatic update frequency (Off, 5 Min, 10 Min, 15 Min, 20 Min, 30 Min, 45 Min, or 60 Min), then press the **ENT** Key.
- 6) The ‘Send Request’ field is highlighted and a countdown timer is displayed in the ‘Request Status’ Window based on the currently selected update rate. Press the **ENT** Key to immediately send an immediate Connex Data Request.

Or:

Press the **FMS** Knob to return to the Weather Data Link (CNXT) Page.

WEATHER PRODUCT OVERVIEW

NEXRAD (SiriusXM)

Enabling/disabling NEXRAD weather information on the Weather Data Link (XM) Page:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **NEXRAD** Softkey.

Enabling/disabling NEXRAD weather information on MFD navigation maps:

- 1) Press the **Map Opt** Softkey.
- 2) Press the **NEXRAD** Softkey.

Enabling/disabling NEXRAD weather information on PFD maps:

- 1) Press the **Map/HSI** Softkey.
- 2) Press the **NEXRAD** Softkey.

Changing the NEXRAD coverage region:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **MENU** Key.
- 3) Turn the large **FMS** Knob to highlight 'Weather Setup' and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the NEXRAD Region datafield.
- 5) Turn the small **FMS** Knob to highlight 'US' or 'CNDA' (Canada) and press the **ENT** Key.

Displaying Time-Lapse NEXRAD Animation on the Weather Data Link (XM) Page:

- 1) Press the **MENU** Key.
- 2) Turn the **FMS** Knob to select 'Weather Setup' and press the **ENT** Key.
- 3) With 'Product Group 1' selected, turn the large **FMS** Knob to highlight the NEXRAD Animation On/Off field.
- 4) Turn the small **FMS** Knob to select 'On' or 'Off', then press the **ENT** Key.
- 5) To remove the menu, push the **FMS** Knob or the **CLR** Key.

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Displaying Time-Lapse NEXRAD Animation on navigation maps:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the **FMS** Knob to select the 'Weather' Group and press the **ENT** Key.
- 5) Turn the large **FMS** Knob to highlight the NEXRAD Animation On/Off field.
- 6) Turn the small **FMS** Knob to highlight 'On' or 'Off' and press the **ENT** Key.
- 7) To remove the menu, push the **FMS** Knob or the **CLR** Key.

EIS

Nav/Com/XPDR/Audio

Flight Management

NEXRAD (FIS-B)

Displaying the NEXRAD weather product on the Weather Data Link (FIS-B) Page:

- 1) Select the 'Map - Weather Data Link (FIS-B)' Page.
- 2) Press the **NEXRAD** Softkey. Each press cycles through a coverage option as the softkey name changes (**US**, **RGNL**, or **US/RGNL**).

Hazard Avoidance

AFCs

Displaying the FIS-B NEXRAD weather product on the 'Map - Navigation Map' Page:

- 1) Press the **Map Opt** Softkey.
- 2) Press the **NEXRAD** Softkey.
- 3) To change the type of NEXRAD displayed, press the **MENU** Key.
- 4) With 'Map Settings' highlighted, press the **ENT** Key.
- 5) Turn the small **FMS** Knob to select the 'Weather' Group, then press the **ENT** Key.
- 6) Turn the large **FMS** Knob to highlight the NEXRAD Data Region field.
- 7) Turn the small **FMS** Knob to highlight 'CONUS' (continental United States), 'RGNL' (regional), or 'Combined', then press the **ENT** Key. This selection also affects display of NEXRAD on the PFD Maps.
- 8) When finished, press the **FMS** Knob or press the **CLR** Key.

Additional Features

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Appendix

Displaying the FIS-B NEXRAD weather product on PFD maps:

- 1) Press the **Map/HSI** Softkey.
- 2) Press the **NEXRAD** Softkey to enable/disable the display of NEXRAD information.

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Precipitation (Garmin Connex)

Displaying Precipitation weather information:

- 1) Press the **Map Opt** Softkey (for PFD maps, press the **Map/HSI** or **Map Opt** Softkey). This step is not necessary on the 'Map - Weather Data Link (CNXT)' Page.
- 2) Press the **PRECIP** Softkey.

Echo Tops (SiriusXM)

Displaying Echo Tops information:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **Echo Top** Softkey.

Cloud Tops (SiriusXM)

Displaying Cloud Tops information:

- 1) Select the 'Map - Weather Data Link (XM)' Page with the **FMS** Knob.
- 2) Press the **CLD Top** Softkey.

Data Link Lightning (SiriusXM, Garmin Connex)

Displaying Data Link Lightning information on Weather Data Link Page:

- 1) Turn the **FMS** Knob to select the 'Map - Weather Data Link (XM or CNXT)' Page.
- 2) Press the **XM LTNG** Softkey or the **DL LTNG** Softkey.

Displaying Data Link Lightning information on the 'Map - Navigation Map' Page:

- 1) Turn the **FMS** Knob to select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.
- 3) Press the **XM LTNG** Softkey or the **DL LTNG** Softkey.

Displaying Data Link Lightning information on PFD maps:

- 1) On the PFD, press the **Map/HSI** Softkey.
- 2) Press the **Lightning** Softkey.

- 3) Press the **Datalink** Softkey.
- 4) When finished, press the **Back** Softkey.

Cell Movement (SiriusXM)

Displaying Cell Movement information on the Weather Data Link (XM) Page:

- 1) Select the 'Map - Weather Data Link (XM)' Page using the **FMS** Knob.
- 2) Press the **Cell MOV** Softkey.

Setting up the system to display Cell Movement with NEXRAD on navigation maps:

- 1) Use the **FMS** Knob to select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the small **FMS** Knob to highlight 'Weather' and press the **ENT** Key.
- 5) Turn the large **FMS** Knob to 'On' or 'Off' for the Cell Movement menu option. When set to 'On', Cell Movement is enabled/disabled with the NEXRAD weather product on navigation maps. When set to 'Off', Cell Movement is not displayed on navigation maps.
- 6) When finished, push the **FMS** Knob or **CLR** Key to remove the menu.

Infrared Satellite (Garmin Connex)

Displaying Infrared Satellite information:

- 1) Select the 'Map - Weather Data Link (CNXT)' Page.
- 2) Press the **IR SAT** Softkey.

SIGMETs and AIRMETs

Displaying SIGMETs and AIRMETs:

- 1) Select the 'Map- Weather Data Link (XM or CNXT or FIS-B)' Page.
- 2) Press the **SIG/AIR** Softkey.
- 3) To view the text of the SIGMET or AIRMET, press the **Joystick** and move the Map Pointer over the icon.
- 4) Press the **ENT** key.

METARs and TAFs

Displaying METAR and TAF text on the MFD:

- 1) On the 'Map - Weather Data Link (XM or FIS-B or CNXT)' Page, press the **METAR** Softkey.
- 2) Press the **Joystick** and pan to the desired airport.
- 3) Press the **ENT** Key. The Weather Information Page is shown with METAR and TAF text.
- 4) Use the **FMS** Knob or the **ENT** Key to scroll through the METAR and TAF text. METAR text must be completely scrolled through before scrolling through the TAF text.
- 5) Press the **FMS** Knob or the **CLR** Key to return to the Weather Data Link Page.

Or:

- 1) Select the Weather Information Page.
 - a) Turn the large **FMS** Knob to select the Waypoint Page Group.
 - b) Press the **WX** Softkey to select the Weather Information Page.
- 2) Press the **FMS** Knob to display the cursor.
- 3) Use the **FMS** Knob to enter the desired airport and press the **ENT** Key.
- 4) Use the **FMS** Knob or the **ENT** Key to scroll through the METAR and TAF text. Note that the METAR text must be completely scrolled through before scrolling through the TAF text.

Displaying original METAR text on the Active Flight Plan Page:

- 1) Select the 'FPL - Active Flight Plan' Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight a waypoint with an available METAR (indicated with a METAR flag next to it). The METAR text will appear in the 'Selected Waypoint Weather' Window below.
- 4) When finished, press the **FMS** Knob to remove the cursor or press the **FPL** Key to exit the Active Flight Plan Page.

Displaying original METAR text information on the PFD Inset Map:

- 1) On the PFD, press the **Map/HSI** Softkey.
- 2) Press the **METAR** Softkey.
- 4) Press the **Joystick** and pan to the desired METAR flag. Original METAR text appears on the map.
- 5) When finished, press the **Joystick** to remove the Map Pointer.

Surface Analysis and City Forecast (SiriusXM)

Displaying Surface Analysis and City Forecast information:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **SFC** Softkey.
- 4) Press the softkey for the desired forecast time: **Current, 12 HR, 24 HR, 36 HR, or 48 HR**. The **SFC** Softkey label changes to show the forecast time selected.

Or:

Press the **Off** Softkey to disable the display of the weather product.

Freezing Level (SiriusXM)

Displaying Freezing Level information:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **FRZ LVL** Softkey.

Winds Aloft

Displaying the Winds Aloft weather product:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **Wind** Softkey.
- 4) Press a softkey for the desired altitude level: **SFC** (surface) up to 42,000 feet. Press the **Next** Softkey or the **Prev** Softkey to cycle through the altitude softkeys. The **Wind** Softkey label changes to reflect the altitude selected.

Enabling/disabling the Vertical Situation Display (containing winds aloft data):

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.
- 3) Press the **Inset** Softkey.
- 4) Press the **VSD** Softkey to enable/disable the Vertical Situation Display.

Enabling/disabling winds aloft data display for the VSD:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the small **FMS** Knob to select 'VSD' and press the **ENT** Key.
- 5) Turn the large **FMS** Knob to highlight the Winds on/off field.
- 6) Turn the small **FMS** Knob to select 'On' or 'Off'.
- 7) Press the **FMS** Knob or **CLR** Key to return to the 'Map - Navigation Map' Page with the changed settings.

County Warnings (SiriusXM)

Displaying County Warning information:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **County** Softkey.

Cyclone (SiriusXM)

Displaying cyclone (hurricane) track information:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **Cyclone** Softkey.

Icing (CIP & SLD) (SiriusXM)

Displaying Icing data:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **ICNG** Softkey.
- 4) Press a softkey for the desired altitude level: 1,000 feet up to 30,000 feet. Press the **Next** Softkey or the **PREV** Softkey to cycle through the altitude softkeys. The **ICNG** Softkey label changes to indicate the altitude selected.

Turbulence (SiriusXM)

Displaying Turbulence data:

- 1) Select the 'Map - Weather Data Link (XM)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **TURB** Softkey.
- 4) Press a softkey for the desired altitude: 21,000 feet up to 45,000 feet. Press the **Next** or **PREV** Softkey to cycle through the altitude softkeys. The **TURB** Softkey label changes to indicate the altitude selection.

PIREPs and AIREPs

Displaying PIREP and AIREP text:

- 1) Select the 'Map - Weather Data Link (XM or FIS-B or CNXT)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **PIREPS** Softkey or the **AIREPS** Softkey. (Note the **AIREPS** Softkey is only available with the SiriusXM Weather service.)
- 4) Press the **Joystick** and pan to the desired weather report. A gray circle will appear around the weather report when it is selected.
- 5) Press the **ENT** Key. The Weather Information Page is shown with PIREP or AIREP text. The data is first displayed in a decoded fashion, followed by the original text. Note the original text may contain additional information not present in the decoded version.
- 6) Use the **FMS** Knob or the **ENT** Key to scroll through the PIREP or AIREP text.
- 7) Press the **FMS** Knob or the **CLR** Key to return to the Weather Data Link (XM) Page.

Temporary Flight Restrictions (TFR)

Displaying TFR Data:

- 1) Select the 'Map - Weather Data Link (XM or FIS-B or CNXT)' Page or 'Map - Navigation Map' Page.
- 2) Press the **Joystick** and pan the map pointer over a TFR to highlight it. The system displays TFR summary information above the map.
- 3) Press the **ENT** Key. The system displays a pop-up menu.
- 4) If necessary, turn the **FMS** Knob to select 'Review Airspaces' and press the **ENT** Key. The system displays the TFR Information window.
- 5) Press the **FMS** Knob or the **CLR** Key to remove the TFR Information window.

Setting up and customizing TFR data for maps on which TFR data can be displayed:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the small **FMS** Knob to select the 'Aviation' Group and press the **ENT** Key.
- 5) Turn the large **FMS** Knob to scroll to the TFR product range settings.
- 6) Turn the small **FMS** Knob to scroll through options (Off, range settings).
- 7) Press the **ENT** Key to select an option.
- 8) Press the **FMS** Knob or **CLR** Key to return to the 'Map - Navigation Map' Page with the changed settings.

FIS-B WEATHER STATUS

Viewing FIS-B status:

- 1) Turn the large **FMS** Knob to select the Aux Page Group.
- 2) Turn the small **FMS** Knob to select the 'Aux - ADS-B Status' Page.

Hazard Avoidance

Enabling/disabling the FIS-B weather feature:

- 1) Select the 'Map - Weather Data Link (FIS-B)' Page.
- 2) Press the **MENU** Key.
- 3) Turn the small **FMS** Knob to highlight 'Enable FIS-B Weather' or 'Disable FIS-B Weather', and press the **ENT** Key.

TRAFFIC INFORMATION SERVICE (TIS)






WARNING: Do not rely solely upon the display of traffic information for collision avoidance maneuvering. The traffic display does not provide collision avoidance resolution advisories and does not under any circumstances or conditions relieve the pilot's responsibility to see and avoid other aircraft.



NOTE: TIS is available only when the aircraft is within the service volume of a TIS-capable terminal radar site. Aircraft without an operating transponder are invisible to both Traffic Advisory Systems (TAS), Traffic Alert and Collision Avoidance Systems (TCAS) and TIS. Aircraft without altitude reporting capability are shown without altitude separation data or climb descent indication.



NOTE: Mode S TIS is disabled if another traffic system such as TAS or Automatic Dependent Surveillance-Broadcast (ADS-B) is installed.

Traffic Symbol	Description
	Non-Threat Traffic
	Traffic Advisory (TA)
	Traffic Advisory Off Scale

TIS Traffic Symbol Description

Displaying TIS traffic on the 'Map - Traffic Map' Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the 'Map - Traffic Map' Page.

- 3) Press the **Operate** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic Mode field.
- 4) Press the **Standby** Softkey to place the system in the Standby Mode. 'STANDBY' is displayed in the Traffic Mode field.
- 5) Rotate the **Joystick** clockwise to increase the map range or rotate counter-clockwise to decrease the map range.
- 6) Press the **TNA Mute** Softkey to mute/unmute the "TIS Not Available" voice alert.

Displaying TIS Traffic on the 'Map - Navigation Map' Page

- 1) Ensure TIS is operating. With the 'Map - Navigation Map' displayed, press the **Map Opt** Softkey.
- 2) Press the **Traffic** Softkey. Traffic is now displayed on the map.

Displaying TIS Traffic on PFD Maps

- 1) Ensure TIS is operating. With the 'Map - Navigation Map' displayed, press the **Map Opt** Softkey.
- 2) Press the **Traffic** Softkey. Traffic is now displayed on the map.

Muting the "TIS Not Available" voice alert

- 1) Select the 'Map - Traffic Map' Page.
- 2) Press the **TNA Mute** Softkey. The status is displayed in the upper left corner of the 'Map - Traffic Map' Page.

TRAFFIC ADVISORY SYSTEM (TAS)



WARNING: Do not rely solely upon the display of traffic information for collision avoidance maneuvering. The traffic display does not provide collision avoidance resolution advisories and does not under any circumstances or conditions relieve the pilot's responsibility to see and avoid other aircraft.



WARNING: Do not rely solely upon the display of traffic information to accurately depict all of the traffic information within range of the aircraft. Due to lack of equipment, poor signal reception, and/or inaccurate information from other aircraft, traffic may be present but not represented on the display.

Flight Instruments



NOTE: Pilots should be aware of traffic system limitations. Traffic systems require transponders of other aircraft to respond to system interrogations. If the transponders do not respond to interrogations due to phenomena such as antenna shading or marginal transponder performance, traffic may be displayed intermittently, or not at all. Aircraft without altitude reporting capability are shown without altitude separation data or climb descent indication. Pilots should remain vigilant for traffic at all times.

EIS

Nav/Com/XPDR/Audio



NOTE: Mode-S TIS is disabled when another traffic system is installed.

Flight Management



NOTE: If Garmin GTX 345R transponder is installed, refer to the Automatic Dependent Surveillance-Broadcast (ADS-B) Traffic discussion for more information about ADS-B traffic displays.

Hazard Avoidance

AFCS

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Symbol	Description
	Traffic Advisory with ADS-B directional information. Arrow points in the direction of the intruder aircraft track.
	Traffic Advisory without directional information.
	Traffic Advisory with ADS-B directional information is beyond the selected display range. Displayed at outer range ring at proper bearing. Arrow points in the direction of the intruder aircraft track.
	Traffic Advisory out of the selected display range without directional information. Displayed at outer range ring at proper bearing.
	Proximity Advisory with ADS-B directional information. Arrow points in the direction of the aircraft track.
	Proximity Advisory without directional information.
	Other Non-Threat traffic with ADS-B directional information. Arrow points in the direction of the intruder aircraft track.
	Other Non-Threat traffic without directional information.

Symbol	Description
	Traffic located on the ground with ADS-B directional information. Arrow points in the direction of the aircraft track. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.
	Ground traffic without ADS-B directional information. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.
	Non-aircraft ground traffic with ADS-B directional information. Pointed end indicates direction of travel. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.
	Non-aircraft ground traffic without ADS-B directional information. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.

ADS-B Traffic Symbolology with GTX 345R Transponder

TAS Symbol	Description
	Non-Threat Traffic
	Proximity Advisory (PA)
	Traffic Advisory (TA)
	Traffic Advisory Off Scale

TAS Symbol Description with GTX 33 ES Transponder

Testing the traffic system:

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the 'Map - Traffic Map' Page.
- 3) Turn the **Joystick** to set the range to 2/6 nm to allow for full test pattern to be displayed during test.
- 4) Press the **Standby** or **TAS STBY** Softkey.
- 5) Press the **Test** Softkey.

Changing Traffic System Modes on the 'Map - Traffic Map' Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the 'Map - Traffic Map' Page.
- 3) Press the **Operate** or **TAS OPER** or **Normal** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic mode field.
- 4) Press the **Standby** or **TAS STBY** Softkey to place the system in the Standby mode. 'STANDBY' is displayed in the Traffic mode field.

Changing the Altitude Range

- 1) On the 'Map - Traffic Map' Page, press the **ALT Mode** Softkey.
- 2) Press one of the following Softkeys:
 - **Above:** Displays Other Non-Threat and Proximity Advisory traffic from 9900 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.
 - **Normal:** Displays Other Non-Threat and Proximity Advisory traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight.
 - **Below:** Displays Other Non-Threat and Proximity Advisory traffic from 2700 feet above the aircraft to 9900 feet below the aircraft. Typically used during descent phase of flight.
 - **UNREST** (unrestricted): All traffic is displayed from 9900 feet above and 9900 feet below the aircraft.
- 3) To return to the Traffic Page, select the **Back** Softkey.

Changing the Display Range on the 'Map - Traffic Map' Page

- 1) Turn the **Joystick**.
- 2) The following range options are available:
 - 750 ft (with optional ADS-B)
 - 750 ft and 1500 ft (with optional ADS-B)
 - 1500 ft and 0.5 nm (with optional ADS-B)
 - 0.5 nm and 1 nm (with optional ADS-B)
 - 1 nm and 2 nm (with optional ADS-B)
 - 2 nm
 - 2 and 6 nm

- 6 and 12 nm
- 12 and 24 nm
- 24 and 40 nm (available with ADS-B)

Enabling/Disabling Flight ID Display

On the 'Map - Traffic Map' Page, press the **FLT ID** Softkey.

Enabling/Disabling Traffic Information (MFD Maps Other Than the 'Map - Traffic Map' Page)

- 1) Press the **Map Opt** Softkey.
- 2) Press the **Traffic** Softkey. Traffic is now displayed on the map.

Customizing the Traffic Display on the 'Map - Navigation Map' Page

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the small **FMS** Knob to select the Traffic Group and press the **ENT** Key.
- 5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through the selections.
 - Traffic – Turns the display of traffic data on or off
 - Traffic Mode – Selects the traffic mode for display; select from:
 - All Traffic - Displays all traffic
 - TA/PA - Displays only Traffic Advisories and Proximity Advisories
 - TA Only - Displays Traffic Advisories only
 - Traffic Symbols – Selects the maximum range at which traffic symbols are shown
 - Traffic Labels – Selects the maximum range at which traffic labels (relative altitude, vertical trend) are shown with the option to turn off
- 6) Turn the small **FMS** Knob to scroll through options (On/Off, range settings, etc.).
- 7) Press the **ENT** Key to select an option.
- 8) Press the **FMS** Knob or **CLR** Key to return to the 'Map - Navigation Map' Page.

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Enabling/Disabling Traffic Overlay on PFD Navigation Maps

- 1) With the Inset Map or HSI Map displayed, press the **Map/HSI** Softkey on the PFD.
- 2) Press the **Traffic** Softkey to enable/disable the display traffic information.






ADS-B TRAFFIC










WARNING: Do not rely solely upon the display of traffic information for collision avoidance maneuvering. The traffic display does not provide collision avoidance resolution advisories and does not under any circumstances or conditions relieve the pilot's responsibility to see and avoid other aircraft.



WARNING: Do not rely solely upon the display of traffic information to accurately depict all of the traffic information within range of the aircraft. Due to lack of equipment, poor signal reception, and/or inaccurate information from other aircraft, traffic may be present but not represented on the display.

Symbol	Description
	Traffic Advisory with directional information. Points in the direction of the intruder aircraft track.
	Traffic Advisory without directional information.
	Traffic Advisory out of the selected display range with directional information. Displayed at outer range ring at proper bearing.
	Traffic Advisory out of the selected display range without directional information. Displayed at outer range ring at proper bearing.
	Proximity Advisory with directional information. Points in the direction of the aircraft track.

Symbol	Description
	Proximity Advisory without directional information.
	Other Non-Threat traffic with directional information. Points in the direction of the intruder aircraft track.
	Other Non-Threat traffic without directional information.
	Traffic located on the ground with directional information. Points in the direction of the aircraft track. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.
	Ground traffic without directional information. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.
	Non-aircraft ground traffic with ADS-B directional information. Pointed end indicates direction of travel. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.
	Non-aircraft ground traffic without ADS-B directional information. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.

ADS-B Traffic Symbology

Enabling/Disabling the Display of ADS-B Traffic

- 1) Select the 'Map - Traffic Map' Page.
 - 2) Press the **ADS-B** Softkey.
- Or:**
- a) Press the **MENU** Key and turn the small **FMS** Knob to highlight 'ADS-B On' or 'ADS-B Off'.
 - b) Press the **ENT** Key.

Traffic System Test with ADS-B-In

- 1) Select the 'Map - Traffic Map' Page.
- 2) If necessary, turn the Joystick to select a map range of 2 and 6 nm to ensure full test pattern display.
- 3) Ensure the **ADS-B** Softkey is disabled.

- 4) If the optional TAS is installed, ensure the **TAS STBY** Softkey is enabled.
- 5) Press the **Test** Softkey.

Or:

- a) Press the **MENU** Key.
 - b) Turn the small **FMS** Knob to highlight 'Test Mode'.
 - c) Press the **ENT** Key.
- 6) Self test takes approximately ten seconds to complete. When completed successfully, traffic symbols are displayed and a voice alert "Traffic System Test" is heard. If the self test passes the traffic system will revert to Standby Mode, and no failure annunciators will be displayed.

Changing the Altitude Range

- 1) On the 'Map - Traffic Map' Page, press the **ALT Mode** Softkey.
- 2) Select one of the following softkeys:
 - **Above:** Displays Other Non-Threat and proximity traffic from 9900 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.
 - **Normal:** Displays Other Non-Threat and proximity traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight.
 - **Below:** Displays Other Non-Threat and proximity traffic from 2700 feet above the aircraft to 9900 feet below the aircraft. Typically used during descent phase of flight.
 - **UNREST (unrestricted):** All traffic is displayed from 9900 feet above and 9900 feet below the aircraft.
- 3) To return to the 'Map - Traffic Map' Page, select the **Back** Softkey.

Enabling/Disabling the Motion Vector Display

- 1) Select the 'Map - Traffic Map' Page.
- 2) Press the **Motion** Softkey.
- 3) Press one of the following softkeys:
 - **Absolute:** Displays the motion vector pointing in the absolute direction.
 - **Relative:** Displays the motion vector relative to own aircraft
 - **Off:** Disables the display of the motion vector.

Adjusting the Duration for the Motion Vector Projected Time

- 1) Select the 'Map - Traffic Map' Page.
- 2) Press the **Motion** Softkey.
- 3) Press the **Duration** Softkey.
- 4) Press a softkey for the desired duration (**30 SEC, 1 MIN, 2 MIN, 5 MIN**).
- 5) When finished, select the **Back** Softkey to return to the 'Map - Traffic Map' Page.

Showing Additional Traffic Information

- 1) Select the 'Map - Traffic Map' Page.
- 2) Press the **FMS** Knob. A cyan border appears on the first selected traffic symbol. Additional information appears in a window in the lower-left corner of the 'Map - Traffic Map' Page.
- 3) To select a different aircraft symbol, turn the **FMS** Knob to move the cyan border until another symbol is selected.
- 4) When finished, press the **FMS** Knob again to disable the traffic selection.

Changing the Display Range on the 'Map - Traffic Map' Page

- 1) Turn the **Joystick**.
- 2) The following range options are available:
 - 500 feet
 - 500 feet and 1000 feet
 - 1000 feet and 2000 feet
 - 2000 feet and 1 nm
 - 1 and 2 nm
 - 2 and 6 nm
 - 6 and 12 nm
 - 12 and 24 nm
 - 24 and 40 nm

TERRAIN AVOIDANCE (TERRAIN PROXIMITY, TERRAIN-SVT, TAWS)



WARNING: Do not use terrain avoidance displays as the sole source of information for maintaining separation from terrain and obstacles. Garmin obtains terrain and obstacle data from third party sources and cannot independently verify the accuracy of the information.



NOTE: Terrain data is not displayed when the aircraft is outside the installed terrain database coverage area.



NOTE: Terrain and obstacle alerting is not available north of 89° North latitude and south of 89° South latitude. This is due to limitations present within the Terrain database and the system's ability to process the data representing the affected areas.



NOTE: Terrain and obstacle alerting requires the Terrain-SVT or TAWS-B option. No terrain or obstacle alerting occurs for the Terrain Proximity feature.

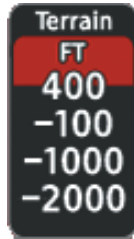
Enabling/disabling relative terrain information on MFD navigation maps

- 1) Press the **Map Opt** Softkey.
- 2) Press the **TER** Softkey to cycle through a terrain option with each press. The selected mode is displayed in cyan: Off, Topo, REL. Press the **TER** Softkey as needed until 'REL' is displayed on the softkey.

Displaying relative terrain information (PFD Maps)

- 1) Press the **Map/HSI** Softkey.
- 2) Press the **Rel Ter** Softkey.

On-Ground Legend



In-Air Legend



Relative Terrain Legends (Terrain Proximity, Terrain-SVT, TAWS-B)

Customizing terrain and obstacle display on the 'Map - Navigation Map' Page:

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Settings' highlighted, press the **ENT** Key.
- 4) Turn the small **FMS** Knob to select the 'Map' Group and press the **ENT** Key.
- 5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
 - Terrain Display – Enables the display of relative ('REL') terrain data or select 'Off' to disable; also sets maximum map range at which terrain is shown.
 - Point Obstacle – Enables/disables the display of point obstacle data and sets maximum range at which point obstacles are shown
 - Wire Obstacle – Enables/disables the display of wire obstacle data and sets maximum range at which wire obstacles are shown
- 6) Turn the small **FMS** Knob to scroll through options for each product (On/Off, range settings, etc.).
- 7) Press the **ENT** Key to select an option.
- 8) Press the **FMS** Knob or **CLR** Key to return to the 'Map - Navigation Map' Page with the changed settings.

Displaying the terrain page (Terrain Proximity, Terrain-SVT, TAWS-B)

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Terrain Proximity, Terrain-SVT, or TAWS-B Page.

Showing/hiding aviation information on the terrain page

- 1) Press the **MENU** Key.
- 2) Turn the **FMS** Knob to highlight 'Show Aviation Data' or 'Hide Aviation Data' (choice dependent on current state) and press the **ENT** Key.

Manually testing the terrain system (TAWS-B only)

- 1) With the aircraft on the ground, select the TAWS-B Page.
- 2) Press the **MENU** Key.
- 3) Turn the FMS Knob to highlight 'Test TAWS System' and press the **ENT** Key to confirm the selection.

Inhibiting/enabling terrain/obstacle alerting (Terrain SVT and TAWS-B only)

- 1) Select the Terrain-SVT or TAWS-B Page.
- 2) Press the **Inhibit** Softkey to inhibit or enable terrain/obstacle alerting.

AUTOMATIC FLIGHT CONTROL SYSTEM



NOTE: If the attitude information required for the default flight director modes becomes invalid or unavailable, the autopilot automatically disengages.

ACTIVATING THE FLIGHT DIRECTOR

An initial press of a key listed in the following table (when the flight director is not active) activates the pilot-side flight director in the listed modes.

Control Pressed	Modes Selected			
	Lateral		Vertical	
FD Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
AP Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
CWS Button	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
GA Button	Go Around	GA	Go Around	GA
ALT Key	Roll Hold (default)	ROL	Altitude Hold	ALT
VS Key	Roll Hold (default)	ROL	Vertical Speed	VS
VNV Key	Roll Hold (default)	ROL	Vertical Path Tracking*	VPTH
NAV Key	Navigation**	GPS VOR LOC	Pitch Hold (default)	PIT
BC Key	Backcourse***	BC	Pitch Hold (default)	PIT
APR Key	Approach**	GPS VOR LOC	Pitch Hold (default)	PIT
HDG Key	Heading Select	HDG	Pitch Hold (default)	PIT

*Valid VNV flight plan must be entered before VNV Key press activates flight director.

**The selected navigation receiver must have a valid VOR or LOC signal or active GPS course before NAV or APR Key press activates flight director.

***The selected navigation receiver must have a valid LOC signal before BC Key press activates flight director.

VERTICAL MODES

Vertical Mode	Description	Control	Annunciation	
Pitch Hold	Holds the current aircraft pitch attitude; may be used to climb/descend to the Selected Altitude	(default)	PIT	
Selected Altitude Capture	Captures the Selected Altitude	*	ALTS	
Altitude Hold	Holds the current Altitude Reference	ALT Key	ALT	nnnnn FT
Vertical Speed	Maintains the current aircraft vertical speed; may be used to climb/descend to the Selected Altitude	VS Key	VS	nnnn FPM
Flight Level Change	Maintains the current aircraft airspeed while the aircraft is climbing/descending to the Selected Altitude	FLC Key	FLC	nnn KT
Level	Commands pitch angle necessary to establish zero feet per minute vertical speed	**	LVL	

* ALTS armed automatically when PIT, VS, FLC, or GA active, and under VPTH when Selected Altitude is to be captured instead of VNAV Target Altitude

** ESP automatically engages LVL Mode

LATERAL MODES

Lateral Mode	Description	Control	Annunciation	
Roll Hold	Holds the current aircraft roll attitude or rolls the wings level, depending on the commanded bank angle	(default)	ROL	
Heading Select	Captures and tracks the Selected Heading	HDG Key	HDG	
Navigation, GPS Arm/ Capture/Track	Captures and tracks the selected navigation source (GPS, VOR, LOC)	NAV Key	GPS	
Navigation, VOR Enroute Arm/Capture/Track			VOR	
Navigation, LOC Arm/ Capture/Track (No Glideslope)			LOC	

Lateral Mode	Description	Control	Annunciation
Level	Maintains wings level	*	LVL

* ESP automatically engages LVL Mode.

COMBINATION MODES (VNV, APR, NAV, BC, GA)

Combination Mode	Description	Control	Annunciation
Vertical Path Tracking	Captures and tracks descent legs of an active vertical profile	VNV Key	VPTH
VNV Target Altitude Capture	Captures the Vertical Navigation (VNV) Target Altitude	*	ALTV
Glidepath	Captures and tracks the SBAS or Baro VNAV glidepath on approach	APR Key	GP
Glideslope	Captures and tracks the ILS glideslope on approach		GS
Backcourse Arm/Capture/Track	Captures and tracks a localizer signal for backcourse approaches	BC Key	BC
Approach, GPS Arm/Capture/Track	Captures and tracks the selected navigation source (GPS, VOR, LOC)	APR Key	GPS
Approach, VOR Arm/Capture/Track			VAPP
Approach, ILS Arm/Capture/Track (Glideslope Mode automatically armed)			LOC
Go Around	Commands a constant pitch angle and wings level in the air	GA Button	GA

* ALTV is armed automatically under VPTH when VNV Target Altitude is to be captured instead of Selected Altitude.

LEVEL MODE WITH (OPTIONAL) ELECTRONIC STABILITY AND PROTECTION

Level (LVL) mode can also become active as a function of the optional Electronic Stability and Protection (ESP) feature.

When the normal flight envelope thresholds have been exceeded for more than 50% of the last 20 seconds, Level mode is activated. The autopilot will engage and provide input to bring the aircraft back into straight and level flight based on zero degrees roll angle and zero feet per minute vertical speed. An aural engaging autopilot alert sounds and the lateral and vertical flight director annunciations will display “LVL”. The AFCS will remain in Level mode until the pilot selects another mode.

OVERSPEED PROTECTION



NOTE: *Overspeed protection is not active in ALT, GS or GP modes.*

While Pitch Hold, Vertical Speed, Flight Level Change, Vertical Path Tracking, or an altitude capture mode is active, airspeed is monitored by the flight director. Overspeed protection is provided to limit the flight director's pitch command in situations where the flight director cannot acquire and maintain the mode reference for the selected vertical mode without exceeding V_{ne} .

When Overspeed Protection is active, the Airspeed Reference appears in a box above the Airspeed Indicator, flashing an amber ‘MAXSPD’ annunciation. Engine power should be reduced and/or the pitch reference adjusted to slow the aircraft. The annunciation disappears when the overspeed condition is resolved.

UNDERSPEED PROTECTION

Underspeed Protection is available when the optional Electronic Stability and Protection (ESP) system is installed and the autopilot is on. It is designed to protect the airplane from stalls. When the aircraft reaches a predetermined airspeed, a yellow MINSPD annunciation will appear above the airspeed indicator.

For airplanes that have ESP installed, the AFCS can detect and protect against underspeed situations while the autopilot is engaged. It is designed to discourage aircraft operation below minimum commandable airspeeds.

Altitude-Critical Modes (ALT, GS, GP, GA, FLC)

As the aircraft slows, within 5 to 10 seconds from reaching stall warning, an aural “AIRSPEED” alert will sound. If the aircraft decelerates to stall warning, the lateral and vertical flight director modes will change from active to armed, and the autopilot will provide input causing the aircraft to pitch down and the wings to level.

An aural “AIRSPEED” alert will sound every five seconds and a red “UNDERSPEED PROTECT ACTIVE” annunciation will appear to the right of the vertical speed indicator. The pitch down force will continue until the aircraft reaches a pitch attitude at which IAS equals the IAS at which stall warning turns off, plus two knots.

USP Airspeeds - Altitude Critical Modes	172	182	206
	KIAS	KIAS	KIAS
	All Flap	All Flap	All Flap
MINSPD Alert Appears	60	61	61
Altitude Critical USP Activation	60	Stall Warning	Stall Warning

USP Activation - Altitude Critical Modes

Non-Altitude Critical Modes (VS, VNAV, PIT, LVL)

When the airspeed trend vector reaches a predetermined airspeed, a single aural “AIRSPEED” will sound, alerting the pilot to the impending underspeed condition. If the aircraft decelerates to an IAS below the minimum commandable autopilot airspeed, a red “UNDERSPEED PROTECT ACTIVE” annunciation will appear to the right of the vertical speed indicator. The vertical flight director mode will change from active to armed, and the autopilot will cause the aircraft to pitch down until reaching a pitch attitude at which IAS equals the minimum commandable autopilot airspeed.

When airspeed increases (as a result of adding power/thrust) to an IAS above the minimum commandable autopilot airspeed, the autopilot will cause the aircraft to pitch up until recapturing the vertical reference. The vertical flight director mode will change from armed to active.

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Flight Instruments	USP Airspeeds - Non Altitude Critical Modes	172	182	206
		KIAS	KIAS	KIAS
		All Flap	All Flap	All Flap
EIS	MINSPD Alert Appears	60	61	61
	Non-Altitude Critical USP Activation	60	61	61

USP Activation - Non Altitude Critical Modes

SUSPECTED AUTOPILOT MALFUNCTION



NOTE: Consult the aircraft documentation for the location of circuit breakers as well as specifics that may supplement or amplify this procedure.

If an autopilot failure or trim failure is suspected to have occurred, perform the following steps:

- 1) Firmly grasp the control wheel.
- 2) Press and hold the **AP DISC** Button. The autopilot will disconnect and power is removed from the trim motor. Power is also removed from all primary servo motors and engaged solenoids. Note the visual and aural alerting indicating autopilot disconnect.
- 3) Retrim the aircraft as needed. Substantial trim adjustment may be needed.
- 4) Pull the appropriate circuit breaker(s) to electrically isolate the servo and solenoid components.
- 5) Release the **AP DISC** Button.

LEVEL MODE

Level (LVL) mode also becomes active as a function of Electronic Stability and Protection (ESP). Refer to the Additional Features section for information on the optional ESP feature.

When the normal flight envelope thresholds have been exceeded for more than 50% of the last 20 seconds, Level mode is activated. The autopilot will engage and provide input to bring the aircraft back into straight and level flight based on zero degrees roll angle and zero feet per minute vertical speed. An aural engaging autopilot alert sounds and the lateral and vertical flight director annunciations will display “LVL”. The AFCS will remain in Level mode until the pilot selects another mode.

OVERPOWERING AUTOPILOT SERVOS

In the context of this discussion, “overpowering” refers to any pressure or force applied to the pitch controls when the autopilot is engaged. A small amount of pressure or force on the pitch controls can cause the autopilot automatic trim to run to an out-of-trim condition. Therefore, any application of pressure or force to the controls should be avoided when the autopilot is engaged.

Overpowering the autopilot during flight will cause the autopilot’s automatic trim to run, resulting in an out-of-trim condition or cause the trim to hit the stop if the action is prolonged. In this case, larger than anticipated control forces are required after the autopilot is disengaged.

The following items should be added to the preflight check:

Verify the means of autopilot disconnect.

In the event of an autopilot disconnect failure, verify that the autopilot can be overridden.

REVERSIONARY MODE

In the event of a PFD failure, the MFD automatically goes into reversionary mode. The autopilot will disconnect and the aural disconnect alert will sound continuously until canceled with the **AP DISC** Button.

In the event of an MFD failure, the PFD automatically goes into reversionary mode and the autopilot will continue to operate in previously selected modes. Autopilot and Flight Director mode selection is available with the AFCS Keys on the bezel of the PFD.

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ADDITIONAL FEATURES

TERMINAL PROCEDURE CHARTS



NOTE: *With the availability of SafeTaxi®, ChartView, or FliteCharts®, it may be necessary to carry another source of charts on-board the aircraft.*

SafeTaxi®

SafeTaxi® is an enhanced feature that gives greater map detail as the map range is adjusted in on the airport. The airport display on the map reveals runways with numbers, taxiways identifiers, and airport landmarks including ramps, buildings, control towers, and other prominent features. Resolution is greater at lower map ranges. The aircraft symbol provides situational awareness while taxiing.

Pressing the DCLTR Softkey (declutter) once removes the taxiway markings and airport identification labels. Pressing the DCLTR Softkey twice removes VOR station ID, the VOR symbol, and intersection names if within the airport plan view. Pressing the DCLTR Softkey a third time removes the airport runway layout, unless the airport in view is part of an active route structure. Pressing the DCLTR Softkey again cycles back to the original map detail.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams provide the pilot with situational awareness by displaying the aircraft position in relation to taxiways, ramps, runways, terminals, and services. This information should not be used by the pilot as the basis for maneuvering the aircraft on the ground. This database is updated on a 56-day cycle.

ChartView

ChartView resembles the paper version of Jeppesen terminal procedures charts. The charts are displayed in full color with high-resolution. The MFD depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function.

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FliteCharts®

FliteCharts® resemble the paper version of AeroNav Services terminal procedures charts. The charts are displayed with high-resolution and in color for applicable charts. The MFD depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The FliteCharts database contains procedure charts for the United States only. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

Selecting Terminal Procedures Charts:

While viewing the Navigation Map Page, Nearest Airport Page, or Flight Plan Page, select the **Charts** Softkey.

Or:

- 1) Press the **MENU** Key to display the Page Menu.
- 2) Turn the large **FMS** Knob to scroll through the Options Menu to Charts.
- 3) Press the **ENT** Key to display the chart.

Selecting Additional Information:

- 1) While viewing the Airport Taxi Diagram, select the **WX** Softkey to display the information windows (AIRPORT, INFO).
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the INFO Box.
- 4) Turn the small **FMS** Knob to select the INFO Box choices. When the INFO Box is selected the G1000NXi softkeys are blank. If multiple choices are available, scroll to the desired choice with the large **FMS** Knob and press the **ENT** Key to complete the selection.
- 5) Press the **FMS** Knob again to deactivate the cursor.

Selecting full screen On or Off:

- 1) While viewing a terminal chart press the **MENU** Key to display the Page Menu OPTIONS.
- 2) Turn the large **FMS** Knob to highlight the Chart Setup Menu Option and press the **ENT** Key.

- 3) Turn the large **FMS** Knob to move between the Full Screen and Color Scheme Options.
- 4) Turn the small **FMS** Knob to choose between the On and Off Full Screen Options.

Selecting Day, Night, or Automatic View:

- 1) While viewing a terminal chart press the **MENU** Key to display the Page Menu OPTIONS.
- 2) Turn the large **FMS** Knob to highlight the Chart Setup Menu Option and press the **ENT** Key.
- 3) Turn the large **FMS** Knob to move to the Color Scheme Option.
- 4) Turn the small **FMS** Knob to choose between Day, Auto, and Night Options.
- 5) If Auto Mode is selected, turn the large **FMS** Knob to select the percentage field. Use the small **FMS** Knob to change the percentage value. The percentage value is the day/night crossover point based on the percentage of backlighting intensity. For example, if the value is set to 15%, the day/night display changes when the display backlight reaches 15% of full brightness.

The display must be changed in order for the new setting to become active. This may be accomplished by selecting another page or changing the display range.

- 6) Press the **FMS** Knob when finished to remove the Chart Setup Menu.

IFR/VFR Charts

IFR/VFR charts resemble the paper version and are displayed with high-resolution and in color for applicable charts.

Selecting IFR Low, IFR High, VFR Charts

- 1) Select the 'Map - IFR/VFR Charts' Page.
- 2) Press the **VFR**, **IFR Low**, or **IFR High** Softkey to display the desired chart.

AIRPORT DIRECTORY

The Aircraft Owners and Pilots Association (AOPA) or AC-U-KWIK Airport Directory database offers detailed information regarding services, hours of operation, lodging options, and more for various airports. This information is viewed on the WPT-Airport Information Page.

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The Airport Directory databases are revised every 56 days. The Airport Directory is always available for use after the expiration date. Check fly.garmin.com for the current database.

Selecting the Airport Directory Page:

- 1) Turn the large **FMS** Knob to select the 'WPT' page group.
- 2) Turn the small **FMS** Knob to select the Airport Information Page. Initially, information for the airport closest to the aircraft's present position is displayed.
- 3) If necessary, select the Info softkey until **Info 2** is displayed.

SIRIUSXM™ RADIO ENTERTAINMENT

The XM Radio Page provides information and control of the audio entertainment features of the SiriusXM™ Satellite Radio.

Selecting the XM Radio Page

- 1) Turn the large **FMS** Knob to select the Auxiliary Page Group.
- 2) Turn the small **FMS** Knob to select the displayed Aux - XM Radio Page.

Active Channel and Channel List

The Active Channel Box on the XM Radio Page displays the currently selected channel. The Channels List Box of the XM Radio Page shows a list of the available channels for the selected category.

Selecting a channel from the channel list:

- 1) While on the XM Radio Page, select the **Channel** Softkey.
- 2) Select the **CH +** Softkey to go up through the list in the Channel Box, or move down the list with the **CH –** Softkey.

Or:

- 1) Press the **FMS** Knob to highlight the channel list and turn the large **FMS** Knob to scroll through the channels.
- 2) Press the **ENT** Key to activate the selected channel.

Selecting a channel directly:

- 1) While on the XM Radio Page, select the **Channel** Softkey.
- 2) Select the **Direct CH** Softkey. The channel number in the Active Channel Box is highlighted.
- 3) Select the numbered softkeys located on the bottom of the display to directly select the desired channel number.
- 4) Press the **ENT** Key to activate the selected channel.

Selecting a Category

The Category Box of the XM Radio Page displays the currently selected category of audio.

- 1) Select the **Category** Softkey on the XM Radio Page.
- 2) Select the **CAT +** and **CAT -** Softkeys to cycle through the categories.

Or:

Turn the small **FMS** Knob to display the Categories list. Highlight the desired category with the small **FMS** Knob and press the **ENT** Key. Selecting All Categories places all channels in the list.

Setting a preset channel number:

- 1) On the XM Radio Page, while listening to an Active Channel that is wanted for a preset, select the **Presets** Softkey to access the first five preset channels (**Preset 1 - Preset 5**).
- 2) Select the **More** Softkey to access the next five channels (**Preset 6 – Preset 10**), and again to access the last five channels (**Preset 11 – Preset 15**). Selecting the **More** Softkey repeatedly cycles through the preset channels.
- 3) Select any one of the (**Preset 1 - Preset 15**) softkeys to assign a number to the active channel.
- 4) Select the **Set** Softkey on the desired channel number to save the channel as a preset.

Adjusting Volume

- 1) With the XM Radio Page displayed, select the **Volume** Softkey.
- 2) Select the **VOL –** Softkey to reduce volume or select the **VOL +** Softkey to increase volume. (Once the **VOL** Softkey is selected, the volume can also be adjusted using the small **FMS** Knob.)

SiriusXM Radio volume may also be adjusted on each passenger headset.

Mute SiriusXM audio:

- 1) Select the XM Radio Page or XM Information Page.
- 2) Select the **Mute** Softkey to mute the audio. Select the **Mute** Softkey again to unmute the audio.



SATELLITE TELEPHONE


















Disabling/enabling telephone and low speed data services:

- 1) Turn the large **FMS** Knob on the MFD to select the Aux page group.
- 2) Turn the small **FMS** Knob to select the 'Aux - Telephone' Page.
- 3) Press the **MENU** Key. The Page Menu window is now displayed.
- 4) Turn the **FMS** Knob to select 'Disable Iridium Transmission' in the menu list.
- 5) Press the **ENT** Key. The Iridium transceiver is now disabled.
- 6) To enable the Iridium transceiver, repeat steps 1 through 3, then select 'Enable Iridium Transceiver'.

Viewing the Telephone Page:

- 1) Turn the large **FMS** Knob on the MFD to select the Aux page group.
- 2) Turn the small **FMS** Knob to select the 'Aux - Telephone' or 'Aux - Text Messaging' Page.
- 3) If necessary, press the **Phone** Softkey to display the 'Aux - Telephone' Page.

Internal Phone	External Phone	Description
		Phone is Idle

Internal Phone	External Phone	Description
 Ringing	 Ringing	Phone is ringing
 Connected	 Connected	Phone has a dial tone (off hook) or connected to another phone
 Busy	 Busy	Phone dialed is busy
 Dialing	 Dialing	Phone is dialing another phone
 Failed	 Failed	Phone has failed
 Status not known	 Status not known	Phone status not known
	 Disabled	Phone is disabled
	 DATA TX	Phone is reserved for data transmission
		Calling other phone or incoming call from other phone
		Other phone is on hold
		Phones are connected

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Entering a new contact:

- 1) With the 'Aux - Telephone' Page displayed, push the **FMS** Knob to display the cursor.
- 2) If necessary, turn either **FMS** Knob to place the cursor on 'New Entry'.
- 3) Press the **ENT** Key. The cursor moves the 'Name' field of the 'Contact Details' Window.
- 4) Enter the desired name of the new contact. Entry can be accomplished through the **FMS** Knob on the MFD.
- 5) Press the **ENT** Key. The cursor moves to the 'Phone Number' Field.
- 6) Enter the desired telephone number. Entry can be accomplished through the **FMS** Knob on the MFD.
- 7) Press the **ENT** Key. The cursor moves to the 'Email' field.
- 8) Enter the desired email address. Entry can be accomplished through the **FMS** Knob on the MFD.
- 9) Press the **ENT** Key. The **Save** button is highlighted.
- 10) Press the **ENT** Key. The new contact entry is added to the list of saved contacts.

Delete a contact:

- 1) With the 'Aux - Telephone' Page displayed, press the **FMS** Knob to display the cursor.
- 2) Turn either **FMS** Knob to place the cursor on the desired contact name.
- 3) Press the **Delete** Softkey. A confirmation window is displayed.
- 4) With 'OK' highlighted, press the **ENT** Key to delete the selected contact.

Editing a contact:

- 1) With the 'Aux - Telephone Page' displayed, push the **FMS** Knob to display the cursor.
- 2) Turn either **FMS** Knob to place the cursor on the desired contact name.
- 3) Press the **Edit** Softkey. The cursor is placed in the 'Name' field. Enter the desired changes. Entry can be accomplished through the **FMS** Knob the MFD.

- 4) Press the **ENT** Key when each field is complete. The **Save** Button is now highlighted.
- 5) Press the **ENT** Key to save the changes.

Incoming Calls



NOTE: The Push-to-Talk switch is not utilized for telephone communication. The microphone is active after pressing the **Answer** Softkey, and stays active until the call is terminated.

Answering an incoming call in the cockpit:

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Press the **Answer** Softkey on the MFD.

Pressing the **Ignore** Softkey will extinguish the pop-up window and leave the call unanswered. Pressing the **Phone** Softkey will display the 'Aux - Telephone' Page allowing additional call information to be viewed before answering.

Muting incoming call alerts:

- 1) With the 'Aux - Telephone' Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
- 2) Turn either **FMS** Knob to place the cursor on 'Disable Incoming Call Alerts'.
- 3) Press the **ENT** Key. The voice and pop-up alert will not be displayed now when an incoming call is received.

Outgoing Calls

Voice calls can be made from the cockpit to the handset in the cabin, or to an external phone through the Iridium Satellite Network.

Making a call to the cabin:

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Press the **Dial** Softkey on the MFD.
- 3) Press the **ENT** Key. The cursor will move from 'Cabin' to 'OK'.
- 4) Press the **ENT** Key again. The cabin phone will now ring.

To exit the call, press the **Hangup** Softkey.

Making an external call from the cockpit using the Iridium satellite network:

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Press the **Dial** Softkey on the MFD.
- 3) Turn the small **FMS** Knob to select 'Iridium'.
- 4) Press the **ENT** Key. The cursor has now moved to the phone number entry field.
- 5) Enter the desired telephone number (country code first) by pressing the number softkeys on the MFD or by pressing the numeric keys on the MFD Control Unit.
- 6) Press the **ENT** Key. 'OK' is highlighted.
- 7) Press the **ENT** Key. The system will begin calling the number.
To exit the call, press the **Hangup** Softkey.

Making an external call from the cockpit by using the Contact List:

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the small **FMS** Knob to select the desired contact name in the list of contacts.
- 4) Press the **Call** Softkey. The external call is initiated and the number associated with the contact name is dialed.

Placing a call on hold:

Press the **Hold** Softkey on the MFD.

Transferring a call:








- 1) Press the **Trans** Softkey on the MFD.
- 2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
- 3) Enter the phone number to which the call is being transferred, as discussed earlier for making an external call on the Iridium satellite network.
- 4) Press the **ENT** Key. 'OK' is now highlighted.
- 5) Press the **ENT** Key again to place the call.

Adding another phone to an active call:

- 1) Press the **Conf** Softkey on the MFD.
- 2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
- 3) Enter the phone number to be added to the call, as discussed earlier for making an external call on the Iridium satellite network.
- 4) Press the **ENT** Key. 'OK' is now highlighted.
- 5) Press the **ENT** Key again to place the call.

Viewing the Text Messaging Page:

- 1) Turn the large **FMS** Knob on the MFD to select the Aux page group.
- 2) Turn the small **FMS** Knob to select the 'Aux - Telephone' or 'Aux - Text Messaging' Page.
- 3) If necessary, press the **SMS** Softkey to display the 'Aux - Text Messaging' Page.

Message Symbol	Description
	Received text message that has not been opened
	Received text message that has been opened
	Saved text message, draft not sent
	System is sending text message
	Text message has been sent
	System failed to send text message
	Predefined text message

Text Message Symbols

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- EIS
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Viewing a Text Message When Received

Press the **View** Softkey to view the message. Pressing the **Ignore** Softkey will extinguish the pop-up window and leave the text message unopened. Pressing the **Ignore All** Softkey will extinguish the pop-window and ignore all future incoming text messages. Pressing the **SMS** Softkey will display the 'Aux - Text Messaging' Page.

Enabling/disabling incoming text message pop-up alerts:

- 1) With the 'Aux - Text Messaging' Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
- 2) Turn either **FMS** Knob to place the cursor on 'Disable New Message Popups' or 'Enable New Message Popups'.
- 3) Press the **ENT** Key. The pop-up alert will not be displayed when an incoming text message is received.

Replying to a text message:

While viewing the text message, press the **Reply** Softkey.

Sending a new text message:

- 1) While viewing the 'Aux - Text Messaging' Page, press the **New** Softkey.
- 2) Turn either **FMS** Knob to place the cursor on 'Draft New Message'.
- 3) Press the **ENT** Key.
- 4) The 'SMS Text Message Draft' Window is now displayed with the cursor in the 'To' field. Enter the desired telephone number or email address. Entry can be accomplished through the **FMS** Knob or the softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by pressing the **Numbers** Softkey. Press the **CapsLock** Softkey to create upper and lower case alpha characters. Special characters can be accessed by pressing the **Symbols** Softkey.
- 5) Press the **ENT** Key. The cursor is now displayed in the 'Message' field.
- 6) Enter the desired message using any combination of entry methods as described in step 2.
- 7) Press the **ENT** Key.

- 8) Press the **Send** Softkey to send the message immediately, or press the **Save** Softkey to save the message in Outbox for sending at a later time. Press the **Cancel** Softkey to delete the message.

Creating a predefined text message:

- 1) Press the **MENU** Key to display the Page Menu.
- 2) Turn either **FMS** Knob to place the cursor on 'Draft New Predefined Message'.
- 3) Press the **ENT** Key. The 'Predefined SMS Text Message' Window is now displayed.
- 4) The cursor is displayed in the 'Title' field. Enter the desired message title using a combination of the **FMS** Knob or softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by pressing the **Numbers** Softkey. Press the **CapsLock** Softkey to create upper and lower case alpha characters. Special characters can be accessed by pressing the **Symbols** Softkey.
- 5) Press the **ENT** Key. The cursor is now displayed in the 'Message' field.
- 6) Enter the desired message using any combination of entry methods as described in step 5.
- 7) Press the **ENT** Key.
- 8) Press the **Save** Softkey. The new predefined message is now shown in the displayed list. Pressing the **Cancel** Softkey will delete the message without saving.
- 9) Press the **MENU** Key to display the Page Menu.
- 10) Turn either **FMS** Knob to place the cursor on 'Cancel Drafting Message'.
- 11) Press the **ENT** Key.

Sending a predefined text message:

- 1) While viewing the 'Aux-Text Messaging' Page, select the **New** Softkey.
- 2) The Predefined SMS Text Message Window is now displayed with the cursor in the 'To' field. Enter the desired telephone number or email address. Entry can be accomplished through the **FMS** Knob and softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by pressing the **Numbers** Softkey. Press the **CapsLock** Softkey to create upper and lower case alpha characters. Special characters can be accessed by pressing the **Symbols** Softkey.
- 3) Press the **ENT** Key. The cursor is now displayed in the 'Message' field.
- 4) Press the **Predefined** Softkey. The Predefined Message Menu Window is displayed.
- 5) Turn either **FMS** Knob to select the desired predefined message.
- 6) Press the **ENT** Key. The predefined message text is inserted into the message field. If desired, the message can be edited by using the **FMS** Knobs.
- 7) Press the **ENT** Key.
- 8) Press the **Send** Softkey to transmit the message.

Showing Inbox messages:

While viewing the 'Aux - Text Messaging' Page, press the **Arrange** Softkey, then press the **Inbox** Softkey.

Showing Outbox messages:

While viewing the 'Aux - Text Messaging' Page, press the **Arrange** Softkey, then press the **Outbox** Softkey.

Showing Draft messages:

While viewing the 'Aux - Text Messaging' Page, press the **Arrange** Softkey, then press the **Drafts** Softkey.

Viewing messages sorted by message date/time:

While viewing the 'Aux - Text Messaging' Page, press the **Arrange** Softkey, then press the **Time** Softkey.

Viewing messages sorted by message type:

While viewing the 'Aux - Text Messaging' Page, press the **Arrange** Softkey, then press the **Type** Softkey.

Viewing messages sorted by address:

While viewing the 'Aux - Text Messaging' Page, press the **Arrange** Softkey, then press the **Address** Softkey.

Viewing the content of a text message:

- 1) While viewing the 'Aux - Text Messaging' Page, select the desired message box.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn either **FMS** Knob to select the desired message.
- 4) Press the **VIEW** Softkey.

Or:

Press the **ENT** Key. Message content is displayed.

- 5) To close the text message, press the **Close** Softkey.

Marking selected message as read:

- 1) While viewing the Inbox on the 'Aux - Text Messaging' Page, press the **FMS** Knob to activate the cursor.
- 2) Turn either **FMS** Knob to select the desired message.
- 3) Press the **MRK Read** Softkey.

The message symbol now indicates the message has been opened.

Marking all messages as read:

- 1) While viewing the Inbox on the 'Aux - Text Messaging' Page, press the **MENU** Key to display the Page Menu.
- 2) Turn either **FMS** Knob to place the cursor on 'Mark All New Messages As Read'.
- 3) Press the **ENT** Key. A confirmation window is displayed.
- 4) With cursor highlighting 'YES', press the **ENT** Key. The message symbols now indicate all the message have been opened.

Deleting a message:

- 1) While viewing the Inbox on the 'Aux - Text Messaging' Page, press the **FMS** Knob to activate the cursor.
- 2) Turn either **FMS** Knob to select the desired message.
- 3) Press the **Delete** Softkey.

SCHEDULER

The Scheduler feature can be used to enter and display reminder messages (e.g., Change oil, Switch fuel tanks, or Altimeter-Transponder Check) in the Alerts Window on the PFD. Messages can be set to display based on a specific date and time (event), once the message timer reaches zero (one-time; default setting), or recurrently whenever the message timer reaches zero (periodic). Message timers set to periodic alerting automatically reset to the original timer value once the message is displayed. When power is cycled, all messages are retained until deleted, and message timer countdown is resumed

Entering a scheduler message:

- 1) Select the Aux - Utility Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the first empty scheduler message naming field.
- 4) Use the **FMS** Knob to enter the message text to be displayed in the Messages Window and press the **ENT** Key.
- 5) Press the **ENT** Key again or use the large **FMS** Knob to move the cursor to the field next to Type.
- 6) Turn the small **FMS** Knob to select the message type:
 - Event—Message issued at the specified date/time
 - One time—Message issued when the message timer reaches zero (default setting)
 - Periodic—Message issued each time the message timer reaches zero
- 7) Press the **ENT** Key again or use the large **FMS** Knob to move the cursor to the next field.
- 8) For periodic and one-time messages, use the **FMS** Knob to enter the timer value (HHH:MM:SS) from which to countdown and press the **ENT** Key.

- 9) For event-based messages:
 - a) Use the **FMS** Knob to enter the desired date (DD-MM-YY) and press the **ENT** Key.
 - b) Press the **ENT** Key again or use the large **FMS** Knob to move the cursor to the next field.
 - c) Use the **FMS** Knob to enter the desired time (HH:MM) and press the **ENT** Key.
- 10) Press the **ENT** Key again or use the large **FMS** Knob to move the cursor to enter the next message.

Deleting a scheduler message:

- 1) Select the Aux - Utility Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the name field of the scheduler message to be deleted.
- 4) Press the **CLR** Key to clear the message text. If the **CLR** Key is pressed again, the message is restored.
- 5) Press the **ENT** Key while the message line is cleared to clear the message time.

SURFACEWATCH (OPTIONAL)

The SurfaceWatch™ feature provides aural and visual annunciations to help the flight crew maintain situational awareness and avoid potential runway incursions and excursions during ground and air operations in the airport environment.

Inhibiting/Uninhibiting SurfaceWatch

- 1) Select the Aux - System Setup 1 Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the SurfaceWatch field.
- 4) Turn the small **FMS** Knob to toggle the SurfaceWatch alerts on or off.

Entering origin/destination airport

- 1) Select the FPL - SurfaceWatch Setup Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.

- 3) Turn the large **FMS** Knob if necessary to highlight the Origin or Destination Airport field.
- 4) Use the **FMS** Knobs to input the desired Origin or Destination Airport.

Selecting origin/destination runway

- 1) Select the FPL - SurfaceWatch Setup Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob if necessary to highlight the Runway or Landing Runway field.
- 4) Turn the small **FMS** Knob to select the desired available Runway or Landing Runway. As the small **FMS** Knob is turned, the preview of the selected runway or landing runway is also displayed.

Selecting required takeoff/landing distance

- 1) Select the FPL - SurfaceWatch Setup Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob if necessary to highlight the REQD Takeoff DIS or REQD Landing DIS field.
- 4) Use the **FMS** Knobs to enter the required takeoff or landing distance. Upon pressing the **FMS** Knob and committing the required takeoff or landing distance, the Runway Length field will turn amber if an insufficient runway length exists.

CONNEXT BLUETOOTH® MANAGEMENT

The Connex Setup Page allows for setting up the installed optional Flight Stream device for a Bluetooth connection between the system and a mobile device running the Garmin Pilot™ application.

The mobile device must be 'paired' with the system in order to use the various functions. Pairing is accomplished by first placing the system in pairing mode by displaying the Connex Setup Page. The system is 'discoverable' whenever this page is displayed. The pairing operation is completed from the mobile device and the Garmin Pilot application. See the device Bluetooth pairing instructions and the connection instructions in the Garmin Pilot application.

Viewing the Connex Setup Page

- 1) Turn the large **FMS** Knob on the MFD to select the Aux page group.
- 2) Turn the small **FMS** Knob to select the Connex Setup page.

Changing the Bluetooth Name

- 1) While viewing the Connex Setup Page, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to place the cursor in the 'Bluetooth Name' field.
- 3) Enter the desired name by using the large **FMS** Knob to select the character field, and the small **FMS** Knob select the desired alphanumeric character for that field.
- 4) Press the **ENT** Key. The cursor is removed and the new name is displayed.

Enabling/Disabling Flight Plan Importing from Garmin Pilot

- 1) While viewing the Connex Setup Page, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to place the cursor in the 'Flight Plan Import' field.
- 3) Turn the small **FMS** Knob to select 'Enabled' or 'Disabled'.
- 4) Press the **FMS** Knob to remove the cursor.

Enabling/Disabling Automatic Reconnection of a Specific Paired Device

- 1) While viewing the Connex Setup Page, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to highlight the desired paired device.
- 3) Turn the small **FMS** Knob to select 'Enabled' or 'Disabled'. Selecting 'Enabled' allows the system to automatically connect to a previously paired device when detected.
- 4) Press the **FMS** Knob to remove the cursor.

Remove a Specific Paired Device from the List of Paired Devices:

- 1) While viewing the Connex Setup Page, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to highlight the desired paired device.
- 3) Press the **Remove** Softkey. A confirmation screen is displayed.

- 4) If necessary, turn the large **FMS** Knob to select 'YES'.
- 5) Press the **ENT** Key to remove the device from the list of paired devices.

ELECTRONIC CHECKLISTS



NOTE: The checklists presented here are for example only and may not reflect checklists actually available for the Cessna NAV III Aircraft. This material is not intended to replace the checklist information presented in the AFM or the Pilot Safety and Warning Supplements document.



NOTE: Garmin is not responsible for the content of checklists. Cessna NAV III Aircraft checklists are created, modified, and updated by the aircraft manufacturer.

The optional checklist functions are displayed on two levels of softkeys that are available on any MFD page.

The MFD is able to display optional electronic checklists which allow a pilot to quickly find the proper procedure on the ground and during each phase of flight. The system accesses the checklists from an SD card inserted into the bezel slot. If the SD card contains an invalid checklist file or no checklist, the Power-up Page messages display 'Checklist File: Invalid' or 'Checklist File: N/A (not available)' and the

Checklist Softkey is not available.

Accessing and navigating checklists:

- 1) From any page on the MFD, press the **Checklist** Softkey or turn the large **FMS** Knob to select the Checklist Page.
- 2) Turn the large **FMS** Knob to select the 'Group' field.
- 3) Turn the small **FMS** Knob to select the desired procedure and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to select the 'Checklist' field.
- 5) Turn the **FMS** Knob to select the desired checklist and press the **ENT** Key. The selected checklist item is indicated with white text surrounded by a white box.

- 6) Press the **ENT** Key or **Check** Softkey to check the selected checklist item. The line item turns green and a checkmark is placed in the associated box. The next line item is automatically selected for checking.

Either **FMS** Knob can be used to scroll through the checklist and select the desired checklist item.

Press the **CLR** Key or **Uncheck** Softkey to remove a check mark from an item.

- 7) When all checklist items have been checked, '*Checklist Finished*' is displayed in green text at the bottom left of the checklist window. If all items in the checklist have not be checked, '*CHECKLIST NOT FINISHED*' will be displayed in yellow text.
- 8) Press the **ENT** Key. 'GO TO NEXT CHECKLIST?' will be highlighted by the cursor.
- 9) Press the **ENT** Key to advance to the next checklist.
- 10) Press the **EXIT** Softkey to exit the Checklist Page and return to the page last viewed.

Immediately Accessing Emergency Procedures

- 1) From any page on the MFD, press the **Checklist** Softkey or turn the large **FMS** Knob to select the Checklist Page.
- 2) Press the **Emergency** Softkey.
- 3) Turn the **FMS** Knob to select the desired emergency checklist and press the **ENT** Key.

- 4) Press the **ENT** Key or **Check** Softkey to check the selected emergency checklist item. The line item turns green and a checkmark is placed in the box next to it. The next line item is automatically highlighted for checking. Either **FMS** Knob can be used to scroll through the checklist and select the desired checklist item.

Press the **CLR** Key or **Uncheck** Softkey to remove a check mark from an item.

- 5) When all checklist items have been checked, '*Checklist Finished*' is displayed in green text at the bottom left of the checklist window. If all items in the checklist have not be checked, '*CHECKLIST NOT FINISHED*' will be displayed in yellow text.

- 6) Press the **ENT** Key. 'GO TO NEXT CHECKLIST?' will be highlighted by the cursor.
- 7) Press the **ENT** Key to advance to the next checklist.
- 8) Press the **Return** Softkey to return to the previous checklist.
- 9) Press the **Exit** Softkey to exit the Checklist Page and return to the page last viewed.

AUXILIARY VIDEO (OPTIONAL)

There are four modes of operation of the optional auxiliary video display: Full-Screen, Full-Screen with Digital Zoom, Split-Screen with Map, and Split-Screen with Map and Digital Zoom.

Displaying auxiliary video:

- 1) Turn the large **FMS** Knob to select the Aux page group.
- 2) Turn the small **FMS** Knob to select Video and display the Aux-Video Page.

Selecting video menu options:

- 1) While viewing the Aux - Video Page press the **MENU** Key to display the Page Menu Options.
- 2) Turn the large **FMS** Knob to highlight the desired video adjustment option and press the **ENT** Key.

Once the **ENT** key is pressed on any option, the page menu closes and returns to the Aux - Video Page.

Video Setup

Video brightness, contrast, and saturation may be adjusted by selecting the setup function. While viewing the setup function softkeys, after 45 seconds of softkey inactivity, the system reverts to the Aux - Video Page softkeys.

Adjusting the video settings:

- 1) With the Aux-Video Page displayed, press the **Setup** Softkey.
- 2) Press the **Bright -** or **Bright +**, to adjust display brightness in five percent increments from 0 to 100%.
- 3) Press the **Contrast-** or **Contrast +**, to adjust display contrast in five percent increments from 0 to 100%.

- 4) Press the **SAT -** or **SAT +**, to adjust display saturation in five percent increments from 0 to 100%.
- 5) If desired, return the display to the default settings by pressing the **Reset** Softkey.
- 6) Press the **Back** Softkey to return to the previous softkey level.

Display Selection

Pressing the **Hide Map** Softkey removes the map and displays video on the full screen. The softkey label changes to grey with black characters. Pressing the **Hide Map** Softkey again restores the map view and the small video image. The softkey label returns to white characters on a black background.

Zoom/Range

Pressing the **Zoom +** or **Zoom -** Softkeys increases or decreases video display magnification between 1x and 10x.

The **RANGE** Knob can be used to increase or decrease the range setting on the map display or zoom in and out on the video display. While in the Split-Screen mode, pressing the **Map Actv** or **Vid Actv** Softkey determines which display the **RANGE** Knob adjusts. Pressing the softkey to display Map Actv allows the **RANGE** Knob to control the range setting of the map display. Pressing the softkey to display Vid Actv allows the **RANGE** Knob to control the zoom setting of the video display.

Input Selection

While on the Aux - Video Page, press the **Input** Softkey to select the EVS or Aux video source.



NOTE: Images provided on the Aux-Video page are for supplemental use only.

ELECTRONIC STABILITY AND PROTECTION (ESP™) (OPTIONAL)



NOTE: ESP is designed to be a safety enhancement feature. ESP is not a full authority, envelope protection system.



NOTE: ESP is designed to discourage exceeding the normal flight envelope. It is not designed or capable of performing the necessary recovery procedures required due to encounters with adverse flight conditions and environments.

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Electronic Stability and Protection (ESP™) is an optional feature that is intended to discourage the exceedance of attitude and established airspeed parameters. This feature will only function when the aircraft is above 200 feet AGL and the autopilot is not engaged.

Aircraft equipped with Garmin Electronic Stability and Protection (ESP) will display “Electronic Stability and Protection System; Garmin ESP” on the power-up page. Aircraft without ESP will not have any ESP indication.



With ESP (reference)



Without ESP (reference)

MFD Power-up Page Examples

ESP engages when the aircraft exceeds one or more conditions beyond the normal flight envelope (pitch, roll, VNE, or impending stall). Enhanced stability for each condition is provided by applying a force to the appropriate control surface to return the aircraft to the normal flight envelope. This is perceived by the pilot as resistance to control movement in the undesired direction when the aircraft approaches a steep attitude, high speed, or impending stall condition.

The ESP feature will only function when the aircraft meets the following conditions:

The aircraft is in flight. The system infers this by speed. If the aircraft GPS ground speed is over 30 knots, or True Airspeed is over 50 Knots.

The aircraft is above 200 feet AGL (GPS Altitude), if GPS altitude is available.

The autopilot is not engaged, meaning the pilot is “hand flying.”

The Aircraft is within the maximum engagement limit range defined as Pitch ($\pm 50^\circ$) and Bank ($\pm 75^\circ$).

ESP is automatically enabled above 200 ft AGL using GPS altitude. If a Loss of GPS Integrity (LOI) occurs ESP will default to enabled, however low speed ESP functions will be disabled.

As the aircraft deviates further from the normal attitude and/or airspeed, the force increases (up to an established maximum) to encourage control movement in the direction necessary to return to the normal attitude and/or airspeed range. For all conditions except for high airspeed, once maximum force is reached, force remains constant up to the maximum engagement limit. Above the maximum engagement limit, forces are no longer applied. There is no maximum engagement limit associated with high airspeed.

When ESP has been engaged for more than ten seconds (cumulative; not necessarily consecutive seconds) of a 20-second interval, the autopilot is automatically engaged with the flight director in Level Mode, bringing the aircraft into level flight. An aural “Engaging Autopilot” alert is played and the flight director mode annunciation will indicate ‘LVL’ for vertical and lateral modes.

In the event of unexpected autopilot behavior, the pilot can interrupt ESP by pushing and holding either the Control Wheel Steering (**CWS**) or Autopilot Disconnect (**AP DISC**) switch. Upon releasing the **CWS** or **AP DISC** switch, ESP force will again be applied, provided aircraft attitude and/or airspeed are within their respective engagement limits. ESP can also be overridden by overpowering the servo’s mechanical torque limit. Although the pilot may physically overpower the ESP forces prior to the ‘Engaging Autopilot’ message, the pilot must recognize when the autopilot is engaged and not attempt to physically override the autopilot.

If flight maneuvers exceeding the normal ESP envelope are intended, the feature can be disabled. ESP can be enabled or disabled on the ‘Aux - System Setup’ Page on the MFD.

Enabling/Disabling ESP:

- 1) Turn the large **FMS** Knob to select the Aux Page Group.
- 2) Turn the small **FMS** Knob to select the ‘Aux - System Setup’ Page.
- 3) If necessary, press the **SETUP 2** Softkey to display the ‘Aux-System Setup 2’ Page. If the ‘Aux - System Setup 2’ is already displayed, proceed to step 4.

- 4) Push the **FMS** Knob to activate the cursor.
- 5) Turn the large **FMS** Knob to place the cursor in the Stability & Protection field.
- 6) Turn the small **FMS** Knob to select 'Enabled' or 'Disabled'.
- 7) Push the **FMS** Knob to remove the cursor.

ESP is automatically enabled on system power up.

ROLL ENGAGEMENT

Roll Limit Indicators are displayed on the roll scale at 45° right and left, indicating where ESP will engage. As roll attitude exceeds 45°, ESP will engage and the on-side Roll Limit Indicator will move to 30°. The Roll Limit Indicator is now showing where ESP will disengage as roll attitude decreases.

Once engaged, ESP force will be applied between 30° and 75°. The force increases as roll attitude increases and decreases as roll attitude decreases. The applied force is intended to encourage pilot input that returns the airplane to a more normal roll attitude. As roll attitude decreases, ESP will disengage at 30°.

ESP is automatically disengaged if the aircraft reaches the autopilot roll engagement attitude limit of 75°.

PITCH ENGAGEMENT

ESP pitch engagement parameters are set specifically for each aircraft model. The following tables shows specific engagement angles, maximum opposing force angles and disengagement limits. Once ESP is engaged, it will apply opposing force between approximately 15° and 50° nose-up and between approximately 12° and 50° nose-down. Maximum opposing force is applied between approximately 25° and 50° nose-up and between approximately 22° and 50° nose-down. ESP pitch engagement parameters are set specifically for each aircraft model.

The opposing force increases or decreases depending on the pitch angle and the direction of pitch travel. This force is intended to encourage movement in the pitch axis in the direction of the normal pitch attitude range for the aircraft.

There are no indications marking the pitch ESP engage and disengage limits in these nose-up/nose-down conditions.

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ESP High Pitch Protection Limits			
	C-172	C-182	C-206
Angle Opposing Force Begins	16°	19°	18°
Max Opposing Force Angle	20°	24°	23°
ESP Disengagement Angle	14°	14°	14°

ESP Pitch Protection by Aircraft Model

ESP Low Pitch Protection Limits			
	C-172	C-182	C-206
Angle Opposing Force Begins	-16°	-17°	-21°
Max Opposing Force Angle	-20°	-22°	-26°
ESP Disengagement Angle	-14°	-12°	-17°

ESP Pitch Protection by Aircraft Model

HIGH AIRSPEED PROTECTION

Exceeding Vne will result in ESP applying force to raise the nose of the aircraft. When the high airspeed condition is remedied, ESP force is no longer applied.

LOW AIRSPEED PROTECTION

(Model 172) When the aircraft decelerates below 55 KIAS and remains below 55 KIAS for 1 second, ESP will activate and begin applying nose down force. ESP will stop applying the nose down force once airspeed has increased above 55 KIAS.

(Models 182 and 206) When the stall warning has been active for at least one half second, ESP will activate and begin applying a nose down force. ESP will stop applying the nose down force once the angle of attack has been reduced sufficiently to deactivate the stall warning.

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REVERSIONARY MODE

Should a system detected failure occur in either display, the system automatically enters reversionary mode. In reversionary mode, critical flight instrumentation is combined with engine instrumentation on the remaining display.

Reversionary display mode can be manually activated by pressing the **DISPLAY BACKUP** Button on the audio panel.



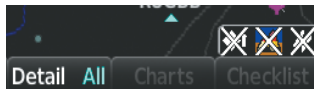
NOTE: *The Pilot's Operating Handbook (POH) always takes precedence over the information found in this section.*

ABNORMAL COM OPERATION

When a COM tuning failure is detected by the system, the emergency frequency (121.500 MHz) is automatically loaded into the active frequency field of the COM radio for which the tuning failure was detected. In the event of a failure of both PFD and MFD, the emergency frequency (121.500 MHz) automatically becomes the active frequency on both COM radios.

HAZARD DISPLAYS WITH LOSS OF GPS POSITION

If GPS position is lost, or becomes invalid, selected hazards being displayed on the Navigation Map Page are removed until GPS position is again established.



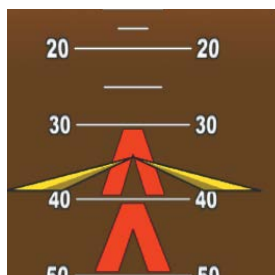
Loss of Hazard Functions with Loss of GPS Position

UNUSUAL ATTITUDES

The PFD ‘declutters’ when the aircraft enters an unusual attitude. Only the primary functions are displayed in these situations.

The following information is removed from the PFD (and corresponding softkeys are disabled) when the aircraft experiences unusual attitudes:

- Traffic Annunciations
- AFCS Annunciations
- Flight director Command Bars
- Inset Map
- Temperatures
- DME Information Window
- Wind Data
- Selected Heading Box
- Selected Course Box
- Transponder Status Box
- System Time
- PFD Setup Menu
- Windows displayed in the lower right corner of the PFD:
 - Timer/References
 - Nearest Airports
 - Flight Plan
 - Messages
 - Procedures
 - DME Tuning
- Barometric Minimum Descent Altitude Box
- Glideslope, Glide-path, and Vertical Deviation Indicators
- Altimeter Barometric Setting
- Selected Altitude
- VNV Target Altitude



Extreme Pitch Indication

DEAD RECKONING

While in Enroute or Oceanic phase of flight, if the system detects an invalid GPS solution or is unable to calculate a GPS position, the system automatically reverts to Dead Reckoning (DR) Mode. In DR Mode, the system uses its last-known position combined with continuously updated airspeed and heading data (when available) to calculate and display the aircraft’s current estimated position.



NOTE: *Dead Reckoning Mode only functions in Enroute (ENR) or Oceanic (OCN) phase of flight. In all other phases, an invalid GPS solution produces a "NO GPS POSITION" annunciation on the map and the system stops navigating in GPS Mode.*

DR Mode is indicated on the system by the appearance of the letters 'DR' superimposed in yellow over the 'own aircraft' symbol as shown in the following figure. In addition, 'DR' is prominently displayed, also in yellow, on the HSI slightly above and to the right of the aircraft symbol on the CDI as shown in the following figure. The CDI deviation bar is displayed in yellow, but will be removed from the display after 20 minutes. Lastly, but at the same time, a 'GPS NAV LOST' alert message appears on the PFD.

Normal navigation using GPS/SBAS source data resumes automatically once a valid GPS solution is restored.

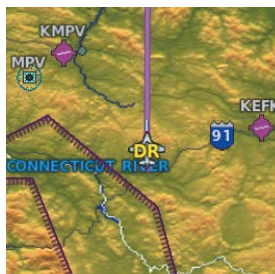
It is important to note that estimated navigation data supplied by the system in DR Mode may become increasingly unreliable and must not be used as a sole means of navigation. If, while in DR Mode, airspeed and/or heading data is also lost or not available, the DR function may not be capable of estimating your position and, consequently, the system may display a path that is different than the actual movement of the aircraft. Estimated position information displayed by the system through DR while there is no heading and/or airspeed data available should not be used for navigation.

DR Mode is inherently less accurate than the standard GPS/SBAS Mode due to the lack of satellite measurements needed to determine a position. Changes in wind speed and/or wind direction compounds the relative inaccuracy of DR Mode. Because of this degraded accuracy, the crew must maintain position awareness using other navigation equipment until GPS-derived position data is restored.

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CDI 'DR' Indication on PFD



Symbolic Aircraft
(Map pages and Inset Map)

Dead Reckoning Indications

As a result of operating in DR Mode, all GPS-derived data is computed based upon an estimated position and is displayed as yellow text on the display to denote degraded navigation source information. This data includes the following:

- Navigation Status Box fields except Active Leg, TAS, and DTK
- GPS Bearing Pointer
- Wind data and pointers in the Wind Data Box on the PFD
- Current Track Indicator
- All Bearing Pointer Distances
- Active Flight Plan distances, bearings, and ETE values


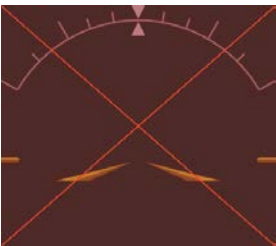
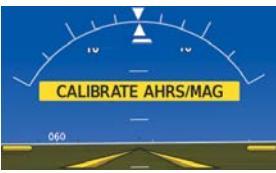

Also, while the system is in DR Mode, the autopilot will couple to GPS for up to 20 minutes. TAWS are also disabled. Additionally, the accuracy of all nearest information (airports, airspaces, and waypoints) is questionable. Finally, airspace alerts continue to function, but with degraded accuracy.

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ANNUNCIATIONS & ALERTS

SYSTEM ANNUNCIATIONS

When an LRU or an LRU function fails, a large red “X” is typically displayed on windows associated with the failed data. Refer to the Pilot’s Operating Handbook (POH) for additional information regarding pilot responses to these annunciations

System Annunciation	Comment
 <p>AHRS ALIGN: Keep Wings Level</p>	Air Data, Attitude and Heading Reference System is aligning.
	Display system is not receiving attitude information from the AHRS.
 <p>CALIBRATE AHRS/MAG</p>	ADHRS calibration incomplete or configuration module failure.
 <p>GPS LOI</p>	GPS information is either not present or is invalid for navigation use. Note that ADHRS utilizes GPS inputs during normal operation. ADHRS operation may be degraded if GPS signals are not present (see POH).

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	System Annunciation	Comment
Flight Instruments EIS		Display system is not receiving airspeed input from the air data computer.
Nav/Com/XPDR/Audio Flight Management		Display system is not receiving vertical speed input from the air data computer.
Hazard Avoidance		Display system is not receiving valid heading input from the AHRS or magnetometer.
AFCS Additional Features		Display system is not receiving altitude input from the air data computer.
Abnormal Operation		Display system is not receiving valid OAT information from the air data computer.
Annun/Alerts		Display system is not receiving valid transponder information.
	Other Various Red X Indications	A red 'X' through any other display field (such as engine instrumentation fields) indicates that the field is not receiving valid data.




CO GUARDIAN MESSAGES

Alerts Window Message	Comments
CO DET SRVC – The carbon monoxide detector needs service.	There is a problem within the CO Guardian that requires service.
CO DET FAIL – The carbon monoxide detector is inoperative.	Loss of communication between the system and the CO Guardian.

RELATIVE POINT OBSTACLE SYMBOLS AND COLORS

Unlighted Obstacle		Lighted Obstacle		Obstacle Location
< 1000' AGL	> 1000' AGL	< 1000' AGL	> 1000' AGL	
				Red obstacle is above or within 100 ft below the aircraft altitude
				Yellow obstacle is between 100 ft and 1000 ft below the aircraft altitude
				White obstacle is more than 1000 ft below aircraft altitude

RELATIVE WIRE OBSTACLES AND COLORS

Wire Obstacle	Wire Obstacle Location
	Red wire obstacle is at or above the aircraft altitude
	Yellow wire obstacle is between the aircraft altitude to within 250 feet below the aircraft altitude
	White wire obstacle is more than 250 ft below the aircraft altitude

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RELATIVE WIND TURBINE OBSTACLES AND COLORS

	Unlighted Wind Turbine Obstacle	Lighted Wind Turbine Obstacle	Wind Turbine Obstacle Location
Flight Instruments			Red obstacle is above or within 100 ft below the aircraft altitude
EIS			Yellow obstacle is between 100 ft and 1000 ft below the aircraft altitude
Nav/Com/XPDR/Audio			White obstacle is more than 1000 ft below aircraft altitude
Flight Management			

TERRAIN-SVT AND TAWS-B POTENTIAL IMPACT AREA WITH ANNUNCIATIONS

Potential Impact Area Examples	Alert Type	Example Annunciation
or	Warning	TAWS-B Warning PULL UP Terrain-SVT Warning TERRAIN
or	Caution	TERRAIN

TERRAIN-SVT ALERTS

Alert Type	PFD/MFD TERRAIN-SVS Page Annunciation	MFD Pop-Up Alert	Aural Message
Reduced Required Terrain Clearance Warning (RTC)	TERRAIN	WARNING – TERRAIN	“Warning; Terrain, Terrain”
Reduced Required Line Clearance (RLC)	TERRAIN	WARNING – WIRE	“Warning; Wire, Wire”
Imminent Terrain Impact Warning (ITI)	TERRAIN	WARNING – TERRAIN	“Warning; Terrain, Terrain”
Reduced Required Obstacle Clearance Warning (ROC)	TERRAIN	WARNING – OBSTACLE	“Warning; Obstacle, Obstacle”
Imminent Obstacle Impact Warning (IOI)	TERRAIN	WARNING – OBSTACLE	“Warning; Obstacle, Obstacle”
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION – TERRAIN	“Caution; Terrain, Terrain”
Imminent Line Impact Caution (ILI)	TERRAIN	CAUTION – WIRE	“Caution, Wire, Wire”
Imminent Terrain Impact Caution (ITI)	TERRAIN	CAUTION – TERRAIN	“Caution; Terrain, Terrain”
Reduced Required Line Clearance Caution (RLC)	TERRAIN	CAUTION – WIRE	“Caution, Wire, Wire”
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION – OBSTACLE	“Caution; Obstacle, Obstacle”
Imminent Obstacle Impact Caution (IOI)	TERRAIN	CAUTION – OBSTACLE	“Caution; Obstacle, Obstacle”

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TERRAIN-SVT SYSTEM STATUS ANNUNCIATIONS

Alert Type	PFD/Terrain-SVT Page Alert Annunciation	Terrain-SVT Page Center Banner Annunciation	Voice Alert
System Test in Progress	TER TEST	TERRAIN TEST	None
System Test Pass	None	None	"Terrain System Test OK"
Terrain Alerting Inhibited	TER INH	None	None
No GPS position	TER N/A	NO GPS POSITION	"Terrain System Not Available"*
Excessively degraded GPS signal; or Out of database coverage area	TER N/A	None	"Terrain System Not Available"*
Terrain System Test Fail; Terrain or Obstacle database unavailable or invalid; Invalid software configuration; or System audio fault	TER FAIL	TERRAIN FAIL	"Terrain System Failure"
MFD Terrain or Obstacle database unavailable or invalid, and Terrain-SVT operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None

* "Terrain System Available" will be heard when sufficient GPS signal is received, or Terrain database coverage area re-entered.

TAWS-B ALERTS

Alert Type	PFD/MFD TAWS-B Page Annunciation	MFD Pop-Up Alert	Aural Message
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"Pull Up"
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up"
Imminent Line Impact Warning (ILI)	PULL UP	WIRE AHEAD - PULL-UP	"Wire Ahead; Pull Up, Pull Up"
Reduced Required Line Clearance Warning (RLC)	PULL UP	WARNING - WIRE	"Wire, Wire; Pull Up, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN AHEAD - PULL-UP	"Terrain Ahead, Pull Up; Terrain Ahead, Pull Up"
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE AHEAD - PULL-UP	"Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain; Caution, Terrain"
Imminent Terrain Impact Caution (ITI)	TERRAIN	TERRAIN AHEAD	"Terrain Ahead; Terrain Ahead"

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	Alert Type	PFD/MFD TAWS-B Page Annunciation	MFD Pop-Up Alert	Aural Message
Flight Instruments	Required Reduced Line Clearance Impact Caution (RLC)	TERRAIN	CAUTION – WIRE	“Caution, Wire; Caution, Wire”
EIS				
Nav/Com/ XPDR/Audio	Imminent Line Clearance Impact Caution (LI)	TERRAIN	WIRE AHEAD	“Wire Ahead; Wire Ahead”
Flight Management	Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION – OBSTACLE	“Caution, Obstacle; Caution, Obstacle”
Hazard Avoidance	Imminent Obstacle Impact Caution (IOI)	TERRAIN	OBSTACLE AHEAD	“Obstacle Ahead; Obstacle Ahead”
AFCs	Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW – TERRAIN	“Too Low, Terrain”
Additional Features	Altitude Voice Callout (VCO) “500”	None	None	“Five-Hundred”
Abnormal Operation	Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	“Sink Rate”
Annun/Alerts	Negative Climb Rate Caution (NCR)	TERRAIN	DON'T SINK	“Don't Sink”

TAWS-B SYSTEM STATUS ANNUNCIATIONS

Alert Type	PFD/TAWS-B Page Alert Annunciation	TAWS-B Page Center Banner Annunciation	Voice Alert
System Test in progress	TAWS TEST	TAWS TEST	None
System Test pass	None	None	"TAWS System Test OK"
TAWS-B FLTA Alerting Inhibited	TAWS INH	None	None
No GPS position	TAWS N/A	NO GPS POSITION	"TAWS Not Available"
Excessively degraded GPS signal; or Out of database coverage area	TAWS N/A	None	"TAWS Not Available"
TAWS-B System Test Fail; Terrain or Obstacle database unavailable or invalid; Invalid software configuration; or System audio fault	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None

* "TAWS Available" will be heard when sufficient GPS signal is received, or Terrain database coverage area re-entered.

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TIS FAILURE ANNUNCIATIONS

Traffic Map Page Center Banner Annunciation	Description
NO DATA	Data is not being received from the transponder*
DATA FAILED	Data is being received from the transponder, but a failure is detected in the data stream*
FAILED	The transponder has failed*
UNAVAILABLE	TIS is unavailable or out of range

* Contact a service center or Garmin dealer for corrective action

TIS MODES AND STATUS ANNUNCIATIONS

Traffic Map Mode Annunciation	Traffic Map Center Banner Annunciation	Traffic Overlay Status Icon (Navigation Maps)	Description
DATA FAILED	TRFC FAIL		Data is being received from the transponder, but a failure is detected in the data stream*
NO DATA	TRFC FAIL		Data is not being received from the transponder*
OPERATING	None		TIS is operating and is receiving traffic data from a data link.
OPERATING	UNAVAILABLE		TIS is operating, but the traffic service is currently unavailable or is out of reception range.

Traffic Map Mode Annunciation	Traffic Map Center Banner Annunciation	Traffic Overlay Status Icon (Navigation Maps)	Description
STANDBY	STANDBY		TIS is in Standby Mode.
UNIT FAILED	TRFC FAIL		The transponder has failed*

* Contact a service center or Garmin dealer for corrective action

TIS TRAFFIC STATUS ANNUNCIATIONS

Traffic Status Banner Annunciation	Description
TA OFF SCALE	A Traffic Advisory is outside the selected display range* Annunciation is removed when traffic comes within the selected display range
TA X.X ± XX ↓	System cannot determine bearing of Traffic Advisory** Annunciation indicates distance in nm, altitude separation in hundreds of feet, and altitude trend arrow (climbing/descending)
AGE MM:SS	Appears if traffic data is not refreshed within 6 seconds If after another 6 seconds data is not received, traffic is removed from the display The quality of displayed traffic information is reduced as the age increases
TRFC COAST	The displayed data is not current (6 to 12 seconds since last message) The quality of displayed traffic information is reduced when this message is displayed
TRFC RMVD	Traffic is removed because it is too old for coasting (12 to 60 seconds since last message) Traffic may exist within the selected display range, but it is not displayed
TRFC FAIL	Traffic data has failed
NO TRFC DATA	Traffic has not been detected
TRFC UNAVAIL	The traffic service is unavailable or out of range

*Shown as symbol on Traffic Map Page

**Shown in center of Traffic Map Page

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TAS TRAFFIC MODES

Mode	Traffic Mode Annunciation (Traffic Map Page)	Traffic Display Status Icon (Other Maps)
Traffic System Test Initiated	TEST (‘TEST MODE’ shown in center of page)	
Operating	OPERATING	
Standby	STANDBY (also shown in white in center of page)	
Traffic System Failed	FAIL	

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TAS FAILURE ANNUNCIATIONS

Traffic Map Page Center Annunciation	Description
NO DATA	Data is not being received from the TAS unit
DATA FAILED	Data is being received from the TAS unit, but the unit is self-reporting a failure
FAILED	Incorrect data format received from the TAS unit

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TAS TRAFFIC STATUS ANNUNCIATIONS

Traffic Status Banner Annunciation	Description
TA OFF SCALE	A Traffic Advisory is outside the selected display range*. Annunciation is removed when traffic comes within the selected display range.
TA X.X ± XX ↓	System cannot determine bearing of Traffic Advisory**. Annunciation indicates distance in nm, altitude separation in hundreds of feet, and altitude trend arrow (climbing/descending).

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Traffic Status Banner Annunciation	Description
TRFC FAIL	TAS unit has failed (unit is self-reporting a failure or sending incorrectly formatted data)
NO TRFC DATA	Data is not being received from the TAS unit

*Shown as symbol on Traffic Map Page

**Shown in center of Traffic Map Page

ADS-B MODES

ADS-B Mode	Traffic Mode Annunciation (Traffic Map Page)	Traffic Map Page Center Banner Annunciation	Traffic Display Status Icon (Other Maps)
ADS-B System Test Initiated	ADS-B: TEST	TEST MODE	
ADS-B Operating in Airborne Mode	ADS-B: AIRB	None	
ADS-B Operating in Surface Mode	ADS-B: SURF	None	
ADS-B Traffic Off	ADS-B: OFF	ADS-B TRFC OFF	
ADS-B Traffic Not Available	ADS-B: N/A	NO TRK/HDG	
ADS-B Failed*	ADS-B: FAIL	FAILED	

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ADS-B TRAFFIC FAILURE ANNUNCIATIONS

Traffic Map Page Center Annunciation	Description
NO DATA	Data is not being received from the traffic unit
DATA FAILED	Data is being received from the traffic unit, but the unit is self-reporting a failure
FAILED	Incorrect data format received from the traffic unit

ADS-B TRAFFIC STATUS ANNUNCIATIONS

Traffic Status Banner Annunciation	Description
TA OFF SCALE	A Traffic Advisory is outside the selected display range*. Annunciation is removed when traffic comes within the selected display range.
TA X.X ± XX ↓	System cannot determine bearing of Traffic Advisory**. Annunciation indicates distance in nm, altitude separation in hundreds of feet, and altitude trend arrow (climbing/descending).
TRFC FAIL	Traffic unit has failed (unit is self-reporting a failure or sending incorrectly formatted data)
NO TRFC DATA	Data is not being received from the traffic unit

*Shown as symbol on Traffic Map Page

**Shown in center of Traffic Map Page

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'AUX - ADS-B STATUS' PAGE MESSAGES FOR ADS-B TRAFFIC

ADS-B Status Page Item	Status Message	Description
Traffic Application Status: Airborne (AIRB), Surface (SURF), Airborne Alerts (CSA)	On	Traffic application is currently on. Required input data is available, and it meets performance requirements.
	Available to Run	Traffic application is not currently active, but application is ready to run when condition(s) determine the application should be active. Required input data is available, and it meets performance requirements.
	Not Available	Traffic application is not available. Required input data is available, but it does not meet performance requirements.
	Fault	Traffic application is not available. Required input data is not available or the application has failed.
	Not Configured	Traffic application is not available, because it has not been configured. If this annunciation persists, the system should be serviced.
	-----	Traffic application status is invalid or unknown.
TIS-B/ADS-R Coverage	Available	The system is receiving the ADS-R coverage from an FAA ground station.
	Not Available	The system is not receiving the ADS-R coverage from an FAA ground station.
	-----	ADS-R coverage is invalid or unknown.
GPS Status: GPS Source	External #1	The system is using the #1 GPS receiver for the GPS position source.
	External #2	The system is using the #2 GPS receiver for the GPS position source.
	-----	The GPS source is invalid or unknown.
Ground Uplink Status: Last Uplink	Number of minutes, or '-----'	Displays the number of minutes since the last uplink from a ground station occurred. If no uplink has been received, or the status is invalid, dashes appear instead of the number of minutes.

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GDL 69A SXM DATA LINK RECEIVER MESSAGES

Message	Message Location	Description
CHECK ANTENNA	XM Information Page (MFD)	Data Link Receiver antenna error; service required
UPDATING	XM Information Page (MFD)	Data Link Receiver updating encryption code
NO SIGNAL	XM Information Page Weather Datalink Page (MFD)	Loss of signal; signal strength too low for receiver
LOADING	XM Radio Page (MFD)	Acquiring channel audio or information
OFF AIR	XM Radio Page (MFD)	Channel not in service
-----	XM Radio Page (MFD)	Missing channel information
WEATHER DATA LINK FAILED	Weather Datalink Page (MFD)	No communication from Data Link Receiver within last 5 minutes
ACTIVATION REQUIRED	XM Information Page (MFD)	SiriusXM subscription is not activated
DETECTING ACTIVATION	Weather Datalink Page (MFD)	SiriusXM subscription is activating.
WAITING FOR DATA...	Weather Datalink Page (MFD)	SiriusXM subscription confirmed downloading weather data.

SURFACEWATCH ALERTS

SurfaceWatch Alert Annunciation	Associated Voice Alert	Description
TWY TAKEOFF	"Taxiway"	Issued when the aircraft is taking off from a non-runway (e.g. a taxiway)
RWY TOO SHORT	"Runway too short"	Issued when the aircraft is taking off from, or landing on, a runway with a length less than needed.

SurfaceWatch Alert Annunciation	Associated Voice Alert	Description
CHECK RUNWAY	"Check runway"	Issued when the aircraft is taking off from, or landing on, a runway different than that entered in the Takeoff Data or Landing Data screen.
TWY LANDING	"Taxiway"	Issued when the aircraft is landing on a non-runway (e.g. a taxiway).

AFCS ALERTS

Condition	Annunciation	Description
Aileron Mistrim Right	AIL→	Roll servo providing sustained force in the indicated direction
Aileron Mistrim Left	←AIL	
Elevator Mistrim Down	↓ELE	Pitch servo providing sustained force in the indicated direction. May indicate a failure of the pitch trim servo or trim system.
Elevator Mistrim Up	↑ELE	
Roll Failure	ROLL	Roll axis control failure; AP inoperative
Pitch Trim Failure (or stuck MEPT Switch)	PTRM	If AP engaged, take control of the aircraft and disengage AP If AP disengaged, move MEPT switches separately to unstick
Pitch Failure	PTCH	Pitch axis control failure; AP inoperative
System Failure	AFCS	AP and MEPT are unavailable; FD may still be available

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Condition	Annunciation	Description
Preflight Test		Performing preflight system test; aural alert sounds at completion Do not press the AP DISC Switch during servo power-up and preflight system tests as this may cause the preflight system test to fail or never to start (if servos fail their power-up tests). Power must be cycled to the servos to remedy the situation.
		Preflight system test failed; aural alert sounds at failure

VOICE ALERTS

Voice Alert	Description
"Minimums, minimums"	The aircraft has descended below the preset barometric minimum descent altitude.
"Vertical track"	The aircraft is one minute from Top of Descent. Issued only when vertical navigation is enabled.
"Traffic"	Played when a Traffic Advisory (TA) is issued (TIS and ADS-B).
"Traffic Not Available"	The aircraft is outside the Traffic Information Service (TIS or ADS-B) coverage area.
"Traffic, Traffic"	Played when a Traffic Advisory (TA) is issued (TAS system).
"Traffic System Test"	Played during a pilot-initiated self test (GTX 345 only).
"TAS System Test Passed"	Played when the TAS system passes a pilot-initiated self test. (GTS 800 without GTX 345)
"TAS System Test Failed"	Played when the TAS system fails a pilot-initiated self test. (GTS 800 without GTX 345)
"One o'clock" through "Twelve o'clock" or "No Bearing"	Played to indicate bearing of traffic from own aircraft.
"High", "Low", "Same Altitude" (if within 200 feet of own altitude), or "Altitude not available"	Played to indicate altitude of traffic relative to own aircraft.

Voice Alert	Description
"Less than one mile", "One Mile" through "Ten Miles", or "More than ten miles"	Played to indicate distance of traffic from own aircraft.
"Airspeed" *	Underspeed condition is impending or active.

* Only applicable to aircraft equipped with optional ESP.

WARNING CAS ANNUNCIATIONS

Annunciation Window Text	Audio Alert
CO LVL HIGH	Repeating Chime
HIGH VOLTS	
LOW VOLTS	
OIL PRESSURE	
USP ACTIVE	

CAUTION CAS ANNUNCIATIONS

Annunciation Window Text	Audio Alert
LOW FUEL L	Single Chime
LOW FUEL R	
LOW VACUUM	
PROP HEAT	
STBY BATT	

ADVISORY CAS ANNUNCIATIONS

Annunciation Window Text	Description	Audio Alert
AP AIL DISC	Autopilot aileron trim disconnected	None
ESP CONFIG	ESP config error. Config service req'd	
ESP CONFIG VALID	ESP is correctly configured	
ESP DEGRADE	ESP IAS mode is inoperative	
ESP FAIL	ESP is inoperative	
ESP OFF	ESP selected off	

SAFE CAS ANNUNCIATIONS

Annunciation Window Text	Audio Alert
PROP HEAT	None

SYSTEM MESSAGE ADVISORIES

Message	Comments
ABORT APR – Loss of GPS navigation. Abort approach.	Abort approach due to loss of GPS navigation.
ADC1 ALT EC – ADC1 altitude error correction is unavailable	GDC1 is reporting the altitude error correction is unavailable.
ADC1 AS EC – ADC1 airspeed error correction is unavailable.	GDC1 is reporting the airspeed error correction is unavailable.
ADC1 SERVICE – ADC1 needs service. Return unit for repair.	The GDC1 should be serviced.
AHRS1 CAL – AHRS1 calibration version error. Svc req'd.	The #1 AHRS calibration version error. The system should be serviced.
AHRS1 CONFIG – AHRS1 config error. Config service req'd.	AHRS configuration settings do not match those of backup configuration memory. The system should be serviced.

Message	Comments
AHRS1 GPS – AHRS1 using backup GPS source.	The #1 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS1 GPS – AHRS1 not receiving any GPS information.	The #1 AHRS is not receiving any or any useful GPS information. Check the current version of the pertinent flight manual limitations. The system should be serviced.
AHRS1 GPS – AHRS1 not receiving backup GPS information.	The #1 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS1 GPS – AHRS1 operating exclusively in no-GPS mode.	The #1 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS1 SERVICE – AHRS1 Magnetic-field model needs update.	The #1 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
AHRS1 TAS – AHRS1 not receiving airspeed.	The #1 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.
AHRS MAG DB – AHRS magnetic model database version mismatch.	The #1 AHRS and #2 AHRS magnetic model database versions do not match.
APR ADVISORY – GPS VNAV not available. Using BARO VNAV.	SBAS not available. The system is calculating the VNAV profile using BARO VNAV.
APR DWNGRADE – Approach downgraded.	Use LNAV minima when approach is downgraded or may use LNAV/VNAV minima with Baro-VNAV.
APR INACTV – Approach is not active.	The system notifies the pilot the loaded approach is not active. Activate approach when required.
ARSPC AHEAD – Airspace ahead less than 10 minutes.	Special use airspace is ahead of aircraft. The aircraft will penetrate the airspace within 10 minutes.
ARSPC NEAR – Airspace near – less than 2 nm.	Special use airspace is within 2 nm of the aircraft position.

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Flight Instruments	ARSPC NEAR – Airspace near and ahead.	Special use airspace is near and ahead of the aircraft position.
EIS	APR INACTV – Approach is not active.	The system notifies the pilot the loaded approach is not active. Activate approach when required.
Nav/Com/XPDR/Audio	AUDIO MANIFEST – Audio software mismatch, communication halted.	The GMA has incorrect software installed. The system should be serviced.
Flight Management	CHECK CRS – Database course for LOC2 / [LOC ID] is [CRS]°.	Selected course for LOC2 differs from published localizer course by more than 10 degrees.
Hazard Avoidance	CNFG MODULE – PFD1 configuration module is inoperative.	The PFD1 configuration module backup memory has failed. The system should be serviced.
AFCs	CO DET SRVC – The carbon monoxide detector needs service.	A failure in the carbon monoxide detector has been detected. The detector may still be available. The system should be serviced when possible.
Additional Features	CO DET FAIL – The carbon monoxide detector is inoperative.	A failure in the carbon monoxide detector has been detected. The system should be serviced.
Abnormal Operation	COM1 CONFIG – COM1 config error. Config service req'd.	The COM1 configuration settings do not match backup configuration memory. The system should be serviced
Annun/Alerts	COM #[1, 2] INOP – CAL - Check COM calibration.	COM1 and/or COM2 calibration version error. Check COM calibration.
Appendix	COM #[1, 2] INOP – CRNT - Check COM current.	COM1 and/or COM2 current is low. Check COM current.
Index	COM #[1, 2] INOP – INTRL - Com internal fault.	COM1 and/or COM2 has an internal fault.
	COM #[1, 2] INOP – SYNTH - COM synthesizer lock fault.	COM1 and/or COM2 has a synthesizer lock fault.
	COM #[1, 2] INOP – VOLT - Check COM voltage.	COM1 and/or COM2 voltage is low. Check COM voltage.
	COM #[1, 2] REDUCED TX POWER – COM synthesizer lock fault.	COM1 and/or COM2 has a reduced transmission power.

Message	Comments
COM1 PTT – COM1 push-to-talk key is stuck.	The COM1 external push-to-talk switch is stuck in the enable (or “pressed”) position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced.
COM1 RMT XFR – COM1 remote transfer key is stuck.	The COM1 transfer switch is stuck in the enabled (or “pressed”) position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
COM1 SERVICE – COM1 needs service. Return unit for repair.	The system has detected a failure in COM1. COM1 may still be usable. The system should be serviced when possible.
COM1 TEMP – COM1 over temp. Reducing transmitter power.	The system has detected an over temperature condition in COM1. The transmitter operates at reduced power. If the problem persists, the system should be serviced.
COM2 CONFIG – COM2 config error. Config service req’d.	The COM2 configuration settings do not match backup configuration memory. The system should be serviced
COM2 PTT – COM2 push-to-talk key is stuck.	The COM2 external push-to-talk switch is stuck in the enable (or “pressed”) position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 RMT XFR – COM2 remote transfer key is stuck.	The COM2 transfer switch is stuck in the enabled (or “pressed”) position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 SERVICE – COM2 needs service. Return unit for repair.	The system has detected a failure in COM2. COM2 may still be usable. The system should be serviced when possible.

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Flight Instruments	COM2 TEMP – COM2 over temp. Reducing transmitter power.	The system has detected an over temperature condition in COM2. The transmitter operates at reduced power. If the problem persists, the system should be serviced.
EIS	CONFIRM BARO QFE – Confirm BARO QFE Reference Elevation	Confirm BARO QFE Reference Elevation.
Nav/Com/XPDR/Audio	DB CHANGE – Database changed. Verify user modified procedures.	This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after an navigation database update. Verify the user-modified procedures in stored flight plans are correct and up to date.
Flight Management	DB CHANGE – Database changed. Verify stored airways.	This occurs when a stored flight plan contains an airway that is no longer consistent with the navigation database. This alert is issued only after an navigation database update. Verify use of airways in stored flight plans and reload airways as needed.
Hazard Avoidance	DB MISMATCH – Navigation database mismatch. Xtalk is off.	The PFD and MFD have different navigation database versions or types installed. Crossfill is off. Check the Aux-System Status Page to determine versions or regions. Also, check the Aux-System Status Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
AFCS	DB MISMATCH – Obstacle database mismatch.	The PFD and MFD have different obstacle database versions or types installed. Check the Aux-System Status Page to determine versions or regions. Also, check the Aux-System Status Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
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DB MISMATCH – Terrain database mismatch.	The PFD and MFD have different terrain database versions or types installed. Check the Aux-System Status Page to determine versions or regions. Also, check the Aux-System Status Page for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
DIG GMA1 MANIFEST – DIG GMA 1 software mismatch, communication halted.	The digital audio controller has incorrect software installed. The system should be serviced.
DME CHECK RANGE – DME range disagreement. Check position sensors.	A failure or disagreement has been detected in a DME receiver. Check position sensors.
FAILED PATH – A data path has failed.	A data path connected to the GDU or the GIA 63W has failed.
FPL TRUNC – Flight plan has been truncated.	This occurs when a newly installed navigation database eliminates an obsolete approach or arrival used by a stored flight plan. The obsolete procedure is removed from the flight plan. Update flight plan with current arrival or approach.
FPL WPT LOCK – Flight plan waypoint is locked.	Upon power-on, the system detects that a stored flight plan waypoint is locked. This occurs when an navigation database update eliminates an obsolete waypoint. The flight plan cannot find the specified waypoint and flags this message. This can also occur with user waypoints in a flight plan that is deleted. Remove the waypoint from the flight plan if it no longer exists in any database, OR update the waypoint name/identifier to reflect the new information.
G/S1 FAIL – G/S1 is inoperative.	A failure has been detected in glideslope receiver 1. The system should be serviced.

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Flight Instruments	G/S1 SERVICE – G/S1 needs service. Return unit for repair.	A failure has been detected in glideslope receiver 1. The receiver may still be available. The system should be serviced when possible.
EIS	G/S2 FAIL – G/S2 is inoperative.	A failure has been detected in glideslope receiver 2. The system should be serviced.
Nav/Com/XPDR/Audio	G/S2 SERVICE – G/S2 needs service. Return unit for repair.	A failure has been detected in glideslope receiver 2. The receiver may still be available. The system should be serviced when possible.
Flight Management	GDC1 MANIFEST – GDC1 software mismatch, communication halted.	The ADAHRS has incorrect software installed. The system should be serviced.
Hazard Avoidance	GDL69 CONFIG – GDL 69 config error. Config service req'd.	GDL 69/69A SXM configuration settings do not match those of backup configuration memory. The system should be serviced.
AFCs	GDL69 FAIL – GDL 69 has failed.	A failure has been detected in the GDL 69/69A or GDL 69/69A SXM. The receiver is unavailable. The system should be serviced.
Additional Features	GDL69 MANIFEST – GDL software mismatch, communication halted.	The GDL 69/69A SXM has incorrect software installed. The system should be serviced.
Abnormal Operation	GEA1 CM INOP - COMM – Check GEA config module connection.	There is a problem with the GEA 1 config module connection. Check the connection.
Annun/Alerts	GEA1 CM INOP - TEMP – Check GEA config module cooling.	The GEA 1 configuration module has insufficient cooling. If the problem persists, the system should be serviced.
Appendix	GEA1 CONFIG – GEA1 config error. Config service req'd.	The GEA1 configuration settings do not match those of backup configuration memory. The system should be serviced.
	GEA1 INOP- CAL – Check GEA rigging.	There is a problem with the GEA 1 rigging. Check the rigging.
	GEA1 INOP - CNFG – Check GEA software and configuration.	There is a problem with the GEA 1 software configuration. Check the configuration. If the problem persists, the system should be serviced.

Message	Comments
GEA1 INOP - INTRL – GEA internal fault.	GEA 1 has an internal fault. The system should be serviced.
GEA1 INOP - SENS – Check GEA configuration.	There is an error in the GEA 1 configuration. Check the configuration. If the problem persists, the system should be serviced.
GEA1 INOP - TEMP – Check GEA cooling arrangement.	The GEA 1 configuration module has insufficient cooling. If the problem persists, the system should be serviced.
GEA1 INOP - VOLT – Check GEA voltages.	The GEA 1 voltage is low. Check GEA voltages.
GEA1 INSP RQRD – Redundant power supply is not present.	The GEA 1 redundant power supply is not present. Check the connection.
GEA1 MANIFEST – GEA1 software mismatch, communication halted.	The #1 GEA 71 has incorrect software installed. The system should be serviced.
GEO LIMITS – AHRS1 too far North/South, no magnetic compass.	The aircraft is outside geographical limits for approved ADAHRS operation. Heading is flagged as invalid.
GFC MANIFEST – GFC software mismatch, communication halted.	Incorrect servo software is installed, or gain settings are incorrect.
GIA #[1, 2] INOP – CRNT - Check GIA current.	GIA1 and/or GIA2 current is low. Check GIA current.
GIA #[1, 2] INOP - SERL – Check GIA Serial Communication.	The GIA1 and/or GIA2 communication is inoperative. They system should be serviced.
GIA #[1, 2] INOP - VOLT – Check GIA voltages.	The GIA1 and/or GIA2 voltage is low. Check GIA voltages.
GIA1 CONFIG – GIA1 audio config error. Config service req'd.	The GIA1 have an error in the audio configuration. The system should be serviced.
GIA1 CONFIG – GIA1 config error. Config service req'd.	The GIA1 configuration settings do not match backup configuration memory. The system should be serviced.
GIA1 COOLING – GIA1 temperature too low.	The GIA1 and/or GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.

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Flight Instruments	GIA1 COOLING – GIA1 over temperature.	The GIA1 temperature is too high. If problem persists, the system should be serviced.
EIS	GIA1 MANIFEST – GIA1 software mismatch, communication halted.	The GIA1 1 has incorrect software installed. The system should be serviced.
Nav/Com/XPDR/Audio	GIA1 SERVICE – GIA1 needs service. Return the unit for repair.	The GIA1 self-test has detected a problem in the unit. The system should be serviced.
	GIA2 CONFIG – GIA2 audio config error. Config service req'd.	The GIA2 have an error in the audio configuration. The system should be serviced.
Flight Management	GIA2 CONFIG – GIA2 config error. Config service req'd.	The GIA2 configuration settings do not match backup configuration memory. The system should be serviced.
	GIA2 COOLING – GIA2 over temperature.	The GIA2 temperature is too high. If problem persists, the system should be serviced.
Hazard Avoidance	GIA2 COOLING – GIA2 temperature too low.	The GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
AFCs	GIA2 MANIFEST – GIA2 software mismatch, communication halted.	The GIA 2 has incorrect software installed. The system should be serviced.
	GIA2 SERVICE – GIA2 needs service. Return the unit for repair.	The GIA2 self-test has detected a problem in the unit. The system should be serviced.
Additional Features	GMA1 AUX MANIFEST – GMA 1 AUX software mismatch, communication halted.	The digital audio controller has incorrect software installed. The system should be serviced.
Abnormal Operation	GMA1 CONFIG – GMA1 config error. Config service req'd.	The audio panel configuration settings do not match backup configuration memory. The system should be serviced.
Annun/Alerts	GMA1 FAIL – GMA1 is inoperative.	The audio panel self-test has detected a failure. The audio panel is unavailable. The system should be serviced.
Appendix	GMA1 MANIFEST – GMA1 software mismatch, communication halted.	The audio panel has incorrect software installed. The system should be serviced.

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GMA1 SERVICE – GMA1 needs service. Return unit for repair.	The audio panel self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio panel may still be usable. The system should be serviced when possible.
GMU1 MANIFEST – GMU1 software mismatch, communication halted.	The GMU 44 has incorrect software installed. The system should be serviced.
GPS NAV LOST – Loss of GPS navigation. Insufficient satellites.	Loss of GPS navigation due to insufficient satellites.
GPS NAV LOST – Loss of GPS navigation. Position error.	Loss of GPS navigation due to position error.
GPS NAV LOST – Loss of GPS navigation. GPS fail.	Loss of GPS navigation due to GPS failure.
GPS1 SERVICE – GPS1 needs service. Return unit for repair.	A failure has been detected in the GPS1 and/or GPS2 receiver. The receiver may still be available. The system should be serviced.
GPS2 SERVICE – GPS2 needs service. Return unit for repair.	
GRS1 MANIFEST – GRS1 software mismatch, communication halted.	The ADAHRS has incorrect software installed. The system should be serviced.
GTS CONFIG – GTS config error. Config service req'd.	GTS 800 configuration settings do not match those of the GDU configuration. The system should be serviced.
GTS MANIFEST – GTS software mismatch, communication halted.	The GTS has incorrect software installed. The system should be serviced.
GTX1 MANIFEST – GTX1 software mismatch, communication halted.	The transponder has incorrect software installed. The system should be serviced.
HDG FAULT – AHRS1 magnetometer fault has occurred.	A fault has occurred in the #1 GMU 44. Heading is flagged as invalid. The ADAHRS uses GPS for backup mode operation. The system should be serviced.
HW MISMATCH – GIA hardware mismatch. GIA1 communication halted.	A GIA mismatch has been detected, where only one is SBAS capable.
HW MISMATCH – GIA hardware mismatch. GIA2 communication halted.	

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Flight Instruments	INSIDE ARSPC – Inside airspace.	The aircraft is inside the airspace.
EIS	INVALID ADM – Invalid ADM: ATN communication halted.	Data link avionics were not configured correctly and therefore will not be able to communicate with the ground network.
Nav/Com/XPDR/Audio	LOCKED FPL – Cannot navigate locked flight plan.	This occurs when the pilot attempts to activate a stored flight plan that contains locked waypoint. Remove locked waypoint from flight plan. Update flight plan with current waypoint.
Flight Management	LOI – GPS integrity lost. Crosscheck with other NAVS.	GPS integrity is insufficient for the current phase of flight.
Hazard Avoidance	LRG MAG VAR – Verify all course angles.	The GDU's internal model cannot determine the exact magnetic variance for geographic locations near the magnetic poles. Displayed magnetic course angles may differ from the actual magnetic heading by more than 2°.
AFCs	MANIFEST – MFD1 software mismatch, communication halted.	The PFD and/or MFD has incorrect software installed. The system should be serviced.
	MANIFEST – PFD1 software mismatch, communication halted.	
Additional Features	MFD SOFTWARE – MFD mismatch, communication halted.	The specified GDU has different software versions installed. The system should be serviced.
Abnormal Operation	MFD TERRAIN DSP – MFD Terrain awareness display unavailable.	One of the terrain or obstacle databases required for TAWS in the specified GDU is missing or invalid.
Annun/Alerts	MFD1 BACKLIGHT CALIBRATION – MFD1 calibration. Return for repair.	The specified GDU's backlight calibration cannot be found or is invalid. The system should be serviced.
Appendix	MFD1 CONFIG – MFD1 config error. Config service req'd.	The MFD configuration settings do not match backup configuration memory. The system should be serviced.
Index	MFD1 COOLING – MFD1 has poor cooling. Reducing power usage.	The MFD is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced.

Message	Comments
MFD1 DB ERR – MFD1 obstacle database error exists.	The MFD detected a failure in the obstacle database. Ensure the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
MFD1 DB ERR – MFD1 obstacle database missing.	The obstacle database is present on another LRU, but is missing on the specified LRU.
MFD1 DB ERR – MFD1 terrain database error exists.	The MFD detected a failure in the terrain database. Ensure the terrain card is properly inserted in display. Replace terrain card. If problem persists, the system should be serviced.
MFD1 DB ERR – MFD1 terrain database missing.	The terrain database is present on another LRU, but is missing on the specified LRU.
MFD1 SERVICE – MFD1 needs service. Return unit for repair.	The MFD self-test has detected a problem. The system should be serviced.
MFD1 KEYSTK – MFD1 [key name] is stuck.	A key is stuck on the MFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
MFD1 VOLTAGE – MFD1 has low voltage. Reducing power usage	The MFD voltage is low. The system should be serviced.
NAV #[1-2] INOP - CAL – Check NAV calibration.	NAV 1 and/or NAV 2 calibration version error. Check NAV calibration.
NAV #[1-2] INOP - CONFIG – Check NAV Software and Config.	The NAV1 and/or NAV2 configuration settings do not match backup configuration memory. The system should be serviced
NAV #[1-2] INOP - SERL – Check NAV Serial Communication.	The NAV1 and/or NAV2 communication is inoperative. They system should be serviced.
NAV #[1-2] INOP - INTRL – NAV internal fault.	NAV1 and/or NAV2 has an internal fault.
NAV #[1-2] INOP - SYNTH – NAV synthesizer lock fault.	The NAV1 and/or NAV2 has a synthesizer lock fault.
NAV1 MANIFEST – NAV1 software mismatch, communication halted.	NAV1 software mismatch. The system should be serviced.

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Flight Instruments	NAV1 RMT XFR – NAV1 remote transfer key is stuck.	The remote NAV1 transfer switch is stuck in the enabled (or “pressed”) state. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
EIS	NAV1 SERVICE – NAV1 needs service. Return unit for repair.	A failure has been detected in the NAV1 receiver. The receiver may still be available. The system should be serviced.
Nav/Com/XPDR/Audio	NAV2 MANIFEST – NAV2 software mismatch, communication halted.	NAV2 software mismatch. The system should be serviced.
Flight Management	NAV2 RMT XFR – NAV2 remote transfer key is stuck.	The remote NAV2 transfer switch is stuck in the enabled (or “pressed”) state. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
Hazard Avoidance	NAV2 SERVICE – NAV2 needs service. Return unit for repair.	A failure has been detected in the NAV2 receiver. The receiver may still be available. The system should be serviced.
AFCs	NON-MAGNETIC UNITS – Non-magnetic NAV ANGLE display units are active.	Navigation angle is not set to MAGNETIC at power-on.
Additional Features	NON WGS84 WPT – Do not use GPS for navigation to [xxxx]	The position of the selected waypoint [xxxx] is not calculated based on the WGS84 map reference datum and may be positioned in error as displayed. Do not use GPS to navigate to the selected non-WGS84 waypoint..
Abnormal Operation	PFD1 BACKLIGHT CALIBRATION – PFD1 backlight calibration lost. Return for repair.	The PFD1 backlight calibration cannot be found or is invalid. The system should be serviced.
Annun/Alerts	PFD1 CONFIG – PFD1 config error. Config service req’d.	The PFD configuration settings do not match backup configuration memory. The system should be serviced.
Appendix	PFD1 COOLING – PFD1 has poor cooling. Reducing power usage.	The PFD is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced.
Index	PFD1 DB ERR – PFD1 obstacle database missing.	The obstacle database is present on another LRU, but is missing on the specified LRU.

Message	Comments
PFD1 DB ERR – PFD1 terrain database error exists.	The PFD detected a failure in the terrain database. Ensure the terrain card is properly inserted in display. Replace terrain card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 terrain database missing.	The terrain database is present on another LRU, but is missing on the specified LRU.
PFD1 KEYSTK – PFD1 [key name] is stuck.	A key is stuck on the PFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
[PFD1 or MFD1] CARD 1 REM – Card 1 was removed. Reinsert card.	The SD card was removed from the top card slot of the specified PFD or MFD. The SD card needs to be reinserted.
[PFD1 or MFD1] CARD 2 REM – Card 2 was removed. Reinsert card.	The SD card was removed from the bottom card slot of the specified PFD or MFD. The SD card needs to be reinserted.
[PFD1 or MFD1] CARD 1 ERR – Card 1 is invalid.	The SD card in the top card slot of the specified PFD or MFD contains invalid data.
[PFD1 or MFD1] CARD 2 ERR – Card 2 is invalid.	The SD card in the bottom card slot of the specified PFD or MFD contains invalid data.
PFD1 VOLTAGE – PFD1 has low voltage. Reducing power usage	The PFD1 voltage is low. The system should be serviced.
PFD1 KEYSTK – PFD2 [key name] is stuck.	A key is stuck on the PFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
PFD1 SERVICE – PFD1 needs service. Return unit for repair.	The PFD self-test has detected a problem. The system should be serviced.
PFD1 TERRAIN DSP – PFD1 Terrain awareness display unavailable.	One of the terrain or obstacle databases required for TAWS in PFD1 is missing or invalid.
PFD1 VOLTAGE – PFD2 has low voltage. Reducing power usage	The PFD2 voltage is low. The system should be serviced.
PTK FAIL – Parallel track unavailable: invalid leg type.	Invalid leg type for parallel offset.

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Flight Instruments	PTK FAIL – Parallel track unavailable: past IAF.	IAF waypoint for parallel offset has been passed.
EIS	PTK FAIL – Parallel track unavailable: bad geometry.	Bad parallel track geometry.
	SCHEDULER [#] – <message>.	Message criteria entered by the user.
Nav/Com/XPDR/Audio	SLCT FREQ – Select appropriate frequency for approach.	The system notifies the pilot to load the approach frequency for the appropriate NAV receiver. Select the correct frequency for the approach.
Flight Management	SLCT MAG – Select MAGNETIC NAV ANGLE display units.	The system notifies the pilot to set the Nav Angle units on the Avionics Settings Screen to Magnetic.
Hazard Avoidance	SLCT NAV – Select NAV on CDI for approach.	The system notifies the pilot to set the CDI to the correct NAV receiver. Set the CDI to the correct NAV receiver.
AFCs	SLCT NON-MAG – Select alternate NAV ANGLE display units.	The system notifies the pilot to set the Nav Angle units on the Avionics Settings Screen to True.
Additional Features	STEEP TURN – Steep turn ahead.	A steep turn (known as a normal bank turn, with more than 90 degrees of directional change) is 15 seconds ahead. Prepare to turn.
Abnormal Operation	STRMSCP FAIL – Stormscope has failed.	Stormscope has failed. The system should be serviced.
	SURFACEWATCH DISABLED – Too far north/south.	The SurfaceWatch system has been disabled.
Annun/Alerts	SURFACEWATCH FAIL – Invalid audio configuration.	The SurfaceWatch system has failed due to an invalid audio configuration.
	SURFACEWATCH FAIL – Invalid configurable alerts.	The SurfaceWatch system has failed due to invalid configurable alerts.
Appendix	SURFACEWATCH FAIL – One or more inputs invalid.	The SurfaceWatch system has failed due to one or more invalid inputs.
Index	SURFACEWATCH INHIBITED – Surfacewatch inhibited.	The SurfaceWatch system has been inhibited.

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SVT DISABLED – Out of available terrain region.	Synthetic Vision is disabled because the aircraft is not within the boundaries of the installed terrain database.
SVT DISABLED – Terrain DB resolution too low.	Synthetic Vision is disabled because a terrain database of sufficient resolution is not currently installed.
SW MISMATCH – GDU software version mismatch. Xtalk is off.	The MFD and PFD have different software versions installed. The system should be serviced.
TERRAIN AUD CFG – Trn Awareness audio config error. Service req'd.	TAWS is disabled because the audio configuration is invalid. The system should be serviced.
TERRAIN DISABLED – Terrain Awareness DB resolution too low.	TAWS is disabled because a terrain database of sufficient resolution is not currently installed.
TIMER EXPIRD – Timer has expired.	The system notifies the pilot the timer has expired.
TRAFFIC FAIL – Traffic device has failed.	The system is no longer receiving data from the traffic system. The traffic device should be serviced.
TRN AUD FAIL – Trn Awareness audio source unavailable	Terrain Awareness audio is unavailable. The system should be serviced.
UNABLE V WPT – Can't reach current vertical waypoint.	The current vertical waypoint can not be reached within the maximum flight path angle and vertical speed constraints. The system automatically transitions to the next vertical waypoint.
VNV – Unavailable. Excessive crosstrack error.	The current crosstrack exceeds the limit, causing vertical deviation to go invalid.
VNV – Unavailable. Excessive track angle error.	The current track angle error exceeds the limit, causing the vertical deviation to go invalid.
VNV – Unavailable. Parallel course selected.	A parallel course has been selected, causing the vertical deviation to go invalid.

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Flight Instruments	VNV – Unavailable. Unsupported leg type in flight plan.	The lateral flight plan contains a procedure turn, vector, or other unsupported leg type prior to the active vertical waypoint. This prevents vertical guidance to the active vertical waypoint.
EIS	WPT ARRIVAL – Arriving at waypoint -[xxxx]	Arriving at waypoint [xxxx], where [xxxx] is the waypoint name.
Nav/Com/XPDR/Audio	XPDR1 ADS-B 1090 – Datalink: ADS-B 1090 receiver has failed.	A failure has been detected in the 1090 receiver.
Flight Management	XPDR1 ADS-B FAIL – Transponder: XPDR1 is unable to transmit ADS-B messages.	ADS-B is inoperative. The transponder may not be receiving a valid GPS position. Other transponder functions may be available. Service when possible.
Hazard Avoidance	XPDR1 ADS-B NO POS – Transponder: ADS-B is not transmitting position.	The transponder is not able to receive position information.
AFCs	XPDR1 ADS-B TRFC – Transponder: ADS-B traffic has failed	The Transponder is incapable of processing traffic information.
	XPDR1 ADS-B UAT – Datalink: ADS-B in UAT receiver has failed.	A failure has been detected in the UAT receiver.
Additional Features	XPDR1 CONFIG – XPDR1 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The system should be serviced.
Abnormal Operation	XPDR1 CSA FAIL – Traffic: ADS-B In traffic alerting has failed.	ADS-B Conflict Situational Awareness (CSA) is unavailable.

Message	Comments
XPDR1 FAIL – XPDR1 is inoperative.	There is no communication with the #1 or #2 transponder.
XPDR1 FAULT – Datalink: ADSB-B in has failed.	The transponder is unable to receive ADS-B information.
XPDR1 FIS-B WX – Datalink: FIS-B Weather has failed.	The transponder is unable to receive FIS-B weather information.
XPDR1 OVER TEMP – Transponder: Transponder over temp.	The system has detected an over temperature condition in XPDR1. The transmitter operates at reduced power. If the problem persists, the system should be serviced.
XPDR1 PRES ALT –Transponder: ADS-B no pressure altitude.	Unable to provide pressure altitude information.
XPDR1 SRVC – XPDR1 needs service. Return unit for repair.	The #1 transponder should be serviced when possible.
XPDR1 UNDER TEMP – Transponder: Transponder under temp.	The system has detected an under temperature condition in XPDR1. The transmitter operates at reduced power. If the problem persists, the system should be serviced.
XTALK ERROR – A flight display crosstalk error has occurred.	The MFD and PFD are not communicating with each other. The system should be serviced.

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FLIGHT PLAN IMPORT/EXPORT MESSAGES

In some circumstances, some messages may appear in conjunction with others.

Flight Plan Import/Export Results	Description
'Flight plan successfully imported.'	A flight plan file stored on the SD card was successfully imported as a stored flight plan.
'File contained user waypoints only. User waypoints imported successfully. No stored flight plan data was modified.'	The file stored on the SD card did not contain a flight plan, only user waypoints. These waypoints have been saved to the system user waypoints. No flight plans stored in the system have been modified.
'No flight plan files found to import.'	The SD card contains no flight plan data.
'Flight plan import failed.'	Flight plan data was not successfully imported from the SD card.
'File contained user waypoints only.'	The file stored on the SD card did not contain a flight plan, only user waypoints. One or more of these waypoints did not import successfully.
'Flight plan partially imported.'	Some flight plan waypoints were successfully imported from the SD card, however others had errors and were not imported. A partial stored flight plan now exists in the system.
'Too many points. Flight plan truncated.'	The flight plan on the SD card contains more waypoints than the system can support. The flight plan was imported with as many waypoints as possible.
'Some waypoints not loaded. Waypoints locked.'	The flight plan on the SD card contains one or more waypoints that the system cannot find in the navigation database. The flight plan has been imported, but must be edited within the system before it can be activated for use.

Flight Plan Import/Export Results	Description
'User waypoint database full. Not all loaded.'	The flight plan file on the SD card contains user waypoints. The quantity of stored user waypoints has exceeded system capacity, therefore not all the user waypoints on the SD card have been imported. Any flight plan user waypoints that were not imported are locked in the flight plan. The flight plan must be edited within the system before it can be activated for use.
'One or more user waypoints renamed.'	One or more imported user waypoints were renamed when imported due to naming conflicts with waypoints already existing in the system.
'Flight plan successfully exported.'	The stored flight plan was successfully exported to the SD card.
'Flight plan export failed.'	The stored flight plan was not successfully exported to the SD card. The SD card may not have sufficient available memory or the card may have been removed prematurely.

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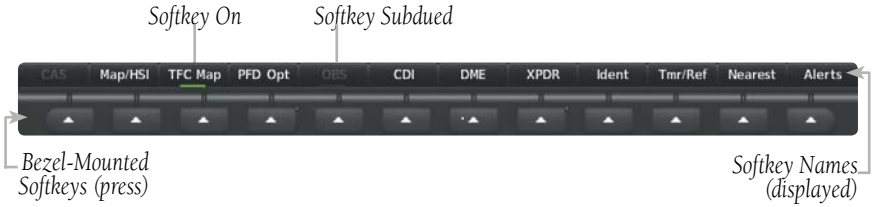
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PFD SOFTKEY MAPS



Softkeys (First-Level PFD Configuration)

Level 1	Level 2	Level 3	Description
CAS			Displays the scroll key. Only selectable when the number of CAS messages exceeds the capacity of the display window.
	CAS Up		Scroll up list of CAS messages.
	CAS Down		Scroll down list of CAS messages.
Map/HSI			Displays the PFD Map display settings softkeys.
	Layout		Displays the PFD Map selection softkeys.
		Map Off	Removes the PFD map from display (Inset, HSI, or Traffic).
		Inset Map	Displays the Inset Map.
		HSI Map	Displays the HSI Map.
		Inset Trfc	Replaces the Inset Map with a dedicated traffic display.
		HSI Trfc	Replaces the HSI Map with a dedicated traffic display.
	Detail		Selects desired amount of map detail: All (No Declutter): All map features visible Detail 3 : Declutters land data Detail 2 : Declutters land and SUA data Detail 1 : Removes everything except for the active flight plan
	Traffic		Displays traffic information on PFD Map.

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	Level 1	Level 2	Level 3	Description
Flight Instruments		TER		<p>Topo: Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on PFD Map.</p> <p>REL: Displays relative terrain information on the PFD Map.</p> <p>Off: Removes terrain</p>
EIS		WX LGND		Displays/removes the name of the selected weather data provider (SiriusXM) and the weather product icon and age box (for enabled weather products).
Nav/Com/XPDR/Audio		NEXRAD		Displays XM NEXRAD weather and coverage on PFD Map (subscription optional)
Flight Management		METAR		Displays METAR information on Inset Map (subscription optional)
Hazard Avoidance		Lightning		Adds/removes the display of SiriusXM or Connex lightning information (based on weather data source selection) on the PFD Map.
AFCS			LTNG Off	Disables lightning function on PFD Map. The softkey annunciator is green when the lightning function is off.
Additional Features			Datalink	Selects the datalink weather source for the PFD Map
			STRMSCP	Adds or removes the display of Stormscope information on the PFD Map. The softkey annunciator is green when the function is on.
	TFC Map			Replaces the PFD Map with a dedicated traffic display.
	PFD Opt			Displays second-level softkeys for additional PFD options.
Abnormal Operation		SVT		Displays additional SVT overlay softkeys.
			Pathways	Displays Pathway Boxes on the Synthetic Vision Display.
			Terrain	Enables synthetic terrain depiction.
Annun/Alerts			HDG LBL	Displays compass heading along the Zero-Pitch line.
Appendix			APT Sign	Displays position markers for airports within approximately 15 nm of the current aircraft position. Airport identifiers are displayed when the airport is within approximately 9 nm.
			Wire	Displays power lines on the synthetic vision display.
Index		Wind		Displays the wind option softkeys.
			Off	Wind information not displayed.

Level 1	Level 2	Level 3	Description
		Option 1	Headwind/Tailwind and crosswind arrows with numeric components.
		Option 2	Total wind direction arrow and numeric speed.
		Option 3	Total wind direction arrow with digital numeric direction and speed.
	DME		Displays 'DME Information' Window (optional).
	Bearing 1		Cycles the Bearing 1 Information Window through NAV1, NAV2, GPS/waypoint identifier and GPS-derived distance information, ADF/frequency, and Off.
	Bearing 2		Cycles the Bearing 2 Information Window through NAV1, NAV2, GPS/waypoint identifier and GPS-derived distance information, ADF/frequency, and Off.
	ALT Units		Displays softkeys to select altitude unit parameters.
		Meters	When enabled, displays altimeter in meters.
		IN	Press to display the BARO setting as inches of mercury.
		HPA	Press to display the BARO setting as hectopascals.
	STD Baro		Sets barometric pressure to 29.92 in Hg (1013 hPa if metric units are selected).
OBS			Selects OBS mode on the CDI when navigating by GPS (only available with active leg). When OBS is on, the softkey annunciator is green.
CDI			Cycles through FMS, NAV1, and NAV2 navigation modes on the CDI.
DME			Displays the 'DME Tuning' Window, allowing tuning and selection of the DME (optional).
XPDR			Displays the transponder selection softkeys.
	Standby		Selects transponder Standby Mode (transponder does not reply to any interrogations).
	On		Activates transponder (transponder replies to identification interrogations).
	ALT		Altitude Reporting Mode (transponder replies to identification and altitude interrogations).
	VFR		Automatically enters the VFR code (1200 in the U.S.A. only).

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	Level 1	Level 2	Level 3	Description
Flight Instruments		Code		Displays transponder code selection softkeys 0-7.
			0 - 7	Use numbers to enter code.
EIS			Ident	Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
Nav/Com/XPDR/Audio			BKSP	Removes numbers entered, one at a time.
Flight Management		Ident		Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
	Ident			Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
Hazard Avoidance	TMR/REF			Displays 'Timer/References' Window.
	Nearest			Displays 'Nearest Airports' Window.
AFCs	Alerts or Message			Displays the 'Alerts' Window when pressed. System generated messages cause the Alerts Softkey label to change to a flashing 'Message' label. Pressing the Message Softkey opens the 'Alerts Window, acknowledges the message, and the softkey reverts to the 'Alerts' label.

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	Level 1	Level 2	Level 3	Level 4	Description
Abnormal Operation	Engine				Displays second-level engine softkeys for EIS configuration.
		Engine			Displays default EIS display.
Annun/Alerts		Lean			Displays EIS lean display and lean softkeys.
			CYL SLCT		Allows selection of engine cylinder to view additional information.
Appendix			Assist		Enables/disables leaning assist mode.
Index		System			Displays system oil pressure and temperature, fuel calculations, electrical system information and system softkeys.

Level 1	Level 2	Level 3	Level 4	Description
		RST Fuel		Resets calculated fuel remaining to default and resets fuel used to zero.
		GAL REM		Press to display the fuel totalizer softkeys
			-10 GAL	Press to decrease remaining fuel quantity in 10-gallon increments.
			-1 GAL	Press to decrease remaining fuel quantity in 1-gallon increments.
			+1 GAL	Press to increase remaining fuel quantity in 1-gallon increments.
			+10 GAL	Press to increase remaining fuel quantity in 10-gallon increments.
			35 GAL	Sets remaining fuel to 35 gallons.
			53 GAL	Sets remaining fuel to 53 gallons.
Map Opt				Displays the different map softkey selectable features.
	Traffic			Displays traffic information on the 'Map - Navigation Map' Page.
	Inset			Displays second level softkeys for the VSD Inset.
		Off		Removes VSD Inset from 'Map - Navigation Map' Page.
		VSD		<p>Displays VSD Inset profile information of terrain/obstacles along the current track, vertical track vector, and selected altitude.</p> <ul style="list-style-type: none"> - Auto: Automatically displays either VSD profile information for active flight plan information or along current track with no active flight plan. - FPL: Displays VSD profile information for active flight plan. - TRK: Displays VSD profile information along current track.

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	Level 1	Level 2	Level 3	Level 4	Description
Flight Instruments		TER			<p>Displays terrain on the map; cycles through the following:</p> <ul style="list-style-type: none"> - Off: No terrain information shown on MFD Map. - Topo: Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on MFD Map. - REL: Displays relative terrain information on the MFD Map.
EIS					
Nav/Com/XPDR/Audio					
Flight Management		AWY			<p>Displays airways on the map; cycles through the following:</p> <ul style="list-style-type: none"> - Off: No airways are displayed. - On: All airways are displayed. - LO: Only low altitude airways are displayed. - HI: Only high altitude airways are displayed.
Hazard Avoidance					
AFCs		STRMSCP			Displays Stormscope information on Navigation Map (optional).
Additional Features		NEXRAD			Displays XM NEXRAD weather and coverage on 'Map - Navigation Map' Page (optional).
		XM LTNG			Displays XM lightning information on the 'Map - Navigation Map' Page (optional).
		METAR			Displays METAR information on Inset Map (subscription optional).
Abnormal Operation		Legend			Displays legends for the displayed XM Weather products (optional).
Annun/Alerts	Detail				<p>Selects desired amount of map detail; cycles through the following levels:</p> <ul style="list-style-type: none"> - Detail All: All map features visible. - Detail-3: Declutters land data. - Detail-2: Declutters land and SUA data. - Detail-1: Removes everything except for the active flight plan.
Appendix	Charts				When available, displays optional airport and terminal procedure charts.
Index		CHRT Opt			Displays chart display settings softkeys (if available).
			ROT CCW		Rotates chart 90 degrees counter clockwise.

Level 1	Level 2	Level 3	Level 4	Description
		ROT CW		Rotates chart 90 degrees clockwise.
		Fit WDT		Chart zoom adjusted to fill width of display.
		Full SCN		When the annunciator bar is green, full screen mode is enabled. The annunciator bar is grey when in split screen mode.
	SYNC			Displays the chart associated with the current phase of flight.
	Info			Returns to the selected airport information chart (Airport Diagram, Alternate Minimums, Climb/Descent Table, Diverse Vector Area, Hot Spot, INOP Components, LAHSO, and Takeoff Minimums).
	DP			Displays departure procedure chart.
	STAR			Displays standard terminal arrival procedure chart.
	APR			Displays approach procedure chart.
	WX			Displays weather information.
	NOTAM			Displays NOTAM information for selected airport, when available.
Checklist				When available, displays optional checklists.

LOADING UPDATED DATABASES



CAUTION: *Never disconnect power to the system when loading a database. Power interruption during the database loading process could result in maintenance being required to reboot the system.*



NOTE: *When loading database updates, the 'DB Mismatch' system messages will be displayed until database synchronization is complete, followed by turning system power off, then on. Synchronization can be monitored on the 'Aux-Database' Page.*

Databases may be loaded through Garmin Pilot and Wireless Transceiver. When loading databases through Garmin Pilot and the Wireless Transceiver, the Wireless Transceiver must be enabled on the system and the multimedia card inserted in the bottom SD slot of the MFD.

The cycles and dates for both standby and active databases are displayed on the “Aux – Databases” page on the MFD. Any active databases with expiration dates in the past will be highlighted with amber text. When an expired active database has a standby database that is ready to become effective, a cyan double-sided arrow will be displayed between the database cycles. When this arrow is visible, it indicates that the standby and active databases in that row will be switched on the next power cycle, activating the current standby database. Databases can also be manually selected (or deselected) by highlighting a list item and pressing the **ENT** Key, provided a valid, verified standby database is present.

In some cases it may be necessary to obtain an unlock code from Garmin in order to make the database product functional. It may also be necessary to have the system configured by a Garmin authorized service facility in order to use some database features.

The navigation database contains the aeronautical data used by the system for the flight management and flight planning functions. Included is detailed data for waypoints, procedures (arrivals, departures, approaches), and airways. The navigation database is updated every 28 days.

The basemap database contains data for the topography and land features, such as rivers, lakes, and towns. It is updated only periodically, with no set schedule. There is no expiration date.

The terrain database contains the terrain mapping data. These databases are updated periodically and have no expiration date.

The obstacle database contains data for obstacles, such as towers, that pose a potential hazard to aircraft. Obstacles 200 feet and higher are included in the obstacle database. It is very important to note that not all obstacles are necessarily charted and therefore may not be contained in the obstacle database. This database is updated on a 56-day cycle.



NOTE: *The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.*

The AOPA or AC-U-KWIK Airport Directory provides data on airports and heliports throughout the U.S. or worldwide, respectively. The AOPA Directory offers detailed information for over 5,300 U. S. airports, along with the names and phone numbers of thousands of FBOs. These databases are updated every 56 days. The AC-U-KWIK Directory offers detailed information for more than 8,000 airports with runways longer than 3,000 feet worldwide.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams aid in following ground control instructions by accurately displaying the aircraft position on the map in relation to taxiways, ramps, runways, terminals, and services. This database is updated on a 56-day cycle.

The FliteCharts database contains procedure charts. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function. The ChartView database must be purchased directly from Jeppesen, but can be updated at jeppesen.com or flygarmin.com.

The IFR/VFR charts database contains VFR and IFR raster charts. The VFR Charts are digital representations of the Sectional Aeronautical Charts and Terminal Area Charts. The IFR Charts include both IFR High (designed for navigation at or above 18,000 ft) and IFR Low (designed for navigation below 18,000 ft). IFR/VFR Charts are updated every 28 days except for Canadian IFR/VFR Charts which are updated every 56 days.

Updated Databases Using a Supplemental Data Card

All databases are updated through a single SD card in the bottom slot of the MFD. When the card is inserted, the databases on the card will be copied to standby and synchronized across all powered, configured units. After update, the card is removed and the databases are stored on the system. When in standby, databases are not immediately available for use, but stored to be activated at a later time.

Database updates can be obtained by following the instructions detailed in the 'Aviation Databases' section of the Garmin website (flygarmin.com). Once the updated files have been downloaded from the website, a PC equipped with an appropriate SD card reader is used to unpack and program the new databases onto an existing Supplemental Data Card. When database files are loaded to the SD card, any previously loaded database files of the same type residing on the SD card will be overwritten. This includes loading a database of a different coverage area or data cycle than that currently residing on the SD card. Equipment required to perform the update is as follows:

- Windows-compatible PC computer
- SD Card Reader: SanDisk SDDR-93, SanDisk SDDR-99, Verbatim #96504, or equivalent
- Updated database obtained from the Garmin website
- Supplemental SD Cards

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Updating Databases:

- 1) With the system OFF, remove an SD Card from the bottom SD card slot of the MFD.
- 2) Download and install the databases on an SD card.
- 3) Put the SD Card in the bottom SD card slot of the MFD.
- 4) Turn the system ON.
- 5) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 6) Turn the large **FMS** Knob and select Aux.
- 7) Turn the small **FMS** Knob and select Databases.
- 8) Monitor the Sync Status on the 'Aux-Databases' Page. Wait for all databases to complete syncing, indicated by 'Sync Complete' being displayed. A cyan double-arrow will appear between the Standby and Active columns to show which Standby databases will be transferred to Active at the next power cycle.
- 9) Verify the correct database cycle information is shown in the Standby column.
- 10) Remove power from the system.
- 11) Remove the SD card from the bottom slot of the MFD if desired.
- 12) Apply power to the system.
- 13) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 14) Turn the large **FMS** Knob and select Aux.
- 15) Turn the small **FMS** Knob and select the Databases.
- 16) Verify the standby databases transferred and are now in the Active column.
- 17) To manually activate any databases that did not transfer to the active column:
 - a) Push the **FMS** Knob. The first database title on the screen will be selected.
 - b) Turn the small **FMS** Knob as necessary to select the database title.
 - c) Press the **ENT** Key. A cyan double-sided arrow will appear indicating the standby database will become active.

Or:

Press the **MENU** Key and select 'Swap Stby/Actv' using the small **FMS** Knob. Press the **ENT** Key. A cyan double-sided arrow will appear indicating the standby database will become active.

- d) Remove and reapply power to the system.
 - e) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
 - f) Turn the large **FMS** Knob and select Aux.
 - g) Turn the small **FMS** Knob and select Databases.
 - h) Verify the standby databases transferred and are now in the Active column.
- 18)** For additional information on each database, push and then turn the **FMS** Knob to select the database, and then press the **Details** Softkey. Press the **ENT** Key or push the **FMS** Knob to exit.

Or:

Press the **MENU** Key and select 'Details' using the small **FMS** Knob and press the **ENT** Key. Press the **ENT** Key or push the **FMS** Knob to exit.

- 19)** To view database information for an individual display:
- a) Turn the large **FMS** Knob and select Aux.
 - b) Turn the small **FMS** Knob and select System Status.
 - c) Press the Display Database Selection Softkey (MFD1 DB, PFD1 DB) to show database information for each display. Use the small **FMS** Knob to scroll through the database information. Press the **ENT** Key or the **FMS** Knob to exit.

Updating Databases Using the Wireless Transceiver

In order to load databases through Garmin Pilot and the Wireless Transceiver (also known as Flight Stream 510 or FS510), the Wireless Transceiver must be enabled on the system and inserted in the bottom SD slot of the MFD. A mobile device with Garmin Pilot must be paired with the Wireless Transceiver over Wireless (refer to the Additional Features section). When there is at least one paired device available to connect, the Wireless Transceiver will automatically connect to the system's preferred mobile device. The preferred device can be selected on the 'Aux - Databases' Page from a menu list of paired devices.

Once a connection to the paired mobile device is made, Garmin Pilot makes available databases that can be transferred to the Wireless Transceiver. If any of these databases is more recent than the respective standby database on the system, (or if there is no standby database on the system) those databases will be automatically selected to load. The database updates may be initiated from the 'Aux - Databases' Page, or from other pages on the MFD.



NOTE: The system will only provide a WiFi connection if new databases have been detected for download on Garmin Pilot via a valid Bluetooth connection. If there are no database updates required the system will not provide a WiFi signal.



NOTE: If the mobile device has previously connected to the FS510, and is not connected to another WiFi source, the mobile device should connect automatically to the FS510. If the mobile device is connected to another WiFi source (i.e. hangar wifi), then the FS510 will not connect automatically.

Updating Databases from any MFD page (except the "Aux- Databases' Page):

- 1) Insert the Wireless Transceiver SD Card in the bottom slot of the MFD if not already inserted.
- 2) Turn the system ON.
- 3) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 4) On the mobile device, start Garmin Pilot and touch **Home > Connex > Database Concierge**.
- 5) Turn the large **FMS** Knob and select Aux.
- 6) Turn the small **FMS** Knob and select the Connex Setup.
- 7) Ensure that Wifi Database Import is enabled in the 'Device' Window (refer to Additional Features section for instructions to enable Wifi Database Import).
- 8) Verify that the mobile device is enabled via Bluetooth in the Bluetooth settings on the mobile device.
- 9) In the 'Paired Devices' Window on the 'Connex Setup' Page, ensure the system is paired with the mobile device in use. (refer to Additional Features for instructions on connection to a preferred device).



NOTE: The database updates may now be continued from any MFD page, however, the update windows shown in these instructions will not be shown on the 'Aux - Databases' Page. Use the proceeding instructions in this section to update databases from the 'Aux - Databases' Page.

- 10) Press the **Update** Softkey when the window appears. (Pressing the **View** Softkey will allow database updates to be viewed from the 'Aux Databases' Page, however, the windows shown below will not appear on the 'Aux Databases' Page. Pressing the **Ignore** Softkey will postpone the updates until further action is taken.)
- 11) If using a device that has not been previously paired with the system, a password prompt will appear on the mobile device. Enter the password shown in the 'Password' Field of the 'Aux - Connnext Setup' Page.
- 12) Database update progress may be monitored on the mobile device.
- 13) When the transfer is complete, a screen will appear.
- 14) Press the **Close** Softkey.
- 15) Remove and reapply power to the system.
- 16) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 17) Turn the large **FMS** Knob and select Aux.
- 18) Turn the small **FMS** Knob and select Databases.
- 19) Verify that the standby databases transferred and are now in the Active column.
- 20) To manually activate any databases that did not transfer to the active column:
 - a) Press the **FMS** Knob. The first database title on the screen will be selected.
 - b) Turn the small **FMS** Knob as necessary to select the database title.
 - c) Press the **ENT** Key. A cyan double-sided arrow will appear indicating that the standby database will become active.

Or:

Press the **Menu** Key and select 'Swap Stby/Actv' using the small **FMS** Knob. Press the **ENT** Key. A cyan double-sided arrow will appear indicating that the standby database will become active.

 - d) Remove and reapply power to the system.

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- e) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- f) Turn the large **FMS** Knob and select Aux.
- g) Turn the small **FMS** Knob and select Databases.
- h) Verify that the standby databases transferred and are now in the Active column.

- 21) For additional information on each database, press and then turn the **FMS** Knob to select the database, and then press the **Details** Softkey. Press the **ENT** Key or the **FMS** Knob to exit.

Or:

Press the **Menu** Key and select 'Details' using the small **FMS** Knob and press the **ENT** Key. Press the **ENT** Key or the **FMS** Knob to exit.

- 22) To view database information for an individual display:
- a) Turn the large **FMS** Knob and select Aux.
 - b) Turn the small **FMS** Knob and select System Status.
 - c) Press the Display Database Selection Softkey (MFD1 DB, PFD1 DB, PFD2 DB) to show database information for each display. Use the small **FMS** Knob to scroll through the database information. Press the **ENT** Key or the **FMS** Knob to exit.

Updating Databases from the 'Aux - Databases' page:



NOTE: The system will only provide a WiFi connection if new databases have been detected for download on Garmin Pilot via a valid Bluetooth connection. If there are no database updates required the system will not provide a WiFi signal.



NOTE: If the mobile device has previously connected to the FS510, and is not connected to another WiFi source, the mobile device should connect automatically to the FS510. If the mobile device is connected to another WiFi source (i.e. hangar wifi), then the FS510 will not connect automatically.

- 1) Insert the Wireless Transceiver SD Card in the bottom slot of the MFD if not already inserted.
- 2) Turn the system ON.
- 3) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.

- 4) On the mobile device, start Garmin Pilot and tap **Home > Connex > Database Concierge**.
- 5) Turn the large **FMS** Knob and select Aux.
- 6) Turn the small **FMS** Knob and select the Connex Setup.
- 7) Ensure that Wifi Database Import is enabled in the 'Device' Window (refer to Additional Features section for instructions to enable Wifi Database Import).
- 8) Verify that the mobile device is enabled via Bluetooth in the Bluetooth settings on the mobile device.
- 9) In the 'Paired Devices' Window on the 'Connex Setup' Page, ensure the system is paired with the mobile device in use. (refer to Additional Features for instructions on connection to a preferred device).
- 10) Press the **Device** Softkey to view databases that are ready to be loaded from the mobile device (pressing the **Stby/Actv** Softkey will again display the current Standby and Active databases).
- 11) The 'Aux - Databases' Page will show the databases connected to the mobile device in place of the active databases on the system. Databases selected to load to the system will be indicated by a single cyan arrow.
- 12) Press the **Update** Softkey.
- 13) If using a device that has not been previously paired with the system, a password prompt will appear on the mobile device. Enter the password shown in the 'Password' Field of the 'Aux - Connex Setup' Page.
- 14) Database Update status will appear in the 'Status' Window at the top of the page. Monitor update progress in the 'Status' Window, or on the mobile device.
- 15) When all databases have been successfully transferred from the mobile device and appear in the Standby column, remove and reapply power to the system.
- 16) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 17) Turn the large **FMS** Knob and select Aux.
- 18) Turn the small **FMS** Knob and select Databases.
- 19) Verify that the standby databases transferred and are now in the Active column.

- 20)** To manually activate any databases that did not transfer to the active column:
- Press the **FMS** Knob. The first database title on the screen will be selected.
 - Turn the small **FMS** Knob as necessary to select the database title.
 - Verify the correct database cycle information is shown for each database for each display.
- Or:**
- Press the **Menu** Key and select 'Swap Stby/Actv' using the small **FMS** Knob. Press the **ENT** Key. A cyan double-sided arrow will appear indicating that the standby database will become active.
- Remove and reapply power to the system.
 - Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
 - Turn the large **FMS** Knob and select Aux.
 - Turn the small **FMS** Knob and select Databases.
 - Verify that the standby databases transferred and are now in the Active column.
- 21)** For additional information on each database, press and then turn the **FMS** Knob to select the database, and then press the **Details** Softkey. Press the **ENT** Key or the **FMS** Knob to exit.
- Or:**
- Press the **Menu** Key and select 'Details' using the small **FMS** Knob and press the **ENT** Key. Press the **ENT** Key or the **FMS** Knob to exit.
- 22)** To view database information for an individual display:
- Turn the large **FMS** Knob and select Aux.
 - Turn the small **FMS** Knob and select System Status.
 - Press the **ENT** Key. A cyan double-sided arrow will appear indicating that the standby database will become active.
 - Press the Display Database Selection Softkey (MFD1 DB, PFD1 DB, PFD2 DB) to show database information for each display. Use the small **FMS** Knob to scroll through the database information. Press the **ENT** Key or the **FMS** Knob to exit.

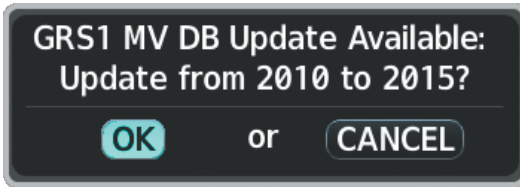
DATABASE DELETION FEATURE

Deleting databases:

- 1) Press the **Menu** Key.
- 2) Turn the small **FMS** Knob to select 'Delete Databases.'
- 3) Press the **ENT** Key.
- 4) A prompt will appear to confirm deletion of all internal databases. Push the **ENT** Key.
- 5) Another prompt will appear to confirm deletion of all internal databases. Press the **ENT** Key.
- 6) Remove and reapply power to the system.
- 7) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 8) Turn the large **FMS** Knob and select Aux.
- 9) Turn the small **FMS** Knob and select Databases.
- 10) Confirm that all databases have been deleted from the system.

MAGNETIC FIELD VARIATION DATABASE UPDATE

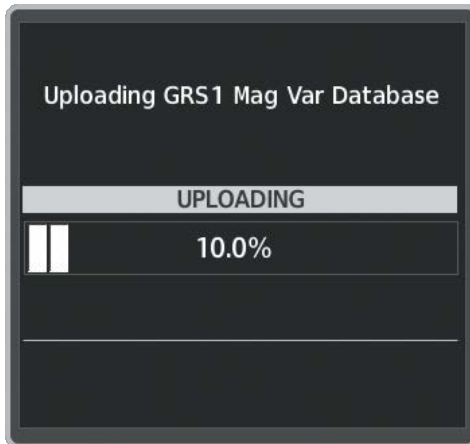
A copy of the current magnetic field variation database (MV DB) is included with the navigation database. At startup, the system compares this version of the MV DB with that presently being used by the ADAHRS. If the system determines the MV DB needs to be updated, a prompt is displayed on the Navigation Map Page.



Magnetic Field Variation Database Update Prompt

Loading the magnetic field variation database update:

With 'OK' highlighted, press the **ENT** Key on the MFD. A progress monitor is displayed as shown. When the upload is complete, the system is ready for use.



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