G1000® Integrated Flight Deck

Cockpit Reference Guide for the Cessna Citation Mustang

GARMIN™

WARNING: Navigation and terrain separation must NOT be predicated upon the use of the terrain function. The G1000 Terrain Proximity feature is NOT intended to be used as a primary reference for terrain avoidance and does not relieve the pilot from the responsibility of being aware of surroundings during flight. The Terrain Proximity feature is only to be used as an aid for terrain avoidance and is not certified for use in applications requiring a certified terrain awareness system. Terrain data is obtained from third party sources. Garmin is not able to independently verify the accuracy of the terrain data.

WARNING: The displayed minimum safe altitudes (MSAs) are only advisory in nature and should not be relied upon as the sole source of obstacle and terrain avoidance information. Always refer to current aeronautical charts for appropriate minimum clearance altitudes.

WARNING: The altitude calculated by G1000 GPS receivers is geometric height above Mean Sea Level and could vary significantly from the altitude displayed by pressure altimeters, such as the GDC 74B Air Data Computer, or other altimeters in aircraft. GPS altitude should never be used for vertical navigation. Always use pressure altitude displayed by the G1000 PFD or other pressure altimeters in aircraft.

WARNING: Do not use outdated database information. Databases used in the G1000 system must be updated regularly in order to ensure that the information remains current. Pilots using any outdated database do so entirely at their own risk.

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

WARNING: Traffic information shown on the G1000 Multi Function Display is provided as an aid in visually acquiring traffic. Pilots must maneuver the aircraft based only upon ATC guidance or positive visual acquisition of conflicting traffic.

⚠️ *WARNING: XM Weather should not be used for hazardous weather penetration. Weather information provided by the GDL 69A is approved only for weather avoidance, not penetration.*

⚠️ *WARNING: NEXRAD weather data is to be used for long-range planning purposes only. Due to inherent delays in data transmission and the relative age of the data, NEXRAD weather data should not be used for short-range weather avoidance.*

⚠️ *WARNING: The Garmin G1000, as installed in the Cessna Citation Mustang aircraft, has a very high degree of functional integrity. However, the pilot must recognize that providing monitoring and/or self-test capability for all conceivable system failures is not practical. Although unlikely, it may be possible for erroneous operation to occur without a fault indication shown by the G1000. It is thus the responsibility of the pilot to detect such an occurrence by means of cross-checking with all redundant or correlated information available in the cockpit.*

⚠️ *WARNING: For safety reasons, G1000 operational procedures must be learned on the ground.*

⚠️ *WARNING: 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 Garmin G1000 utilize GPS as a precision electronic NAVigation AID (NAVAID). Therefore, as with all NAVAIDs, information presented by the G1000 can be misused or misinterpreted and, therefore, become unsafe.*

⚠️ *WARNING: To reduce the risk of unsafe operation, carefully review and understand all aspects of the G1000 Pilot's Guide documentation and the Cessna Citation Mustang Airplane Flight Manual. Thoroughly practice basic operation prior to actual use. During flight operations, carefully compare indications from the G1000 to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety purposes, always resolve any discrepancies before continuing navigation.*

WARNING: The illustrations in this guide are only examples. Never use the G1000 to attempt to penetrate a thunderstorm. Both the FAA Advisory Circular, Subject: Thunderstorms, and the Airman's Information Manual (AIM) recommend avoiding "by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo."

CAUTION: The GDU 1040A PFDs and GDU 1500 MFD displays use a lens coated with a special anti-reflective coating that is very sensitive to skin oils, waxes, and abrasive cleaners. CLEANERS CONTAINING AMMONIA WILL HARM THE ANTI-REFLECTIVE COATING. It is very important to clean the lens using a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings.

CAUTION: The Garmin G1000 does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and the pilot's authority to operate this device under FAA/FCC regulations.

NOTE: All visual depictions contained within this document, including screen images of the G1000 panel and displays, are subject to change and may not reflect the most current G1000 system. Depictions of equipment may differ slightly from the actual equipment.

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: 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.

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Part Number	Change Summary
190-00600-00 Rev A	Initial release

Revision	Date of Revision	Affected Pages	Description
A	October, 2006	i through Index-2	Production release
B	November, 2006	41-44	Added Additional Features section

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FLIGHT INSTRUMENTS

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** Softkey to display the second-level softkeys.

2) Press the **STD BARO** Softkey.

OR

Push the **BARO** Knob to select standard pressure.

CHANGING ALTIMETER BAROMETRIC PRESSURE SETTING UNITS

1) Press the **PFD** Softkey to display the second-level softkeys.

2) Press the **ALT UNIT** Softkey.

3) Press the **IN** Softkey to display the barometric pressure setting in inches of mercury (in Hg).

Or, press the **HPA** Softkey to display the barometric pressure setting in hectopascals.

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

SYNCHRONIZING THE ALTIMETER BAROMETRIC PRESSURE SETTINGS

1) Press the **MENU** Key to display the PFD Setup Menu.

2) Turn the large **FMS** Knob to highlight the 'Baro Sync' ON/OFF field.

3) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

4) Press the **MENU** Key to remove the window.

SYNCHRONIZE CDI

1) Press the **MENU** Key to display the PFD Setup Menu.

2) Turn the large **FMS** Knob to highlight 'CDI SYNC OFF'.

3) Turn the small **FMS** Knob in the direction of the green arrowhead to select ON.

4) Press the **MENU** Key again to remove the window.

CHANGE NAVIGATION SOURCES

1) Press the **CDI** Softkey to change from GPS to VOR1 or LOC1. This places the light blue tuning box over the NAV1 standby frequency in the upper left corner of the PFD.

2) Press the **CDI** Softkey again to change from VOR1 or LOC1 to VOR2 or LOC2. This places the light blue tuning box over the NAV2 standby frequency.

3) Press the **CDI** Softkey a third time to return to GPS.

ENABLE/DISABLE OBS MODE WHILE NAVIGATING WITH GPS

1) Press the **OBS** Softkey to select OBS Mode.

2) Turn a **CRS** Knob to select the desired course to/from the waypoint. Press a **CRS** Knob to synchronize the Selected Course with the bearing to the next waypoint.

3) Press the **OBS** Softkey again to disable OBS Mode.

GENERIC TIMER

1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to select the time field (hh/mm/ss). Turn the **FMS** Knobs to set the desired time, then press the **ENT** Key. The UP/DOWN field is now highlighted.

2) Turn the small **FMS** Knob to display the UP/DOWN window. Turn the **FMS** Knob to select 'UP' or 'DOWN', then press the **ENT** Key. 'START?' is now highlighted.

3) Press the **ENT** Key to START, STOP, or RESET the timer (if the timer is counting DOWN, it will start counting UP after reaching zero). Press the **CLR** Key or the **TMR/REF** Softkey to remove the window.

CONFIGURE VSPEED BUGS INDIVIDUALLY

1) Press the **TMR/REF** Softkey.

2) Turn the large **FMS** Knob to highlight the desired Vspeed.

3) Use the small **FMS** Knob to change the Vspeed in 1-kt increments (when a speed has been changed from a default value, an asterisk appears next to the speed).

4) Press the **ENT** Key or turn the large **FMS** Knob to highlight the ON/OFF field

5) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

TURN VSPEED BUGS ON OR OFF BY CATEGORY

1) Press the **MENU** Key.

2) Turn the **FMS** Knob to highlight the desired option.

3) Press the **ENT** Key. Press the **TMR/REF** Softkey to remove the window.

SET BAROMETRIC MINIMUM DESCENT ALTITUDE

1) Press the **TMR/REF** Softkey.

2) Turn the large **FMS** Knob to highlight the 'Baro Min' field.

3) Use the small **FMS** Knob to enter the desired altitude and press the **ENT** Key.

4) In the highlighted ON/OFF field, turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

5) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

DISPLAYING WIND DATA

1) Press the **PFD** Softkey.

2) Press the **WIND** Softkey to display wind data below the Selected Heading.

3) Press one of the **OPTN** softkeys to change how wind data is displayed.

4) To remove the Wind Data Window, press the **OFF** Softkey.

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NAV/COM/TRANSPONDER/AUDIO PANEL

ENTER OR CHANGE FLIGHT ID

1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to highlight the Flight ID field.

2) Turn the small **FMS** Knob to enter the first character.

3) Turn the large **FMS** Knob to select the next field.

4) Turn the small **FMS** Knob to enter the next desired character.

5) Repeat steps 3 and 4 until the desired Flight ID is entered.

6) Press the **ENT** Key to update the Flight ID.

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 ADF or BFO.

10) Press the **ENT** Key to complete the selection.

DME TUNING

1) Press the **ADF/DME** or **DME** Softkey.

2) Turn the large **FMS** to select the DME source field.

3) Turn the small **FMS** Knob to select the desired DME tuning.

4) Press the **ENT** Key to complete the selection.

ENTER A TRANSPONDER CODE

1) Press the **XPDR** Softkey to display the transponder mode selection softkeys.

2) Press the **XPDR1** or **XPDR2** Softkey to select the active transponder.

3) Press the **CODE** Softkey to display the transponder code selection softkeys, for digit entry.

4) 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

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

Receive

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

SELECTING A NAV RADIO

1) Press the **CDI** Softkey to select NAV1 (VOR1/LOC1) or NAV2 (VOR2/LOC2).

2) Pressing the **NAV1, NAV2, DME,** or **ADF** Key selects and deselects 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.

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.

DIGITAL CLEARANCE RECORDER AND PLAYER

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

Record

1) Press the **REC** Key to begin recording.

2) Press the **REC** Key again to stop recording.

Play

1) Press the **PLAY** Key once to play the latest recorded memory block.

2) Press the **PLAY** Key once while playing to stop.

3) Press the **PLAY** Key twice quickly while playing to begin playing the previously recorded block. Each subsequent two presses will skip back to the previously recorded block.

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AUTOMATIC FLIGHT CONTROL SYSTEM

✓ **NOTE:** *If sensor information (other than attitude) required for a flight director mode becomes invalid or unavailable, the flight director automatically reverts to the default mode for that axis.*

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

VERTICAL MODES

Vertical Mode	Control	Mode Annunciation	Mode Reference Change Increment
Pitch Hold	(default)	PIT	0.5°
Selected Altitude Capture	*	ALTS	
Altitude Hold	ALT Key	ALT nnnnn FT	
Vertical Speed	VS Key	VS nnnn FPM	100 fpm
Flight Level Change, IAS Hold	FLC Key	FLC nnn KT	1 kt
Flight Level Change, Mach Hold	FLC Key	FLC .nnn	M 0.01
Vertical Path Tracking	VNV Key	VPTH	
Vertical Navigation Altitude Capture	VNV Key	ALTV	
Glideslope	APR Key	GS	
Glidepath	APR Key	GP	
Go-Around (in air)	GA Switch	GA	
Takeoff (on ground)	GA Switch	TO	

Selected Altitude Capture Mode is armed automatically when Pitch Hold, Vertical Speed, Flight Level Change, or Go-Around Mode is active, and in certain cases under Vertical Path Tracking.

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LATERAL MODES

Lateral Mode	Control	Annunciation
Roll Hold	(default)	ROL
Low Bank	BANK Key	Green arc displayed over the roll attitude scale
Heading Select	HDG Key	HDG
Navigation, VOR Enroute Arm/Capture/Track	NAV Key	VOR
Navigation, GPS Arm/Capture/Track		GPS
Navigation, LOC Arm/Capture/Track (No Glideslope)		LOC
Backcourse Arm/Capture/Track	BC Key	BC
Approach, GPS Arm/Capture/Track	APR Key	GPS
Approach, VOR Arm/Capture/Track		VAPP
Approach, ILS Arm/Capture/Track (Glideslope Mode automatically armed)		LOC
Go-Around (in air)	GA Switch	GA
Takeoff (on ground)		TO

Roll Hold Mode (ROL)

Bank Angle	Flight Director Response
< 6 deg	Rolls wings level
6 to 30 deg	Maintains current aircraft roll attitude
> 30 deg	Limits bank to 30 degrees

Roll Hold Mode Responses

GPS NAVIGATION

DIRECT-TO NAVIGATION

Direct-to Navigation from the MFD

1) Press the **Direct-to** ($\boxed{Ð►}$) Key.

2) Enter the destination waypoint identifier.

3) Press the **ENT** Key to confirm the identifier. The 'Activate?' field is highlighted.

4) If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 5.

5) Turn the large **FMS** Knob to place the cursor over the 'VNV' altitude field.

6) Enter the desired altitude.

7) Press the **ENT** Key. The option to select MSL or AGL is now displayed.

8) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.

9) Press the **ENT** Key. The cursor is now flashing in the VNV offset distance field.

10) Enter the desired offset distance before (-) or after (+) the waypoint.

11) Press the **ENT** Key. The 'Activate?' field is highlighted.

12) Press the **ENT** Key to activate.

Direct-to Navigation from the PFD

1) Press the **Direct-to** Key ($\boxed{Ð►}$).

2) Turn the large **FMS** Knob to place the cursor in the desired selection field.

3) Turn the small **FMS** Knob to begin selecting the desired identifier, location, etc.

4) Press the **ENT** Key.

5) The cursor is now flashing on 'ACTIVATE?'. If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 6.

6) Turn the large **FMS** Knob to place the cursor over the 'VNV' altitude field.

7) Turn the small **FMS** Knob to enter the desired VNV altitude.

8) Press the **ENT** Key. The option to select MSL or AGL is now displayed.

9) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.

10) Press the **ENT** Key. The cursor is placed in the 'VNV' offset distance field.

11) Turn the small **FMS** Knob to enter the desired target altitude offset from the selected Direct-to.

12) Press the **ENT** Key to highlight 'Activate?' or turn the large **FMS** Knob to highlight the 'COURSE' field.

13) Turn the small **FMS** Knob to enter the desired course to the waypoint.

14) Press the **ENT** Key to highlight 'ACTIVATE?'.

15) Press the **ENT** again to activate the Direct-to.

ACTIVATE A STORED FLIGHT PLAN

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

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired flight plan

4) Select the **ACTIVE** Softkey. The confirmation window is now displayed.

5) With 'OK' highlighted, press the **ENT** Key to activate the flight plan. To cancel the flight plan activation, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

ACTIVATE A FLIGHT PLAN LEG

1) From the Active Flight Plan Page, press the **FMS** Knob to activate the cursor and turn the large **FMS** Knob to highlight the desired destination waypoint.

2) Select the **ACT LEG** Softkey.

OR

3) Press the **MENU** Key, select the 'Activate Leg' option from the page menu and press the **ENT** Key. This step must be used when activating a leg from the PFD.

4) With 'Activate' highlighted, press the **ENT** Key.

STOP NAVIGATING A FLIGHT PLAN

1)   Press the **FPL** Key to display the Active Flight Plan Page.

2)   Press the **MENU** Key to display the Page Menu Window.

3)   Turn the large **FMS** Knob to highlight 'Delete Flight Plan' and press the **ENT** Key. With 'OK' highlighted, press the **ENT** Key to deactivate the flight plan. This will not delete the stored flight plan, only the active flight plan.

VERTICAL NAVIGATION

The navigation database only contains altitudes for procedures that call for "Cross at" altitudes. If the procedure states "Expect to cross at," then the altitude will not be in the database. In this case the altitude may be entered manually.

5000FT   *Stay AT or ABOVE 5,000 ft*

2300FT   *Stay AT 2,300 ft*

3000FT   *Stay AT or BELOW 3,000 ft*

Altitudes associated with arrival and approach procedures are "auto-designated". This means the system will automatically use the altitudes loaded with the arrival or approach for giving vertical speed and deviation guidance. Note that these altitudes will be displayed as blue text up to, but not including the FAF. The FAF will always be 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 may also be made "non-designated" by placing the cursor over the desired altitude and pressing the **CLR** Key. The altitude is now displayed only as a reference. It will not be used to give vertical guidance. Other displayed altitudes may change due to re-calculations or rendered invalid as a result of manually changing an altitude to a non-designated altitude.

	White Text	**Light Blue Text**	**Light Blue Subdued Text**
Large Text	Altitude calculated by the system estimating the altitude of the aircraft as it passes over the navigation point. This altitude is provided as a reference and is not designated to be used in determining vertical speed and deviation guidance.	Altitude has been entered by the pilot. Altitude is designated for use in giving vertical speed and deviation guidance. Altitude does not match the published altitude in navigation database or no published altitude exists.	The system cannot use this altitude in determining vertical speed and deviation guidance.
Small Text	Altitude is not designated to be used in determining vertical speed and deviation guidance. Altitude has been retrieved from the navigation database and is provided as a reference.	Altitude is designated for use in giving vertical speed and deviation guidance. Altitude has been retrieved from the navigation database or has been entered by the pilot and matches a published altitude in the navigation database.	The system cannot use this altitude in determining vertical speed and deviation guidance.

FLIGHT PLANNING

WEIGHT PLANNING

All procedures apply to the MFD unless otherwise stated.

Entering Weight Parameters

The Weight Planning Page is displayed after system power-up. If it is necessary to return to this page, turn the large **FMS** Knob to select the 'AUX' page group. Turn the small **FMS** Knob to select the first rectangular page icon.

1) Select the **EMPTY WT** Softkey to place the cursor in the Basic Empty Weight field.

2) Enter the desired aircraft empty weight.

3) Press the **ENT** Key. The cursor is now over the 'PILOT & STORES' field.

4) Enter the desired weight of Pilot & Stores.

5) Press the **ENT** Key.

6) Continue repeating these steps until all desired weights have been entered.

Entering Fuel Parameters

1) If necessary, press the **FMS** Knob to activate the cursor.

2) Turn the large **FMS** Knob to place the cursor in the 'FUEL ON BOARD' field.

3) Select the **FOB SYNC** Softkey to enter the fuel on board quantity as read from the aircraft fuel quantity sensors.

    OR

    Manually enter the desired fuel quantity.

4) Press the **ENT** Key. The cursor is now in the 'FUEL RESERVES' field.

5) Enter the desired reserve fuel quantity.

6) Press the **FMS** Knob to remove the cursor.

TRIP PLANNING

1) Turn the large **FMS** Knob to select the 'AUX' page group.

2) Turn the small **FMS** Knob to select the second rectangular page icon.

3) The current page mode is displayed at the top of the page: 'AUTOMATIC' or 'MANUAL'. To change the page mode, select the **AUTO** or **MANUAL** Softkey.

4) For Direct-to planning:

    a) Select the **WPTS** Softkey and verify that the starting waypoint field indicates 'P.POS' (present position).

    b) If necessary, press the **MENU** Key and select 'Set WPT to Present Position' to display 'P.POS'.

    c) Press the **ENT** Key and the flashing cursor moves to the ending waypoint field.

    d) Enter the identifier of the ending waypoint and press the **ENT** Key to accept the waypoint.

    OR

5) For point-to-point planning:

    a) Enter the identifier of the starting waypoint.

    b) Once the waypoint's identifier is entered, press the **ENT** Key to accept the waypoint. The flashing cursor moves to the ending waypoint.

    c) Again, enter the identifier of the ending waypoint.

    d) Press the **ENT** Key to accept the waypoint.

    OR

6) For flight plan leg planning:

    a) Select the **FPL** Softkey (at the bottom of the display).

    b) Turn the small **FMS** Knob to select the desired flight plan (already stored in memory), by number.

    c) Turn the large **FMS** Knob to highlight the 'LEG' field.

    d) Turn the small **FMS** Knob to select the desired leg of the flight plan, or select 'CUM' to apply trip planning calculations to the entire flight plan. Selecting 'FPL 00' will display an active flight plan. If an active flight plan is selected, 'REM' will be an available option to display planning data for the remainder of the flight plan.

NOTE: The page mode must be set to 'MANUAL' to perform the following steps.

7) Turn the large **FMS** Knob to highlight the departure time (DEP TIME) field.

NOTE: The departure time on the Trip Planning Page is used for preflight planning. Refer to the Utility Page for the actual flight departure time.

8) Enter the departure time. Press the **ENT** Key when finished. Departure time may be entered in local or UTC time, depending upon system settings.

9) Enter the fuel flow. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, fuel flow is provided by the system.

10) The flashing cursor moves to the fuel onboard field. Modify the fuel onboard. Press the **ENT** Key when finished. In 'AUTOMATIC' mode, fuel onboard is provided by the entry made on the Weight Planning Page.

11) The flashing cursor moves to the calibrated airspeed field. Enter a calibrated airspeed. Press the **ENT** Key when finished.

CREATE A NEW USER WAYPOINT

1) Turn the large **FMS** Knob to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.

4) Enter the desired waypoint name.

5) Press the **ENT** Key.

6) The cursor is now in the 'REFERENCE WAYPOINTS' field. If desired, the waypoint can be defined by a reference waypoint. Use one of the following methods to enter the reference waypoint:

    a) Turn the small **FMS** Knob to the left to display a list of flight plan waypoints. This list is populated only when there is an active flight plan.

    b) Turn the large **FMS** Knob to select the desired waypoint.

    c) Press the **ENT** Key.

    OR

    a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

    b) Turn the small **FMS** Knob to the right to display the 'NRST' waypoints to the aircraft's current position.

    c) Turn the large **FMS** Knob to select the desired waypoint.

    d) Press the **ENT** Key.

    OR

    a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

    b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

    c) Turn the large **FMS** Knob to select the desired waypoint.

    d) Press the **ENT** Key.

7) After pressing the **ENT** Key, the cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.

8) Press the **ENT** Key.

9) The cursor is now displayed in the 'DIS' (distance) field. Enter the desired distance from the reference waypoint.

10) Press the **ENT** Key. The cursor is now placed for entering another reference waypoint, if desired.

11) Press the **FMS** Knob to remove the flashing cursor.

DELETE A USER WAYPOINT

1) Turn the large **FMS** Knob to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Press the **FMS** Knob to activate the cursor.

4) Turn the large **FMS** Knob to the place the cursor in the 'USER WAYPOINT LIST' field.

5) Turn the small **FMS** Knob to highlight the desired waypoint.

6) Select the **DELETE** Softkey.

7) The message 'Would you like to delete the user waypoint' is displayed. With 'YES' highlighted, press the **ENT** Key.

CREATE A NEW FLIGHT PLAN

Using the MFD

1) Press the **FPL** Key

2) Turn the small **FMS** Knob to display the Flight Plan Catalog Page.

3) Select the **NEW** Softkey to display a blank flight plan for the first empty storage location.

4) Turn the small **FMS** Knob to display the Waypoint Information Window.

5) Enter the identifier of the departure waypoint.

6) Press the **ENT** Key.

7) Repeat step number 3, 4, and 5 to enter the identifier for each additional flight plan waypoint.

8) When all waypoints have been entered, press the **FMS** Knob to return to the Flight Plan Catalog Page. The new flight plan is now in the list.

Using the PFD

> *NOTE: If a flight plan is active, an additional flight plan cannot be entered using the PFD.*

> *NOTE: After the first leg is entered (using the PFD only) it is immediately activated.*

1) Press the **FPL** Key.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the small **FMS** Knob to enter the first letter of the destination waypoint identifier.

4) Turn the large **FMS** Knob to the right to move the cursor to the next character position.

5) Repeat step 3 to spell out the rest of the waypoint identifier.

6) Press the **ENT** Key and the cursor is now ready for entering of the next flight plan waypoint.

7) Repeat steps 3 through 6 to enter the identifier for each additional flight plan waypoint.

8) Once all waypoints have been entered, press the **FMS** Knob to remove the cursor. The new flight plan is now active.

INSERT A WAYPOINT IN THE ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired flight plan waypoint. The new waypoint will be inserted before the highlighted waypoint.

4) Turn the small **FMS** Knob. The Waypoint Information Window is now displayed.

5) Enter the new flight plan waypoint by one of the following:

a) Enter the user waypoint identifier, facility, or city.

b) Press the **ENT** Key.

OR

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'NRST' waypoints to the aircraft's current position.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

OR

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

ENTER AN AIRWAY IN A FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan or display a stored flight plan.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the waypoint before which the airway will be entered.

4) Enter the desired airways entry point. When the first alphanumeric key is pressed, the Waypoint Information Window will be displayed.

5) Press the **ENT** Key.

6) Enter the desired airway identifier. When the first alphanumeric key is pressed, the Waypoint Information Window will be displayed.

7) Press the **LD AIRWY** Softkey.

8) Turn either **FMS** Knob to scroll through the list of available exit points.

9) With the desired exit point highlighted, press the **ENT** Key.

10) With 'LOAD?' highlighted, press the **ENT** Key.

INVERT AN ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.

2) Press the **MENU** Key to display the Page Menu.

3) Turn the large **FMS** Knob to highlight 'Invert Flight Plan'.

4) Press the **ENT** Key. The original flight plan remains intact in its flight plan catalog storage location.

5) With 'OK' highlighted, press the **ENT** Key to invert the flight plan.

REMOVE A DEPARTURE, ARRIVAL, APPROACH, OR AIRWAY FROM A FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.

   a) Press the **FMS** Knob to activate the cursor.

   OR

   a) Press the **FPL** Key.

   b) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.

   c) Press the **FMS** Knob to activate the cursor.

   d) Turn the large **FMS** Knob to highlight the desired flight plan.

   e) Select the **EDIT** Softkey.

2) Turn the large **FMS** Knob to highlight the title for the approach, departure, arrival, or airway to be deleted. Titles appear in white directly above the procedure's waypoints.

3) Press the **CLR** Key to display a confirmation window.

4) With 'OK' highlighted, press the **ENT** Key to remove the selected procedure or airway.

STORE A FLIGHT PLAN

1) After creating a flight plan on either the PFD or MFD, it may be saved by pressing the **MENU** Key.

2) Turn the large **FMS** Knob to highlight 'Store Flight Plan' and press the **ENT** Key.

3) With 'OK' highlighted, press the **ENT** Key to store the flight plan.

EDIT A STORED FLIGHT PLAN

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

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired flight plan.

4) Select the **EDIT** Softkey.

5) Turn the large **FMS** Knob to place the cursor in the desired location.

6) Enter the changes, then press the **ENT** Key.

7) Press the **FMS** Knob to return to the Flight Plan Catalog Page.

DELETE A WAYPOINT FROM THE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.

   a) Press the **FMS** Knob to activate the cursor.

   OR

   a) Press the **FPL** Key.

   b) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.

   c) Press the **FMS** Knob to activate the cursor.

   d) Turn the large **FMS** Knob to highlight the desired flight plan.

   e) Select the **EDIT** Softkey.

2) Turn the large **FMS** Knob to highlight the waypoint to be deleted.

3) Press the **CLR** Key to display a 'REMOVE (Wpt Name)' confirmation window.

4) With 'OK' highlighted, press the **ENT** Key to remove the waypoint. To cancel the delete request, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

5) Once all changes have been made, press the **FMS** Knob to remove the cursor.

INVERT AND ACTIVATE A STORED FLIGHT PLAN

1) Press the **FPL** Key.

2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.

3) Press the **FMS** Knob to activate the cursor.

4) Turn the large **FMS** Knob to highlight the desired flight plan.

5) Select the **INVERT** Softkey. 'Invert and activate stored flight plan?' will be displayed.

6) With 'OK' highlighted, press the **ENT** Key. The selected flight plan is now inverted and activated. The original flight plan remains intact in its flight plan catalog storage location.

COPY A FLIGHT PLAN

1) Press the **FPL** Key.

2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.

3) Press the **FMS** Knob to activate the cursor.

4) Turn the large **FMS** Knob to highlight the flight plan to be copied.

5) Select the **COPY** Softkey. A 'Copy to flight plan #?' confirmation window is displayed.

6) With 'OK' highlighted, press the **ENT** Key to copy the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

DELETE A FLIGHT PLAN

1) Press the **FPL** Key.

2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.

3) Press the **FMS** Knob to activate the cursor.

4) Turn the large **FMS** Knob to highlight the flight plan to be deleted.

5) Select the **DELETE** Softkey. A 'Delete flight plan #?' confirmation window is displayed.

6) With 'OK' highlighted, press the **ENT** Key to delete the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

GRAPHICAL FLIGHT PLAN CREATION

1) Press the **FPL** Key to display the Active Flight Plan Page.

2) Press the **Joystick** to activate the map pointer. Use the **Joystick** to move the pointer to the desired point on the map to be inserted as a waypoint in the flight plan.

3) The default insertion point is at the end of the flight plan. If the selected waypoint is to be placed anywhere other than the end of the flight plan, press the **FMS** Knob to activate the cursor. Waypoints are inserted *ABOVE* the cursor. Turn the large **FMS** Knob to select the desired insertion point.

4) Select the **LD WPT** Softkey. The selected waypoint will be inserted at the selected point. The default user waypoint naming is USR000, USR001, USR002, and so on.

5) To change the user waypoint name, follow the procedure for modifying a user waypoint.

PROCEDURES

LOAD AND ACTIVATE A DEPARTURE PROCEDURE

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'SELECT DEPARTURE'.

3) Press the **ENT** Key. The cursor is displayed in the 'DEPARTURE' field with a list of available departures.

4) Turn the large **FMS** Knob to highlight the desired departure.

5) Press the **ENT** Key. A list of runways may be displayed for the departure. If so, turn either **FMS** Knob to select the desired runway.

6) Press the **ENT** Key. The cursor is displayed in the 'TRANSITION' field with a list of available transitions.

7) Turn the large **FMS** Knob to highlight the desired transition.

8) Press the **ENT** Key.

9) With 'LOAD?' highlighted, press the **ENT** Key. The departure will be active when the flight plan is active.

ACTIVATE A DEPARTURE LEG

1) Press the **FPL** Key to display the active flight plan.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired waypoint within the departure.

4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg will be displayed.

5) With 'ACTIVATE' highlighted, press the **ENT** Key.

LOAD AN ARRIVAL PROCEDURE

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'SELECT ARRIVAL'.

3) Press the **ENT** Key. The cursor is displayed in the 'ARRIVAL' field with a list of available arrivals.

4) Turn the large **FMS** Knob to highlight the desired arrival.

5) Press the **ENT** Key. A list of transitions is displayed for the selected arrival.

6) Turn either **FMS** Knob to select the desired transition.

7) Press the **ENT** Key. A list of runways is displayed for the selected arrival.

8) Turn the large **FMS** Knob to highlight the desired runway.

9) Press the **ENT** Key.

10) With 'LOAD?' highlighted, press the **ENT** Key.

11) The arrival will become part of the active flight plan.

ACTIVATE AN ARRIVAL LEG

1) Press the **FPL** Key to display the active flight plan.

2) Press the **FMS** Knob to activate the cursor.

3) Turn the large **FMS** Knob to highlight the desired waypoint within the arrival.

4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg will be displayed.

5) With 'ACTIVATE' highlighted, press the **ENT** Key.

LOAD AND/OR ACTIVATE AN APPROACH PROCEDURE

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'SELECT APPROACH'.

3) Press the **ENT** Key. A list of available approaches for the destination airport is displayed.

4) Turn the either **FMS** Knob to highlight the desired approach.

The WAAS channel and ID for the selected approach procedure are displayed in the 'APPROACH CHANNEL' field.

5) Press the **ENT** Key. A list of available transitions for the selected approach procedure is now displayed.

6) Turn either **FMS** Knob to select the desired transition. The "Vectors" option assumes vectors will be received to the final course segment of the approach and will provide navigation guidance relative to the final approach course.

7) Press the **ENT** Key. 'LOAD? or ACTIVATE?' is now displayed with 'LOAD?' highlighted.

8) Turn the large **FMS** Knob to select either 'LOAD?' or 'ACTIVATE?'.

Selecting 'LOAD?' will enter the selected approach procedure into the active flight plan, but will not be currently active. Selecting 'ACTIVATE?' will enter the selected approach procedure into the active flight plan and immediately activate it.

9) Press the **ENT** Key.

ACTIVATE AN APPROACH IN THE ACTIVE FLIGHT PLAN

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'ACTIVATE APPROACH'.

3) Press the **ENT** Key. A confirmation window will be displayed.

4) With 'ACTIVATE' highlighted, press the **ENT** Key.

ACTIVATE A VECTOR TO FINAL APPROACH FIX

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'ACTIVATE VECTOR-TO-FINAL'.

3) Press the **ENT** Key.

4) A direct-to vector is established to the final approach fix.

ACTIVATE A MISSED APPROACH IN THE ACTIVE FLIGHT PLAN

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'ACTIVATE MISSED APPROACH'.

3) Press the **ENT** Key. A confirmation window will be displayed.

4) With 'ACTIVATE' highlighted, press the **ENT** Key.

GARMIN™

Blank Page

HAZARD AVOIDANCE

CUSTOMIZING THE HAZARD DISPLAYS ON THE NAVIGATION MAP

1)   With the Navigation Map Page displayed, press the **MENU** Key to display the Navigation Map Page Menu. The cursor flashes on the 'Map Setup' 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.

XM WEATHER (OPTIONAL)

⚠️   *WARNING: Use of XM weather for hazardous weather penetration is not recommended. Weather information provided by XM Radio Service is approved only for weather avoidance, not penetration.*

Displaying XM Weather on the Navigation Map Page

1)   Press the **MAP** Softkey.

2)   Press the **NEXRAD** or **XM LTNG** Softkey to display the desired weather. Press the applicable softkey again to remove weather data from the Navigation Map Page.

Display METAR and TAF information on the Airport Information 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.

3)   Select the **WX** Softkey to display METAR and TAF text (METAR and TAF information is updated every 12 minutes).

Displaying Weather on the Weather Data Link Page

1)   Turn the large **FMS** Knob to select the Map Page Group.

2)   Turn the small **FMS** Knob to select the Weather Data Link Page.

3)   Select the available softkeys to select the desired XM weather product.

4) Select the **LEGEND** Softkey to view the legends for the selected products. If necessary, turn either **FMS** Knob to scroll through the list. Press the small **FMS** Knob or the **ENT** Key to return to the map.
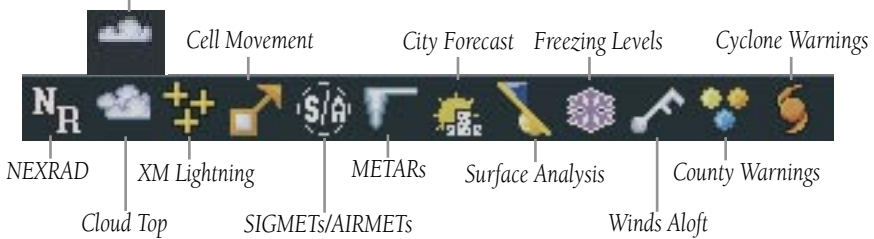
Map Panning Information – Weather Data Link Page

1) Push in the **Joystick** to display the panning arrow.

2) Move the **Joystick** to place the panning arrow on AIRMETs, TFRs, METARs, or SIGMETs.

3) Press the **ENT** Key to display pertinent information for the selected product.

Note that pressing the **ENT** Key when panning over an AIRMET or a SIGMET displays an information box that shows the text of the report. Panning over an airport with METAR information does not display more information but allows the user to press the **ENT** Key and select that Airport's Information Page to display the text of the report. Pressing the **ENT** Key when panning over a TFR displays TFR specific information.

Weather Products and Symbols

Echo Top (Cloud Top and Echo Top Mutually Exclusive)

Cell Movement   *City Forecast*   *Freezing Levels*   *Cyclone Warnings*

NEXRAD   *XM Lightning*   *METARs*   *Surface Analysis*   *County Warnings*

Cloud Top   *SIGMETs/AIRMETs*   *Winds Aloft*

Weather Product Age

Weather Product	Expires After (minutes)	Refresh Rate (minutes)
SIGMETs/AIRMETs	60	12
City Forecasts	60	12
County Warnings	60	5
Cyclone Warnings	60	12
Echo Tops	30	7.5
Freezing Levels	60	12
METARs	90	12
Lightning	30	5
NEXRAD	30	5
Cell Movement	30	1.25
Surface Analysis	60	12
TFRs	60	12
Winds Aloft	60	12
TAFs	60	12
Clouds Tops	60	15

TRAFFIC INFORMATION SERVICE (TIS)

✓ *NOTE: If the G1000 is configured to use an optional Traffic Advisory System (TAS), TIS will not be available for use.*

✓ *NOTE: Traffic Information Service (TIS) is only available when the aircraft is within the service volume of a TIS capable terminal radar site.*

Displaying Traffic on the Traffic Map Page

1) Turn the large **FMS** Knob to select the Map Page Group.

2) Turn the small **FMS** Knob to select the Traffic Map Page.

3) Select the **OPERATE** Softkey to begin displaying traffic. 'TIS OPERATING' is displayed in the Traffic Mode field.

4) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'TIS STANDBY' will be displayed in the Traffic Mode field.

5) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

Displaying Traffic on the Navigation Map

1) Ensure **TIS** is operating. With the Navigation Map displayed, press the **MAP** Softkey.

2) Select the **TRAFFIC** Softkey. Traffic will now be displayed on the map.

TERRAIN AWARENESS & WARNING SYSTEM (TAWS) DISPLAY

> *NOTE: Terrain data is not displayed when the aircraft latitude is greater than 75 degrees north or 60 degrees south.*

> *NOTE: TAWS operation is only available when the G1000 is configured for a TAWS-B installation.*

Manual System Test

1) While the TAWS Page is displayed, press the **MENU** Key.

2) Turn the small **FMS** Knob to select 'Test TAWS'.

3) Press the **ENT** Key. During the test 'TAWS TEST' is displayed in the center of the TAWS Page.

When all is in working order, "TAWS System Test, OK" will be heard.

Display Terrain on the TAWS Page

1) Turn the large **FMS** Knob to select the Map Page Group.

2) Turn the small **FMS** Knob to select the TAWS Page.

3) If desired, select the **VIEW** Softkey to access the **ARC** and **360** softkeys. When the **ARC** Softkey is selected, a radar-like 120° view is displayed. Select the **360** Softkey to return to the 360° default display.

4) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

Color	Terrain/Obstacle Location	Suggested Pilot Response
Red	Terrain/Obstacle at or within 100' below or above aircraft altitude.	Initiate climb and/or turn away from terrain/obstacle.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.	Be aware of surroundings. Be prepared to take action.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.	No action required.
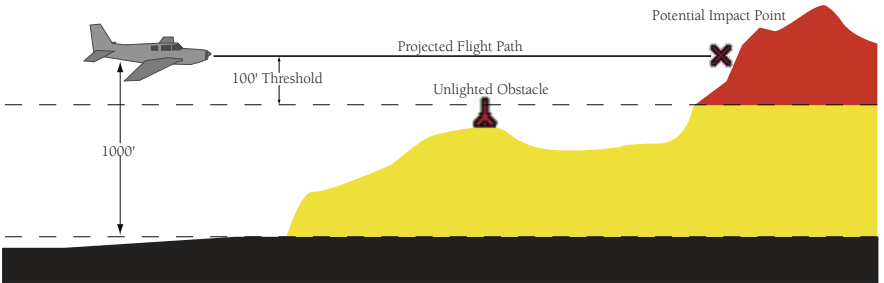
Unlighted Obstacle (Height is less than 1000' AGL)	Lighted Obstacle (Height is less than 1000' AGL)	Unlighted Obstacle (Height is greater than 1000' AGL)	Lighted Obstacle (Height is greater than 1000' AGL)	Potential Impact Points

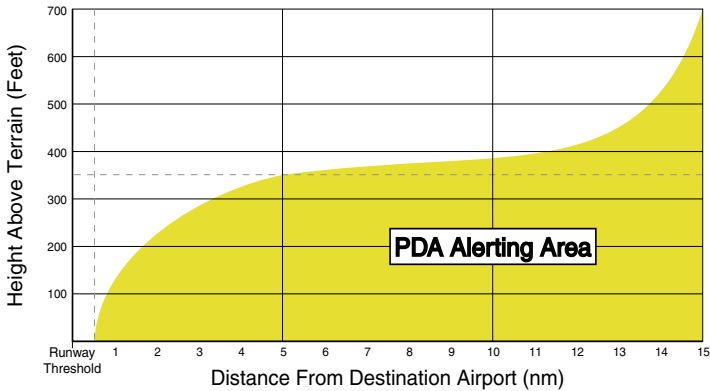**TAWS Colors & Symbols**

GARMIN™

Imminent Terrain Impact (ITI) and Imminent Obstacle Impact (IOI)

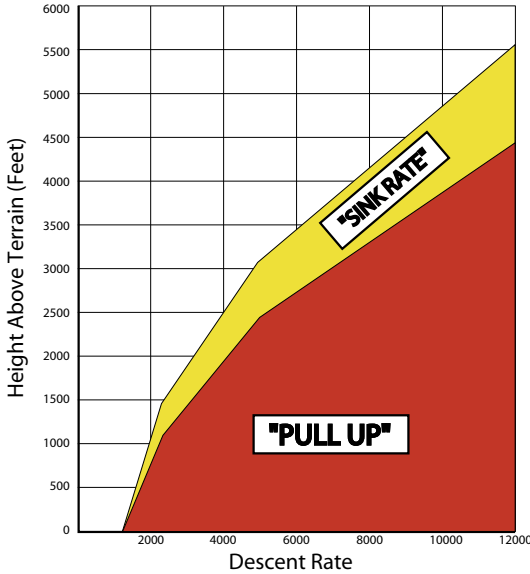| Phase of Flight	Level Flight	Descending
Enroute	700 ft	500 ft
Terminal	350 ft	300 ft
Approach	150 ft	100 ft
Departure	100 ft	100 ft

Terrain & Obstacle Clearance Thresholds for Alerting

Premature Descent Alert (PDA)

PDA Alerting

Excessive Descent Rate Alert (EDR)

Excessive Descent Rate Alerting

Negative Climb Rate After Takeoff Alert (NCR)

The purpose of the Negative Climb Rate After Takeoff alert is to provide suitable alerts to the pilot when the system determines that the aircraft is losing altitude (closing upon terrain) after takeoff. The aural message "Don't Sink" is given for NCR alerts, accompanied by an annunciation and a pop-up terrain alert on the display.
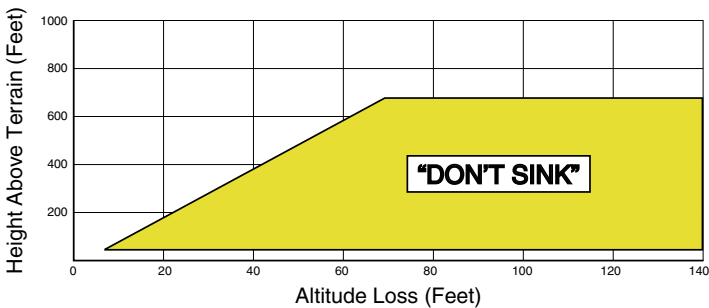
Negative Climb Rate (NCR) Alerting

"Five-Hundred" Aural Alert

The purpose of the aural alert message "Five-hundred" is to provide an advisory alert to the aircrew that the aircraft is five-hundred feet above terrain. When the aircraft descends within 500 feet of terrain, the aural message "Five-hundred" is heard.

Enable/Disable Aviation Data

1) While the TAWS Page is displayed, press the **MENU** Key.

2) Turn the small **FMS** Knob to select "Show (or Hide) Aviation Data".

3) Press the **ENT** Key.

TAWS Inhibit

Inhibit TAWS

While the TAWS Page is displayed, press the **INHIBIT** Softkey.

OR

1) Press the **MENU** Key.

2) Turn the small **FMS** Knob to select 'Inhibit TAWS'.

3) Press the **ENT** Key.

Enable TAWS

While the TAWS Page is displayed, press the **INHIBIT** Softkey.

OR

1) While the TAWS Page is displayed, press the **MENU** Key.

2) Turn the small **FMS** Knob to select 'Enable TAWS'.

3) Press the **ENT** Key.

AIRBORNE COLOR WEATHER RADAR

WARNING: Begin transmitting only when it is safe to do so. If it is desired to transmit while the aircraft is on the ground, no personnel or objects should be within 11 feet of the antenna.

CAUTION: In Standby Mode, the antenna is parked at the center line. It is always a good idea to put the radar in Standby Mode before taxiing the aircraft to prevent the antenna from bouncing on the bottom stop and possibly causing damage to the radar assembly.

Displaying Weather on the Weather Radar Page

1) Turn the large **FMS** Knob to select the Map Page Group.

2) Turn the small **FMS** Knob to select the Weather Radar Page.

3) Select the **MODE** Softkey.

4) If the aircraft is on the ground, select the **STANDBY** Softkey to initiate the one minute warm-up period. After the warm-up is complete, the radar will enter the Standby Mode. After the aircraft is airborne, select the **WEATHER** Softkey.

    OR

    If the aircraft is already airborne, select the **WEATHER** or **GROUND** Softkey. The one-minute warm-up period will be initiated, after which the radar will begin transmitting. The horizontal scan is initially displayed.

5) Turn the **Joystick** to select the desired range.

6) If desired, select the **VERTICAL** Softkey for vertical scanning.

Weather Mode Color	Intensity	Approx. Rainfall Rate
BLACK	< 23 dBZ	< .01 in./hr.
GREEN	23 dBZ to < 32 dBZ	.01 - 0.1 in./hr.
YELLOW	32 dBZ to < 41 dBZ	0.1 - 0.5 in./hr.
RED	41 dBZ to < 50 dBZ	0.5 - 2 in./hr.
MAGENTA	50 dBZ and greater	> 2 in./hr.

Adjusting Antenna Tilt

Move the **Joystick** up or down to adjust the tilt of the antenna up or down. Monitor the displayed tilt value in the TILT field.

When scanning vertically, a Tilt Line may be displayed to aid in positioning the tilt of the antenna. If the Tilt Line is not displayed, perform the following steps:

1) Press the **MENU** Key

2) Turn the large **FMS** Knob to select 'Show Tilt Line'.

3) Press the **ENT** Key.

Adjusting Antenna Bearing

Move the **Joystick** right or left to adjust the azimuth position of the antenna right or left. Monitor the displayed bearing value in the BEARING field.

When scanning horizontally, a Bearing Line may be displayed to aid in positioning the antenna for the vertical scan. If the Bearing Line is not displayed, perform the following steps:

1) Press the **MENU** Key

2) Turn the large **FMS** Knob to select 'Show Bearing Line'.

3) Press the **ENT** Key.

Vertically Scan a Storm Cell

1) While in the Horizontal Scan view, move the **Joystick** to place the Bearing Line on the desired storm cell, or other area, to be vertically scanned.

2) Select the **VERTICAL** Softkey. A vertical 'slice' of the selected area will now be displayed.

3) Move the **Joystick** right or left to move the scanned "slice" a few degrees right or left.

4) Turn the **Joystick** to adjust the range.

5) To select a new area to be vertically scanned, select the **HORIZON** Softkey to return to the Horizontal Scan view and repeat the previous steps.

Adjusting Gain

⚠️ *WARNING: Changing the gain in Weather Mode will cause precipitation intensity to be displayed as a color not representative of the true intensity. Remember to return the gain setting to 'Calibrated' for viewing the actual intensity of precipitation.*

1) Select the **GAIN** Softkey to activate the cursor in the 'GAIN' field.

2) Turn the small **FMS** Knob to adjust the gain for the desirable level. The gain setting is visible in the gain field as a movable horizontal bar in a flashing box. The line pointer is a reference depicting the calibrated position.

3) Press the **FMS** Knob to remove the cursor.

4) Select the **GAIN** Softkey again to recalibrate the gain. 'CALIBRATED' will be displayed in the 'GAIN' field.

Ground Mapping

1) Select the **MODE** Softkey.

2) Select the **GROUND** Softkey to place the radar in Ground Map Mode.

3) Select the **BACK** Softkey.

4) Press the **FMS** Knob to activate the cursor.

5) Turn the large **FMS** Knob to place the cursor in the 'TILT' field.

6) Adjust the antenna tilt angle by turning the small **FMS** Knob to position the ground returns as desired.

7) Press the **FMS** Knob to remove the cursor.

Ground Map Mode Color	Intensity
BLACK	0 dB
LIGHT BLUE	> 0 dB to < 9 dB
YELLOW	9 dB to < 18 dB
MAGENTA	18 dB to < 27 dB
BLUE	27 dB and greater

Sector Scan

1) While in the Horizontal Scan Mode, move the **Joystick** right or left to place the Bearing Line in the desired position. The location of the Bearing Line will become the center point of the Sector Scan.

2) Press the **FMS** Knob to display the cursor.

3) Turn the large **FMS** Knob to place the cursor in the SECTOR SCAN field.

4) Turn the small **FMS** Knob to select FULL, 60°, 40°, or 20° scan.

5) If desired, readjust the Bearing Line with the **Joystick** to change the center of the Sector Scan.

6) Press the **FMS** Knob to remove the cursor.

Antenna Stabilization

1) To activate or deactivate the antenna stabilization, select the **MODE** Softkey.

2) Select the **STAB ON** Softkey to activate antenna stabilization or select the **STAB OFF** Softkey to deactivate. The current stabilization condition is shown in the upper right of the weather radar display.

Weather Attenuated Color Highlight (WATCH™)

To activate or deactivate the Watch™ feature, select the **WATCH** Softkey. This feature is only available in the Horizontal Scan Mode.

Weather Alert

To activate or deactivate Weather Alert, select the **WX ALRT** Softkey. Activating and deactivating will also enable or inhibit the alert on the PFD.

Automatic Standby

When the weather radar system is in the Weather or Ground Map Mode, upon landing the system will automatically switch to Standby Mode.

ADDITIONAL FEATURES

> **NOTE:** The availability of SafeTaxi™, ChartView, or FliteCharts™ in electronic form does not preclude the requirement to carry paper charts aboard the aircraft. See AC 120-76A for more information.

SAFETAXI™

SafeTaxi™ is an enhanced feature that gives greater map detail when zooming in on airports at close range. The airport display on the map reveals runways with numbers, taxiways with identifying letters/numbers, and airport landmarks including ramps, buildings, control towers, and other prominent features. Resolution is greater at lower map ranges. When the aircraft location is within the screen boundary, including within SafeTaxi ranges, an airplane symbol is shown on any of the navigation map views for enhanced position awareness.

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

CHARTVIEW

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

FLITECHARTS™

FliteCharts™ resemble the paper version of National Aeronautical Charting Office (NACO) terminal procedures charts. The charts are displayed with high-resolution and in color for applicable charts.

VIEW CHARTS FROM THE NAVIGATION MAP PAGE

1) Press the **SHW CHRT** Softkey while viewing the navigation map. This will display the airport diagram for the closest airport, if available.

OR

Move the map pointer to point to a desired point on the map and press the **SHW CHRT** Softkey.

2) Press the **DP, STAR, APR, WX,** and **NOTAM** softkeys to access charts for departures, arrivals, approaches, weather and NOTAMs.

3) Press the **GO BACK** Softkey to return to the previous page.

VIEW CHARTS FROM THE ACTIVE FLIGHT PLAN PAGE

1) While viewing the Active Flight Plan Page, press the **FMS** Knob to activate the cursor.

2) Turn the large **FMS** Knob to select the departure airport, destination airport, departure, arrival, or approach.

3) Press the **SHW CHRT** Softkey. The appropriate chart will be displayed, if available for the item selected.

4) Press the **GO BACK** Softkey to return to the previous page.

CHANGE DAY/NIGHT 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 between the 'FULL SCREEN' and 'COLOR SCHEME' Options.

4) Turn the small **FMS** Knob to choose between the 'On' and 'Off' Full Screen Options.

5) Turn the small **FMS** Knob to choose between 'Day', 'Auto', and 'Night' Options.

6) In Auto Mode, turn the large **FMS** Knob to select the percentage field and change percentage with the small **FMS** Knob. The percentage of change is the day/night crossover point based on backlighting intensity.

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

XM® RADIO ENTERTAINMENT

The XM® Radio Page provides information and control of the audio entertainment features of the XM 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 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. The Channels List Box of the XM Radio Page shows a list of the available channels for the selected category.

Selecting a Category

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

1)   Select the **CATGRY** Softkey on the XM Radio Page.

2)   Press the **CAT +** and **CAT -** Softkeys to cycle through the categories.

OR

3)   Turn the small **FMS** Knob to display the 'Categories' list. Highlight the desired category with the small **FMS** Knob.

4)   Press the **ENT** Key.

Select an Available Channel within the Selected Category

1)   While on the XM Radio Page, press the **CHNL** Softkey.

OR

2)   Press the **FMS** Knob to highlight the channel list and turn the large **FMS** Knob to scroll through the channels.

3)   Press the **CH +** Softkey to go up through the list in the Channel Box, or move down the list with the **CH –** Softkey.

4)   With the desired channel highlighted, press the **ENT** Key.

Entering a Channel Directly

1)   While on the XM Radio Page, press the **CHNL** Softkey.

2)   Press the **DIR CH** Softkey. The channel number in the Active Channel Box will be 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.

Assigning Channel Presets

Up to 15 channels from any category can be assigned a preset number.

1)   On the XM Radio Page, with the desired channel active, press the **PRESETS** Softkey to access the first five preset channels (**PS1 - PS5**).

2)   Press the **MORE** Softkey to access the next five channels (**PS6 – PS10**), and again to access the last five channels (**PS11 – PS15**). Pressing the **MORE** Softkey repeatedly cycles through the preset channels.

3)   Press any one of the (**PS1 - PS15**) 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.

Adjusting Volume

Radio volume is controlled at each passenger station.

ABNORMAL OPERATION

REVERSIONARY MODE

In the event of PFD1 or MFD failure, the G1000 system automatically switches to Reversionary (or backup) Mode. Reversionary Mode is a mode of operation in which all important flight information is presented identically on at least one of the remaining displays. Flight parameters are presented in the same format as in normal mode.

Reversionary display mode can also be manually activated by the pilot if the system fails to detect a display problem.

- **PFD1 –** By pressing the **DISPLAY BACKUP** button on the left audio panel.
- **MFD –** By pressing the **DISPLAY BACKUP** button on the left or the right audio panel.
- **PFD2 –** By pressing the **DISPLAY BACKUP** button on the right audio panel.

> **NOTE:** The Citation Mustang Airplane Flight Manual (AFM) 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 PFDs, 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 will be removed until GPS position is again established.


Loss of Hazard Functions with Loss of GPS Position

UNUSUAL ATTITUDES

The PFD will 'declutter' when the aircraft enters an unusual attitude. Only the primary functions will be displayed in these situations.

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

- Traffic Annunciations
- AFCS Annunciations
- Flight director Command Bars
- Inset Map
- Temperatures
- DME Information Window
- Wind Data
- Selected Heading Box
- Selected Course Box
- Transponder Status Box

- System Time
- PFD Setup Menu
- Windows displayed in the lower right corner of the PFD:
– Timer/References
– Nearest Airports
– Flight Plan
– Messages
– Procedures
– ADF/DME Tuning
- Barometric Minimum Descent Altitude Box

- Glideslope, Glide-path, and Vertical Deviation Indicators
- Altimeter Barometric Setting
- Selected Altitude
- VNV Target Altitude
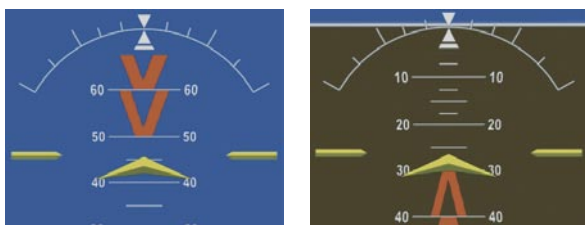
Extreme Pitch Indication

DEAD RECKONING

While in Enroute or Oceanic phase of flight, if the G1000 detects an invalid GPS solution or is unable to calculate a GPS position, the system will automatically revert to Dead Reckoning (DR) Mode. In DR Mode, the G1000 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 will only function in Enroute (ENR) or Oceanic (OCN) phase of flight. In all other phases, an invalid GPS solution will produce a "NO GPS POSITION" annunciation on the map and the G1000 will stop navigating in GPS Mode.*

DR Mode is indicated on the G1000 by the appearance of the letters 'DR' superimposed in yellow over the 'own aircraft' symbol as shown in Figure 11-4. In addition, 'DR' will be prominently displayed, also in yellow, on the HSI slightly above and to the right of the aircraft symbol on the CDI as shown in Figure 11-4. Also, the CDI deviation bar is removed from the display. Lastly, but at the same time, a 'GPS NAV LOST' alert message will appear on the PFD.

Normal navigation using GPS/WAAS source data will resume automatically once a valid GPS solution is restored.

It is important to note that estimated navigation data supplied by the G1000 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 accurately tracking your estimated 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 G1000 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/WAAS Mode due to the lack of satellite measurements needed to determine a position. Changes in wind speed and/or wind direction will compound 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 will be computed based upon an estimated position and will be displayed as yellow text on the display to denote degraded navigation source information. This data includes the following:

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

Also, while the G1000 is in DR Mode, the autopilot will not couple to GPS, and both TAWS and Terrain Proximity will be disabled. Additionally, the accuracy of all nearest information (airports, airspaces, and waypoints) will be questionable. Finally, airspace alerts will continue to function, but with degraded accuracy.

ANNUNCIATIONS & ALERTS

CAS MESSAGES

Messages			Description	Inhibits						
Warning	Caution	Advisory		ESI	TOPI	AIR	LOPI	ESDI	EMER	GND
	AFT DOOR		Tailcone baggage door not fully secured						X	
	AFT JBOX CB L-R*		Start control circuit breaker (located in aft j-box) tripped						X	
	AFT JBOX LMT L-R*		Current limiter blown (located in aft j-box)						X	
	ANTISKID FAIL		Antiskid Control Unit cannot perform anti-skid functions						X	
BATTERY O'TEMP	BATTERY O'TEMP		Overheated NiCad battery (optional)							
	BATT TEMP FAIL		Battery temperature sensor failure	X			X			
CABIN ALT	CABIN ALT	CABIN ALT	Cabin altitude potentially unsafe	X			X			X
	CABIN DOOR		Cabin door not fully secured						X	
	CHECK DOORS		A door monitor has not been properly tested or has failed	X	X	X			X	
	DUCT O'HEAT L-R*		Duct temperature too high or sensor disconnected				X		X	
	ENG A/I COLD L-R*	ENG A/I COLD L-R*	Engine anti-ice system ON and inlet temperature is cold					X	X	
	ENG CTRL SYS L-R*		FADEC has a fault that requires maintenance							
	F/W SHUTOFF L-R*		Fuel firewall shutoff valve fully closed						X	
	FLAPS FAIL		A flap system failure has occurred.						X	
	FUEL BOOST L-R*	FUEL BOOST L-R*	Electric fuel boost pump ON. Caution condition is displayed when the boost pump is operating in abnormal conditions.						X	
	FUEL FLTR BP L-R*		Engine fuel filter impending bypass switch closed						X	
		FUEL LO INOP L-R*	Fuel low level function failure	X			X			
	FUEL LVL LO L-R*		Fuel level in tank is too low						X	
	FUEL PRES LO L-R*		Fuel pressure too low					X	X	
		FUEL TRANSFER	Fuel transfer valve open						X	
GEN OFF L-R	GEN OFF L-R*		One or both electrical generators offline							
	HYD PRESS LO		Hydraulic system pressure too low		X				X	
	HYD PUMP ON		Hydraulic pump running too long				X		X	
	NOSE DOOR L-R*		One or both nose baggage doors not fully secured						X	

Messages			Description	Inhibits					
Warning	Caution	Advisory		ESI	TOPI	AIR	LOPI	ESDI	EMER
		NO TIRE SPINDOWN	Antiskid control spindown function not working				X		X
OIL PRESS LO L-R*			Oil pressure less than redline low limit	X				X	X
	OXYGEN OFF		Oxygen supply off		X		X		X
	P/S HTR L-R*		No current detected to pitot static heater						X
	PRESS CTRL	PRESS CTRL	Pressure controller loss of integrity		X		X		X
		PRESS OFF	Air Source Selector switch in OFF or fresh air position				X		X
		SPD BRK EXTEND	Speed brakes extended						X
	STALL WARN FAIL		Failure detected in stall warning system	X	X		X		X
		STALL WARN HI	Stall warning system on ice-contaminated schedule	X					X
	STALL WARN HTR		No power delivered to stall warning vane heater	X					X
		SURFACE DE-ICE	De-ice boots inflating/deflating as designed						X
	T2 HTR FAIL L-R*		T2 probe heater failure		X		X		X
TAIL CONE BLD LK			Tailcone temp high, possible bleed air leak.		X		X		X
	TAIL DE-ICE FAIL		De-ice system not operating normally						X
	W/S A/I FAIL L-R*	W/S A/I FAIL L-R*	Loss of power to windshield heater						X
	W/S O'HEAT L-R*	W/S O'HEAT L-R*	Windshield anti-ice power ON; temperature too high						X
	WING DE-ICE FAIL		De-ice system operating abnormally						X
	WOW MISCOMPARE		Gear on-ground inputs do not agree		X		X		X

Only affected side displayed (L, R, or L-R) in a CAS message; applicable CAS messages listed here display L-R for example.

Name	Inhibit
EMER	Emergency Bus Mode Inhibit
ESI	Engine Start Inhibit
TOPI	Takeoff Operation Phase Inhibit
AIR	In-Air Inhibit
LOPI	Landing Operation Phase Inhibit
ESDI	Engine Shutdown Inhibit

COMPARATOR ANNUNCIATIONS

Comparator Window Text	Condition
ALT MISCOMP	Difference in altitude sensors is ≥ 200 ft.
IAS MISCOMP	If both airspeed sensors detect < 35 knots, this is inhibited.
	If either airspeed sensor detects ≥ 35 knots, and the difference in sensors is > 10 kts.
	If either airspeed sensor detects ≥ 80 knots, and the difference in sensors is > 7 kts.
HDG MISCOMP	Difference in heading sensors is > 6 degrees.
PIT MISCOMP	Difference in pitch sensors is > 5 degrees.
ROLL MISCOMP	Difference in roll sensors is > 6 degrees.
ALT NO COMP	No data from one or both altitude sensors.
IAS NO COMP	No data from one or both airspeed sensors.
HDG NO COMP	No data from one or both heading sensors.
PIT NO COMP	No data from one or both pitch sensors.
ROLL NO COMP	No data from one or both roll sensors..

REVERSIONARY SENSOR ANNUNCIATIONS

Reversionary Sensor Window Text	Condition
BOTH ON ADC1	Both PFDs are displaying data from the number one Air Data Computer.
BOTH ON ADC2	Both PFDs are displaying data from the number two Air Data Computer.
BOTH ON AHRS1	Both PFDs are displaying data from the number one Attitude & Heading Reference System.
BOTH ON AHRS2	Both PFDs are displaying data from the number two Attitude & Heading Reference System.
BOTH ON GPS1	Both PFDs are displaying data from the number one GPS receiver.
BOTH ON GPS2	Both PFDs are displaying data from the number two GPS receiver.
XSIDE ADC	The PFD displaying this annunciation is displaying data from the cross-side Air Data Computer.
XSIDE AHRS	The PFD displaying this annunciation is displaying data from the cross-side Attitude & Heading Reference System.

G1000 SYSTEM FAILURE ANNUNCIATIONS

GIA 63W Integrated Avionics Units

GEA 71 Engine Airframe Unit OR GIA 63W Integrated Avionics Unit
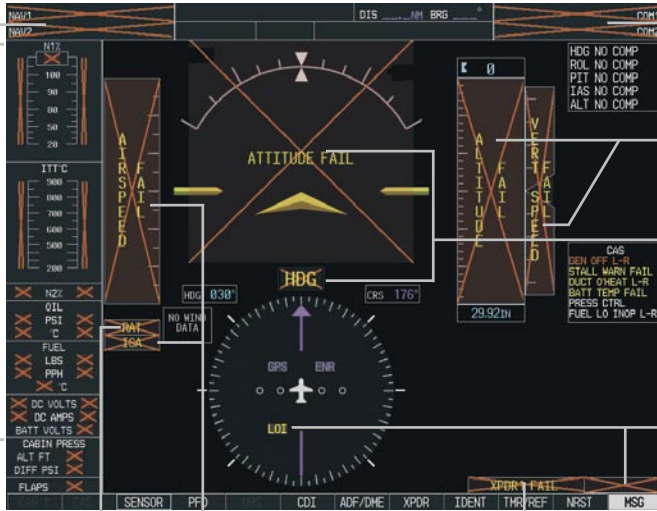
FADEC

GIA 63W Integrated Avionics Units

GDC 74B Air Data Computer

GRS 77 AHRS OR GMU 44 Magnetometer

GIA 63W Integrated Avionics Units

GDC 74B Air Data Computer

GTX 33/33D Transponder OR GIA 63W Integrated Avionics Units

G1000 System Failure Annunciations

System Annunciation Red 'X'

Messages Window

Message Softkey Annunciation

G1000 System Messages

MFD & PFD Message Advisories

Message	Comments
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 & PFD with preferred settings, if desired.
XTALK ERROR – A flight display crosstalk error has occurred.	The MFD and PFD are not communicating with each other. The G1000 system should be serviced.
PFD1 SERVICE – PFD1 needs service. Return unit for repair.	The PFD and/or MFD self-test has detected a problem. The G1000 system should be serviced.
PFD2 SERVICE – PFD2 needs service. Return unit for repair.	
MFD1 SERVICE – MFD1 needs service. Return unit for repair.	
MANIFEST – PFD1 software mismatch. Communication halted.	The PFD and/or MFD has incorrect software installed. The G1000 system should be serviced.
MANIFEST – PFD2 software mismatch. Communication halted.	
MANIFEST – MFD1 software mismatch. Communication halted.	
PFD1 CONFIG – PFD1 configuration error. Config service req'd.	The PFD configuration settings do not match backup configuration memory. The G1000 system should be serviced.
PFD2 CONFIG – PFD2 configuration error. Config service req'd.	
MFD1 CONFIG – MFD1 configuration error. Config service req'd.	The MFD configuration settings do not match backup configuration memory. The G1000 system should be serviced.
SW MISMATCH – GDU software version mismatch. Xtalk is off.	The MFD and PFD have different software versions installed. The G1000 system should be serviced.

GARMIN

MFD & PFD Message Advisories (Cont.)

Message	Comments
PFD1 COOLING – PFD1 has poor cooling. Reducing power usage.	The PFD and/or MFD is overheating and is reducing power consumption by dimming the display. If problem persists, the G1000 system should be serviced.
PFD2 COOLING – PFD2 has poor cooling. Reducing power usage.	
MFD1 COOLING – MFD1 has poor cooling. Reducing power usage.	
PFD1 "KEY" KEYSTK – Key is stuck.	A key is stuck on the PFD and/or MFD bezel. Attempt to free the stuck key by pressing it several times. The G1000 system should be serviced if the problem persists.
PFD2 "KEY" KEYSTK – Key is stuck.	
MFD1 "KEY" KEYSTK – Key is stuck.	
CNFG MODULE – PFD1 configuration module is inoperative.	The PFD1 configuration module backup memory has failed. The G1000 system should be serviced.
PFD1 VOLTAGE – PFD1 has low voltage. Reducing power usage	The PFD1 voltage is low. The G1000 system should be serviced.
PFD2 VOLTAGE – PFD2 has low voltage. Reducing power usage	The PFD2 voltage is low. The G1000 system should be serviced.
MFD1 VOLTAGE – MFD1 has low voltage. Reducing power usage	The MFD voltage is low. The G1000 system should be serviced.

Database Message Advisories

Message	Comments
MFD1 DB ERR – MFD1 aviation database error exists.	The MFD and/or PFD detected a failure in the aviation database. Attempt to reload the aviation database. If problem persists, the G1000 system should be serviced.
PFD1 DB ERR – PFD1 aviation database error exists.	
PFD2 DB ERR – PFD2 aviation database error exists.	

Database Message Advisories (Cont.)

Message	Comments
MFD1 DB ERR – MFD1 basemap database error exists.	The MFD and/or PFD detected a failure in the basemap database.
PFD1 DB ERR – PFD1 basemap database error exists.	
PFD2 DB ERR – PFD2 basemap database error exists.	
MFD1 DB ERR – MFD1 terrain database error exists.	The MFD and/or PFD detected a failure in the terrain database. Ensure that the terrain card is properly inserted in display. Replace terrain card. If problem persists, the G1000 system should be serviced.
PFD1 DB ERR – PFD1 terrain database error exists.	
PFD2 DB ERR – PFD2 terrain database error exists.	
MFD1 DB ERR – MFD1 obstacle database error exists.	The MFD and/or PFD detected a failure in the obstacle database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the G1000 system should be serviced.
PFD1 DB ERR – PFD1 obstacle database error exists.	
PFD2 DB ERR – PFD2 obstacle database error exists.	
MFD1 DB ERR – MFD1 airport terrain database error exists.	The MFD and/or PFD detected a failure in the airport terrain database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the G1000 system should be serviced.
PFD1 DB ERR – PFD1 airport terrain database error exists.	
PFD2 DB ERR – PFD2 airport terrain database error exists.	
MFD1 DB ERR – MFD1 Safe Taxi database error exists.	The MFD and/or PFD detected a failure in the Safe Taxi database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the G1000 system should be serviced.
PFD1 DB ERR – PFD1 Safe Taxi database error exists.	
PFD2 DB ERR – PFD2 Safe Taxi database error exists.	

Database Message Advisories (Cont.)

Message	Comments
MFD1 DB ERR – MFD1 Chartview database error exists.	The MFD and/or PFD detected a failure in the ChartView database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the G1000 system should be serviced.
MFD1 DB ERR – MFD1 FliteCharts database error exists.	The MFD and/or PFD detected a failure in the FliteCharts database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the G1000 system should be serviced.
DB MISMATCH – Aviation database version mismatch. Xtalk is off.	The PFD and MFD have different aviation database versions installed. Crossfill is off. Install correct aviation database version in both displays.
DB MISMATCH – Aviation database type mismatch. Xtalk is off.	The PFD and MFD have different aviation database types installed (Americas, European, etc.). Crossfill is off. Install correct aviation database type in both displays.
DB MISMATCH – Terrain database version mismatch. Xtalk is off.	The PFD and MFD have different terrain database versions installed. Crossfill is off. Install correct terrain database version in both displays.
DB MISMATCH – Terrain database type mismatch. Xtalk is off.	The PFD and MFD have different terrain database types installed. Crossfill is off. Install correct terrain database type in both displays.
DB MISMATCH – Obstacle database version mismatch. Xtalk is off	The PFD and MFD have different obstacle database versions installed. Crossfill is off. Install correct obstacle database version in both displays.
DB MISMATCH – Airport Terrain database mismatch. Xtalk is off	The PFD and MFD have different airport terrain databases installed. Crossfill is off. Install correct airport terrain database in both displays.

GMA 1347D Message Advisories

Message	Comments
GMA1 FAIL – GMA1 is inoperative.	The audio panel self-test has detected a failure. The audio panel is unavailable. The G1000 system should be serviced.
GMA2 FAIL – GMA2 is inoperative.	
GMA XTALK – GMA crosstalk error has occurred.	An error has occurred in transferring data between the two GMAs. The G1000 system should be serviced.
GMA1 CONFIG – GMA1 configuration error. Config service req'd.	The audio panel configuration settings do not match backup configuration memory. The G1000 system should be serviced.
GMA2 CONFIG – GMA2 configuration error. Config service req'd.	
MANIFEST – GMA1 software mismatch. Communication halted.	The audio panel has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GMA2 software mismatch. Communication halted.	
GMA1 SERVICE – GMA1 needs service. Return unit for repair.	The audio panel self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio panel may still be usable. The G1000 system should be serviced when possible.
GMA2 SERVICE – GMA2 needs service. Return unit for repair.	

GIA 63W Message Advisories

Message	Comments
GIA1 CONFIG – GIA1 configuration error. Config service req'd.	The GIA1 and/or GIA2 configuration settings do not match backup configuration memory. The G1000 system should be serviced.
GIA2 CONFIG – GIA2 configuration error. Config service req'd.	
GIA1 CONFIG – GIA1 audio config error. Config service req'd.	The GIA1 and/or GIA2 have an error in the audio configuration. The G1000 system should be serviced.
GIA2 CONFIG – GIA2 audio config error. Config service req'd.	

GIA 63W Message Advisories (Cont.)

Message	Comments
GIA1 COOLING – GIA1 temperature too low.	The GIA1 and/or GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
GIA2 COOLING – GIA2 temperature too low.	
GIA1 COOLING – GIA1 over temperature.	The GIA1 and/or GIA2 temperature is too high. If problem persists, the G1000 system should be serviced.
GIA2 COOLING – GIA2 over temperature.	
GIA1 SERVICE – GIA1 needs service. Return the unit for repair.	The GIA1 and/or GIA2 self-test has detected a problem in the unit. The G1000 system should be serviced.
GIA2 SERVICE – GIA2 needs service. Return the unit for repair.	
HW MISMATCH – GIA hardware mismatch. GIA1 communication halted.	A GIA mismatch has been detected, where only one is WAAS capable.
HW MISMATCH – GIA hardware mismatch. GIA2 communication halted.	
MANIFEST – GIA1 software mismatch. Communication halted.	The GIA1 and/or GIA 2 has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GIA2 software mismatch. Communication halted.	
COM1 TEMP – COM1 over temp. Reducing transmitter power.	The system has detected an over temperature condition in COM1 and/or COM2. The transmitter will operate at reduced power. If the problem persists, the G1000 system should be serviced.
COM2 TEMP – COM2 over temp. Reducing transmitter power.	
COM1 SERVICE – COM1 needs service. Return unit for repair.	The system has detected a failure in COM1 and/or COM2. COM1 and/or COM2 may still be usable. The G1000 system should be serviced when possible.
COM2 SERVICE – COM2 needs service. Return unit for repair.	

GIA 63W Message Advisories (Cont.)

Message	Comments
COM1 PTT – COM1 push-to-talk key is stuck.	The COM1 and/or 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 G1000 system should be serviced.
COM2 PTT – COM2 push-to-talk key is stuck.	
COM1 RMT XFR – COM1 remote transfer key is stuck.	The COM1 and/or 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 G1000 system should be serviced.
COM2 RMT XFR – COM2 remote transfer key is stuck.	
LOI – GPS integrity lost. Crosscheck with other NAVS.	GPS integrity is insufficient for the current phase of flight.
GPS NAV LOST – Loss of GPS navigation. Insufficient satellites.	Loss of GPS navigation due to insufficient satellites.
GPS NAV LOST – Loss of GPS navigation. Position error.	Loss of GPS navigation due to position error.
GPS NAV LOST – Loss of GPS navigation. GPS fail.	Loss of GPS navigation due to GPS failure.
ABORT APR – Loss of GPS navigation. Abort approach.	Abort approach due to loss of GPS navigation.
APR DWNGRADE – Approach downgraded. Use LNAV minima.	Use LNAV minima when approach is downgraded.
TRUE APR – True north approach. All angles are TRUE.	Displayed after passing the first waypoint of a true north approach when the nav angle is set to 'AUTO'.
GPS1 FAIL – GPS1 is inoperative.	A failure has been detected in the GPS1 and/or GPS2 receiver. The receiver is unavailable. The G1000 system should be serviced.
GPS2 FAIL – GPS2 is inoperative.	
GPS1 SERVICE – GPS1 needs service. Return unit for repair.	A failure has been detected in the GPS1 and/or GPS2 receiver. The receiver may still be available. The G1000 system should be serviced.
GPS2 SERVICE – GPS2 needs service. Return unit for repair.	

GIA 63W Message Advisories (Cont.)

Message	Comments
NAV1 SERVICE – NAV1 needs service. Return unit for repair.	A failure has been detected in the NAV1 and/or NAV2 receiver. The receiver may still be available. The G1000 system should be serviced.
NAV2 SERVICE – NAV2 needs service. Return unit for repair.	
NAV1 RMT XFR – NAV1 remote transfer key is stuck.	The remote NAV1 and/or 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 G1000 system should be serviced.
NAV2 RMT XFR – NAV2 remote transfer key is stuck.	
G/S1 FAIL – G/S1 is inoperative.	A failure has been detected in glideslope receiver 1 and/or receiver 2. The G1000 system should be serviced.
G/S2 FAIL – G/S2 is inoperative.	
G/S1 SERVICE – G/S1 needs service. Return unit for repair.	A failure has been detected in glideslope receiver 1 and/or receiver 2. The receiver may still be available. The G1000 system should be serviced when possible.
G/S2 SERVICE – G/S2 needs service. Return unit for repair.	

GEA 71 Message Advisories

Message	Comments
GEA1 CONFIG – GEA1 configuration error. Config service req'd.	The GEA1 configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.
GEA2 CONFIG – GEA2 configuration error. Config service req'd.	The GEA2 configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.
MANIFEST – GEA1 software mismatch. Communication halted.	The #1 GEA 71 has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GEA2 software mismatch. Communication halted.	The #2 GEA 71 has incorrect software installed. The G1000 system should be serviced.

GTX 33 & GTX 33D Message Advisories

Message	Comments
XPDR1 CONFIG – XPDR1 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.
XPDR2 CONFIG – XPDR2 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.
MANIFEST – GTX1 software mismatch. Communication halted.	The transponder has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GTX2 software mismatch. Communication halted.	The transponder has incorrect software installed. The G1000 system should be serviced.
XPDR1 SRVC – XPDR1 needs service. Return unit for repair.	The #1 transponder should be serviced when possible.
XPDR2 SRVC – XPDR2 needs service. Return unit for repair.	The #2 transponder should be serviced when possible.
XPDR1 FAIL – XPDR1 is inoperative.	There is no communication with the #1 transponder.
XPDR2 FAIL – XPDR2 is inoperative.	There is no communication with the #2 transponder.

GRS 77 Message Advisories

Message	Comments
AHRS1 TAS – AHRS1 not receiving airspeed.	The #1 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The G1000 system should be serviced.
AHRS2 TAS – AHRS2 not receiving airspeed.	The #2 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The G1000 system should be serviced.

GRS 77 Message Advisories (Cont.)

Message	Comments
AHRS1 GPS – AHRS1 using backup GPS source.	The #1 AHRS is using the backup GPS path. Primary GPS path has failed. The G1000 system should be serviced when possible.
AHRS2 GPS – AHRS2 using backup GPS source.	The #2 AHRS is using the backup GPS path. Primary GPS path has failed. The G1000 system should be serviced when possible.
AHRS1 GPS – AHRS1 not receiving any GPS information.	The #1 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The G1000 system should be serviced.
AHRS2 GPS – AHRS2 not receiving any GPS information.	The #2 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The G1000 system should be serviced.
AHRS1 GPS – AHRS1 not receiving backup GPS information.	The #1 AHRS is not receiving backup GPS information. The G1000 system should be serviced.
AHRS2 GPS – AHRS2 not receiving backup GPS information.	The #2 AHRS is not receiving backup GPS information. The G1000 system should be serviced.
AHRS1 GPS – AHRS1 operating exclusively in no-GPS mode.	The #1 AHRS is operating exclusively in no-GPS mode. The G1000 system should be serviced.
AHRS2 GPS – AHRS2 operating exclusively in no-GPS mode.	The #2 AHRS is operating exclusively in no-GPS mode. The G1000 system should be serviced.
AHRS MAG DB – AHRS magnetic model database version mismatch.	The #1 AHRS and #2 AHRS magnetic model database versions do not match.
AHRS1 SRVC – AHRS1 Magnetic-field model needs update.	The #1 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.

GRS 77 Message Advisories (Cont.)

Message	Comments
AHRS2 SRVC – AHRS2 Magnetic-field model needs update.	The #2 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
GEO LIMITS – AHRS1 too far North/South, no magnetic compass.	The aircraft is outside geographical limits for approved AHRS operation. Heading is flagged as invalid.
GEO LIMITS – AHRS2 too far North/South, no magnetic compass.	
MANIFEST – GRS1 software mismatch. Communication halted.	The #1 AHRS has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GRS2 software mismatch. Communication halted.	The #2 AHRS has incorrect software installed. The G1000 system should be serviced.

GMU 44 Message Advisories

Message	Comments
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 G1000 system should be serviced.
HDG FAULT – AHRS2 magnetometer fault has occurred.	A fault has occurred in the #2 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The G1000 system should be serviced.
MANIFEST – GMU1 software mismatch. Communication halted.	The GMU 44 has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GMU2 software mismatch. Communication halted.	

GDL 69A Message Advisories

Message	Comments
GDL69 CONFIG – GDL 69 configuration error. Config service req'd.	GDL 69 configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.
GDL69 FAIL – GDL 69 has failed.	A failure has been detected in the GDL 69. The receiver is unavailable. The G1000 system should be serviced
MANIFEST – GDL software mismatch. Communication halted.	The GDL 69 has incorrect software installed. The G1000 system should be serviced.

GDC 74B Message Advisories

Message	Comments
ADC1 ALT EC – ADC1 altitude error correction is unavailable.	GDC1 or GDC2 is reporting that the altitude error correction is unavailable.
ADC2 ALT EC – ADC2 altitude error correction is unavailable.	
ADC1 AS EC – ADC1 airspeed error correction is unavailable.	GDC1 or GDC2 is reporting that the airspeed error correction is unavailable.
ADC2 AS EC – ADC2 airspeed error correction is unavailable.	
MANIFEST – GDC1 software mismatch. Communication halted.	The GDC 74B has incorrect software installed. The G1000 system should be serviced.
MANIFEST – GDC2 software mismatch. Communication halted.	

GCU 475 Message Advisories

Message	Comments
GCU CNFG – GCU Config error. Config service req'd.	GCU 475 configuration settings do not match those of backup configuration memory. The G1000 system should be serviced.

GCU 475 Message Advisories (Cont.)

Message	Comments
GCU FAIL – GCU is inoperative.	A failure has been detected in the GCU 475. The GCU 475 is unavailable.
MANIFEST – GCU software mismatch. Communication halted.	The GCU 475 has incorrect software installed. The G1000 system should be serviced.

GMC 710 Message Advisories

Message	Comments
GMC CONFIG – GMC Config error. Config service req'd.	Error in the configuration of the GMC 710.
GMC FAIL – GMC is inoperative.	A failure has been detected in the GMC 710. The GMC 710 is unavailable.
MANIFEST – GMC software mismatch. Communication halted.	The GMC 710 has incorrect software installed. The G1000 system should be serviced.

GWX 68 Alert Messages

Message	Comments
GWX CONFIG – GWX configuration error. Config service req'd.	GWX 68 configuration settings do not match those of the GDU configuration. The G1000 system should be serviced.
GWX FAIL – GWX is inoperative.	The GDU is not receiving status packet from the GWX 68 or the GWX 68 is reporting a fault. The GWX 68 radar system should be serviced.
GWX SERVICE – Needs service. Return unit for repair.	A failure has been detected in the GWX 68. The GWX 68 may still be usable.
WX ALERT – Possible severe weather ahead.	The GWX 68 indicates severe weather within ±10 degrees of the aircraft heading at a range of 80 to 320 nm.
MANIFEST – GWX software mismatch. Communication halted.	The GWX 68 has incorrect software installed. The G1000 system should be serviced.

Miscellaneous Message Advisories

Message	Comments
FPL WPT LOCK – Flight plan waypoint is locked.	Upon power-up, the G1000 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 a flight plan that is deleted. Remove the waypoint from the flight plan if it no longer exists in any database, or update the waypoint name/identifier to reflect the new information.
FPL WPT MOVE – Flight plan waypoint moved.	The system has detected that a waypoint coordinate has changed due to a new aviation database update. Verify that stored flight plans contain correct waypoint locations.
TIMER EXPIRD – Timer has expired.	The system notifies the pilot that the timer has expired.
DB CHANGE – Database changed. Verify user modified procedures.	This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after an aviation database update. Verify that the user-modified procedures in stored flight plans are correct and up to date.
DB CHANGE – Database changed. Verify stored airways.	This occurs when a stored flight plan contains an airway that is no longer consistent with the aviation database. This alert is issued only after an aviation database update. Verify use of airways in stored flight plans and reload airways as needed.
FPL TRUNC – Flight plan has been truncated.	This occurs when a newly installed aviation 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.

Miscellaneous Message Advisories (Cont.)

Message	Comments
LOCKED FPL – Cannot navigate locked flight plan.	This occurs when the pilot attempts to activate a stored flight plan that contains locked waypoint. Remove locked waypoint from flight plan. Update flight plan with current waypoint.
WPT ARRIVAL – Arriving at waypoint -[xxxx]	Arriving at waypoint [xxxx], where [xxxx] is the waypoint name.
STEEP TURN – Steep turn ahead.	A steep turn is 15 seconds ahead. Prepare to turn.
INSIDE ARSPC – Inside airspace.	The aircraft is inside the airspace.
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 and ahead.	Special use airspace is near and ahead of the aircraft position.
ARSPC NEAR – Airspace near – less than 2 nm.	Special use airspace is within 2 nm of the aircraft position.
LEG UNSMOOTH – Flight plan leg will not be smooth.	The approaching flight plan waypoints are too close to allow for smooth turns. Prepare for steep turns ahead and expect noticeable course deviations.
APPR INACTV – Approach is not active.	The system notifies the pilot that the loaded approach is not active. Activate approach when required.
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 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.
PTK FAIL – Bad geometry, parallel offset not activated.	Bad parallel track geometry.
PTK FAIL – Invalid leg type, parallel offset not activated.	Invalid leg type for parallel offset.

Miscellaneous Message Advisories (Cont.)

Message	Comments
PTK FAIL – Past IAF, parallel offset not activated.	IAF waypoint for parallel offset has been passed.
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 will automatically transition to the next vertical waypoint.
VNV – Unavailable. Unsupported leg type in flight plan.	The lateral flight plan contains a procedure turn, vector, or other unsupported leg type prior to the active vertical waypoint. This will prevent vertical guidance to the active vertical waypoint.
VNV – Unavailable. Excessive crosstrack error.	The current crosstrack exceeds the limit, causing vertical deviation to go invalid.
VNV – Unavailable. Excessive track angle error.	The current track angle error exceeds the limit, causing the vertical deviation to go invalid.
VNV – Unavailable. Parallel course selected.	A parallel course has been selected, causing the vertical deviation to go invalid.
NO WGS84 WPT – Non WGS 84 waypoint for navigation -[xxxx]	The selected waypoint [xxxx] does not use the WGS 84 datum. Cross-check position with alternate navigation sources.
TRAFFIC FAIL – Traffic device has failed.	The G1000 is no longer receiving data from the traffic system. The traffic device should be serviced.
STRMSCP FAIL – Stormscope has failed.	Stormscope has failed. The G1000 system should be serviced.
FAILED PATH – A data path has failed.	A data path connected to the GDU or the GIA 63/63W has failed.
MAG VAR WARN – Large magnetic variance. 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°.
SCHEDULER [#] – <message>.	Message criteria entered by the user.

AFCS ALERTS

Condition	Annunciation	Description
Pitch Failure	PTCH	Pitch axis control failure. AP is inoperative.
Roll Failure	ROLL	Roll axis control failure. AP is inoperative.
MET Switch Stuck, or Pitch Trim Axis Control Failure	PTRM	If annunciated when AP is engaged, a failure has occurred in the pitch trim system. If annunciated when AP is not engaged, a failed or stuck switch is causing the annunciation.
System Failure	AFCS	AP and MET are unavailable. FD may still be available.
Emergency Descent Mode	EDM	AP engaged when aircraft altitude above 30,000 ft and cabin pressurization is lost. Selected Heading set 90° left of current heading; Selected Altitude set to 15000 ft
Elevator Mistrim Up	↑ELE	A condition has developed causing the pitch servo to provide a sustained force in the nose up direction.
Elevator Mistrim Down	↓ELE	A condition has developed causing the pitch servo to provide a sustained force in the nose down direction.
Aileron Mistrim Left	←AIL	A condition has developed causing the roll servo to provide a sustained left force.
Aileron Mistrim Right	AIL→	A condition has developed causing the roll servo to provide a sustained right force.
Rudder Mistrim Left	←RUD	A condition has developed causing the yaw servo to provide a sustained force.
Rudder Mistrim Right	RUD→	A condition has developed causing the yaw servo to provide a sustained force.
Preflight Test	PFT	Performing preflight system test. Upon completion of the test, the aural alert will be heard.
	PFT	Preflight system test has failed.

TAWS ALERTS SUMMARY

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

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

* Mustang default configuration

TAWS STATUS ANNUNCIATIONS

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Pop-Up Alert	Aural Message
TAWS System Test Fail	`TAWS FAIL`	None	"TAWS System Failure"
TAWS Alerting is disabled	`TAWS INHB`	None	None
No GPS position or excessively degraded GPS signal	`TAWS N/A`	None	"TAWS Not Available" "TAWS Available" will be heard when sufficient GPS signal is re-established.
System Test in progress	`TAWS TEST`	None	None
System Test pass	None	None	"TAWS System Test OK"

OTHER G1000 AURAL ALERTS

Aural Alert	Description
"Minimums, minimums"	The aircraft has descended below the preset barometric minimum descent altitude.
"Vertical track"	The aircraft is one minute from Top of Descent. Issued only when vertical navigation is enabled.
"Traffic"	The Traffic Information Service (TIS) has issued a Traffic Advisory alert
"TIS not available"	The aircraft is outside the Traffic Information Service (TIS) coverage area.

APPENDIX

PFD SOFTKEY MAP

Top Level PFD Softkeys

(optional) (optional)
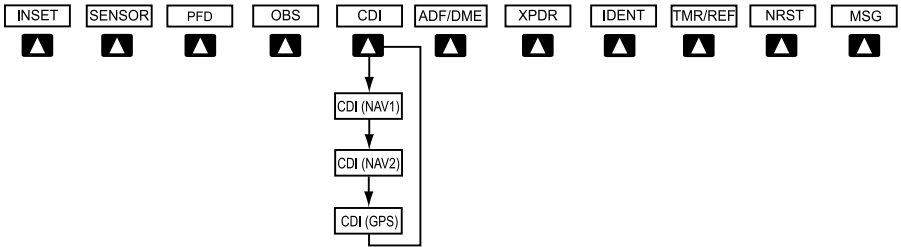
Select the **BACK** or **OFF** Softkey to return to the top-level softkeys.
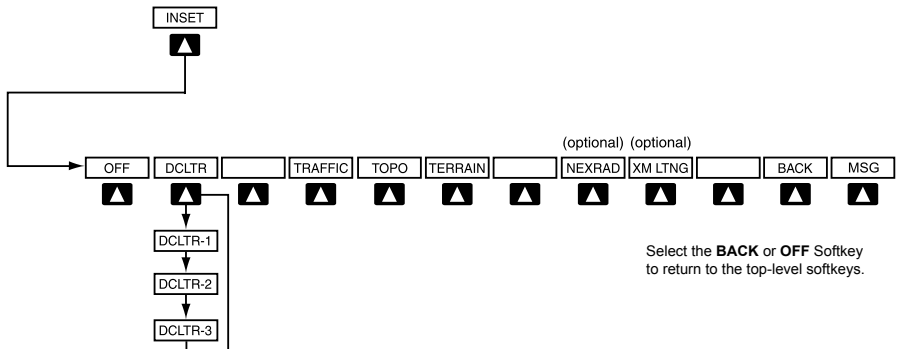
Inset Map Softkeys

INSET   Displays Inset Map in PFD lower left corner

   OFF   Removes Inset Map

   DCLTR (3)   Selects desired amount of map detail; cycles through declutter levels:
         DCLTR (No Declutter): All map features visible
         DCLTR-1: Declutters land data
         DCLTR-2: Declutters land and SUA data
         DCLTR-3: Removes everything except the active flight plan

TRAFFIC	Displays traffic information on Inset Map
TOPO	Displays topographical data (e.g., coast-lines, terrain, rivers, lakes) and elevation scale on Inset Map
TERRAIN	Displays terrain information on Inset Map
NEXRAD	Displays NEXRAD weather and coverage information on Inset Map (optional feature)
XM LTNG	Displays XM lightning information on Inset Map (optional feature)
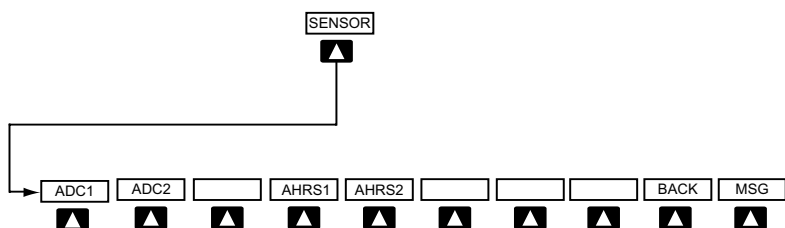
Select the **BACK** Softkey to return to the top level softkeys.

Sensor Softkeys

SENSOR	Displays softkeys for selecting the #1 and #2 AHRS and Air Data Computers
ADC1	Selects the #1 Air Data Computer
ADC2	Selects the #2 Air Data Computer
AHRS1	Selects the #1 AHRS
AHRS2	Selects the #2 AHRS
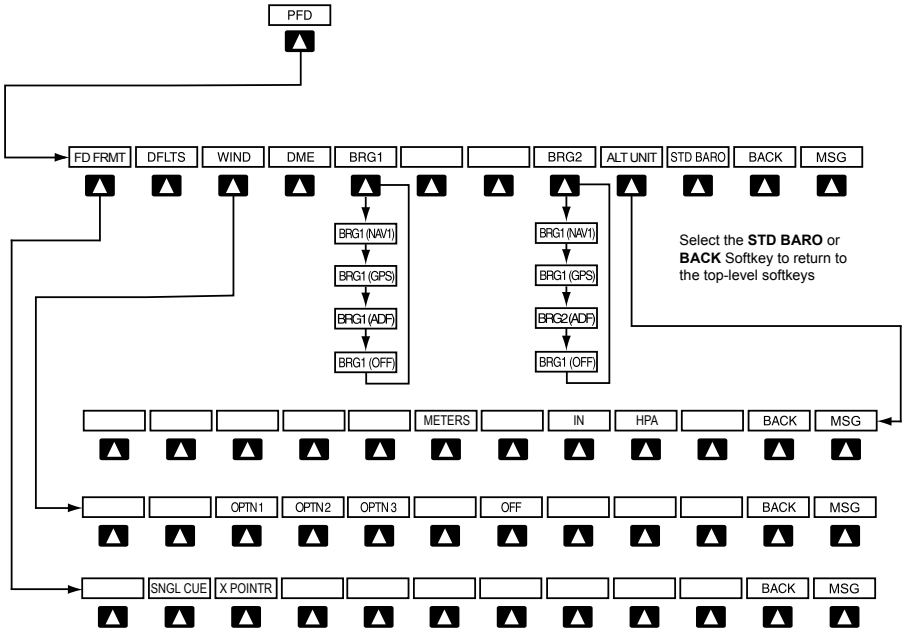
PFD Configuration Softkeys

PFD		Displays second-level softkeys for additional PFD configurations
	FD FRMT	Displays the softkeys for selecting the two flight director formats
	SNGL CUE	Selects the single cue flight director format
	X POINTR	Selects the cross pointer flight director format
	DFLTS	Resets PFD to default settings, including changing units to standard
	WIND	Displays softkeys to select wind data parameters
	OPTN 1	Longitudinal and lateral components
	OPTN 2	Total direction and speed

	OPTN 3	Total direction with head and crosswind speed components
	OFF	Information not displayed
BRG1		Cycles the Bearing 1 Information Window through NAV1 or GPS/waypoint identifier and GPS-derived distance information, and ADF/frequency.
BRG2		Cycles the Bearing 2 Information Window through NAV2 or GPS/waypoint identifier and GPS-derived distance information, and ADF/frequency.
ALT UNIT		Displays softkeys for setting the altimeter and BARO settings to metric units
	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 hectopacals
STD BARO		Sets barometric pressure to 29.92 in Hg (1013 hPa)
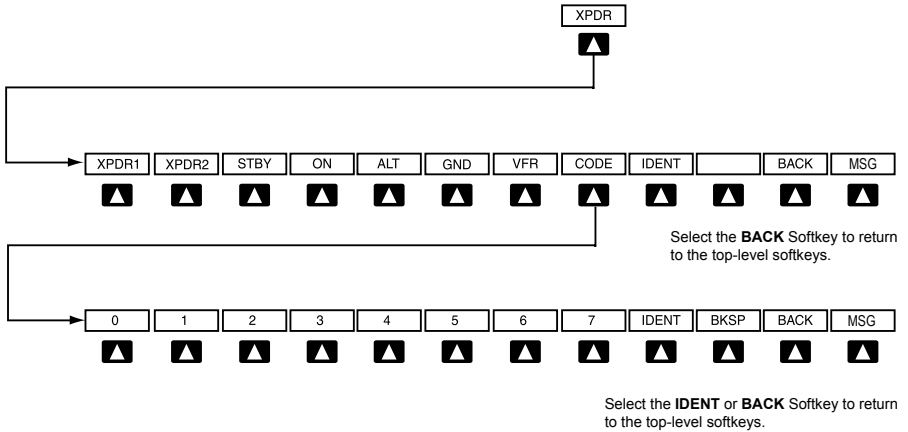
Transponder Softkeys

XPDR		Displays transponder mode selection softkeys
	XPDR1	Selects the #1 transponder as active
	XPDR2	Selects the #2 transponder as active
	STBY	Selects Standby Mode (transponder does not reply to any interrogations)
	ON	Selects Mode A (transponder replies to interrogations)
	ALT	Selects Mode C – Altitude Reporting Mode (transponder replies to identification and altitude interrogations)
	GND	Manually selects Ground Mode, the transponder does not allow Mode A and Mode C replies, but it does permit acquisition squitter and replies to discretely addressed Mode S interrogations.
	VFR	Automatically enters the VFR code (1200 in the U.S.A. only)
	CODE	Displays transponder code selection softkeys 0-7

0 — 7	Use numbers to enter code
BKSP	Removes numbers entered, one at a time
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
NRST	Displays Nearest Airports Window
MSG	Displays Messages Window

MFD SOFTKEY MAP

MFD Softkeys
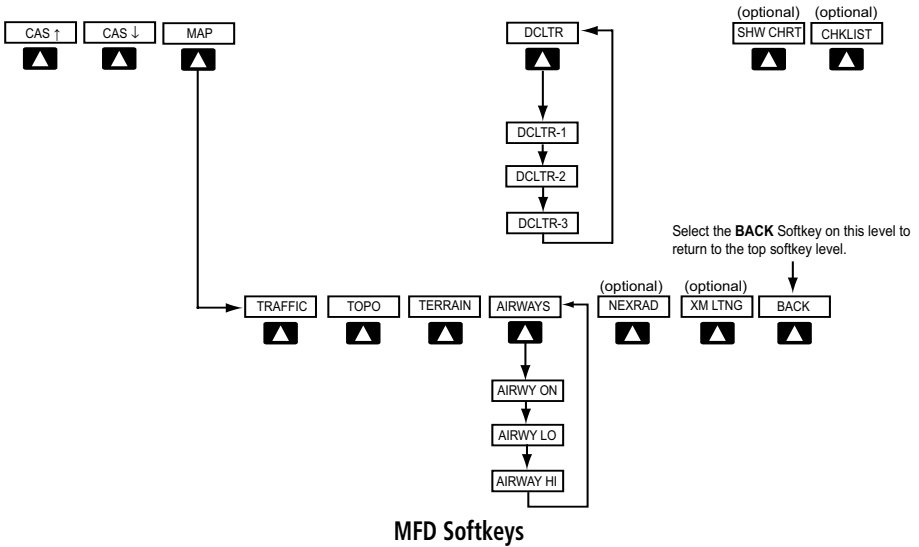
CAS ↑	Scroll up (Displayed only when a sufficient number of items are displayed in the Crew Alerting System Display to warrant scrolling)
CAS ↓	Scroll down (Displayed only when a sufficient number of items are displayed in the Crew Alerting System Display to warrant scrolling)
MAP	Enables second-level Navigation Map softkeys

TRAFFIC	Displays traffic information on Navigation Map
TOPO	Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Navigation Map
TERRAIN	Displays terrain information on Navigation Map
AIRWAYS	Displays airways on the map; cycles through the following: AIRWAYS: No airways are displayed AIRWY ON: All airways are displayed AIRWY LO: Only low altitude airways are displayed AIRWY HI: Only high altitude airways are displayed
NEXRAD	Displays NEXRAD weather and coverage information on Navigation Map (optional feature)
XM LTNG	Displays XM lightning information on Navigation Map (optional feature)
BACK	Returns to top-level softkeys
DCLTR (3)	Selects desired amount of map detail; cycles through declutter levels: DCLTR (No Declutter): All map features visible DCLTR-1: Declutters land data DCLTR-2: Declutters land and SUA data DCLTR-3: Removes everything except the active flight plan
SHW CHRT	When available, displays optional airport and terminal procedure charts
CHKLIST	When available, displays optional checklists

SD CARD USE

The G1000 System uses Secure Digital (SD) cards to load and store various types of data. For basic flight operations, SD cards are required for database storage as well as Jeppesen aviation and ChartView database updates.

Jeppesen Databases

The Jeppesen aviation database is updated on a 28-day cycle. The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function.

Both these databases are provided directly from Jeppesen. The ChartView database should be copied to the Garmin supplied Supplemental Data Card which will reside in the bottom card slot on the MFD. The aviation database may be installed from the Jeppesen supplied SD data card or copied to one of the Garmin supplied Supplemental Data Cards. Contact Jeppesen (www.jeppesen.com) for subscription and update information.

The aviation database may be programmed to only one of the Supplemental Data Cards. This card must then be used to update the PFD and the MFD.

> **NOTE:** *After the aviation database is installed, the card may be removed after loading the update to each LRU.*

Updating the Jeppesen aviation database:

1) With the G1000 System OFF, insert the SD card containing the aviation database update into the top card slot of the PFD to be updated (Label of SD card facing left).

2) Turn the G1000 System ON. A prompt similar to the following is displayed in the upper left corner of the PFD:

```
DO YOU WANT TO UPDATE THE AVIATION DATABASE?
            FROM              TO
REGION:     WORLDWIDE         WORLDWIDE
CYCLE:      0604              0605
EFFECTIVE:  13-APR-2006       11-MAY-2006
EXPIRES:    11-MAY-2006       08-JUN-2006

NO WILL BE ASSUMED IN 8 SECONDS.
```

Database Update Prompt

3) Press the **ENT** Key to start the database update. A prompt similar to the following is displayed:

```
DO YOU WANT TO UPDATE THE AVIATION DATABASE?
              FROM            TO
REGION:       WORLDWIDE       WORLDWIDE
CYCLE:        0604            0605
EFFECTIVE:    13-APR-2006     11-MAY-2006
EXPIRES:      11-MAY-2006     08-JUN-2006

NO WILL BE ASSUMED IN 8 SECONDS.
UPDATING AVIATION DATABASE, PLEASE WAIT.
.
UPDATED 1 FILES SUCCESSFULLY!
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 8 SECONDS.
```

Database Update Confirmation

4) After the update completes, the PFD starts in normal mode.

5) Turn the G1000 System OFF and remove the SD card.

6) Repeat steps 1 through 4 for the MFD. The MFD and PFD databases are now updated. Remove the SD card when finished.

7) Verify that the correct update cycle is loaded during startup of the MFD.

Garmin Databases

The following G1000 databases are stored on Supplemental Data Cards provided by Garmin:

- Extended Basemap
- Terrain
- Airport terrain
- Obstacle
- SafeTaxi
- FliteCharts

A Supplemental Data Card should be inserted into the bottom card slot of the PFD and the MFD and not removed except for updating the card. If one of the Supplemental Data Cards contains the ChartView database, or the FliteCharts database, this card must be inserted into the bottom card slot on the MFD.

Since these databases are not stored internally in the MFD or PFD, a Supplemental

GARMIN™

Data Card containing identical database versions must be kept in each display unit.

The basemap database contains data for the topography and land features, such as rivers, lakes and towns. It is updated only periodically, with no set schedule. There is no expiration date.

The terrain and airport terrain databases contain the terrain mapping and airport diagram data. They are updated periodically and have no expiration date.

The obstacle database contains data for obstacles, such as towers, that pose a potential hazard to aircraft. Obstacles 200' and higher are included in the obstacle database. It is very important to note that not all obstacles are necessarily charted and therefore may not be contained in the obstacle database. This database is updated on a 56-day cycle.

> **NOTE:** The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams aid in following ground control instructions by accurately displaying the aircraft position on the map in relation to taxiways, ramps, runways, terminals, and services. This database is updated on a 56-day cycle.

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

UPDATING GARMIN DATABASES

The Garmin database updates can be obtained by following the instructions detailed in the 'Aviation Databases' section of the Garmin website (www.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 the existing Supplemental Data Cards. Equipment required to perform the update is as follows:

- Windows-compatible PC computer (Windows 2000 or XP recommended).
- SanDisk SD Card Reader, P/Ns SDDR-93 or SDDR-99 or equivalent card reader.
- Updated database obtained from the Garmin website.
- Existing 010-00330-42 Supplemental Database SD Cards from both PFD and MFD.

After the data has been copied to the appropriate data cards, perform the following steps:

1) Insert one SD card in the bottom card slot of the MFD and one in the bottom card slot of the PFD. The SD card containing the ChartView or FliteCharts database must be inserted into the bottom slot on the MFD.

2) Apply power to the G1000 System. View the MFD power-up splash screen. Check that the databases are initialized and displayed on the scrolling window of the splash screen. When updating the terrain and FliteCharts databases, an 'in progress' message may be seen. If this message is present, wait for the system to finish loading before verifying the correct databases are initialized, then proceed to step 3.

Power-Up Splash Screen Window

3) Acknowledge the Power-up Page agreement by pressing the **ENT** Key or the right most softkey.

4) Turn the large **FMS** Knob to select the AUX Page group on the MFD.

5) Turn the small **FMS** Knob to select the System Status Page.

6) Press the **DBASE** Softkey to place the cursor in the 'DATABASE' box.

7) Turn either **FMS** Knob to scroll through the database list and check that all databases are current and there are no errors.

8) Power down the G1000.

Blank Page

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