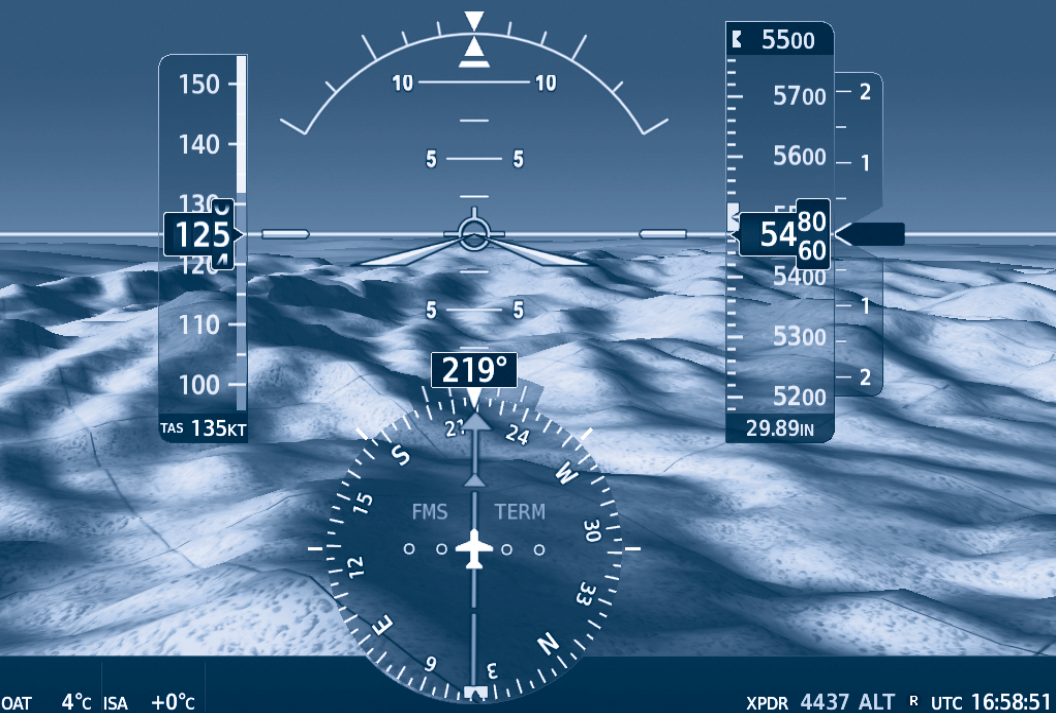


G1000[®] NXi

Cockpit Reference Guide



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 2136.07 or later for the Tecnam P2010. 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 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: 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 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 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 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 operate this equipment without first obtaining qualified instruction.



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: 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 use a QFE altimeter setting with this system. System functions will not operate properly with a QFE altimeter setting. Use only a QNH altimeter setting for height above mean sea level, or the standard pressure setting, as applicable.



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



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.



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.



NOTE: When operating the system with the magnetic sensor uncoupled from the AHRS, the displayed heading and heading information used by some system components (e.g. traffic system, AFCS, and weather radar) will be different from the heading calculated by the AHRS. The difference is an amount equal to the difference between the current Magnetic Field Variation Database (MV DB) value, and the MV DB value when the magnetic sensor was uncoupled. Due to the convergence of isogonic lines, this condition is most noticeable at or near the north and south magnetic poles.



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: 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 utilize 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: 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: 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 utilize 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: 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: 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: 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 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: 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 www.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 www.flygarmin.com by selecting 'Aviation Database Alerts.'



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 FlightCharts 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: Operate the 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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190-02440-00	Initial Release

Revision	Date of Revision	Affected Pages	Description
A	April 2018	All	Production release at GDU 20.10

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FLIGHT INSTRUMENTS

FLIGHT INSTRUMENTS

ENABLING/DISABLING AND MODIFYING VSPEED BUGS

- 1) Press the **Tmr/Ref** Softkey to show the References Window.
- 2) Turn the large **FMS** Knob to highlight the desired vspeed bug value.
- 3) Turn the small **FMS** Knobs to adjust the value for the selected vspeed bug.
- 4) 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 OR RESTORING DEFAULT VALUES TO ALL VSPEED BUGS AS A GROUP

- 1) Press the **Tmr/Ref** Softkey.
- 2) Press the **MENU** Key.
- 3) Turn the **FMS** Knob to highlight 'All References On', 'All References Off', or 'Restore Defaults'.
- 4) Press the **ENT** Key.
- 5) To remove the window, press the **CLR** Key or the **Tmr/Ref** Softkey.

SETTING THE SELECTED ALTITUDE

Turn the **ALT** Knob to set the Selected Altitude. Turn the large knob for 1000-ft increments, the 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.

DISPLAYING ALTITUDE IN METERS

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



WARNING: Do not use a QFE altimeter setting with this system. System functions will not operate properly with a QFE altimeter setting. Use only a QHN altimeter setting for the height above mean sea level, or the standard pressure setting, as applicable.

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 to display the second-level softkeys.
- 2) Press the **STD Baro** Softkey.

CHANGING 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 (hPa).

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

SETTING THE BARO TRANSITION ALERT

- 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 Altitude in the 'Baro Transition Alert' box. If desired, turn the small **FMS** knob to change the setting.
- 4) Turn the large **FMS** Knob to highlight the Altitude field.
- 5) 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.
- 6) Turn the large **FMS** Knob to highlight the 'On' or 'Off' field for the BARO Transition Alert Level.

- 7) If desired, turn the small **FMS** Knob to set the BARO Transition Alert Flight 'Level' to either 'On' or 'Off'.
- 8) Turn the large **FMS** Knob to highlight the Flight 'Level' field.
- 9) 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.
- 10) Push the **FMS** Knob to deactivate the cursor.

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.

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

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.

CHANGING THE SELECTED FMS (GPS) CDI 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 'Format Allowed' in the 'GPS CDI' box.
- 4) Turn the small **FMS** Knob to highlight the desired setting and press the **ENT** Key.
- 5) To cancel the selection, press the **FMS** Knob or the **CLR** Key.

ENABLING/DISABLING OBS MODE WHILE NAVIGATING A GPS FLIGHT PLAN

- 1) Press the **OBS** Softkey to select OBS Mode.
- 2) Turn a **CRS** Knob to select the desired course to/from the waypoint. Push the **CRS** Knob to synchronize the Selected Course with the bearing to the next waypoint.
- 3) Press the **OBS** Softkey again to disable OBS Mode.

SELECTING BEARING DISPLAY AND CHANGING SOURCES

- 1) Press the **PFD Opt** Softkey.
- 2) Press either the **Bearing 1** or **Bearing 2** Softkey to display the desired bearing pointer and information window with a NAV source.
- 3) Press either the **Bearing 1** or **Bearing 2** Softkey again to change the bearing source to FMS.
- 4) Press either the **Bearing 1** or **Bearing 2** Softkey a third time to change the bearing source to ADF (note: ADF radio installation is optional).
- 5) To remove the bearing pointer and information window, press either the **Bearing 1** or **Bearing 2** Softkey again.

DISPLAYING THE DME INFORMATION WINDOW

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **DME** Softkey to display the 'DME' Information Window above the Bearing1 Information Window.
- 3) To remove the 'DME' Information Window, press the **DME** Softkey again.

SUPPLEMENTAL FLIGHT DATA

SETTING 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/DOWN 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 TEMPERATURE DISPLAY UNITS

- 1) 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 'Temperature' field in the 'Display Units' Box.
- 4) Turn the small **FMS** Knob to highlight either 'Celsius' or 'Fahrenheit' and press the **ENT** Key to confirm the selection.
- 5) To cancel the selection, press the **FMS** Knob or the **CLR** Key.

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 **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 headwind/tailwind and crosswind components
- 4) To remove the window, press the **Off** Softkey.

PFD ANNUNCIATIONS AND ALERTING FUNCTIONS

SETTING THE MINIMUM DESCENT ALTITUDE/DECISION HEIGHT AND BUG

- 1) Press the **Tmr/Ref** Softkey.
- 2) Turn the large **FMS** Knob to highlight the Minimums field.
- 3) Turn the small **FMS** Knob to select 'BARO' or 'TEMP COMP.' 'OFF' is selected by default.
- 4) Press the **ENT** Key or turn the large **FMS** Knob to highlight the next field.
- 5) Use the small **FMS** Knob to enter the desired altitude (from zero to 16,000 feet).
- 6) 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)
- 7) To remove the window, press the **CLR** Key or the **Tmr/Ref** Softkey.

GARMIN SYNTHETIC VISION TECHNOLOGY (SVT)



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.



NOTE: Do not use the flight path marker as a flight director.

ACTIVATING AND DEACTIVATING SVT

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Terrain** Softkey. The SVT display will cycle on or off with the **Terrain** Softkey.

ACTIVATING AND DEACTIVATING PATHWAYS

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Terrain** Softkey.
- 4) Press the **Pathways** Softkey. The Pathway feature will cycle on or off with the **Pathways** Softkey.

ACTIVATING AND DEACTIVATING HORIZON HEADINGS

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Terrain** Softkey.
- 4) Press the **HDG LBL** Softkey. The horizon heading display will cycle on or off with the **HDG LBL** Softkey.

ACTIVATING AND DEACTIVATING AIRPORT SIGNS

- 1) Press the **PFD Opt** Softkey.
- 2) Press the **SVT** Softkey.
- 3) Press the **Terrain** Softkey.
- 4) Press the **APT Sign** Softkey. Display of airport signs will cycle on or off with the **APT Sign** Softkey.

ENABLING/DISABLING SVT FIELD OF VIEW ON THE NAVIGATION MAP

- 1) While viewing the 'Map - Navigation Map' Page, press the **MENU** Key to display the 'Page Menu' Window.
- 2) Turn the large **FMS** Knob to highlight 'Map Settings' and press the **ENT** Key.
- 3) Turn the small **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.

ENGINE INDICATION SYSTEM

ENGINE DISPLAY



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① Engine Manifold Pressure

Displays manifold pressure in inches of Mercury to indicate engine power.

② Tachometer

Displays propeller speed in revolutions per minute (RPM).

③ Oil Pressure

Displays pressure of oil supplied to the engine in pounds per square inch (PSI).

④ Oil Temperature

Displays engine oil temperature in degrees Fahrenheit.

⑤ Fuel Pressure

Displays fuel pressure, in pounds per square inch (PSI)

⑥ Cylinder Head Temperature

Displays the head temperature of the hottest cylinder in degrees Fahrenheit.

⑦ Fuel Flow

Displays fuel flow in gallons per hour (GPH).

⑧ Fuel Quantity

Displays fuel quantities, in gallons, for the left (L) and right (R) fuel tanks.

⑨ Alternator Amperes

Displays Alternator amperes.

⑩ Pitch Trim Position

Displays elevator pitch trim position.

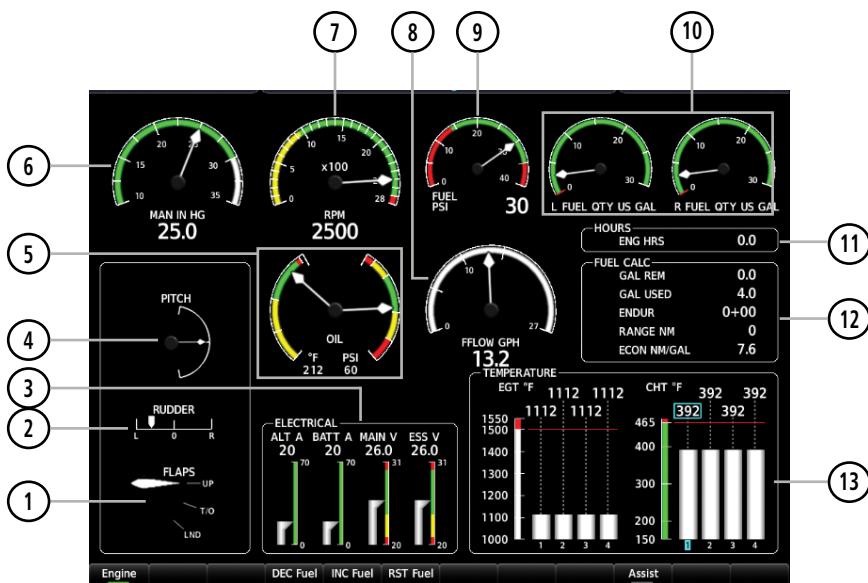
⑪ Rudder Trim

Displays rudder trim position.

⑫ Flap Position

Displays flap position.

ENGINE PAGE



Engine Page (IO-390 Engine Shown)

- 1 Flap Position** Displays flap position.
- 2 Rudder Trim** Displays rudder trim position.
- 3 Electrical Group** Displays Alternator (ALT A) and Battery (BATT A) currents in amperes and Main Bus (MAIN V) and Essential Bus (ESS V) in voltage.
- 4 Pitch Trim Position** Displays elevator pitch trim position.
- 5 Oil Temperature** Displays engine oil temperature in degrees Fahrenheit (°F).
- Oil Pressure** Displays pressure of oil supplied to the engine in pounds per square inch (PSI).
- 6 Engine Manifold Pressure** Displays manifold pressure in inches of Mercury to indicate engine power (MAN IN HG).
- 7 Tachometer** Displays propeller speed in revolutions per minute (RPM).

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- 8 Fuel Flow** Displays fuel flow in gallons per hour (GPH).
- 9 Fuel Pressure** Displays fuel pressure, in pounds per square inch (PSI)
- 10 Fuel Quantity** Displays fuel quantities, in US gallons (GAL), for the left (L) and right (R) fuel tanks.
- 11 Engine Hours** Displays the total time in hours the engine has been in service
- 12 Fuel Calculations Group** Displays calculated fuel used (GAL USED), time remaining (ENDUR), range in nautical miles, (RANGE NM), and economy (ECON NM/GAL) are calculated based on the displayed fuel remaining (GAL REM) and the fuel flow totalizer. The calculated range is based upon ground speed, distance, economy and fuel remaining
- 13 Exhaust Gas Temperature** Exhaust Gas (EGT) temperatures in degrees Fahrenheit (°F) are displayed for each cylinder using a bar graph on the Engine Page. A temperature display for each cylinder is shown at the top of the graph.
- Cylinder Head Temperature** Displays the head temperature in degrees Fahrenheit (°F) are displayed for each cylinder using a bar graph on the Engine Page. A temperature display for each cylinder is shown at the top of the graph.

Adjusting the fuel totalizer quantity:

- 1) Press the **Engine** Softkey to display the Engine Page.
- 2) Press **INC Fuel** to increase the initial usable fuel displayed, or press **DEC Fuel** to decrease the initial usable fuel displayed. Press **RST Fuel** to reset displayed fuel remaining to maximum fuel capacity and reset fuel used to zero.

Accessing Leaning Assist Mode:

- 1) Press the **Engine** Softkey to display the Engine Page.
- 2) Press the **Assist** Softkey to identify peaks.

NAV/COM/TRANSPONDER/AUDIO PANEL

ADF TUNING (OPTIONAL)

- 1) Press the **ADF/DME** Softkey.
- 2) Turn the small **FMS** Knob to enter the first digit of the desired ADF frequency.
- 3) Turn the large **FMS** Knob to select the next desired field.
- 4) Turn the small **FMS** Knob to enter the desired number.
- 5) Repeat steps 3 and 4 until the desired ADF frequency is entered.
- 6) Press the **ENT** Key to accept the new frequency.
- 7) Press the **ENT** Key again to transfer the frequency to the active field.
- 8) Turn the large **FMS** Knob to select the Mode field.
- 9) Turn the small **FMS** Knob to select ANT, ADF, ADF/BFO, or ANT/BFO.
- 10) Press the **ENT** Key to complete the selection.

DME TUNING (OPTIONAL)

- 1) Press the **ADF/DME** or **DME** Softkey.
- 2) Turn the large **FMS** to select the DME mode 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) Press the desired softkey to activate the transponder mode.

ENTERING 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 radio.
- 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 on CDI selection) upon approach loading or approach activation.

AUTO-TUNING RADIOS ON THE MFD

Auto-tuning on the MFD is done in much the same way as on the PFD. Use the **FMS** Knobs to select the desired frequency on any of the information pages. Pressing the **ENT** Key then loads the selected frequency in the tuning box as a standby frequency.

DIGITAL CLEARANCE RECORDER AND PLAYER

The **PLAY** Key controls the play function. Pressing the **PLAY** Key once plays the latest recorded memory block. The PLAY Annunciator flashes to indicate when play is in progress. The PLAY Annunciator turns off after the present memory block has finished playing.

Pressing the **MKR/MUTE** Key during play of a memory block stops play. If a COM input signal is detected during play of a recorded memory block, play is halted.

Pressing the **PLAY** Key while audio is playing begins playing the previously recorded memory block. Each subsequent press of the **PLAY** Key selects the previously recorded memory block.

Powering off the unit automatically clears all recorded blocks.

INTERCOM SYSTEM (ICS) ISOLATION

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

Mode	PILOT Key Annunciator	COPLT Key Annunciator	Pilot Hears	Copilot Hears	Passenger Hears
ALL	OFF	OFF	Selected radios, aural alerts, pilot, copilot, passengers, music	Selected radios, aural alerts, pilot, copilot, passengers music	Selected radios, aural alerts, pilot, copilot, passengers music
PILOT	ON	OFF	Selected radios, aural alerts, pilot	Copilot; passengers music	Copilot; passengers music
COPILOT	OFF	ON	Selected radios, aural alerts, pilot; passengers music	Copilot	Selected radios, aural alerts, pilot; passengers music
CREW	ON	ON	Selected radios, aural alerts, pilot, copilot	Selected radios, aural alerts, pilot, copilot	Passengers music

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FLIGHT MANAGEMENT

Changing A Field In The MFD Navigation Status Box

- 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 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) Turn the large **FMS** Knob, or press the **ENT** Key once, to select the 'Orientation' field.
- 4) Turn the small **FMS** Knob to select the desired orientation.
- 5) Press the **ENT** Key to select the new orientation.
- 6) 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) Select the 'Map' group.
- 4) Press the **ENT** Key.
- 5) 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 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, 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 Navigation Map showing the selected waypoint.

REVIEWING INFORMATION FOR A SPECIAL-USE OR CONTROLLED AIRSPACE

- 1) With the desired map page displayed, push the **Joystick** to display the Map Pointer and place the Map Pointer on an open area within the boundaries of an airspace. (As the Map Pointer crosses the airspace boundary, the boundary is highlighted and airspace information is shown.)
- 2) Press the **ENT** Key to display an options menu.
- 3) 'Review Airspaces' should already be highlighted, if not select it. Press the **ENT** Key to display the 'Information' Window for the selected airspace.
- 4) Press the **FMS** Knob, the **CLR** Key, or the **ENT** Key to exit the 'Information' Window.

MEASURING BEARING AND DISTANCE BETWEEN ANY TWO POINTS

- 1) Press the **MENU** Key (with the 'Map - 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.

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- 3) Press the **Topo** Softkey again to remove topographic data from the PFD Inset Map or the HSI Map. When topographic data is removed from the PFD Map or HSI Map, all navigation data is presented on a black background.

DISPLAYING/REMOVING TOPOGRAPHIC DATA USING THE NAVIGATION MAP PAGE MENU

- 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) Select the 'Map' Group.
- 4) Press the **ENT** Key.
- 5) Highlight the 'Terrain Display' Field.
- 6) 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' Window is displayed.
- 3) Select the 'Map' Group.
- 4) Press the **ENT** Key.
- 5) 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' Window is displayed.
- 3) Select the 'Map' Group and select the **ENT** Key.

- 4) Highlight the 'Topo Scale' Field.
- 5) 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 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 Navigation Map Page.

DECLUTTERING THE MAP

Press the **Detail** Softkey with the 'Map - Navigation Map' Page displayed. The current declutter level is shown. With each softkey selection, 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 Menu is displayed.
- 3) Turn the small **FMS** Knob to select the 'Airways' group, and press the **ENT** Key.
- 4) 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 Navigation Map Page.

Navigation maps can display some additional items. These items (e.g. track vector, wind vector, fuel range ring, SVT field of view, and selected altitude intercept arc) can be displayed/removed individually.

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'.

Or:

If it is a data field, use the FMS Knob to select the range or time value.

- 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 Navigation Map Page.

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.
- 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.
- 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' 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.

SELECTING AN INTERSECTION

- 1) With the 'WPT - Intersection Information' Page displayed, enter an identifier in the Intersection Box.
- 2) Press the **ENT** Key.
- 3) Press the **FMS** Knob to remove the flashing cursor.

SELECTING AN NDB

- 1) With the 'WPT - NDB Information' Page displayed, enter an identifier, the name of the NDB, or the city in which it's located in the NDB Box.
- 2) Press the **ENT** Key.
- 3) Press the **FMS** Knob to remove the flashing cursor.

SELECTING A VOR

- 1) With the 'WPT - VOR Information' Page displayed, enter an identifier, the name of the VOR, or the city in which it's located in the VOR Box.
- 2) Press the **ENT** Key.
- 3) Press the **FMS** Knob to remove the flashing cursor.

SELECTING A VRP

- 1) With the 'WPT - VRP Information' Page displayed, enter the identifier or the name of the VRP in the VRP Box.
- 2) Press the **ENT** Key.
- 3) Press the **FMS** Knob to remove the flashing cursor.

SELECTING A USER WAYPOINT

- 1) With the 'WPT - User WPT Information' Page displayed, enter the name of the User Waypoint, or scroll to the desired waypoint in the User Waypoint List using the large **FMS** Knob.
- 2) Press the **ENT** Key.
- 3) Press the **FMS** Knob to remove the flashing cursor.

CREATING USER WAYPOINTS FROM THE USER WAYPOINT INFORMATION PAGE

- 1) With the 'WPT - User WPT Information' Page displayed, 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 USER WAYPOINTS FROM MAP PAGES

1) Press 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. The first reference waypoint box is highlighted.

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.

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.

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.

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.

SELECTING AND VIEWING AN AIRSPACE ALERT WITH ITS ASSOCIATED INFORMATION

- 1) Select the 'NRST - Nearest Airspaces' Page.
- 2) Press the **Alerts** Softkey; 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 cursor is placed in the 'Group' Box.
- 3) Turn the small **FMS** Knob to highlight the 'Airspace' in the 'Group' Box and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the 'Smart Airspace' Field in the 'Map Settings' Window.
- 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).
- 2) 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.
- 3) Press the **ENT** Key. The 'Activate?' Field is highlighted.
- 4) Press the **ENT** Key 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) 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 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, 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.

SELECTING A MANUAL DIRECT-TO COURSE

- 1) Press the **Direct-to** Key. The 'Direct To' Window is displayed with the destination Field highlighted.
- 2) Highlight the 'Course' Field.
- 3) 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 with the destination field highlighted.
- 2) Press the **ENT** Key. The cursor is now displayed on 'Activate?'.
- 3) Press the **ENT** Key again to activate the direct-to.

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

- 1) Press the **Direct-to** Key to display the 'Direct To' Window.
- 2) Turn the large **FMS** Knob to place the cursor over the 'VNV' Box altitude field.
- 3) Enter the desired altitude.

- 4) Press the **ENT** Key to accept the altitude constraint; if the selected waypoint is an airport, 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) Press the **ENT** Key. The cursor is now flashing in the 'VNV' Box 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.

REMOVING A VNV ALTITUDE CONSTRAINT

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

FLIGHT PLANNING

CREATING AN ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key. Press the small **FMS** Knob to activate the cursor (only on MFD).
- 2) 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 departure 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) Repeat step number 2 for the destination airport and runway.
- 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 the cursor (if required).

CREATING A STORED FLIGHT PLAN

- 1) From the MFD, press the **FPL** Key.
- 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 departure 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.
- 5) Repeat step number 4 for the destination airport and runway.
- 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 remove the cursor.

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.

PREVIEWING A PENDING 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 name.
- 2) Press the **ENT** Key to display the 'FPL - Preview Flight Plan' Page on the MFD.

Or:

Press the **Preview** Softkey to display the 'FPL - Preview Flight Plan' Page on the MFD.

IGNORING A PENDING 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 name.
- 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.

Or:

Press the **Ignore** Softkey 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.

STORING A PENDING FLIGHT PLAN

- 1) Press the **FPL** Key on the MFD.
- 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 annunciation is removed.

ACTIVATING A PENDING FLIGHT PLAN

- 1) Press the **FPL** Key on the MFD 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.
- 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 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 on the MFD.
- 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 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 on the MFD.
- 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.

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.

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

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.

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) The 'Flight Plan Info' Box displays 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 ACTIVE FLIGHT PLAN PAGE OR THE ACTIVE 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.

COPYING 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 **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 XX?' 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.

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.

DELETING 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 '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.

DELETING 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 deleted.
- 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.

DELETING 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 deleted.
- 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.

DELETING AN ENTIRE 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 **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the header of the procedure to be deleted.
- 3) Press the **CLR** Key. The 'Remove <procedure 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.

Or:

- 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 to display the Page Menu and turn the **FMS** Knob to highlight 'Remove <procedure> '.
- 3) Press the **ENT** Key. The 'Remove <procedure 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.

DELETING AN INDIVIDUAL WAYPOINT FROM 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 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 deleted.
- 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.

DELETING AN ENTIRE AIRWAY FROM 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 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 header of the airway to be deleted.
- 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.

DELETING AN ENTIRE PROCEDURE FROM 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 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 header of the procedure to be deleted.
- 6) Press the **CLR** Key. The 'Remove <procedure 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.

Or:

- 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 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) Press the **MENU** Key to display the Page Menu and turn the **FMS** Knob to highlight 'Remove <procedure>'.
- 6) Press the **ENT** Key. The 'Remove <procedure 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.

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 remove the flashing cursor.

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.

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.

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 destination 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 remove the flashing cursor.

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) Select '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.

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.

COLLAPSING/EXPANDING THE 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.

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 (MFD or PFD).
- 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, the 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.)

EDITING A USER-DEFINED HOLD

- 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 'Edit Hold', 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 'Update?' is highlighted to update the hold.

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 the 'HOLD' waypoint.
- 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 (PFD or MFD).
- 2) Press the **MENU** Key to display the Page Menu with the cursor on the 'Cancel Direct-To NAV' selection.
- 3) Press the **ENT** Key. The holding pattern is removed.

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.

ACTIVATING A VERTICAL NAVIGATION DIRECT-TO

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor and turn the **FMS** Knob to highlight the desired waypoint.
- 3) Press the **VNV Direct-To** 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) Press the **FMS** Knob to remove the flashing cursor.



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.

MODIFYING THE VS TGT AND FPA

- 1) Press the **FPL** Key to display the 'FPL - Active Flight Plan' Page on the MFD.
- 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) Press the **FMS** Knob to remove the flashing cursor.

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
BRK	353°	21.5NM	12000FT
KCOS-RNAV _{GPS} Y 35R LPV			
HABUK iaf	164°	8.0NM	10280FT
FALUR	290°	5.3NM	8600FT
CEGIX faf	352°	6.4NM	8100FT
RW35R map	352°	6.1NM	
6600FT	352°	0.9NM	6600FT
ADANE mahp	056°	15.6NM	9000FT
HOLD	297°	7.0NM	

Displayed Text Examples

White Text

Cyan Text with Pencil Icon

Cyan Text

White Text with Altitude Restriction Bar

Altitude Constraint Examples

2300FT

Cross AT 2,300 ft

5000FT

Cross AT or ABOVE 5,000 ft

3000FT

Cross AT or BELOW 3,000 ft

6646FT

Temperature Compensated

White Text	Cyan Text
5000FT 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. 5000FT 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.	5000FT Altitude is designated for use in determining vertical guidance. A pencil icon indicates manual designation or manual data entry. 5000FT The system cannot use this altitude in determining vertical guidance because of an invalid constraint condition.

Altitudes associated with arrival and approach procedures are “auto-designated”. This means the system automatically uses the altitudes loaded with the arrival or approach for giving vertical speed and deviation guidance. Note that these altitudes are displayed as cyan text up to, but not including, the FAF. The FAF is always a “reference only” altitude and cannot be designated, unless the selected approach does not provide vertical guidance. In this case, the FAF altitude can be designated.

Altitudes that have been designated for use in vertical guidance can be “un-designated” using the **CLR** Key. The altitude is now displayed only as a reference. It is not used to give vertical guidance. Other displayed altitudes may change due to re-calculations or be rendered invalid as a result of manually changing an altitude to a non-designated altitude.

MANUALLY DESIGNATING A WAYPOINT ALTITUDE TO BE USED FOR VERTICAL GUIDANCE

- 1) Press the **FPL** Key on the MFD to display the ‘FPL - Active Flight Plan’ Page.
- 2) Press the **FMS** Knob, and turn to highlight the desired waypoint altitude.
- 3) Turn the small **FMS** Knob to enter editing mode.
- 4) Press the **ENT** Key. The altitude is now shown in cyan, indicating it is usable for vertical guidance.

MANUALLY DESIGNATING A PROCEDURE WAYPOINT ALTITUDE TO BE USED FOR VERTICAL GUIDANCE

- 1) Press the **FPL** Key on the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Press the **FMS** Knob, and highlight the desired waypoint altitude. Turn the small **FMS** Knob to enter editing mode.
- 3) Press the **ENT** Key. The altitude is now shown in cyan, indicating it is usable for vertical guidance.

ENTERING/MODIFYING AN ALTITUDE CONSTRAINT

- 1) Press the **FPL** Key on the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Press 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, an additional choice is displayed. Turn the small **FMS** Knob to choose 'MSL' or 'AGL', and press the **ENT** Key to accept the altitude.

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

DELETING AN ALTITUDE CONSTRAINT PROVIDED BY THE NAVIGATION DATABASE

- 1) Press the **FPL** Key on the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Press 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.

DELETING AN ALTITUDE CONSTRAINT THAT HAS BEEN MANUALLY ENTERED

- 1) Press the **FPL** Key on the MFD to display the 'FPL - Active Flight Plan' Page.
- 2) Press 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.
- 4) Select 'REMOVE' and press the **ENT** Key. The manually entered altitude is deleted (it is replaced by a system calculated altitude, if available).

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

MODIFYING A SYSTEM CALCULATED ALTITUDE CONSTRAINT

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

- 4) Select 'EDIT' and press the **ENT** Key.
- 5) Edit the value using the **FMS** Knobs, and press the **ENT** Key.
- 6) Press the **FMS** Knob to remove the flashing cursor.

ENABLING THE VERTICAL SITUATION DISPLAY

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

PROCEDURES

VIEWING AVAILABLE PROCEDURES AT AN AIRPORT

- 1) From the 'WPT - Airport Information' Page:
Press the **DP** Softkey. The 'WPT - Departure Information' Page is displayed, defaulting to the airport displayed on the Airport information Page.
Or.
Press the **STAR** Softkey. The 'WPT - Arrival Information' Page is displayed, defaulting to the airport displayed on the Airport information Page.
Or.
Press the **APR** Softkey. The 'WPT - Approach Information' Page is displayed, defaulting to the airport displayed on the 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) Turn the large **FMS** Knob to highlight the procedure. The procedure is previewed on the map.
- 4) Turn the small **FMS** Knob to view 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 small **FMS** Knob to view the available runway or transition. Press the **ENT** Key to select the runway or transition. The cursor moves to the next box (if available). The procedure is previewed on the map.
- 6) Turn the small **FMS** Knob to view the available runway or transition. Press the **ENT** Key to select the runway or transition. The cursor moves to the 'Sequence' Box or the 'Minimums' Box. The procedure is previewed on the map.
- 7) Press the **Info 1** Softkey or the **Info 2** Softkey to return to the 'WPT - Airport Information' Page.

LOADING A PROCEDURE INTO THE ACTIVE FLIGHT PLAN FROM THE <PROCEDURE> INFORMATION PAGE

- 1) From the 'WPT - Airport Information' Page:
Press the **DP** Softkey. The 'WPT - Departure Information' Page is displayed, defaulting to the airport displayed on the Airport information Page.
Or.
Press the **STAR** Softkey. The 'WPT - Arrival Information' Page is displayed, defaulting to the airport displayed on the Airport information Page.
Or.
Press the **APR** Softkey. The 'WPT - Approach Information' Page is displayed, defaulting to the airport displayed on the 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 procedure, if desired.
 - a) Turn the large **FMS** Knob to highlight the procedure. The procedure is previewed on the map.
 - b) Turn the small **FMS** Knob to view 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.
 - c) Turn the small **FMS** Knob to view the available runway or transition. Press the **ENT** Key to select the runway or transition. The cursor moves to the next box (if available). The procedure 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 or the 'Minimums' Box. The procedure is previewed on the map.

- 4) Press the **MENU** Key to display the <Procedure> Information Page Menu.
- 5) Turn the **FMS** Knob to highlight 'Load <procedure>'.
- 6) Press the **ENT** Key to load the procedure into the active flight plan.

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, if necessary, 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.

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 active '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.

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, if necessary, 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.

REMOVING AN ARRIVAL FROM 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, 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.

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 (available only if SBAS available)	RNAV GPS approach using published LNAV/VNAV minima (downgrades to LNAV 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 LNAV if SBAS unavailable)

Approach Service Levels

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, if necessary, 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.

4) Select a transition (if required) and press the **ENT** Key.

5) 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 'TEMP At XXXX' Field. Turn the small **FMS** Knob to select the temperature, and press the **ENT** Key.

Or:

To skip setting minimums, 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.

LOADING AN APPROACH INTO THE ACTIVE FLIGHT PLAN FROM THE 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.
- 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 'TEMP At' <airport> Field. Turn the small **FMS** Knob to select the temperature, and press the **ENT** Key.

Or:

To skip setting minimums, press the **ENT** Key. 'LOAD?' 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. The system continues navigating the current flight plan until the approach is activated. When GPS is not approved for the selected final approach course, the message 'NOT APPROVED FOR GPS' is displayed. GPS provides guidance to the approach, but the HSI must to be switched to a NAV receiver to fly the final course of the approach.

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.

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.

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.

ACTIVATING TEMPERATURE COMPENSATED ALTITUDE

- 1) From the 'FPL - Active Flight Plan' Page, press the **MENU** Key on the MFD. 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.
- 4) Use the small **FMS** Knob to select the 'TEMP 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.

CANCELLING TEMPERATURE COMPENSATED ALTITUDE

- 1) From the 'FPL - Active Flight Plan' Page, press the **MENU** Key. The 'Page Menu' is displayed.
- 2) Turn the **FMS** Knob to highlight 'Temperature Compensation'.
- 3) Press the **ENT** Key. The 'Temperature Compensation' Window is displayed.
- 4) Press the **ENT** Key. 'Cancel Compensation?' is highlighted.
- 5) Press the **ENT** Key. The temperature compensated altitude at the FAF is cancelled.

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.

In manual page mode, the other eight trip input data fields must be entered by the pilot, in addition to flight plan and leg selection.

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.

Or:

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- 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

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.

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Blank Page

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 Navigation Map 'Page Menu'. The cursor flashes on the 'Map Settings' option.
- 2) Press the **ENT** Key. The Map Setup 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 Navigation Map Page.

Changing the display range of hazard displays

Turn the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

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.

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 **Layout** Softkey.
- 3) Press the **WX LGND** Softkey to show/remove the weather product age information for PFD maps.

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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
City Forecast		90
Surface Analysis		60
Freezing Levels		120
Winds Aloft		90
County Warnings		60
Cyclone Warnings		60
Icing Potential (CIP and SLD)		90

SiriusXM Weather Product Symbols and Data Timing

SiriusXM Weather Product	Symbol	Expiration Time (Minutes)
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

SiriusXM Weather Product Symbols and Data Timing

FIS-B Weather Product	Symbol	Expiration Time (Minutes)	Broadcast Rate (Minutes)
NEXRAD Composite (US)		30	15
NEXRAD Composite (Regional)		30	2.5
METARs		90	5
Pilot Weather Report (PIREP)		90	10
Winds Aloft		90	10
SIGMETs/AIRMETs	SIGM AIRM	60	5
No Radar Coverage	no product image	30	2.5
Terminal Aerodrome Forecast (TAF)	TFR	60	10
Temporary Flight Restriction (TFR)	no product image		10

FIS-B Weather Product Symbols and Data Timing

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 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 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 **CLR** Key to return to the Weather Data Link page with the changed settings.



NOTE: 'Product Group 2' is not applicable to FIS-B Weather.

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 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 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 the 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.

NEXRAD (SIRIUSXM)

Displaying the NEXRAD weather product on the 'Map - Weather Data Link (XM)' Page

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

Displaying the NEXRAD weather product on the 'Map - Navigation Map' Page

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

Displaying the 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.

Selecting the NEXRAD Coverage Region on the 'Map - 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 Region field.
- 4) Turn the small FMS Knob to select 'US' or 'CNDA', then press the **ENT** Key.
- 5) To remove the menu, push the **FMS** Knob or the **CLR** Key.

NEXRAD (FIS-B)

Displaying the FIS-B NEXRAD weather product on the 'Map - 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**).

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.

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.

ECHO TOPS (SIRISUXM)

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)

Displaying Data Link Lightning information on 'Map - Weather Data Link (XM)' Page

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

Enabling/disabling 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 to enable data link lightning from the selected data link weather source, or press the **LTNG Off** Softkey to disable data link lightning.
- 4) When finished, press the **Back** Softkey.

CELL MOVEMENT (SIRIUSXM)

Displaying Cell Movement information on the 'Map - 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.

SIGMETs AND AIRMETS

Displaying SIGMETs and AIRMETS

- 1) Select the Weather Data Link 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 Weather Data Link 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.

- Press the **FMS** Knob or the **CLR** Key to return to the Weather Data Link Page.

Displaying original METAR text on the Active Flight Plan Page

- Select the 'FPL - Active Flight Plan' Page on the MFD.
- Press the **FMS** Knob to activate the cursor.
- 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.
- 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 Map

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

SURFACE ANALYSIS AND CITY FORECAST (SIRIUSXM)

Displaying Surface Analysis and City Forecast information

- Select the 'Map - Weather Data Link (XM)' Page.
- Select the **More WX** Softkey.
- Press the **SFC** Softkey.
- 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

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

WINDS ALOFT

Displaying the Winds Aloft weather product

- 1) Select the 'Map - Weather Data Link (XM)' Page with the **FMS** Knob.
- 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** or **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 with the **FMS** Knob.
- 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 with the **FMS** Knob.
- 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** or **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)' Page.
- 2) Press the **More WX** Softkey.
- 3) Press the **PIREPS** or **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 'Map - Weather Data Link (XM)' Page.

TFRS

Displaying TFR Data

- 1) Select the 'Map - Weather Data Link (XM)' Page or the '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 setting.
- 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 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.

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.

STORMSCOPE LIGHTNING DETECTION SYSTEM



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.

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	

Lightning Age and Symbols

Adjusting the Stormscope Map Range

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the 'Map - Stormscope' Page.
- 3) Turn the **Joystick** clockwise to increase the map range or counter-clockwise to decrease the map range.

Selecting 'cell' or 'strike' mode

- 1) Select the 'Map - Stormscope®' Page.
- 2) Press the **Mode** Softkey. The **Cell** and **Strike** softkeys are displayed.
- 3) 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 in the upper right corner of the Stormscope Page.
- 4) Press the **Back** Softkey to return to the top level softkeys for the Stormscope Page.

Manually clearing Stormscope cell or strike information

- 1) Select the 'Map - Stormscope' Page.
- 2) Press the **Clear** Softkey.

Displaying Stormscope information on MFD navigation maps

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

Displaying Stormscope information on PFD maps

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

Setting up Stormscope options on the Navigation Map

- 1) On the 'Map - Navigation Map' Page, press the **MENU** Key.
- 2) With 'Map Settings' selected, press the **ENT** Key.
- 3) Turn the small **FMS** Knob to display the group selection window. Turn the small **FMS** Knob to select 'Weather', and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight and move between the product selections.
- 5) When an item is highlighted, turn the small **FMS** Knob to select the option.
- 6) Press the **ENT** Key.
- 7) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

Selecting the 'cell' or 'strike' mode on the Navigation Map

- 1) Press the **MENU** Key.
- 2) With 'Map Settings' selected, press the **ENT** Key.

- 3) Turn the **FMS** Knob to select the 'Weather' group and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to select the Stormscope Mode field.
- 5) Turn the small **FMS** Knob to change between 'Cell' and 'Strike' options. When the desired item is selected, press the **ENT** Key.
- 6) Press the **FMS** knob to return to the 'Map - Navigation Map' Page.

Manually clearing Stormscope data on the Navigation Map

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

Selecting a Stormscope range on the Navigation Map

- 1) Press the **MENU** Key.
- 2) With 'Map Settings' highlighted, press the **ENT** Key.
- 3) Turn the **FMS** Knob to highlight the select the 'Weather' group, and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to highlight the Stormscope maximum map display range distance.
- 5) Turn the small **FMS** Knob to select the Stormscope maximum map display range distance.
- 6) Press the **ENT** Key.
- 7) Press the **FMS** Knob to return to the 'Map - Navigation Map' Page.

TERRAIN DISPLAYS



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 of 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.

On-Ground Legend



In-Air Legend



Relative Terrain Legend

Displaying terrain and obstacle information (MFD maps other than the terrain page)

- 1) Press the **Map Opt** Softkey (for the PFD Inset Map, press the **Map/HSI** Softkey).
- 2) Press the **TER** Softkey until **REL** is shown to display terrain and obstacle data.

Displaying relative terrain information on PFD Inset Map or HSI Map

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

Customizing terrain and obstacle display on the Navigation Map Page

- 1) Select the 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 – Turns the display of relative ('REL') terrain data on or off and sets maximum range at which terrain is shown
 - Obstacle Data – Turns the display of obstacle data on or off and sets maximum range at which 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

- 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/TAWS-B Page.

Showing/hiding aviation information on the terrain page

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

VERTICAL SITUATION DISPLAY (VSD) TERRAIN

Enabling/Disabling the Vertical Situation Display (VSD)

- 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 or disable the VSD.

Enabling/Disabling VSD Relative Terrain on the Navigation Map (when VSD is enabled)

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Map Opt** Softkey.
- 3) Press the **TER** Softkey. Each selection cycles through an option displayed in cyan: Off (disables terrain), Topo (to show topographical data) or REL (to show relative terrain).

Selecting a VSD Mode

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **Inset** Softkey.
- 3) Press the **VSD** Softkey displaying the VSD mode in cyan. Each press of the softkey cycles through a mode selection: FPL (flight plan), TRK (track), or Auto.

Customizing the Track Mode Boundary display on the 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 'VSD' Group and press the **ENT** Key.
- 5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
 - TRK Mode BNDRY – Enables/disables the display of the Track Mode Boundary and sets maximum range at which Track Mode Boundary is shown.
- 6) Turn the small **FMS** Knob to scroll through options (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 'Map - Navigation Map' Page with the changed settings.

TRAFFIC SYSTEMS

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.

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

TIS Traffic Symbols

Displaying Traffic Data

Enabling/disabling traffic information (MFD maps other than the Traffic Map Page)

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

Enabling/disabling traffic information on the PFD Inset Map or HSI Map

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

Customizing traffic display on the Navigation Map Page

- 1) Select the 'Map - Navigation Map' Page.
- 2) Press the **MENU** Key.
- 3) With 'Map Setup' 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 product 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 Only - Displays Traffic Alerts only
- Traffic Symbols – Selects the maximum range at which traffic symbols are shown
- Traffic Labels – Selects the maximum range at which traffic labels are shown (with the option to turn off)

- 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 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) Confirm TIS is in Operating Mode:

Press the **TIS OPER** Softkey to begin displaying traffic.

Or:

- a) Press the **MENU** Key.
- b) Select 'Operate Mode' (shown if TIS is in Standby Mode) and press the **ENT** Key.

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.

Switching between TIS modes

- 1) Select the 'Map - Traffic Map' Page.
- 2) Press the **STANDBY** or **OPERATE** Softkey to switch between modes. The mode is displayed in the upper left corner of the Traffic Map Page.

TAS TRAFFIC

Flight Instruments



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.

EIS

Nav/Com/XPDR/Audio



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 Management



NOTE: Pilots should be aware of TAS system limitations. TAS 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.

Hazard Avoidance

AFCS



NOTE: Mode-S TIS is disabled when TAS installed.

Additional Features



NOTE: If a Garmin GTX 345R transponder is installed with this traffic system, refer to the ADS-B traffic discussion for more information about ADS-B traffic displays.

Abnormal Operation



NOTE: If an optional Avidyne TAS600 is installed, refer to the applicable Pilot's Guide from the manufacturer for detailed information about that traffic system.

Annun/Alerts

TAS Symbology

Appendix



NOTE: The Garmin traffic system does not display traffic determined to be on the ground, including Mode C transponder equipped aircraft operating below 300' AGL that is not climbing. However, if own aircraft has ADS-B In capability, and is receiving traffic information from an ADS-B source (including ADS-R, ADS-B, TIS-B), the system does display this traffic while operating in SURF Mode. Refer to the ADS-B Traffic Section for more information.

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If a Garmin GTX 335 ES transponder is installed, the system uses the following symbols to represent traffic.

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

TAS Symbol Description with GTX 335R Transponder

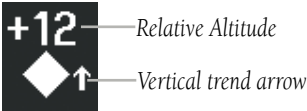
If a Garmin GTX 345 transponder is installed with the TAS, the symbols in the following table depict traffic, and include Automatic Dependent Surveillance-Broadcast (ADS-B) information. Refer to the ADS-B Traffic discussion later in this section for more information.

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.
	Proximity Advisory without directional information.

Flight Instruments	Symbol	Description
		Other Non-Threat traffic with directional information. Points in the direction of the intruder aircraft track.
EIS		Other Non-Threat traffic without directional information.
Nav/Com/XPDR/Audio		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.
Flight Management		Non-aircraft ground traffic. Ground traffic is only displayed when ADS-B is in Surface (SURF) Mode or own aircraft is on the ground.

ADS-B Traffic Symbology with GTX 345R Transponder

The system displays the altitude vertical trend as an up/down arrow (for speeds greater than 500 fpm in either direction) to the right of the intruder symbol.



Intruder Altitude and Vertical Trend Arrow

System Test

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.

Operation



NOTE: The Garmin GTS 800 TAS automatically changes from **Standby** to **Operating** mode eight seconds after takeoff. The system also automatically changes from **Operating** to **Standby** mode 24 seconds after landing.

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** 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, select the **ALT Mode** Softkey.
- 2) Select 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 'Map - Traffic Map' Page, select the **Back** Softkey.

Changing the display range on the 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)

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- 1 nm and 2 nm (with optional ADS-B)
- 2 and 6 nm
- 6 and 12 nm
- 12 and 24 nm
- 24 and 40 nm

Enabling/disabling traffic information (MFD maps other than the 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 Navigation Map Page.

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.

Other Aircraft Equipment	Viewable by GTX 345 UAT Equipped Aircraft
1090ES Out Equipped	Yes
UAT Receive Only Capable	No
UAT Transmit Equipped	Yes
No Transponder, No ADS-B	No
Non ADS-B Equipped, but with Mode C or S Transponder	Yes*

* Only when in ADS-B ground station coverage and when the other aircraft is in ATC radar coverage.

Aircraft Available for Viewing by an ADS-B Equipped Own Aircraft

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.

	Symbol	Description
Flight Instruments		Traffic Advisory out of the selected display range without directional information. Displayed at outer range ring at proper bearing.
EIS		Proximity Advisory with directional information. Points in the direction of the aircraft track.
Nav/Com/XPDR/Audio		Proximity Advisory without directional information.
Flight Management		Other Non-Threat traffic with directional information. Points in the direction of the intruder aircraft track.
		Other Non-Threat traffic without directional information.
Hazard Avoidance		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.
AFCs		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.
Additional Features		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

Operation

Enabling/disabling the display of ADS-B traffic

- 1) Select the 'Map - Traffic Map' Page.
- 2) Press the **ADS-B** Softkey.

Testing the display of ADS-B traffic

- 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.

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 traffic from 9000 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 9000 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, press 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 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

Turn the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

Viewing ADS-B Traffic 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.

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
TO/GA Button	Takeoff (on ground) Go Around (in air)	TO GA	Takeoff (on ground) Go Around (in air)	TO 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**	FMS VOR LOC	Pitch Hold (default)	PIT
APR Key	Approach**	FMS VOR LOC	Pitch Hold (default)	PIT
HDG Key	Heading Select	HDG	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 FMS course before **NAV or **APR** Key press activates flight director.

VERTICAL MODES

Vertical Mode	Description	Control	Annunciation	
Pitch Hold	Holds 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 current Altitude Reference	ALT Key	ALT	nnnnn FT
Vertical Speed	Holds aircraft vertical speed; may be used to climb/descend to the Selected Altitude	VS Key	VS	nnnn FPM
Flight Level Change	Holds aircraft airspeed while aircraft is climbing/descending to the Selected Altitude	FLC Key	FLC	nnn KT
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 WAAS glidepath on approach	APR Key	GP	
Glideslope	Captures and tracks the ILS glideslope on approach		GS	
Takeoff	Commands a constant pitch angle and wings level on the ground in preparation for takeoff	TO/GA Button	TO	
Go Around	Disengages the autopilot and commands a constant pitch angle and wings level		GA	

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

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

*** *GP is available in installations with GIA 63W IAUs when WAAS is available.*

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, FMS	Captures and tracks the selected navigation source (FMS, VOR, LOC)	NAV Key	FMS
Navigation, VOR Enroute Capture/Track			VOR
Navigation, LOC Capture/Track (No Glideslope)			LOC
Navigation Backcourse Capture/Track			BC
Approach, FMS	Captures and tracks the selected navigation source (FMS, VOR, LOC)	APR Key	FMS
Approach, VOR Capture/Track			VAPP
Approach, LOC Capture/Track (Glideslope Mode automatically armed)			LOC
Takeoff	Commands a constant pitch angle and wings level on the ground in preparation for takeoff	TO/GA Button	TO
Go Around	Disengages the autopilot and commands a constant pitch angle and wings level in the air		GA

The Garmin AFCS limits turn rate to 3 degrees per second (standard rate turn).

Flight
Instruments

EIS

Nav/Com/
XPDR/Audio

Flight
Management

Hazard
Avoidance

AFCS

Additional
Features

Abnormal
Operation

Annun/Alerts

Appendix

Index

Blank Page

ADDITIONAL FEATURES

SAFETAXI

SafeTaxi is an enhanced feature that gives greater map detail when viewing airports at close range. The maximum map ranges for enhanced detail are pilot configurable. When viewing at ranges close enough to show the airport detail, the map reveals taxiways with identifying letters/numbers, airport Hot Spots, and airport landmarks including ramps, buildings, control towers, and other prominent features. Resolution is greater at lower map ranges. When the MFD display is within the SafeTaxi ranges, the airplane symbol on the airport provides enhanced position awareness.

The **Detail** Softkey (declutter) label advances to Detail All, Detail 3, Detail 2 and Detail 1 each time the softkey is selected for easy recognition of decluttering level. Pressing the **Detail All** Softkey removes the taxiway markings and airport feature labels. Pressing the **Detail 3** Softkey removes VOR station ID, the VOR symbol, and intersection names if within the airport plan view. Pressing the **Detail 2** Softkey removes the airport runway layout, unless the airport in view is part of an active route structure. Pressing the **Detail 1** Softkey cycles back to the original map detail.

Configuring SafeTaxi range

- 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 the 'Map Settings' Menu Option and press the **ENT** Key.
- 3) Turn the **FMS** Knob to select the 'Aviation' Group and press the **ENT** Key.
- 4) Turn the large **FMS** Knob to scroll through the 'Aviation' Group options to SafeTaxi.
- 5) Turn the small **FMS** Knob to display the range of distances.
- 6) Turn either **FMS** Knob to select the desired distance for maximum SafeTaxi display range.
- 7) Press the **ENT** Key to complete the selection.
- 8) Press the **FMS** Knob to return to the 'Map-Navigation Map' Page.

CHARTS

Electronic charts that resemble the paper versions of terminal procedures charts (FliteCharts) and Jeppesen® terminal procedures charts (ChartView) can be displayed on the MFD.

When the databases for both chart types are purchased and loaded in the system, the desired charts brand, or source, can be selected for viewing. The active chart source for a particular procedure is shown on the information pane under Source.

Selecting Preferred Charts Source

- 1) While viewing a chart press the **MENU** Softkey 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 'Preferred Charts Source' option.
- 4) Turn the small **FMS** Knob to choose between the available options (FliteCharts, ChartView).

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 planview of approach charts and on airport diagrams. Airport Hot Spots are outlined in magenta.

The geo-referenced aircraft position is indicated by an aircraft symbol displayed on the chart when the current position is within the boundaries of the chart. Inset boxes are not considered within the chart boundaries. Therefore, when the aircraft symbol reaches a chart boundary line, or inset box, the aircraft symbol is removed from the display.

Selecting Terminal Procedures Charts

While viewing the 'Map-Navigation Map' Page, 'NRST-Nearest Airport' Page, or 'FPL-Active Flight Plan' Page, press the **Charts** Softkey,

Selecting a chart

- 1) While viewing the 'Map-Navigation Map' Page, 'FPL-Active Flight Plan' Page, or 'NRST-Nearest Airports' Page, press the **Charts** Softkey. The airport diagram or approach chart is displayed on the 'WPT-Airport Information' Page.
- 2) Press the **FMS** Knob to activate the cursor.

- 3) Turn the large **FMS** Knob to select either the Airport Identifier Box or the 'Approach' Box. (Press the **APR** Softkey if the 'Approach' Box is not currently shown).
- 4) Turn the small and large **FMS** Knob to enter the desired airport identifier.
- 5) Press the **ENT** Key to complete the airport selection.
- 6) Turn the large **FMS** Knob to select the 'Approach' Box.
- 7) Turn the small **FMS** Knob to show the approach chart selection choices.
- 8) Turn either **FMS** Knob to scroll through the available charts.
- 9) Press the **ENT** Key to complete the chart selection.

Selecting Additional Information

- 1) While viewing the Airport Taxi Diagram, press the **Full SCN** 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 Airport, Info, Runways, or Frequencies Box.
- 4) Turn the small **FMS** Knob to select the Info Box choices. 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.

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 geo-referenced aircraft position is indicated by an aircraft symbol displayed on the chart when the current position is within the boundaries of the chart. Not all charts are geo-referenced. These charts will display an Aircraft Not Shown Icon in the lower right corner of the MFD.

Selecting Terminal Procedures Charts

While viewing the 'Map-Navigation Map' Page, 'NRST-Nearest Airport' Page, or 'FPL-Active Flight Plan' Page, press the **Charts** Softkey.

Selecting a chart

- 1) While viewing the 'Map-Navigation Map' Page, 'FPL-Active Flight Plan' Page, or 'NRST-Nearest Airports' Page, press the **Charts** Softkey. The airport diagram or approach chart is displayed on the 'WPT-Airport Information' Page.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to select either the Airport Identifier Box or the 'Approach' Box. (Press the **APR** Softkey if the Approach Box is not currently shown).
- 4) Turn the small and large **FMS** Knob to enter the desired airport identifier.
- 5) Press the **ENT** Key to complete the airport selection.
- 6) Turn the large **FMS** Knob to select the 'Approach' Box.

- 7) Turn the small **FMS** Knob to show the approach chart selection choices.
- 8) Turn either **FMS** Knob to scroll through the available charts.
- 9) Press the **ENT** Key to complete the chart selection.

Selecting Additional Information

- 1) While viewing the Airport Taxi Diagram, press the **WX** Softkey to display the information windows.
- 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 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.

The geo-referenced aircraft position is indicated by an aircraft symbol displayed on the chart when the current position is within the boundaries of the chart. Not all charts are geo-referenced. IFR/VFR charts may be viewed by selecting the 'Map - IFR/VFR Charts' Page.

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) and optional AC-U-KWIK Airport Directory databases offer detailed information regarding services, hours of operation, lodging options, and more. This information is viewed on the Airport Information Page by pressing the Info Softkey until **Info 2** is displayed.

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, press the Info softkey until **Info 2** is displayed.

SIRIUSXM™ RADIO ENTERTAINMENT

The 'Aux - 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 Information' Page.
- 3) Press the **Radio** Softkey to show the 'Aux - XM Radio' Page where audio entertainment is controlled.

ACTIVE CHANNEL AND CHANNEL LIST

The Active Channel Box on the XM Radio Page displays the currently selected channel that the SiriusXM Radio is using.

The Channels List Box of the XM Radio Page shows a list of the available channels for the selected category. Channels can be stepped through one at a time or may be selected directly by channel number.

Selecting a channel from the channel list

- 1) While on the 'Aux-XM Radio' Page, press the **Channel** Softkey.
- 2) Press the **CH +** Softkey to go up through the list in the 'Channels' 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 'Aux-XM Radio' Page, press the **Channel** Softkey.
- 2) Press the **Direct CH** Softkey. The channel number in the 'Active Channel' Box is highlighted.
- 3) Press 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.

CATEGORY

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

Selecting a category

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

PRESETS

Up to 15 channels from any category can be assigned a preset number. The preset channels are selected by pressing the **Presets** and **More** Softkeys. Then the preset channel can be selected directly and added to the channel list for the Presets category.

Setting a preset channel number

- 1) On the 'Aux-XM Radio' Page, while listening to an 'Active Channel' that is wanted for a preset, press the **Presets** Softkey to access the first five preset channels (**Preset 1 - Preset 5**).
- 2) Press 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**). Pressing the **More** Softkey repeatedly cycles through the preset channels.
- 3) Press any one of the (**Preset 1 - Preset 15**) softkeys to assign a number to the active channel.
- 4) Press the **Set** Softkey on the desired channel number to save the channel as a preset.

VOLUME

Adjusting the volume

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

Muting SiriusXM audio

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

CONNEXT SETUP

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 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.

Removing 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 optional checklists presented here are for example only and may differ from checklists available for the DA42NG. The information described in this section is not intended to replace the checklist information described in the AFM or the Pilot Safety and Warning Supplements document.



NOTE: Garmin is not responsible for the content of checklists. Checklists are created by the aircraft manufacturer. Modifications or updates to the checklists are coordinated through the aircraft manufacturer. The user cannot edit these checklists.

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 (except the EIS Pages), 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.

Accessing emergency procedures

- 1) From any page on the MFD (except the EIS Pages), press the **Checklist** Softkey or turn the large **FMS** Knob to select the Checklist Page.
- 2) Press the **EMER** 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.

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.

CREW PROFILES

Creating a profile:

- 1) Select the 'Aux - System Setup (1 or 2)' Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight 'Create' in the 'Crew Profile' Box.
- 4) Press the **ENT** Key. A 'Create Profile' Window is displayed.
- 5) Use the **FMS** Knob to enter a profile name up to 16 characters long and press the **ENT** Key. Crew profile names cannot begin with a blank as the first letter.
- 6) In the next field, use the small **FMS** Knob to select the desired settings upon which to base the new profile. Profiles can be created based on Garmin factory defaults, default profile settings (initially based on Garmin factory defaults unless edited by the pilot), or other previously created profile settings.
- 7) Press the **ENT** Key.
- 8) With 'Create' highlighted, press the **ENT** Key to create the profile.
Or:
Use the large **FMS** Knob to select 'Create & Activate' and press the **ENT** Key to activate the new profile.
- 9) To cancel the process, select 'Cancel' with the large **FMS** Knob and press the **ENT** Key.

Selecting an active profile:

- 1) Select the 'Aux - System Setup (1 or 2)' Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight the 'Active' profile field in the 'Crew Profile' Box.
- 4) Turn the small **FMS** Knob to display the crew profile list and highlight the desired profile.
- 5) Press the **ENT** Key. The system loads and displays the system settings for the selected profile.

Renaming a profile:

- 1) Select the 'Aux - System Setup (1 or 2)' Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight 'Rename' in the 'Crew Profile' Box.
- 4) Press the **ENT** Key.
- 5) In the 'Rename Profile' Window, turn the **FMS** Knob to select the profile to rename.
- 6) Press the **ENT** Key.
- 7) Use the **FMS** Knob to enter a new profile name up to 16 characters long and press the **ENT** Key.
- 8) With 'Rename' highlighted, press the **ENT** Key.
- 9) To cancel the process, use the large **FMS** Knob to select 'Cancel' and press the **ENT** Key.

Deleting a profile:

- 1) Select the 'Aux - System Setup (1 or 2)' Page.
- 2) Press the **FMS** Knob momentarily to activate the flashing cursor.
- 3) Turn the large **FMS** Knob to highlight 'Delete' in the 'Crew Profile' Box.
- 4) Press the **ENT** Key.
- 5) In the 'Delete Profile' Window, turn the **FMS** Knob to select the profile to delete.
- 6) Press the **ENT** Key.
- 7) With 'Delete' highlighted, press the **ENT** Key.

- 8) To cancel the process, use the large **FMS** Knob to select 'Cancel' and press the **ENT** Key.

Importing a profile from an SD card:

- 1) Insert an SD card containing the crew profile(s) into the top card slot on the MFD.
- 2) Turn the **FMS** Knob to select the 'Aux - System Setup 1 or 2' Page.
- 3) Press the **Import** Softkey.
Or:
 - a) Press the **MENU** Key.
 - b) Turn the **FMS** Knob to highlight 'Import Crew Profile' and press the **ENT** Key.
- 4) The system displays the 'Crew Profile Importing' Window with 'Import' highlighted. Turn the large **FMS** Knob to highlight the 'Profile Name' Field, then scroll to the desired profile name with the large and small **FMS** Knobs, then press the **ENT** Key. Then press the **ENT** Key with 'Import' highlighted.
- 5) If the imported profile name is the same as an existing profile on the system, the system displays an 'Overwrite existing profile? OK or CANCEL' prompt. Press the **ENT** Key to replace profile on the system with the profile imported from the SD card, or turn the **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key to return to the 'Crew Profile Importing' Window.
- 6) If successful, the system displays 'Crew profile import succeeded.' in the Window below. With 'OK' highlighted, press the **ENT** or **CLR** Keys or press the **FMS** Knob to return to the 'Aux - System Setup 1 or 2' Page. The imported profile becomes the active profile.

Exporting a profile to an SD card:

- 1) Insert the SD card for storing the Crew Profile into the top card slot on the MFD.
- 2) Turn the **FMS** Knob to select the 'Aux - System Setup 1 or 2' Page.
- 3) Press the **Export** Softkey. The system displays the 'Crew Profile Exporting' Window.
Or:
 - a) Press the **MENU** Key.
 - b) Turn the **FMS** Knob to highlight 'Export Crew Profile' and press the **ENT** Key.

- 4) To export the crew profile using the current selected profile, press the **ENT** Key with 'Export' highlighted. To change the selected profile, turn the large **FMS** Knob to highlight the 'Profile Name' Field, then scroll to the desired profile name with the large and small **FMS** Knobs, then press the **ENT** Key. Then press the **ENT** Key with 'Export' highlighted.
- 5) If the selected profile to be exported is the same as an existing profile file name on the SD card, the system displays an 'Overwrite existing profile? OK or CANCEL' prompt. Press the **ENT** Key to replace the profile on the SD card with the profile to be exported, or turn the **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key to return to the 'Crew Profile Exporting' Window without exporting the profile.
- 6) If successful, the window displays 'Crew profile export succeeded.' With 'OK' highlighted, press the **ENT** or **CLR** Keys, or press the **FMS** Knob to return to the 'Aux - System Setup 1 or 2' Page.

ELECTRONIC STABILITY AND PROTECTION (ESP™)

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.

Enabling/Disabling ESP:

- 1) Turn the large **FMS** Knob to select the Aux Page Group.
- 2) Turn the small **FMS** Knob to select the 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) Press 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) Press the **FMS** Knob to remove the cursor.

ABNORMAL OPERATION

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.



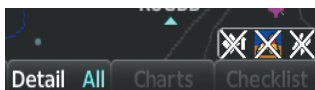
NOTE: *The Tecnam P2010 Pilot's Operating Handbook (POH) always takes precedence over the information found in this section.*

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.



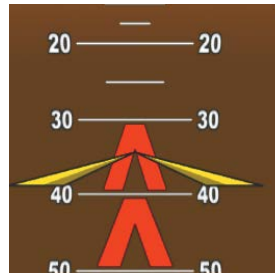
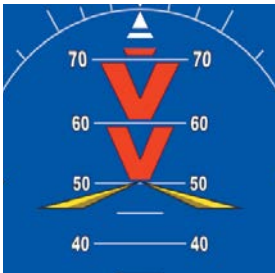
Loss of Hazard Functions with Loss of GPS Position

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



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.



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 amber 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. Terrain functions 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.

ANNUNCIATIONS & ALERTS

WARNING ALERTS

Warning Messages	Description
FLAP OVERSPEED	Airspeed too fast with flaps deployed
LOW FUEL PRESS	Fuel pressure is low.
LOW OIL PRESS	Oil pressure is low.
UNDERSPEED	UNDERSPEED
PROTECT ACTIVE	PROTECT ACTIVE -

CAUTION ALERTS

Caution Messages	Description
ALT FAIL	Alternator has failed.
LH FUEL LOW	Left fuel tank is low.
RH FUEL LOW	Right fuel tank is low.
NO ADC MODES	Autopilot air data modes are not available.
NO VERT MODES	Autopilot vertical modes are not available
PITOT HEAT	Pitot heater has failed.

ADVISORY ALERTS

Advisory Messages	Description
EXT POWER ON	External Power

SAFE OPERATING ANNUNCIATIONS

Safe Operating Messages	Description
FUEL PUMP ON	Fuel pump is active.
PITOT HEAT ON	Pitot heat is active.

SYSTEM ANNUNCIATIONS

When an LRU or an LRU function fails, a large red or amber '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
	Air Data, Attitude and Heading Reference System is aligning.
	Display system is not receiving attitude information from the AHRS.
	AHRS calibration incomplete or configuration module failure.
	GPS information is either not present or is invalid for navigation use. Note that AHRS utilizes GPS inputs during normal operation. AHRS operation may be degraded if GPS signals are not present (see POH).
	Display system is not receiving airspeed input from the air data computer.

System Annunciation	Comment
	Display system is not receiving vertical speed input from the air data computer.
	Display system is not receiving valid heading input from the AHRS or magnetometer.
	Display system is not receiving altitude input from the air data computer.
	Display system is not receiving valid OAT information from the air data computer.
	Display system is not receiving valid ISA information from the Air Data Computer.
	Display system is not receiving valid transponder information.
Other Various Red or Amber X Indications	An red or amber 'X' through any other display field (such as Engine instrumentation fields) indicates that the field is not receiving valid data.

OBSTACLE DATABASE SYMBOLS AND COLORS
TAWS Relative 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

TAWS-B and Terrain-SVT Potential Impact Point Areas with Annunciations

Potential Impact Area Examples	Alert Type	Example Annunciation
 or 	Warning	
 or 	Caution	

Wind Turbine Obstacles and Colors

Unlighted Wind Turbine Obstacle	Lighted Wind Turbine Obstacle	Wind Turbine Obstacle Location
		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

TERRAIN-SVT ALERTS

Alert Type	PFD/MFD* Alert Annunciation	MFD Pop-Up Alert (except Terrain-SVT Page)	Voice Alert
Reduced Required Terrain Clearance Warning (RTC)	TERRAIN	WARNING – TERRAIN	"Warning; Terrain, Terrain"
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 Terrain Impact Caution (ITI)	TERRAIN	CAUTION – TERRAIN	"Caution; Terrain, Terrain"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION – OBSTACLE	"Caution; Obstacle, Obstacle"
Imminent Obstacle Impact Caution (IOI)	TERRAIN	CAUTION – OBSTACLE	"Caution; Obstacle, Obstacle"

* Annunciation is displayed on the MFD when terrain display is enabled.

TAWS-B ALERTS

Alert Type	PFD/MFD** TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Voice Alert
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"Pull Up"
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN – PULL-UP or TERRAIN AHEAD – PULL-UP	"Terrain, Terrain; Pull Up, Pull Up" or "Terrain Ahead, Pull Up; Terrain Ahead, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN – PULL-UP or TERRAIN AHEAD – PULL-UP	"Terrain, Terrain; Pull Up, Pull Up" or "Terrain Ahead, Pull Up; Terrain Ahead, Pull Up"
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE – PULL-UP or OBSTACLE AHEAD – PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up" or "Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE – PULL-UP or OBSTACLE AHEAD – PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up" or "Obstacle Ahead, Pull Up; Obstacle Ahead, Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION – TERRAIN or TERRAIN AHEAD	"Caution, Terrain; Caution, Terrain" or "Terrain Ahead; Terrain Ahead"
Imminent Terrain Impact Caution (ITI)	TERRAIN	CAUTION – TERRAIN or TERRAIN AHEAD	"Caution, Terrain; Caution, Terrain" or "Terrain Ahead; Terrain Ahead"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION – OBSTACLE or OBSTACLE AHEAD	"Caution, Obstacle; Caution, Obstacle" or "Obstacle Ahead; Obstacle Ahead"

Alert Type	PFD/MFD** TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Voice Alert
Imminent Obstacle Impact Caution (IOI)	TERRAIN	CAUTION – OBSTACLE or OBSTACLE AHEAD	"Caution, Obstacle; Caution, Obstacle" or "Obstacle Ahead; Obstacle Ahead"
Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW – TERRAIN	"Too Low, Terrain"
Altitude Voice Callout (VCO) "500"	None	None	"Five-Hundred"
Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	"Sink Rate"
Negative Climb Rate Caution (NCR)	TERRAIN	DONT SINK or TOO LOW – TERRAIN	"Don't Sink"* or "Too Low, Terrain"

** Annunciation is displayed on the MFD when terrain display is enabled.

TERRAIN-SVT SYSTEM STATUS

Alert Type	PFD/MFD [†] 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"*

Alert Type	PFD/MFD [†] Alert Annunciation	Terrain-SVT Page Center Banner Annunciation	Voice Alert
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

[†] Annunciation is shown on Terrain-SVT Page and the Navigation Map Page when Terrain is enabled.
 * "Terrain System Available" will be heard when sufficient GPS signal is received, or Terrain database coverage area re-entered.

TAWS-B SYSTEM STATUS ANNUNCIATIONS

Alert Type	PFD/MFD Alert Annunciation [†]	TAWS-B Page 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"

Alert Type	PFD/MFD Alert Annunciation†	TAWS-B Page Annunciation	Voice Alert
MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None

† Annunciation is shown on TAWS-B Page and the Navigation Map Page when Terrain is enabled.

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

TIS MODES AND STATUS ANNUNCIATION

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.
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

TIS FAILURE ANNUNCIATIONS

Traffic Map Page Center 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

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	

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).
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

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

Flight Instruments
EIS
Nav/Com/XPDR/Audio
Flight Management
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ADS-B TRAFFIC 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	ADS-B TRK/HDG	
ADS-B Failed*	ADS-B:FAIL	ADS-B TRFC FAIL	

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

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

AUX-ADS-B STATUS PAGE MESSAGES

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.

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)	Sirius SXM subscription is not activated
DETECTING ACTIVATION	Weather Datalink Page (MFD)	Sirius SXM subscription is activating.
WAITING FOR DATA...	Weather Datalink Page (MFD)	Sirius SXM subscription confirmed downloading weather data.

AFCS STATUS ALERTS

Alert 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	
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

Alert Condition	Annunciation	Description
Pitch Failure	PTCH	Pitch axis control failure; AP inoperative
System Failure	AFCS	AP and MEPT are unavailable; FD may still be available
Preflight Test	PFT	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.
	PFT	Preflight system test failed; aural alert sounds at failure

VOICE ALERTS

Voice Alert	Alert Trigger
"Check Gear"	Played when landing gear remain in the 'Up' position, and the pilot retards the throttle to within 1/4" of idle.
"Minimums, minimums"	The aircraft has descended below the preset minimum descent altitude or decision 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 with the TIS system or the optional GTS 800 TAS system.
"TIS Not Available"	The aircraft is outside the Traffic Information Service (TIS) coverage area.
"TAS System Test Passed"	GTS 800 TAS
"TAS System Test Fail"	GTS 800 TAS
"One o'clock" through "Twelve o'clock" or "No Bearing"	Intruder bearing (GTS 800 only)
"High", "Low", "Same Altitude" (if within 200 feet of own altitude), or "Altitude not available"	Intruder relative altitude (GTS 800 only)

Voice Alert	Alert Trigger
"Less than one mile", "One Mile" through "Ten Miles", or "More than ten miles"	Intruder distance (GTS 800 only)

SYSTEM MESSAGE ADVISORIES

Message Advisory	Comments
ABORT APR – Loss of GPS navigation. Abort approach.	Abort approach due to loss of GPS navigation. This message may also be displayed if the active flight plan is deleted while an RNAV approach that requires SBAS is active
ADC1 ALT EC – ADC1 altitude error correction is unavailable.	GDC1 is reporting that the altitude error correction is unavailable.
ADC1 AS EC – ADC1 airspeed error correction is unavailable.	GDC1 is reporting that the airspeed error correction is unavailable.
ADC1 SERVICE – ADC1 needs service. Return unit for repair.	A failure has been detected in the GDC1. The system should be serviced.
AHRS MAG DB – AHRS magnetic model database version mismatch.	The #1 AHRS magnetic model database versions do not match.
AHRS1 CAL – AHRS1 calibration version error. Srvc req'd.	The AHRS1 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.
AHRS1 GPS – AHRS1 not receiving any GPS information.	The AHRS1 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 AHRS1 is not receiving backup GPS information. The system should be serviced.
AHRS1 GPS – AHRS1 operating exclusively in no-GPS mode.	The AHRS1 is operating exclusively in no-GPS mode. The system should be serviced.

Message Advisory	Comments
AHRS1 GPS – AHRS1 using backup GPS source.	The AHRS1 is using the backup GPS path. Primary GPS path has failed. The system should be serviced when practical..
AHRS1 SERVICE – AHRS1 needs service. Return unit for repair.	A failure has been detected in the #1 AHRS. The system should be serviced.
AHRS1 SRVC – AHRS1 Magnetic-field model needs update.	The AHRS1 earth magnetic field model is out of date. Update magnetic field model when practical.
AHRS1 TAS – AHRS1 not receiving valid airspeed.	The AHRS1 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.
APR ADVISORY – SBAS VNAV not available. Using Baro VNAV.	SBAS VNAV not available. Check GPS signal.
APR DWNGRADE – Apr downgraded.	Vertical guidance generated by SBAS is unavailable. Use only LNAV minimums.
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.
ARSPC NEAR – Airspace near and ahead.	Special use airspace is near and ahead of the aircraft position.
AUDIO MANIFEST - Audio software mismatch, communication halted.	The GMA 1347 has incorrect software installed. The system should be serviced.
AV FWD FAN FAIL – The cooling fan for remote avionics has failed.	A failure has been detected in the cooling fan for the fwd remote avionics.
AV AFT FAN FAIL – The cooling fan for remote avionics has failed.	A failure has been detected in the cooling fan for the aft remote avionics.
CHECK CRS – Database course for LOC1 / [LOC ID] is [CRS]°.	Selected course for LOC1 differs from published localizer course by more than 10 degrees.

	Message Advisory	Comments
Flight Instruments	CHECK CRS – Database course for LOC2 / [LOC ID] is [CRS]°.	Selected course for LOC2 differs from published localizer course by more than 10 degrees.
EIS	CNFG MODULE – PFD1 configuration module is inoperative.	The specified GDU's configuration module backup memory has failed. The system should be serviced.
Nav/Com/XPDR/Audio	COM1 CONFIG – COM1 config error. Config service req'd.	The COM1 configuration settings do not match backup configuration memory. The system should be serviced.
Flight Management	COM1 MANIFEST – COM1 software mismatch, communication halted.	The COM 1 has incorrect software installed. The system should be serviced.
Hazard Avoidance	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.
AFCs	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.
Additional Features	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 practical.
Abnormal Operation	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.
Annun/Alerts	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 MANIFEST – COM2 software mismatch, communication halted.	The COM 2 has incorrect software installed. The system should be serviced.
Appendix	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.
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Message Advisory	Comments
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 practical.
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.
COPILOT RADIOS MUTED – Copilot radios are muted.	The copilot radios are set on mute.
CPCS CONFIG ERROR - Unexpected Config Strapping.	The CPCS configuration is incorrect.
DATA LOST – Pilot stored data was lost. Recheck settings.	The pilot profile data was lost. System reverts to default pilot profile and settings. The pilot may reconfigure the MFD & PFDs with preferred settings, if desired.
DATABASE CHANGE – 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 a navigation database update. Verify use of airways in stored flight plans and reload airways as needed.
DATABASE CHANGE – Verify user modified procedures.	This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after a navigation database update. Verify the user-modified procedures in stored flight plans are correct and current.
DB MISMATCH – Navigation database mismatch. Xtalk is off.	The GDUs have different navigation database versions or regions installed. Crossfill is off. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.

	Message Advisory	Comments
Flight Instruments	DB MISMATCH – Obstacle database mismatch.	The GDUs have different obstacle database versions or regions installed. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
EIS		
Nav/Com/XPDR/Audio	DB MISMATCH – Standby Navigation database mismatch.	The GDUs have different standby navigation database versions or regions installed. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
Flight Management		
Hazard Avoidance	DB MISMATCH – Terrain database mismatch.	The GDUs have different terrain database versions or regions installed. Check the Avionics Status Screen to determine versions or regions. Also, check the Avionics Status Screen for a database synchronization function not completed. After synchronization is complete, power must be turned off, then on.
AFCS		
Additional Features	DIG GMA1 MANIFEST – DIG GMA 1 software mismatch, communication halted.	The digital audio controller has incorrect software installed. The system should be serviced.
Abnormal Operation	DME CHECK RANGE – DME range disagreement. Check position sensors.	A failure or disagreement has been detected in a DME receiver. Check position sensors.
Annun/Alerts	DOC VIEWER MISMATCH – See Document Viewer Page for detailed info.	The documents on the database cards do not match. Ensure the aircraft manufacturer installed documents on the bottom card of each display match.
Appendix	ESP CONFIG – ESP config error. Config service req'd.	ESP is not configured properly. The system should be serviced.
	ESP DEGRADE – ESP IAS mode is inoperative.	IAS mode of ESP is inoperative. The system should be serviced.
Index	ESP FAIL – ESP is inoperative.	The ESP function has failed and is inoperative. The system should be serviced.

Message Advisory	Comments
ESP OFF – ESP selected off.	Electronic Stability and Protection has been disabled on the Avionics Settings Screen.
FAILED PATH – A data path has failed.	A data path between two or more LRUs has failed. The system should be serviced when practical.
FAILED AP PATH – A autopilot servo data path has failed.	A data path between two or more autopilot servos have failed. The system should be serviced when practical.
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-up, The system detects that a stored flight plan waypoint is locked. This occurs when an aviation 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 flight plans that are 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.
FS510 CARD ERROR – FS510 not detected in MFD Bottom Slot.	The SD card was removed from the bottom card slot of the MFD. The SD card needs to be reinserted.
FUEL QTY COMP - Fuel quantity temp compensation has failed.	A failure of the fuel temperature probe has been detected. Fuel weight may not contain accurate fuel temperature compensation data.
G/S1 FAIL – G/S1 is inoperative.	A failure has been detected in glideslope receiver 1. The system should be serviced.
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 practical.
G/S2 FAIL – G/S2 is inoperative.	A failure has been detected in glideslope receiver 2. The system should be serviced.

	Message Advisory	Comments
Flight Instruments	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 practical.
EIS	GAE 43 FAILURE - Using Cabin Controller information.	A failure of the GAE 43 Altitude Encoder has been detected. KAPS II pressurization system being used. for cabin pressurization information..
Nav/Com/XPDR/Audio	GDC1 MANIFEST – GDC1 software mismatch, communication halted.	The GDC1 has incorrect software installed. The system should be serviced.
Flight Management	GDL69 CONFIG – GDL 69 config error. Config service req'd.	GDL 69A SXM configuration settings do not match those of backup configuration memory. The system should be serviced.
Hazard Avoidance	GDL69 FAIL – GDL 69 has failed.	A failure has been detected in the GDL 69A SXM. The receiver is unavailable. The system should be serviced.
AFCs	GDL69 MANIFEST – GDL69 software mismatch, communication halted.	The GDL 69A SXM has incorrect software installed. The system should be serviced.
Additional Features	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.
Abnormal Operation	GEA1 MANIFEST – GEA1 software mismatch, communication halted.	The GEA1 has incorrect software installed. The system should be serviced.
Annun/Alerts	GEO LIMITS – AHRS1 too far north/south, no magnetic compass.	The aircraft is outside geographical limits for approved AHRS operation. Heading is annunciated as invalid.
	GFC MANIFEST – GFC software mismatch, communication halted.	Incorrect servo software is installed, or gain settings are incorrect.
Appendix	GIA1 CONFIG – GIA1 audio config error. Config service req'd.	The GIA1 have an error in the audio configuration. The system should be serviced.
Index	GIA1 CONFIG – GIA1 config error. Config service req'd.	The GIA1 configuration settings do not match backup configuration memory. The system should be serviced.

Message Advisory	Comments
GIA1 COOLING – GIA1 over temperature.	The GIA1 temperature is too high. If problem persists, the system should be serviced.
GIA1 COOLING – GIA1 temperature too low.	The GIA1 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
GIA1 MANIFEST – GIA1 software mismatch, communication halted.	The GIA1 has incorrect software installed. The system should be serviced.
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.
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.
GIA2 COOLING – GIA2 temperature too low.	The GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
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.
GMA1 AUX MANIFEST – GMA 1 AUX software mismatch, communication halted.	The digital audio controller has incorrect software installed. The system should be serviced.
GMA1 CONFIG – GMA1 config error. Config service req'd.	The audio controller configuration settings do not match backup configuration memory. The system should be serviced.
GMA1 FAIL – GMA1 is inoperative.	The audio controller has detected a failure. The audio controller is unavailable. The system should be serviced.

	Message Advisory	Comments
Flight Instruments	GMA1 MANIFEST – DIG GMA 1 software mismatch, communication halted.	The audio controller has incorrect software installed. The system should be serviced.
EIS	GMA1 SERVICE – GMA1 needs service. Return unit for repair.	The audio controller self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio controller may still be usable. The system should be serviced when practical.
Nav/Com/XPDR/Audio	GMC CONFIG – GMC Config error. Config service req'd.	Error in the configuration of the GMC.
Flight Management	GMC FAIL – GMC is inoperative.	A failure has been detected in the GMC. The GMC is unavailable.
Hazard Avoidance	GMC KEYSTK – GMC [key name] key is stuck.	A key is stuck on the GMC bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
AFCS	GMC MANIFEST – GMC software mismatch. Communication halted.	The GMC has incorrect software installed. The system should be serviced.
Additional Features	GMU1 MANIFEST – GMU1 software mismatch, communication halted.	The GMU1 has incorrect software installed. The system should be serviced.
Abnormal Operation	GPS NAV LOST – Loss of GPS navigation. Enable GPS sensors.	Loss of GPS navigation due to GPS being disabled
	GPS NAV LOST – Loss of GPS navigation. GPS fail.	Loss of GPS navigation due to GPS failure.
Annun/Alerts	GPS NAV LOST – Loss of GPS navigation. Position error.	Loss of GPS navigation due to position error.
	GPS1 CHECK POSITION – Position difference. Check position sensors.	A difference has been detected in the current position. Check position sensors.
Appendix	GPS1 FAIL – GPS1 is inoperative.	A failure has been detected in GPS1 receiver. The system should be serviced.

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Message Advisory	Comments
GPS1 SERVICE – GPS1 needs service. Return unit for repair.	A fault has been detected in the GPS1 receiver. The receiver may still be available. If the message persists through a normal power cycle, the system should be serviced when practical.
GPS2 CHECK POSITION – Position difference. Check position sensors.	A difference has been detected in the current position. Check position sensors.
GPS2 FAIL – GPS2 is inoperative.	A failure has been detected in GPS2 receiver. The system should be serviced.
GPS2 SERVICE – GPS2 needs service. Return unit for repair.	A fault has been detected in the GPS2 receiver. The receiver may still be available. If the message persists through a normal power cycle, the system should be serviced when practical.
GRS1 CONFIG – GRS1 config error. Config service req'd.	GRS configuration settings do not match those of backup configuration memory. The system should be serviced.
GRS1 MANIFEST – GRS1 software mismatch, communication halted.	The AHRS1 has incorrect software installed. The system should be serviced.
GRS1 SERVICE – GRS1 needs service. Return unit for repair.	The AHRS1 should be serviced when practical.
GTS CONFIG – GTS Config error. Config service req'd.	The GTS and GDU have different copies of the GTS configuration, or the Mode S address is invalid. 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.
GTX2 MANIFEST – GTX2 software mismatch, communication halted.	The transponder has incorrect software installed. The system should be serviced.

	Message Advisory	Comments
Flight Instruments	GWX CONFIG – GWX config error. Config service req'd.	GWX configuration settings do not match those of the GDU configuration. The system should be serviced.
EIS	GWX FAIL – GWX is inoperative.	The GDU is not receiving status packet from the GWX or the GWX is reporting a fault. The radar system should be serviced.
Nav/Com/XPDR/Audio	GWX MANIFEST – GWX software mismatch, communication halted.	The GWX has incorrect software installed. The system should be serviced.
Flight Management	GWX SERVICE – GWX needs service. Return unit for repair.	A failure has been detected in the GWX. The GWX may still be usable.
Hazard Avoidance	HDG FAULT – AHRS1 magnetometer fault has occurred.	A fault has occurred in the #1 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced.
AFCs	HOLD EXPIRED – Holding EFC time expired.	Expect Further Clearance (EFC) time has expired for the User Defined Hold.
Additional Features	HW MISMATCH – GIA hardware mismatch, GIA2 communication halted.	A GIA mismatch has been detected, where only one is SBAS capable.
	HW MISMATCH – GIA1 hardware mismatch, GIA1 communication halted.	A GIA mismatch has been detected, where only one is SBAS capable.
Abnormal Operation	INSIDE ARSPC – Inside airspace.	The aircraft is inside the airspace.
Annun/Alerts	LOI – GPS integrity lost. Crosscheck with other NAVS.	GPS integrity is insufficient for the current phase of flight.
	LOSS OF GPS NAVIGATION – Poor Satellite Coverage.	Loss of GPS navigation due to insufficient/poor satellite coverage.
Appendix	LOW BANK ACTIVE – Disengage for approach.	Low Bank mode is active. Disengage to continue approach.
Index	LOW BANK ACTIVE – Disengage for RNP less than 1.0.	Low Bank mode is active. Disengage to continue RNP 1.0.

Message Advisory	Comments
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°.
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.
MFD1 CARD 1 ERR – MFD1 card 1 is invalid.	The SD card in the top card slot of the MFD contains invalid data.
MFD1 CARD 1 REM – MFD1 card 1 was removed. Reinsert card.	The SD card was removed from the top card slot of the MFD. The SD card needs to be reinserted.
MFD1 CARD 2 ERR – MFD1 card 2 is invalid.	The SD card in the bottom card slot of the MFD contains invalid data.
MFD1 CARD 2 REM – MFD1 card 2 was removed. Reinsert card.	The SD card was removed from the bottom card slot of the MFD. The SD card needs to be reinserted.
MFD1 CONFIG – MFD1 config error. Config service req'd.	The MFD configuration settings do not match backup configuration memory. The system should be serviced.
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.
MFD1 DB ERR – MFD1 database error exists.	The MFD detected a failure in one or more databases. 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 MFD. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.

	Message Advisory	Comments
Flight Instruments	MFD1 DB ERR – MFD1 Terrain database missing.	The terrain database is present on another LRU, but is missing on the MFD. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
EIS	MFD1 FAN FAIL – MFD1 internal fan failure. Return for repair.	The specified GDU's internal cooling fan has failed. The system should be serviced.
Nav/Com/XPDR/Audio	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.
Flight Management	MFD1 MANIFEST – MFD 1 software mismatch, communication halted.	The MFD has incorrect software installed. The system should be serviced.
Hazard Avoidance	MFD1 SERVICE – MFD1 needs service. Return unit for repair.	The MFD self-test has detected a problem. The system should be serviced.
AFCs	MFD1 SOFTWARE – MFD1 mismatch, communication halted.	The MFD has different software versions installed. The system should be serviced.
Additional Features	MFD1 TERRAIN DSP – MFD1 Terrain awareness display unavailable.	One of the terrain, airport terrain, or obstacle databases required for TAWS in the MFD is missing or invalid.
Abnormal Operation	MFD1 VOLTAGE – MFD1 has low voltage. Reducing power usage	The MFD voltage is low. The system should be serviced.
Annun/Alerts	NAV DB UPDATED – Active navigation database updated.	System has updated the active navigation database from the standby navigation database.
	NAV1 MANIFEST – NAV1 software mismatch, communication halted.	The NAV 1 has incorrect software installed. The system should be serviced.
Appendix	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.
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Message Advisory	Comments
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.
NAV2 MANIFEST – NAV2 software mismatch, communication halted.	The NAV 2 has incorrect software installed. The system should be serviced.
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.
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.
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.
PFD POSITIONS DIFFERENT – PFD position mismatch. Check position sensors.	A difference has been detected in the displayed position on the PFDs. Check position sensors.
PFD1 BACKLIGHT CALIBRATION – PFD1 calibration lost. Return for repair.	The PFD1 backlight calibration cannot be found or is invalid. The system should be serviced.
PFD1 CARD 1 ERR – PFD1 card 1 is invalid.	The SD card in the top card slot of PFD1 contains invalid data.
PFD1 CARD 1 REM – PFD1 card 1 was removed. Reinsert card.	The SD card was removed from the top card slot of PFD1. The SD card needs to be reinserted.
PFD1 CARD 2 ERR – PFD1 card 2 is invalid.	The SD card in the bottom card slot of PFD1 contains invalid data.

	Message Advisory	Comments
Flight Instruments	PFD1 CARD 2 REM – PFD1 card 2 was removed. Reinsert card.	The SD card was removed from the bottom card slot of PFD1. The SD card needs to be reinserted.
EIS	PFD1 CONFIG – PFD1 config error. Config service req'd.	The PFD1 configuration settings do not match backup configuration memory. The system should be serviced.
Nav/Com/XPDR/Audio	PFD1 COOLING – PFD1 has poor cooling. Reducing power usage.	PFD1 is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced.
Flight Management	PFD1 DB ERR – PFD1 database error exists.	PFD1 detected a failure in one or more databases. Ensure the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
Hazard Avoidance	PFD1 DB ERR – PFD1 Obstacle database missing.	The obstacle database is present on another LRU, but is missing on the specified LRU.
	PFD1 DB ERR – PFD1 Terrain database missing.	The terrain database is present on another LRU, but is missing on the specified LRU.
AFCs	PFD1 FAN FAIL – PFD1 internal fan failure. Unit needs service.	The PFD1 internal cooling fan has failed. The system should be serviced.
Additional Features	PFD1 KEYSTK – PFD1 [key name] is stuck.	A key is stuck on the PFD1 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
Abnormal Operation	PFD1 MANIFEST – PFD1 software mismatch, communication halted.	PFD1 has incorrect software installed. The system should be serviced.
Annun/Alerts	PFD1 SERVICE – PFD1 needs service. Return unit for repair.	The PFD1 self-test has detected a problem. The system should be serviced.
	PFD1 SOFTWARE – PFD1 mismatch, communication halted.	PFD1 has different software versions installed. The system should be serviced.
Appendix	PFD1 TERRAIN DSP – PFD1 Terrain awareness display unavailable.	One of the terrain, airport terrain, or obstacle databases required for TAWS in PFD1 is missing or invalid.
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Message Advisory	Comments
PFD1 VOLTAGE – PFD1 has low voltage. Reducing power usage	The PFD1 voltage is low. The system should be serviced.
PILOT RADIOS MUTED – Copilot radios are muted.	The pilot radios are set on mute.
PTK FAIL – Parallel track unavailable: bad geometry.	Bad parallel track geometry.
PTK FAIL – Parallel track unavailable: invalid leg type.	Invalid leg type for parallel offset.
PTK FAIL – Parallel track unavailable: past IAF.	IAF waypoint for parallel offset has been passed.
RAIM UNAVAIL – RAIM not available from FAF to MAP waypoints.	GPS satellite coverage is insufficient to perform Receiver Autonomous Integrity Monitoring (RAIM) from the FAF to the MAP waypoints.
REGISTER CONNEXT – Data services inop, register w/ Connex.	The system is not registered with Garmin Connex, or its current registration data has failed authentication.
SCHEDULER [#] – <message>.	Message criteria entered by the user.
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.
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.
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.
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.
STEEP TURN – Steep turn ahead.	The computed bank angle needed to execute the turn ahead may exceed the current bank angle limit.
STRMSCP FAIL – Stormscope has failed.	Stormscope has failed. The system should be serviced.

	Message Advisory	Comments
Flight Instruments	SURFACEWATCH DISABLED - Too far north/south.	The SurfaceWatch system has been disabled.
EIS	SURFACEWATCH FAIL - Invalid audio configuration.	The SurfaceWatch system has failed due to an invalid audio configuration.
Nav/Com/XPDR/Audio	SURFACEWATCH FAIL - Invalid configurable alerts.	The SurfaceWatch system has failed due to invalid configurable alerts.
Flight Management	SURFACEWATCH FAIL - One or more inputs invalid.	The SurfaceWatch system has failed due to one or more invalid inputs.
	SURFACEWATCH INHIBIT - Surfacewatch inhibited.	The SurfaceWatch system has been inhibited.
Hazard Avoidance	SVT DISABLED – Out of available terrain region.	Synthetic Vision is disabled because the aircraft is not within the boundaries of the installed terrain database.
AFCs	SVT DISABLED – Terrain DB resolution too low.	Synthetic Vision is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.
Additional Features	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.
Abnormal Operation	TERRAIN DISABLED – Terrain Awareness DB resolution too low.	TAWS is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.
Annun/Alerts	TIMER EXPIRD – Timer has expired.	The system notifies the pilot the timer has expired.
Appendix	TRAFFIC FAIL – Traffic device has failed.	The system is no longer receiving data from the traffic system. The traffic device should be serviced.
Index	TRN AUD FAIL – Trn Awareness audio source unavailable.	TAWS is disabled because an aural alert audio source is unavailable.
	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.
	UNABLE VNAV – Excessive cross-track error.	The current cross-track exceeds the limit, causing vertical deviation to go invalid.

Message Advisory	Comments
UNABLE VNAV – Excessive track angle error.	The current track angle error exceeds the limit, causing the vertical deviation to go invalid.
UNABLE VNAV – Reverted to PIT.	The current VNAV is not supported, the Flight Director has reverted to PIT mode.
UNABLE VNAV – Parallel course selected.	A parallel course has been selected, causing the vertical deviation to go invalid.
UNABLE VNAV – 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.
UNABLE VNAV ALTITUDE – Cannot meet VNAV altitude constraint.	The current vertical speed is insufficient to make the active flight plan altitude constraint prior to crossing the waypoint.
VNAV CONFIG – VNAV config error Config service req'd.	VNAV configuration error. The system should be serviced.
WPT ARRIVAL – Arriving at waypoint - [xxxx]	Arriving at waypoint [xxxx], where [xxxx] is the waypoint name.
WX ALERT – Possible severe weather ahead.	The GWX 70 indicates severe weather within ± 10 degrees of the aircraft heading at a range of 80 to 320 nm.
XPDR1 ADS-B FAIL – XPDR1 unable to transmit ADS-B messages.	ADS-B is inoperative. Other transponder functions may be available. Transponder should be serviced when practical.
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.
XPDR1 FAIL – XPDR1 is inoperative.	There is no communication with the #1 transponder.
XPDR1 SERVICE – XPDR1 needs service. Return unit for repair.	The #1 transponder should be serviced when practical.
XTALK ERROR – Flight display crosstalk error has occurred.	The GDUs and/or GTCs are not communicating with each other. The system should be serviced.

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.
'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.
'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.
'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.
'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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CREW PROFILE IMPORT/EXPORT MESSAGES

Crew Profile Import/Export Results	Description
'No crew profile files found to import.'	Displayed if the SD card does not have one or more valid crew profile filenames.
'Overwrite existing profile?'	Displayed if the profile name matches the name of existing profile.
'Profile name invalid. Enter a different profile name.'	Displayed if the profile name is invalid.
'All available crew profiles in use. Delete a profile before importing another.'	Displayed if the maximum number for crew profiles has been reached.
'Crew profile import failed.'	Displayed if the importing operation fails for any other reason.
'Crew profile import succeeded.'	Displayed if the importing operation succeeds.
'Overwrite existing file?'	Displayed if the filename matches the name of an existing file on the SD card.
'Crew profile export failed.'	Displayed if the export operation fails.
'Crew profile export succeeded.'	Displayed if the export operation succeeds.

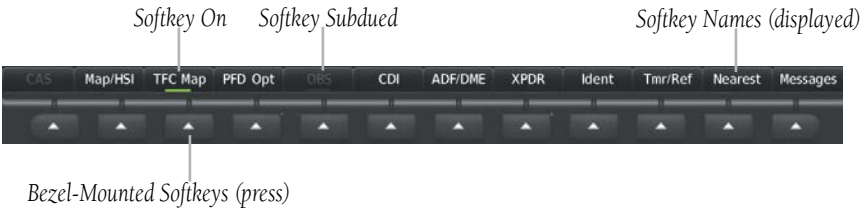
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SOFTKEY FUNCTION



Softkeys (First-Level PFD Configuration)

PFD SOFTKEY MAPS

Level 1	Level 2	Level 3	Level 4	Description
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 or Traffic).
		Inset Map		Displays the Inset Map.
		HSI Map		Displays the HSI Map.
		TFC Map		Replaces the PFD Map with a dedicated traffic display.
		Wx LGND		Displays/removes the name of the selected data link weather provider (SiriusXM) and the weather product icon and age box (for enabled weather products).
	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.

	Level 1	Level 2	Level 3	Level 4	Description
Flight Instruments		Topo			Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on PFD Map.
EIS		Rel Ter			Displays relative terrain information on the PFD Map.
Nav/Com/XPDR/Audio		NEXRAD			Displays XM NEXRAD weather and coverage on PFD Map (subscription optional).
		METAR			Displays METAR information on PFD Map (subscription optional).
Flight Management		Lightning			Adds/removes the display of SiriusXM lightning information on PFD Map. (optional)
Hazard Avoidance			LTNG Off		Disables lightning function on PFD Map. The softkey annunciator is green when the lightning function is off.
AFCs			Datalink		Selects the data link weather source for the PFD Map.
Additional Features			STRMSCP		Adds or removes the display of Stormscope information on the PFD Map. The softkey annunciator is green when the function is on. When the function is off, the annunciator is gray.
Abnormal Operation	TFC Map				Replaces the PFD Map with a dedicated traffic display.
	PFD Opt				Displays second-level softkeys for additional PFD options.
Annun/Alerts		SVT			Displays additional SVT overlay softkeys. (optional)
			Pathways		Displays Pathway Boxes on the Synthetic Vision Display.
Appendix			Terrain		Enables synthetic terrain depiction.
			HDG LBL		Displays compass heading along the Zero-Pitch line.

Level 1	Level 2	Level 3	Level 4	Description
		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.
	Wind			Displays the wind option softkeys.
		Off		Wind information not displayed.
		Option 1		Total wind direction arrow with numeric speed
		Option 2		Total wind direction arrow with digital numeric direction and speed.
		Option 3		Total wind direction arrow with numeric headwind (H) or tailwind (T) and crosswind (X) components.
	DME			Displays DME Information (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.

	Level 1	Level 2	Level 3	Level 4	Description
Flight Instruments	CDI				Cycles through FMS, NAV1, and NAV2 navigation modes on the CDI.
EIS	ADF/DME				Displays the ADF/DME Tuning Window, allowing selection and tuning of the ADF and DME (optional).
Nav/Com/XPDR/Audio	XPDR				Displays the transponder selection softkeys.
		Standby			Selects transponder Standby Mode (transponder does not reply to any interrogations).
Flight Management		On			Activates transponder (transponder replies to identification interrogations).
		ALT			Altitude Reporting Mode (transponder replies to identification and altitude interrogations).
Hazard Avoidance		VFR			Automatically enters the VFR code (1200 in the U.S.A. only).
AFCs		Code			Displays transponder code selection softkeys 0-7.
			0 - 7		Use numbers to enter code.
Additional Features			Ident		Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
			BKSP		Removes numbers entered, one at a time.
Abnormal Operation		Ident			Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
Annun/Alerts	Ident				Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
	Tmr/Ref				Displays Timer/References Window.
Appendix	Nearest				Displays Nearest Airports Window.

Level 1	Level 2	Level 3	Level 4	Description
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.

MFD SOFTKEY MAPS

Level 1	Level 2	Level 3	Description
Engine			Displays 'EIS - Engine' Page.
	Engine		Returns to previous MFD page.
	DEC Fuel		Decreases calculated fuel remaining by 1 gallon for each softkey press.
	INC Fuel		Increases calculated fuel remaining by 1 gallon for each softkey press.
	RST Fuel		Resets calculated fuel remaining to maximum capacity and resets fuel used to zero.
	Assist		Enables/disables leaning assist mode.
Map Opt			Displays second level Map Options softkeys
	Traffic		Displays traffic information on Navigation Map Page.
	Inset		Displays inset window second level softkeys.
		Off	Removes VSD inset from Navigation Map Page.
		VSD	Displays VSD profile information of terrain/obstacles along the current track, vertical track vector, and selected altitude. 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.

	Level 1	Level 2	Level 3	Description
Flight Instruments		TER		Displays terrain on the map; cycles through the following: 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		AWY		Displays airways on the map; cycles through the following: Off: No airways are displayed. On: All airways are displayed. LO: Only low altitude airways are displayed. HI: Only high altitude airways are displayed.
Flight Management				
Hazard Avoidance		STRMSCP		Displays Stormscope information on Navigation Map (optional).
		NEXRAD		Displays radar weather and coverage on Navigation Map Page (optional).
AFCS		XM LTNG		Displays XM lightning information on Navigation Map Page (optional).
		METAR		Displays METAR information on PFD Map (subscription optional).
Additional Features		Legend		Displays legends for the displayed XM Weather products (optional).
Abnormal Operation	Detail			Selects desired amount of map detail; cycles through the following levels: 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.
Annun/Alerts				
Appendix	Charts			When available, displays optional airport and terminal procedure charts (optional).
		CHRT Opt		Displays chart display settings softkeys (if available).
Index		Show Map and Chart		Show Map displays the applicable WPT Page information upon the map for the chart currently selected. Chart displays the chart for the WPT Page that is currently selected and returns to the Charts Level 2 Softkeys.

Level 1	Level 2	Level 3	Description
	Info		Pressing the Info 1 or Info 2 Softkey returns to the airport diagram when the view is on a different chart.
	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.*

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.

Database updates can be obtained by following the instructions detailed in the 'Aviation Databases' section of the Garmin website (fly.garmin.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. 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

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.

Updating Databases

- 1) With the system OFF, remove an SD Card from the top SD card slot of the MFD.
- 2) Download and install the databases on an SD card.
- 3) Put the SD Card in the top 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 the SD card from the bottom slot of the MFD if desired.
- 11) Remove and reapply power to the system.

- 12) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 13) Turn the large **FMS** Knob and select Aux.
- 14) Turn the small **FMS** Knob and select the Databases.
- 15) Verify that the standby databases transferred and are now in the Active column.
- 16) 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.
 - 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.
- 17) 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.
- 18) 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 USING THE FLIGHT STREAM 510

In order to load databases through Garmin Pilot and the Flight Stream 510, the Flight Stream 510 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 Flight Stream 510 over Bluetooth (refer to the Additional Features section). When there is at least one paired device available to connect, the Flight Stream 510 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 Flight Stream 510. 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 Flight Stream 510 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.



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 following 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 - Connex Setup' Page.
- 12) The following window will appear. Database update progress may be monitored on the mobile device.
- 13) When the transfer is complete, Press the **Close** Softkey.
- 14) Remove and reapply power to the system.
- 15) Press the **ENT** Key or the right-most softkey on MFD display to acknowledge the startup screen.
- 16) Turn the large **FMS** Knob and select Aux.
- 17) Turn the small **FMS** Knob and select Databases.
- 18) Verify that the standby databases transferred and are now in the Active column.
- 19) 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.
 - 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.
- 20)** 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.
- 21)** 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 Flight Stream 510 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.
- 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:
 - 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) 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.

 - 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 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 **ENT** Key. A cyan double-sided arrow will appear indicating that the standby database will become active.
 - d) 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

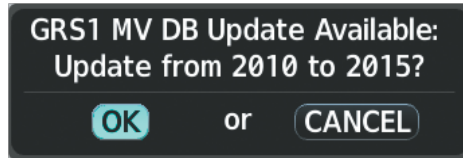
If databases are not properly loading or functioning, and an attempt has been made to load the databases using a new SD card or multimedia card, it may be necessary to delete the databases from the system.

Deleting databases:

- 1) Touch the **Menu** Key.
- 2) Turn the small **FMS** Knob to select 'Delete Databases.'
- 3) Push 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. Push 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

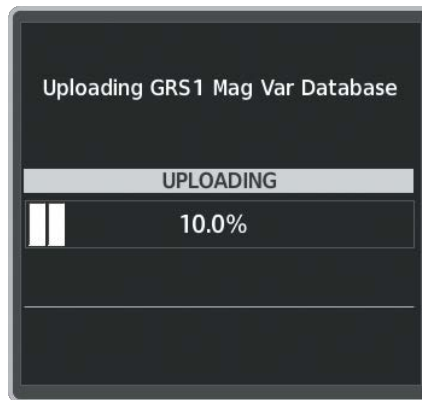
A copy of the current magnetic field variation database (MV DB) is included with the navigation database. At startup, the system compares this version of the MV DB with that presently being used by the AHRS. If the system determines the MV DB needs to be updated, a prompt is displayed on the Navigation Map Page.



Magnetic Field Variation Database Update Prompt

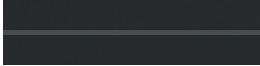
Loading the magnetic field variation database update

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.



Uploading Database

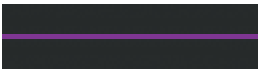
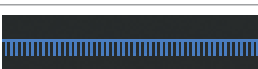
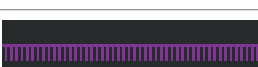
MAP SYMBOLS
Land Symbols

Land Symbols	Symbol	Default Range (nm)	Maximum Range (nm)
User Waypoint		25	40
Highways and Roads			
Interstate Highway (Freeway)		50	400
International Highway (Freeway)		50	400
US Highway (National Highway)		15	150
State Highway (Local Highway)		2.5	100
Local Road (Local Road)	N/A	4	25
Railroads (RAILROAD)		7.5	25
Large City (> 200,000)		100	1000
Medium City (> 50,000)		50	400
Small City (> 5,000)		25	100
State/Province		400	1000
River/Lake		75	100
Latitude/Longitude (LAT/LON)		1	1000

Aviation Symbols

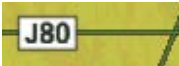
Aviation Symbols	Symbol	Default Range (nm)	Maximum Range (nm)
Large Airport (Longest Runway $\geq$ 8100 ft)		100	1000
Medium Airport (8100 ft > Longest Runway $\geq$ 5000 ft)		50	400
Small Airport (Longest Runway < 5000 ft) (Medium Airport if it has a tower frequency)		25	150
Taxiways (SafeTaxi)	See Additional Features	1.5	5
Runway Extension		7.5	150
Missed Approach Preview On/Off (Missed APR)	N/A	N/A	N/A
Intersection (INT)		25	40
Non-directional Beacon (NDB)		25	50
VOR		50	250
VOR Compass Rose On/Off	N/A	N/A	N/A
Visual Reporting Point (VRP)		25	1000
Temporary Flight Restriction (TFR)		250	1000
VNAV Constraints		1000	1000
(VNAV Constraints) Show All (show all constraints within flight plan if VNAV Constraints are 'On' above)	N/A	N/A	N/A

Airspace Symbols

Airspace Symbols	Symbol	Default Range (nm)	Maximum Range (nm)
Smart Airspace On/Off	N/A	N/A	N/A
Airspace Altitude Labels (Airspace ALT LBL) On/Off			
Class B Airspace Altitude Label (ceiling/floor)		N/A	N/A
Class C Airspace Altitude Label (ceiling/floor)		N/A	N/A
Class D Airspace Altitude Label (ceiling)		N/A	N/A
Class B Airspace/TMA (CLASS B/ TMA)		50	150
Class C Airspace/TCA (CLASS C/ TCA)		50	100
Class D Airspace (CLASS D)		10	100
Alert/Prohibited/Restricted/Warning Areas (RESTRICTED)		50	100
Military Operations Area [(MOA) (MILITARY)]		50	250
Other/Air Defense Interdiction Zone (OTHER/ADIZ)		50	250

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Airways Symbols

Airways Symbols	Symbol	Default Range (nm)	Maximum Range (nm)
Low Altitude Airways (V Routes and T Routes)		50	100
High Altitude Airways (J Routes and Q Routes)		50	100

Active Flight Plan Leg Type Symbols

Flight Plan Leg Type	Symbol
Active Course Leg*	
Active Heading Leg*	
Active Roll Steering Path*†	
Course Leg in the current flight segment	
Course Leg not in the current flight segment	
Heading Leg	
Roll Steering Path †	
Future Roll Steering Path ‡	
Turn Anticipation Arc	

* The active leg or path is the one currently being flown, and is shown in magenta.
† A roll steering path is a computed transition between two disconnected legs.
‡ A roll steering path in the flight plan that is beyond the next leg appears as a future roll steering path. When a future roll steering path becomes the next leg in the flight plan, it appears as a roll steering path.

MISCELLANEOUS SYMBOLS

Item	Symbol
ARTCC Frequency or FSS Frequency	
North Arrow	
Map Pointer (when panning)	
Measuring Pointer	
User Waypoint	
Vertical Navigation Along Track Waypoint	
Parallel Track Waypoint	
Unanchored Flight Path Waypoint	
Displayed when aircraft GPS location is valid, but heading is invalid.	
Top of Descent (TOD)	
Bottom of Descent (BOD)	
Navigating using Dead Reckoning	

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