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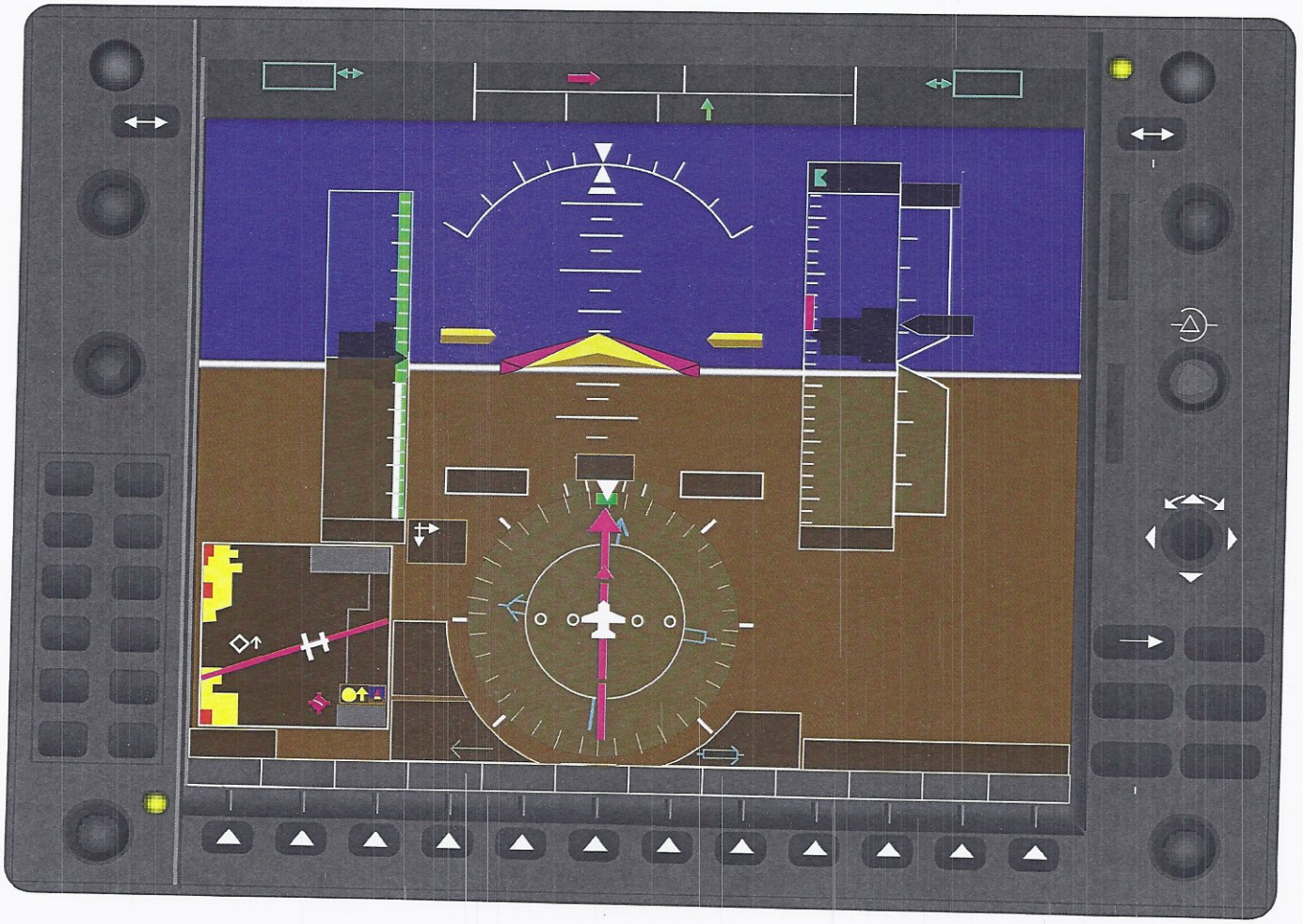
The Garmin G1000W
(WAAS version)

A Pilot-friendly Manual

by

John Dittmer



Kozub

DISCLAIMER

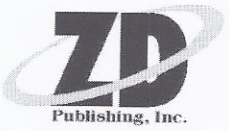
This manual is based on the Cessna Nav III version and covers the WAAS, GPS, VOR and ILS approaches along with complete GPS operations. It also includes descriptions of the PFD, MFD, Vertical Navigation, Holding, all types of approaches and use of the autopilot. Since each airframe manufacturer includes different airplane-specific items, this manual **DOES NOT** cover the airplane systems and there are some minor differences between airframe manufacturers. Airframe differences in AFCS controls, MFD Control Units and the MFD/PFD Control Unit are covered beginning in Appendix H on Page 71.

While great care was taken to verify the enclosed operations, they are not to be construed as official Garmin recommendations. Since the GPS and avionics worlds are rapidly changing, the contents contained within may become outdated and/or unsuitable at any time. Any action taken by the user as a result of any item herein is solely at the risk of the reader. I make no warranty as to the accuracy of the information, safety or suitability for use by anyone or for any purpose.

My thanks to Bob for his eagle-eye editing, Kathy for her patience and understanding and Jim, a good friend who urged me on in the beginning. Special thanks to Jack, Brandy, Al and Jim for their help and support. Without their professional expertise, this manual would have been impossible.

Although this manual is designed to expedite the learning curve for those of you who are just starting to use the G1000W, the most recent version of Garmin's "Pilot's Guide and Reference" remains the final authority.

The examples in this manual make a trip from Wichita Mid Continent airport in Kansas north to Salina Municipal Airport via STONS intersection. This trip was picked because it is a simple trip that still allows examples of most features contained herein. Examples of DPs and STARs utilize the Dallas, Fort Worth Airport in Texas.



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SECTION CONTENT

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It will take some quality time for you to understand and appreciate the tremendous capabilities of the G1000. When purchasing an aircraft equipped with the G1000W, you hopefully received some training, the Pilot's Guide and a CD of the G1000 trainer. Our manual combined with their trainer is the best combination for learning the unit while on the ground and not being distracted by the noise and interruptions inherent with flight.

I. Introduction
A. GPS Terms

Active Waypoint - The waypoint you will reach next. In the Direct-To mode it is identified with an " ". In the Flight Plan mode it is identified with " ". In either case the course line to it is colored magenta.

Airport Identifiers - For airports in the contiguous U.S., with the airport identifier containing all letters it will begin with a "K". If the identifier contains a number the "K" prefix is not used. Two-letter prefixes are used in the noncontiguous U.S.: "PA", "PF", "PO" and "PP" are used in Alaska, "PH" in Hawaii, "TJ" in Puerto Rico and "TI" in the Virgin Islands. "C" is used in Canada. For all other airports the identifier in the database appears as it is charted. (Zurich-LSZH).

Data Bases - There are many data bases used with the G1000W: Expanded Basemap, Terrain, Airport Terrain, Obstacle, SafeTaxi™ and FliteCharts™ . The Aviation data base is updated every 28 days. See the G1000 Pilot's Guide, Appendix A for more information. **Direct To Operation** - The G1000W will give you track, ground speed, ETE, and all other functions.

Flight Plan Operation - This mode provides you with track, ground speed, and ETE. It will also sequence to the next waypoint automatically. One advantage of operating in the Flight Plan mode is you can easily go to any waypoint in the flight plan even if it is behind you, such as returning to the originating airport.

Hot Spots - This feature is used in conjunction with the SafeTaxi™ feature. When viewing in SafeTaxi™ any "Hot Spots" appear as a red circle on the diagram to alert you to an area that history has show needs special attention to avoid any potential conflicts and problems. Activate the cursor and use the panning feature to highlight the spot and a description of the common problem appears.

Leg Mode - Most operations are carried out in the Leg Mode where the G1000 determines the course to the active waypoint and the GPS will automatically sequence to the next waypoint. If you are navigating on a flight plan in the Leg Mode, CDI sensitivity and RAIM protection will automatically sequence to Terminal and Approach status at the appropriate time (see next page).

LNAV - Lateral Navigation.

LNAV/VNAV - stands for Lateral Navigation with Vertical Guidance.

LNAV+V - Lateral Navigation with Advisory Vertical Guidance. This Garmin term does not appear on the approach chart but only when selecting the approach on the unit. The advisory descent angle reaches the MDA over the threshold. It may be better for your situation to descend faster to the MDA and fly there until reaching the MAP sans the old VOR and NDB approaches. This technique may result in a better opportunity to land when the runway is sighted.

LPV - stands for Localizer-Precision with Vertical Guidance.

OBS Mode - While in the OBS Mode the G1000W will not automatically sequence to the next waypoint nor will it define the desired course. Instead, the pilot determines the desired course by manually setting the CDI. The Desired Track (DTK) is defined by the active waypoint and the CDI setting. The OBS Mode is required whenever holding, executing a course reversal, executing a missed approach that requires a holding pattern, or proceeding on a SID or STAR that uses a radial of a VOR or a bearing of an NDB as part of the procedure. The G1000 will not go into the Approach status (see next page) if it is in OBS Mode.

I. Introduction
A. GPS Terms (cont'd)

RAIM - Stands for Receiver Autonomous Integrity Monitoring. RAIM is used by the receiver only when WAAS is unavailable. Most likely this will occur only when flying outside WAAS coverage. This high-tech term shows how well the GPS receiver determines the integrity of navigation information by using only GPS signals. The four levels of protection from RAIM, from lowest to highest, are: Oceanic 2.0 nm, En route 2.0 nm, Terminal 1.0 nm, and Non-Precision Approaches at 0.3 nm. The G1000 issues an alert message when RAIM is not available.

If you will be flying outside WAAS coverage and since RAIM outages are usually predictable it is prudent to determine if RAIM will be available for your approach. This can be accomplished by using the G1000 or during your weather briefing with FSS.

SafeTaxi™ - This feature provides greater map detail on any of the pages that display the navigation view. At the time of this writing, It provides detailed taxiway, runways with numbers, and ramp information at more than 700 airports. PRESS the **DCLTR** Soft Key to remove taxiway markings and airport identification, PRESS **DCLTR-1** Soft Key to remove any VOR station ID and symbol along with intersection names, PRESS **DCLTR-2** Soft Key to remove the runway layout if the airport is not part of the active route structure.

Terminal (TERM) - The GPS will automatically go into TERM (Terminal) status when it gets within 30 NM of the departure or arrival airport. Full scale CDI deflection will change from 2 NM full scale deflection to 1.0 NM.

Trend Indicators - A solid magenta line appears in the Airspeed Indicator when the aircraft is accelerating or decelerating, in the Altimeter when the aircraft is climbing or descending and in the Horizontal Situation Indicator when turning left or right. The line is in the direction of change and represents the projected value in 6 seconds. If the turn rate is greater than 4°/second the line will have an arrowhead.

Turn Anticipation - When a waypoint is not a fly-over waypoint, the turn to a new course may begin before reaching the waypoint. This smooths the transition to the next leg.

WAAS - stands for Wide Area Augmentation System. Through the use of ground stations corrections are applied to the timing signals and thus the accuracy of the receiver. This results in ILS type minimums if the airport environment supports them. A pseudo glide slope, termed glide path, is also generated for the GPS approaches which eliminates step-down procedures during final approach.

Waypoint - Any point you can navigate to. A waypoint can be defined as an airport, intersection, VOR, NDB, or even a user defined geographical point. Although you may specify a waypoint referencing a VOR, radial, and distance, all waypoints stored in the G1000 are defined by latitude and longitude.

Waypoint alerting is the G1000's way to tell you that the aircraft is getting close to the next active waypoint. Approximately 20 seconds before arrival at the point where a turn should be started, the message **"NEXT DTK XXX°"** will start to flash followed by **"TURN TO XXX°"** in the Navigation Status Bar of the PFD.

B. G1000 MFD Architecture

This listing is a compilation of the main page groups and their pages along with the ⏏ Soft Keys available.

MAP
- 1. Navigation Map
  - MAP
  - DCLTR
  - SHW CHRT
- 2. Traffic Map
  - STANDBY
  - OPERATE
  - TEST
  - ALT MODE
- 3. Stormscope
  - MODE
  - VIEW
  - CLEAR
- 4. Weather Data Link
  - NEXRAD
  - ECHO TOP
  - CLD TOP
  - LTNG
  - CELL MOV
  - SIG/AIR
  - METAR
  - LEGEND
  - MORE WX
    - SFC OFF
    - FRZ LVL
    - WIND OFF
    - COUNTY
    - CYCLONE
    - LEGEND
    - BACK
- 5. Terrain Proximity
  - VIEW

WPT
- 1. Airport Information
  - MAP
  - CHRT
  - INFO
  - DP
  - STAR
  - APR
  - WX
  - NOTAM
- 2. Intersection Information
  - MAP
- 3. NDB Information
  - MAP
- 4. VOR Information
  - MAP
- 5. User WPT Information
  - MAP
  - NEW
  - DELETE
  - RENAME

AUX
- 1. Trip Planning
  - MAP
  - AUTO / MANUAL
  - FLP / WPTS
- 2. Utility
- 3. GPS Status
  - GPS1 / GPS2
  - RAIM/SBAS
- 4. System Setup
  - DFLTS
- 5. XM Information
  - RADIO (XM RADIO)
    - CHNL
    - CATEGORY
    - VOL
    - PRESETS
  - INFO (XM INFORMATION)
    - RADIO
    - LOCK
- 6. System Status
  - LRU
  - ARFRM
  - DBASE
  - ANN TEST

NRST
- 1. Nearest Airports
  - MAP
  - APT
  - RNWY
  - FREQ
  - APR
  - LD APR
  - SHW CHRT
- 2. Nearest Intersections
  - MAP
- 3. Nearest NDB
  - MAP
- 4. Nearest VOR
  - MAP
  - VOR
  - FREQ
- 5. Nearest User WPTS
  - MAP
- 6. Nearest Frequencies
  - MAP
  - ARTCC
  - FSS
  - WX
- 7. Nearest Airspaces
  - MAP
  - ALERTS
  - FREQ

FPL (PRESS FPL)
- 1. Active Flight Plan
  - MAP
  - VIEW
  - CNCL VNV
  - SHW CHRT
- 2. Flight Plan Catalog
  - MAP
  - VIEW

PRESS PROC to view the Procedures menu to gain access to Approaches, Arrivals and Departures.
The **CHKLIST** ⏏ Soft Key is available on all the pages.

C. Using a Different G1000W for the First Time

Whenever you get into a different airplane equipped with a G1000W or have the occasion to use a different G1000W for the first time, take a moment to verify some settings to help alleviate any surprises.

After the unit has gone through its self test, ROTATE the Large FMS Knob on the MFD to select AUX and ROTATE the Small FMS Knob to select Page 4 (System Setup Page).

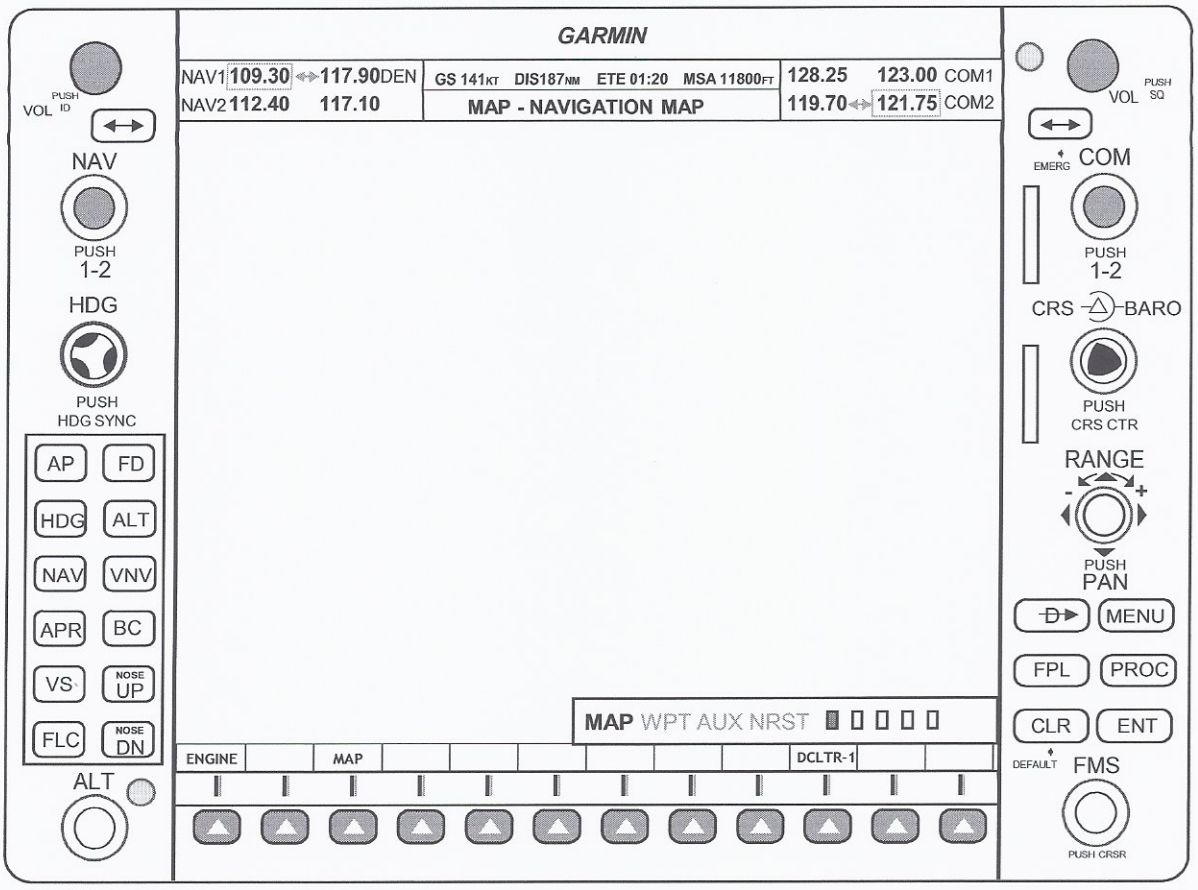
Verify or set the following parameters to your liking:

- TIME FORMAT(Local 12 hour, Local 24 hour or UTC)
- NAV ANGLE (Magnetic or True)
- DISTANCE and SPEED UNITS (Metric or Nautical)
- ALTITUDE and VERTICAL SPEED (Feet or Meters)
- TEMPERATURE (Celsius or Fahrenheit)
- FUEL (Gallons or Liters)
- WEIGHT (Pounds or Kilograms)
- POSITION COORDINATES (Degrees, Minutes, and Hundredths of Minutes, or Degrees, Minutes, Seconds, and tenths of seconds)
- AIRSPACE ALERTS and ALTITUDE BUFFERs
- THE FOUR MFD DATA BAR FIELD VALUES (13 different values)
- GPS CDI (Full scale deflection settings and Auto or Manual capture)
- COM CHANNEL SPACING (25.0 or 8.33 kHz)
- NEAREST AIRPORT RUNWAY CRITERIA (Surface Type and Minimum Length)

ROTATE Small FMS knob to view AUX page 6 (System Status). Here you can verify the status of the G1000W components and check the database dates and their version numbers.

BAROMETRIC PRESSURE (Inches or Hectopascals) is set on the PFD by pressing the **PFD** Soft Key, the **ALT UNIT** Soft Key and then selecting the **IN** or **HPA** Soft Key.

I. Introduction
C. Controls



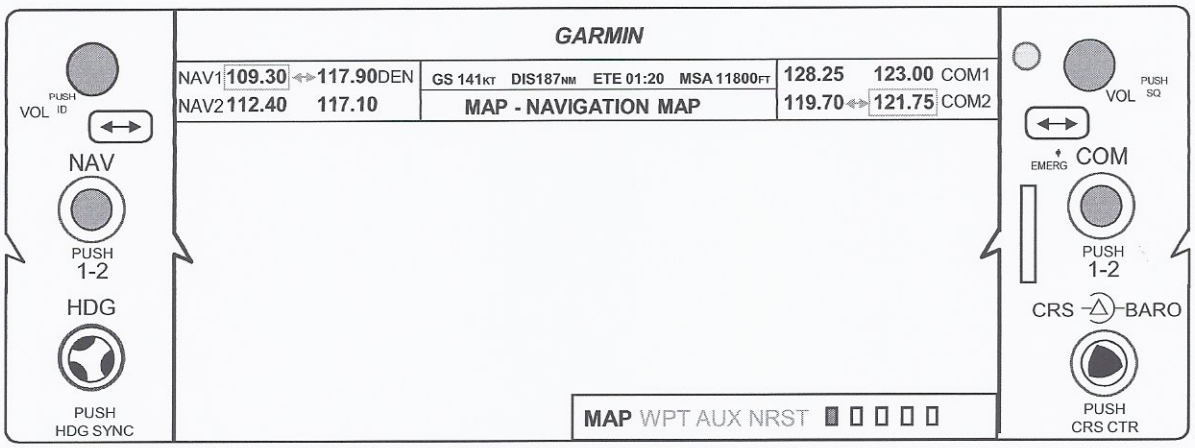
The controls to the left of the screen, from top to bottom, are used to adjust the navigation volumes, listen to the Morse code identifier, swap the active and standby communication frequencies, change the tuning box between radios, adjust the tunable navigation frequency, adjust the heading bug on the HSI, control the AFCS, and adjust the altitude reference bug.

The buttons along the bottom of the screen are called “soft keys”. When pressed, they toggle various functions on/off. Their functions change with different screens.

The controls to the right of the screen, from top to bottom, are used to change the communication radio volume and control the squelch, swap the active and standby communication frequencies, toggle the tuning box between the communication radios, and adjust the tunable communication frequency. The Course/Baro selector’s large knob changes the barometric pressure in the altimeter and the small knob adjusts the course needle when navigating by VOR or OBS mode on GPS. The Joystick, changes the map range when rotated, activates the map pointer when pushed, and moves the map pointer in the direction of displacement. The six keys are used to select navigation functions and clear or accept data. The FMS knobs on the bottom select the various page groups and numbers on the MFD, enter data and activate the cursor.

See the following pages for more in depth explanation of the controls.

I. Introduction
C. Controls - Upper Controls



The left and right edges at the top of the screen display the frequencies for the two navigation radios on the left and the two communication radios on the right. Each radio has an active and standby frequency. The standby frequencies have a cyan box around them which also means they are the tuneable freqs. The active frequencies are the ones towards the center of the screen on the same line as the standby frequency. The active frequency is shown in green when it is receiving a valid signal. It also has the flip-flop arrows between it and its standby freq. The active navigation radio is selectable by pressing the tuning knobs. The navigation source is selected by pressing the **CDI** (△) Soft Key on the PFD. The active communication radio is selectable on the audio panel.

When the navigation radio is tuned to a valid frequency and receiving a valid signal its identifier is displayed to the right of the active frequency.

The top knobs are the volume controls for the displayed frequency. Rotate them to control the volume of the respective radio. Push the Nav Volume knob to turn the Morse code identifier filter on or off. Push the Com Volume knob to turn the automatic squelch on or off.

The Frequency Toggle button, for both Nav and Com radios, swaps the two frequencies for the radio in use. PUSH and HOLD the Com Toggle Button to place the emergency frequency 121.500 in the active radio position.

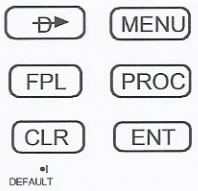
The Dual Nav and Com knobs are used to tune the respective frequency. The small knob changes kHz while the large knob changes MHz. When the small knob is pushed it changes the tuning and active freqs to the other radio.

The Heading Selector controls the heading bug on the PFD. PRESS the Heading Selector to synchronize the heading bug with the current heading.

The Course/Baro Selector consists of a large and small knob. Rotating the small knob causes the Course Deviation Indicator in the HSI to rotate when either VOR/LOC radios are selected. When GPS is selected it rotates the CDI only when in OBS mode. Push the small knob to rotate the Course needle to center the CDI when operating in VOR mode only. Rotate the Large knob to change the altimeter setting on the PFD.

C. Controls - Lower Controls, and Soft Keys

The Joystick serves 3 functions. Rotating it clockwise increases the map range and counterclockwise decreases the range. Pushing the Joystick initiates the panning function by making the pointing arrow appear at the aircraft's present position. Tilting the Joystick up, down, left or right, moves the pointing arrow in the same direction.

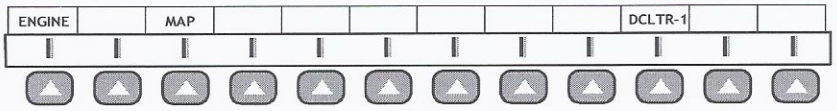


The six keys grouped together give access to flight planning operations, menus, and accepts or cancels data entry.

- Direct-To Key is used to enter or select a waypoint and create a direct course.
- Menu Key provides access to additional features for the displayed page.
- Flight Plan Key gives access to the Active Flight Plan, Flight Plan Catalog, and the Vertical Navigation profile.
- Procedure Key gives access to approaches, Departure Procedures (DP) and Standard Arrival Procedures (STAR). They can be viewed and added to the active flight plan or Direct-To operation.
- The Clear Key cancels an entry. PRESS and HOLD the Clear Key to return the MFD to the Navigation Map Page (NAV 1).
- The Enter Key accepts a menu selection or data entry, and approves or completes an operation.

The two concentric FMS knobs allow selection of the different page groups (Large Knob) and pages within the group (Small Knob) on the MFD. Whenever a page is displayed that allows changes or selections, PRESS the Small FMS Knob to turn the cursor on or off. ROTATE the Small FMS Knob to select the desired character in the highlighted field and ROTATE the Large FMS Knob to move the cursor among fields.

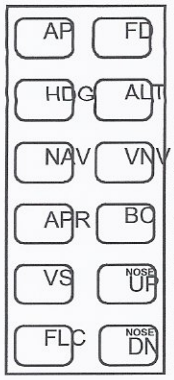
The Altitude Control also consists of two concentric knobs. They are used to change or set the reference altitude that is displayed above the altimeter on the PFD. The Large Knob changes the thousands number and the Small Knob changes the hundreds number.



Soft keys are located along the bottom of the MFD and PFD with the symbol △ . They provide shortcut functions that otherwise would have to be accessed through complex menus. The labels above the keys change with different pages so the same key can have as many functions as there are pages. For example, on the PFD there is a CDI and OBS soft key. Repeated presses of the **CDI** Soft Key cycles the navigation indicator on the HSI through Nav 1, Nav 2 and GPS receivers. The **OBS** Soft Key is visible only when using GPS for navigation. It has no function during VOR/LOC navigation.

D. Controls - AFCS Controls

The following dedicated AFCS keys are located on the lower left side of both the PFD and MFD bezels:



AP Key Engages the autopilot and activates the flight director. Press again to turn autopilot off.
FD Key Activates/deactivates the flight director only. Pressing once turns on the flight director in the default pitch and roll modes. Pressing again deactivates the flight director and removes the Command Bars. If the autopilot is engaged, the key is disabled.
HDG Key Selects/deselects Heading Select Mode.
NAV Key Selects/deselects Navigation Mode. (Track GPS or VOR/LOC.)
APR Key Selects/deselects Approach Mode. (Vertical tracking for ILS and GPS approaches.)
VS Key Selects/deselects Vertical Speed Mode. (Manual vertical speed control.)
FLC Key Selects/deselects Flight Level Change Mode.
ALT Key Selects/deselects Altitude Hold or Altitude Arm Mode.
VNV Key Selects/deselects Vertical Path Tracking Mode for Vertical Navigation flight control.
BC Key Selects/deselects Backcourse Mode.
NOSE UP/NOSE DN Keys Control the mode reference in Pitch Hold, Vertical Speed, and Flight Level. Changes the selected mode by 0.5°, 100 fpm or 1 kt each time it is pressed.
(See Appendixes H, I, J, K and L for other airframe controls.)

Command Bars - The magenta colored Command Bars appear when the Flight Director is in use. This occurs when either the **FD** or **AP** buttons are pressed. The two Command Bars move together and are known as a single-cue system. They constitute a visual presentation of the functions you have programmed (HDG, NAV, ALT, etc.) on the AFCS keys. The aircraft symbol is shown as a two-colored yellow symbol that resembles a flying wing. When the autopilot is on, the aircraft will automatically synchronize with the command bars if it is in the allowable parameters. If the autopilot is off, the pilot must control pitch and bank manually. The maximum commanded pitch values are +20° / -15° and the maximum commanded bank angle is 22°. The Command Bars automatically disappear if the pitch exceeds +30° / -20° or the bank exceeds 65°.


Command Bars


Aircraft Symbol

Annunciation - Various annunciators appear at the top of the screen just below the flight plan waypoints, distance and bearing. The 3 boxes from left to right, are Lateral Modes, Autopilot Status and Vertical Modes. Green indicates the function is active and white indicates the function is armed. As the function transitions from armed to active, the annunciation moves from the standby position to the active position, turns green and flashes several times before becoming steady. Should a sensor fail or navigation data is lost a flashing yellow mode annunciator appears for 10 seconds or until the affected mode key is pressed or another mode for that axis is selected. The system begins to automatically roll the wings level or maintain the pitch angle.

Annunciators

Additional Controls

AP DISC Switch - The red autopilot disconnect switch is located on the left grip of the pilot's control wheel. When activated it disengages the autopilot. It also interrupts pitch trim operation. The switch can also be used to acknowledge the autopilot disconnect and mute the associated aural tone.

CWS Button - The Control Wheel Steering button is located on the right grip of the pilot's control wheel. When pressed it allows manual control of the aircraft while the autopilot is engaged. The flight director command bars synchronize with the current pitch and roll as long as it is not in a vertical navigation, glideslope, glide path or roll hold mode. When released, the autopilot normally establishes the flight director's current pitch and roll attitude.

GA Switch - The Go-Around switch is located on the instrument panel above the throttle or on the side of the throttle. When pressed it disengages the autopilot and changes the flight director to a pitch up, wings level attitude. It also activates the missed approach when using GPS or VOR/LOC and a valid frequency has been tuned.

MET Switch - The Manual Electric Trim switch is located on the left grip of the pilot's control wheel, aft of the AP DISC Switch. It is a split switch with a left and right side. The left switch arms the function and the right switch controls the DOWN (forward) and UP (rearward) contacts. The switch can be used to disengage the autopilot and to acknowledge an autopilot disconnect alert to mute the associated aural tone.

D. Controls - AFCS Controls (cont'd)

The various pitch modes, controls and annunciations are:

Function	Control	Annunciation
Pitch Hold - *The default pitch mode. It holds the current* aircraft pitch attitude and may be used to climb or descend to a selected altitude.	(default)	PIT
Selected Altitude Capture - Captures the selected altitude.	(Note 1)	ALTS
Altitude Hold - Holds the current altitude.	**ALT** Key	ALT nnnnn FT
Vertical Speed - Maintains the current aircraft vertical speed if aircraft performance permits.	**VS** Key	VS nnnn FPM
Flight Level Change - Maintains the current airspeed while the aircraft is climbing or descending to the selected altitude.	**FLC** Key	FLC nnn KT
Vertical Path Tracking - Captures and tracks descent legs of an active vertical profile.	**VNV** Key	VPTH
VNV Target Altitude Capture - Captures the Vertical Navigation (VNV) Target Altitude.	(Note 2)	ALTV
Glidepath - Captures and tracks the WAAS glidepath on approach when WAAS is available.	**APR** Key	GP
Glideslope - Captures and tracks the ILS glideslope on approach.	**APR** Key	GS
Go Around - Automatically disengages the autopilot and commands a 7° pitch up attitude and wings level.	**GA** Switch	GA

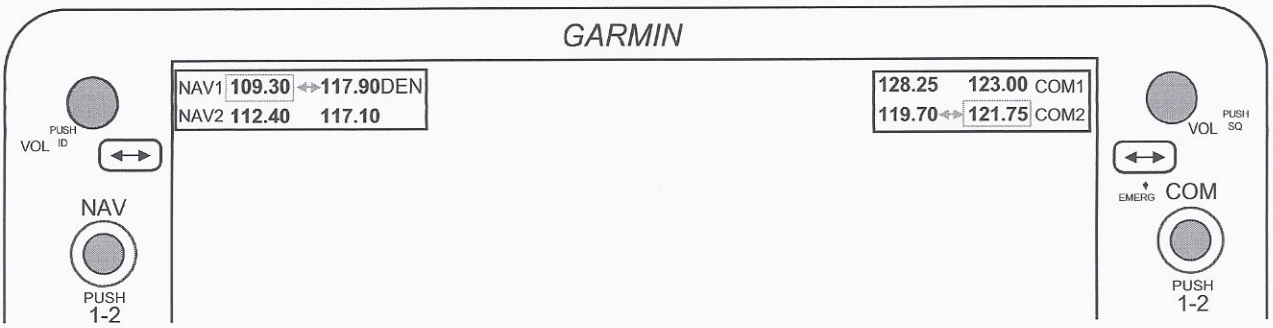
Note 1 - ALTS is automatically armed when PIT, VS, FLC or GA is active and also with VPTH when the selected altitude is to be captured instead of the VNV Target Altitude.

Note 2 - ALTV is automatically armed under VPTH when the VNV Target Altitude is to be captured instead of the selected altitude.

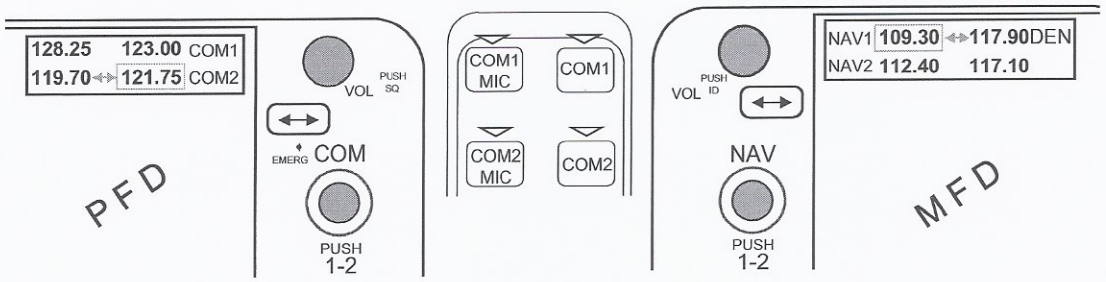
The various roll modes, controls and annunciations are:

Function	Control	Annunciation
Roll Hold - The default roll mode. It holds the current aircraft roll attitude or rolls the wings level, depending on the commanded bank angle.	(default)	ROL
Heading Select - Captures and tracks the Selected Heading.	**HDG** Key	HDG
Navigation - Captures and tracks the selected navigation source (GPS, VOR, LOC). (No glideslope)	**NAV** Key	GPS, VOR, LOC
Backcourse - Captures and tracks the localizer for backcourse approaches.	**BC** Key	BC
Approach - Captures and tracks the selected navigation source (GPS, VOR, LOC). (Glideslope mode arms automatically for an ILS. GS also appears.)	**APR** Key	GPS, VAPP, LOC
Go around - Commands a wings level with a 7° pitch up attitude.	**GA** Switch	GA

A. Tuning Frequencies



Frequency tuning can be accomplished through a number of ways. On both the PFD and the MFD the Navigation frequencies are on the left and the Communication frequencies are on the right. The Com readouts of the left panel and the Nav readouts of the right panel are arranged similar to the old NAVCOM radios as shown below.



Each frequency window has two rows of frequencies and two frequencies on each row. The frequencies to the outside of the display are in the Standby Fields and the ones to the inside of the displays are in the Active Fields. The Number 1 radio frequencies are on the top line and the Number 2 radio frequencies are on the bottom line for both Com and Nav receivers. When a frequency in the Active Field is in use it turns green. The audio for the radios is selected on the audio panel and the navigation source for the CDI is selected by pushing the **CDI** (△) Soft Key, beneath the HSI on the PFD.

Manual Tuning. One frequency on each side has a light blue box around it to signify it is the tuneable frequency. Rotating the Small NAV or COM Knob will change the kHz value and rotating the Large NAV or COM Knob will change the MHz value. PRESS either small knob to change the tuning box to the other radio. The double-headed arrow indicates which frequencies can be swapped. PRESS either toggle key to swap the frequencies where the toggle arrow is located. PRESS and HOLD the Com Toggle Key for about 2 seconds to place the emergency frequency, 121.500, into the Active Position.

Automatic Tuning. When navigating by GPS, loading or activating an ILS or VOR approach automatically places the corresponding navigation frequency in the **Active Field of NAV 1**. If the navigation source is NAV 1 or NAV 2, activating an ILS or VOR approach automatically places the corresponding navigation frequency in the **Standby Field of the Selected CDI NAV Radio.**

A general rule is that any time a frequency is highlighted on any of the following pages, PRESS (ENT) to place that frequency into the tuning box of the appropriate radio, NAV or COM.

Waypoint Pages - Airport Information and VOR Information,
Nearest Pages - Airports, VOR, Frequencies and Airspaces.

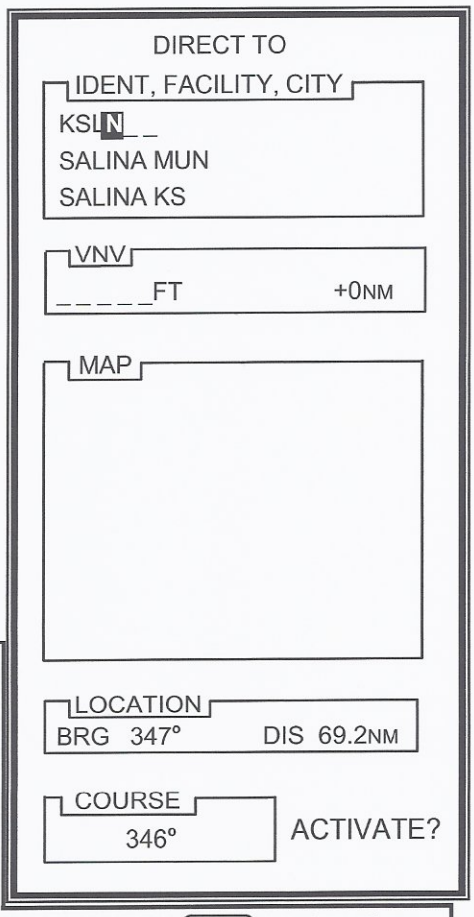
B. Direct To a Waypoint (Spelling Method) (MFD and PFD)

Since the GPS knows where it is, a Direct-To operation does not require you to enter a starting point but only the desired destination. Assume you are at KICT at Wichita, KS and want to go direct to KSLN at Salina, KS which is about 70 nautical miles to the north. (See Page 69 of this manual)

NOTE: The Direct-To window depicted is on the MFD. The window on the PFD displays the same information except it also allows you to enter an altitude and an offset distance.

1. PRESS [D▶] (This opens the Direct To window).
2. ROTATE Small FMS Knob one click clockwise to highlight only the first character to begin the spelling process. The character "K" appears by default.
3. ROTATE Large FMS Knob one click clockwise to move the cursor.
4. ROTATE Small FMS Knob until desired character appears.
5. Continue until identifier is complete as shown.
6. PRESS [ENT] to highlight "ACTIVATE?".
7. PRESS [ENT] again. This closes the "DIRECT TO" window and draws a magenta line in the MFD from your present position to the selected waypoint. It also appears in the inset on the PFD if it is showing.

OR PRESS Small FMS Knob to cancel the operation.



NOTE: While the Direct-To window is displayed, the MAP box shows a map of the waypoint and its scale can be changed by rotating the RANGE joystick.

NOTE: The MFD Data Bar and the PFD Navigation Status Bar at the top of the respective displays will reflect the entered information after step #7.

NOTE: If a flight plan was active prior to the Direct-To operation, the Active Flight Plan information is still displayed with those waypoints. PRESS [FPL] to close the Active Flight Plan window and return to the Map 1 page.

NOTE: You may specify a course to the waypoint. Before Activating, ROTATE Large FMS Knob to highlight the "Course" field. ROTATE Small FMS Knob to select the first two digits and then change them - ROTATE Large FMS Knob to highlight the last digit and ROTATE Small FMS Knob to change it. PRESS [ENT] twice to accept the specified course. A magenta line will be drawn approximately 450NM long from the waypoint. To proceed direct from your present position, PRESS [D▶] and then [ENT] twice.

C. Cancel Direct-To Navigation. (MFD and PFD)

1. PRESS [D▶] then [MENU].
2. With "Cancel Direct-To NAV" highlighted, PRESS [ENT]. If a flight plan is still active, the G1000 resumes navigating the flight plan along the closest leg.

Continued on next page.

D. Direct To a waypoint (Shortcuts)

From a Page that Displays only 1 Waypoint. (MFD only)

If the page displays only 1 waypoint such as the Airport, Intersection, NDB, VOR or User Waypoint Information Page:

1. PRESS [D▶] .
2. PRESS [ENT] twice.

From a Page that Displays Multiple Waypoints. (MFD only)

If the page displays multiple waypoints such as the Nearest Airport, Intersection, NDB, VOR or User Waypoint Page you must first select the desired waypoint:

1. PRESS Small FMS Knob to activate the cursor.
2. If necessary ROTATE Large FMS Knob to highlight the desired waypoint.
3. PRESS [D▶]
4. PRESS [ENT] twice.

Panning from the Map Page. (MFD only)

When the Map Page is displayed:

1. PRESS the Joystick to activate the map pointer.
2. PUSH the Joystick in the direction of the desired waypoint.
3. When the waypoint is highlighted PRESS [D▶] .
4. PRESS [ENT] twice.

NOTE: If the map pointer is not placed on an existing waypoint, PRESS [D▶] then [ENT] twice. A User Waypoint depicted by an orange solid square is created with the label "MAPWPT". If there already is a waypoint that was created by this method, the new one will replace it. This waypoint is stored in the User Waypoint Page.

Direct to a Waypoint using City or Facility Name. (MFD and PFD)

Direct from Wichita Mid Continent Airport (KICT) to Des Moines International Airport (KDSM).

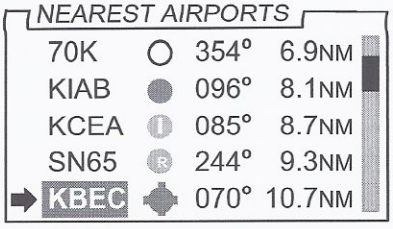
1. PRESS [D▶] to open the Direct-To window. The active waypoint is automatically highlighted. If a waypoint is not highlighted, use the knobs to spell out identifier, name or city.
2. ROTATE Large FMS Knob to highlight the city/state field. (It is the bottom field on the MFD window and the right field on the PFD window.)
3. ROTATE Small FMS Knob to highlight the first character in that field.
4. Continue Rotating Small FMS Knob to select the first character "D".
5. ROTATE Large FMS Knob to move the cursor to the next character.
6. Continue with steps #4 and #5 until the city name appears. **CAUTION!** The first waypoint for that city name may not be the airport. When Des Moines, IA appears, the VOR (DSM) shows first. One more click on the Small FMS Knob displays (DS) NDB which is co-located with FOREM intersection, and one more click displays KDSM the international airport.
7. PRESS [ENT]. This highlights "ACTIVATE?" at the bottom with the flashing cursor.
8. PRESS [ENT] to complete the operation.

NOTE: The same method is used to select the waypoint by the facility name. Instead of highlighting the city/state field in Step #2, highlight the facility name field. It is the middle field on the MFD window and the bottom field on the PFD window.

E. Direct to a Nearest Airport. (From any page)

Should it be necessary to proceed to a nearest airport when not on a flight plan, the 25 nearest airports to your present position (that meet the criteria you selected on Aux Page 4, System Setup) are easily available. We are at the Wichita, Mid-Continent Airport, KICT, and wish to go direct to the Beech Factory *airport, KBEC, which is about 10 miles east.*

1. ROTATE Large FMS Knob fully clockwise to select NRST pages.
2. If necessary ROTATE Small FMS Knob to Page 1.
3. PRESS Small FMS Knob to activate cursor.
4. ROTATE either FMS Knob to highlight KBEC which is the identifier for the Beech Factory airport as shown to the right.
5. PRESS [D▶] then [ENT] twice to activate the operation.
6. PRESS Small FMS Knob to turn the cursor OFF.
7. Return to desired page on MFD.

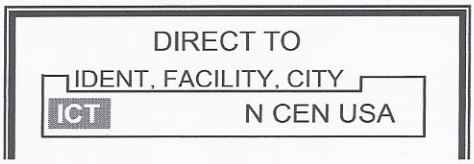


NOTE: When an airport is highlighted in Step #3, the Airport Information, Runways, Frequencies, and Approaches are displayed below the Nearest Airports box. To access the other runways, frequencies or approaches, PRESS the **RNWY, FREQ, or APR** [△] Soft Key, then ROTATE either FMS Knob to highlight the desired field. With a frequency selected, PRESS [ENT] to load the frequency into the Standby window of COM 1. Besides having the bearing to and distance to shown in the box, a white dashed/dotted line is drawn on the map from the airplane to the airport. Once activated, the line changes to magenta

F. Direct to any Waypoint in the Active Flight Plan (MFD or PFD)

When on a flight plan, you can proceed direct to any waypoint in the flight plan by following basically the same procedures as above. We just left Wichita, KICT on a flight plan to Salina, KSLN via the Wichita VOR, ICT, and STONS intersection.

1. From the MAP page 1 on the MFD PRESS [D▶] to view the Direct To window.
2. ROTATE Small FMS Knob one click **counterclockwise** to view the waypoints in the flight plan.
3. ROTATE Large FMS Knob to highlight STONS.
4. PRESS [ENT] to view details of the selected waypoint. At the bottom of the window the cursor is flashing on "ACTIVATE?"
5. PRESS [ENT] to activate the Direct-To operation. The screen returns to MAP Page 1 with STONS shown as the Direct-To waypoint.



OR

1. PRESS [FPL] to view all the waypoints in the flight plan. The active waypoint may be highlighted.
2. If necessary, PRESS Small FMS Knob to activate the cursor.
3. ROTATE Large FMS Knob to highlight the desired waypoint.
4. PRESS [D▶] to view the waypoint description.
5. PRESS [ENT] twice.

NOTE: The symbol ➡ will appear next to STONS on the Active Flight Plan page until passing STONS. Then, the symbol ⌐ will depict going from STONS to KSLN.

III. Flight Plans

The G1000 can store up to 99 numbered flight plans. Additionally each of the stored Flight Plans can be used in reverse and each one can contain up to 31 waypoints. Unlike the Direct-To mode, the Flight Plan Mode requires you to enter an identifier for the starting point. Three methods of creating Flight Plans are the Spelling, the Point-n-Shoot and the Most Recent List method.

A. Creating a Flight Plan (spelling method) (MFD or PFD)

Wichita, KS (KICT) to STONS intersection, to Salina, KS (KSLN).

1. PRESS (FPL). This opens the Active Flight Plan window (FPL 1).
2. ROTATE Small FMS Knob one click clockwise to display the Flight Plan Catalog Page (FPL 2). (Fig 1)
3. PRESS **NEW** (△) Soft Key to open the Stored Flight Plan window.

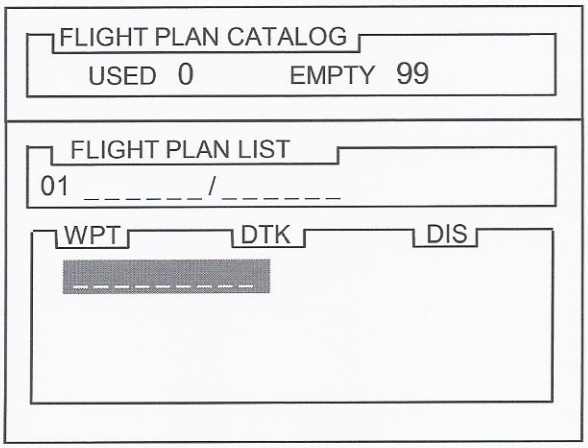


FIG 1

4. ROTATE Small FMS Knob 2 clicks clockwise to display the first character of the first waypoint identifier. (The default is the letter "K".) (Fig 2)
5. ROTATE Large FMS Knob to move the cursor to the next character.
6. ROTATE Small FMS Knob to select the character's value (I).
7. Continue with steps #5 and #6 to spell out the rest of the waypoint identifier. (KICT)
8. PRESS (ENT). The flashing cursor moves to the next line in the Stored Flight Plan window.
9. Repeat steps #4 through #8 to spell the rest of the waypoints in the flight plan.

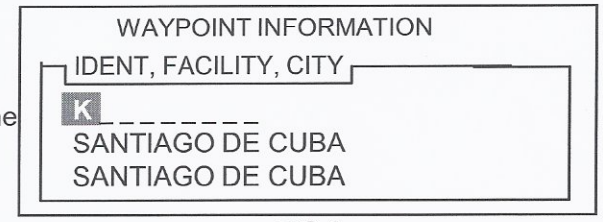


FIG 2

10. When finished, PRESS (MENU) to open the Options Window. (Fig 3)
11. If necessary ROTATE the Large FMS Knob to highlight the **"Store Flight Plan"** option and PRESS (ENT). You are presented with the question shown below.

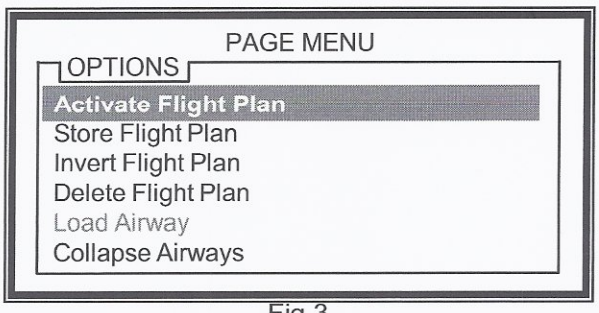
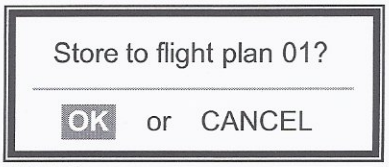


Fig 3



12. PRESS (ENT) to store the flight plan.
13. PRESS the Small FMS Knob to return to the Flight Plan Catalog Page with the flight plan listed as shown to the right in Fig 4.

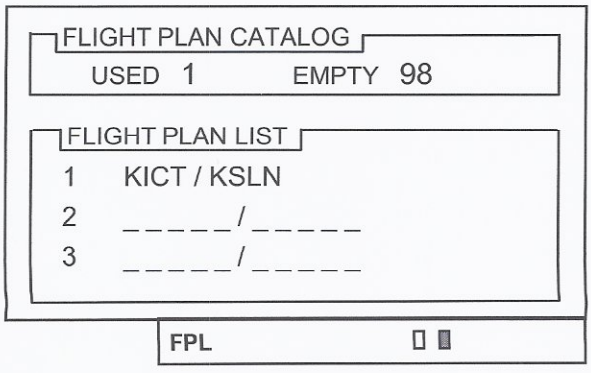


Fig 4

NOTE: If the flight plan is built on the PFD, as soon as the second waypoint is added, the flight plan becomes the active flight plan.

B. Creating a Flight Plan (Point-n-Shoot Method) (MFD only)

The example creates a flight plan from Wichita, KS (KICT), to Emporia KS VOR (EMP), Kansas City VOR (MCI) to Quad Cities International airport (KMLI) in Moline, Illinois.

1. PRESS FPL to open the Active Flight Plan window (FPL 1) from any page.
2. ROTATE Small FMS Knob to open the Flight Plan Catalog Page (FPL 2).
3. PRESS **NEW** Soft Key.
4. PUSH IN the Joystick to turn the map pointer (flashing arrow) on. (It is at KICT airport.)
5. PRESS the **LD WPT** Soft Key on bottom of screen to enter KICT as the first waypoint.
6. PUSH the Joystick in the direction of the next waypoint, in this case to the upper right as the Emporia VOR is northeast.

NOTE: This is called Panning. Even though the next waypoint may not be visible initially, as the pointer is moved, the map will scroll so the pointer remains visible.

NOTE: The map scale may still be changed to view more or less area by ROTATING the joystick.

7. When the identifier for the VOR is highlighted (EMP), PRESS the LD **WPT** Soft Key on the bottom of the screen to enter the waypoint into the flight plan.
8. Repeat steps #6 and #7 above to enter remaining waypoints.
9. When finished, PRESS MENU to open the Page Menu window.
10. If necessary, ROTATE Large FMS Knob to highlight "Store Flight Plan" option.
11. PRESS ENT twice. The flight plan is stored as the next available number.
12. PRESS FPL to deactivate the cursor and return to the original page.

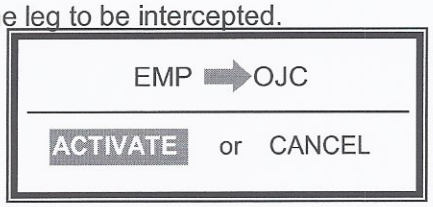
NOTE: To add a flight plan by this method without being located at the initial waypoint, it will be necessary to pan the map to the starting waypoint after turning the map pointer on in step #6 above.

NOTE: If you mistakenly enter a wrong waypoint, ROTATE the Large FMS Knob to highlight it and PRESS CLR then ENT .

C. Activating a Leg in the Active Flight Plan.

You may intercept a flight plan leg at an intermediate point.

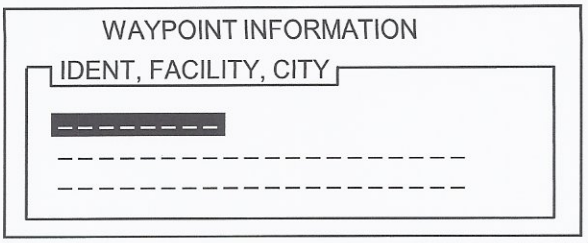
1. PRESS FPL to view the Active Flight Plan.
2. PRESS Small FMS Knob to activate the cursor.
3. ROTATE Large FMS Knob to highlight the waypoint at the end of the leg to be intercepted.
4. PRESS MENU .
5. If necessary ROTATE Large FMS Knob to highlight "Activate Leg".
6. PRESS ENT . A window that describes the leg appears.
7. PRESS ENT to complete the operation.
8. PRESS FPL to return to the Map Page.



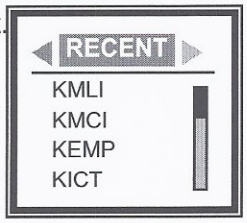
NOTE: An alternate method is: After Step #3 above, PRESS **ACT LEG** Soft Key instead of MENU .

D. Creating a Flight Plan (Most Recent List Method) (MFD only)

This flight plan will go from Quad Cities International airport (KMLI) in Moline, Illinois, Emporia VOR at Emporia, KS (EMP) to Wichita, KS (KICT).

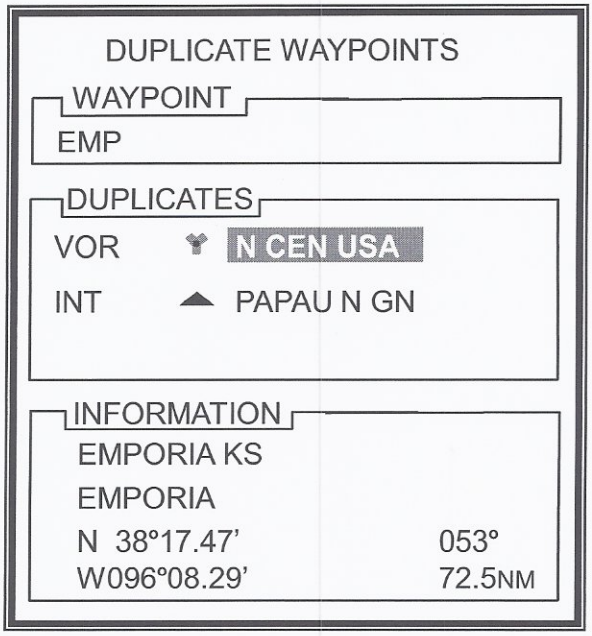


1. PRESS [FPL] to open the Active Flight Plan window (FPL 1) from any page.
2. ROTATE Small FMS Knob to open the Flight Plan Catalog Page (FPL 2).
3. PRESS **NEW** [△] Soft Key.
4. ROTATE Small FMS Knob 1 click **counterclockwise, then 2 clicks clockwise** to view the Recent Waypoint window as shown to the right. (Your list will be different.)



5. ROTATE Large FMS Knob to highlight the desired identifier in the Most Recent List.
6. PRESS [ENT] twice.
7. ROTATE Small FMS Knob 1 click **counterclockwise, then 2 clicks clockwise** to view the Recent Waypoint window again.
8. ROTATE Large FMS Knob to highlight the desired identifier in the Most Recent List.
9. PRESS [ENT] twice.
10. Repeat steps #4 through #9 until all the waypoints are entered.
11. When finished PRESS [MENU] .
12. ROTATE Large FMS Knob to highlight "Store Flight Plan".
13. PRESS [ENT] twice.
14. PRESS [FPL] to return to the Map 1 Page.

NOTE: If there is more than one waypoint in the database with the identifier you choose, the Duplicate Waypoints window opens. Our example of "EMP" resulted in a VOR located in North-Central USA and an intersection in Papau New Guinea. If necessary ROTATE Large FMS Knob to highlight the desired waypoint and PRESS [ENT] .

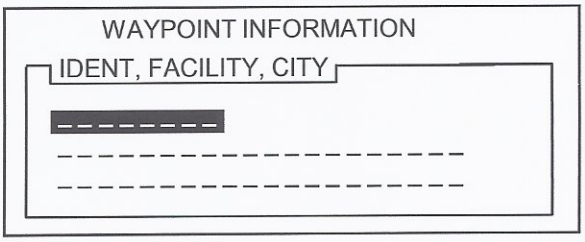


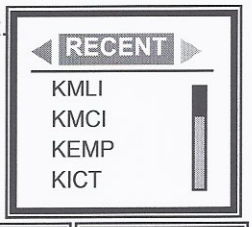
E. Creating a Flight Plan Using Airways (MFD only)

This flight plan will go from Wichita Mid Continent airport (KICT), Victor 12 northeast to Napoleon VOR (ANX), Victor 10 to Kirksville VOR (IRK) direct to Kirksville Regional airport in Missouri (KIRK). The airways don't have to be visible on the MFD. To make them visible, PRESS **MAP** (△) Soft Key then **AIRWAYS** (△) Soft Key. Repeated Presses of the **AIRWAYS** (△) Soft Key cycle through:

Airways ON - Shows both High and Low Airways (Jet Routes and Victor Airways)
Airway LO - Shows only Victor Airways.
Airway HI - Shows only Jet Routes.
} Maximum viewable scale is 500 nm but could be less depending on selection under Map Setup.
Airways - No airways are visible.

1. PRESS (FPL) to open the Active Flight Plan window (FPL 1) from any page.
2. ROTATE Small FMS Knob to open the Flight Plan Catalog Page (FPL 2).
3. PRESS **NEW** (△) Soft Key.
4. ROTATE Small FMS Knob 1 click **counterclockwise, then 2 clicks clockwise** to view the Recent Waypoint window as shown to the right. (Your list will be different.) (You may spell out the waypoint instead of #4 and #5.)
5. ROTATE Large FMS Knob to highlight the desired identifier in the Most Recent List. (KICT) and PRESS (ENT) twice.
6. ROTATE Small and Large Knobs to spell out Wichita VOR (ICT). This is where the airway will be picked up.
7. PRESS (ENT) twice.
8. PRESS (MENU).
9. ROTATE Large FMS Knob to highlight "Load Airway" and PRESS (ENT). A list of airways at the ICT VOR appears as show to the near right.
10. If necessary, ROTATE Large FMS Knob to highlight desired airway (V12).
11. PRESS (ENT). A list of exit waypoints appears as shown at the far right.
12. ROTATE Large FMS Knob to highlight the exit waypoint (ANX). The map expands to display the chosen waypoint.
13. PRESS (ENT) twice. The updated list of waypoints appears.
14. PRESS (MENU).
15. Repeat steps #9 through #13. Choose V10 and IRK.
16. ROTATE Small and Large FMS Knobs to spell out destination (KIRK).
17. PRESS (ENT) to view the flight plan waypoints.





KICT		
ICT	304°	9.2NM
Airway - V12.ANX		
EMP	059°	76.0NM
OJC	059°	73.7NM
ANX	059°	32.3NM
Airway - V10.IRK		
IRK	046°	94.7NM
KIRK	138°	3.3NM

NOTE: Not all of the available waypoints are automatically loaded into the flight plan. Only waypoints that are VORs, needed to define a course change, or ATC compulsory reporting points are loaded. See Optional Airway Waypoints on next page.

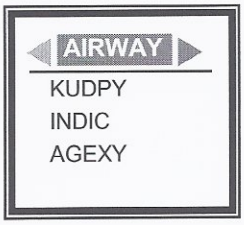
18. PRESS (FPL) to return to Map Page.

Continued on next page

E. Creating a Flight Plan Using Airways (MFD only) (cont'd)

Inserting "optional" airway waypoints.

"Optional" airway waypoints are those that are on the airway but not automatically loaded with an airway. They can be manually added from a list much like FPL, NRST and RECENT. The example will add "INDIC" intersection to the flight plan to Kirksville, MO from the previous page.
With the active flight plan showing:



1. PRESS Small FMS Knob to activate the cursor.
2. ROTATE Large FMS Knob to highlight the airway segment.
3. ROTATE Small FMS Knob **one click counterclockwise** to view the list of waypoints on the airway as shown to the right.
4. ROTATE Large FMS Knob to highlight the waypoint to be inserted.
5. PRESS [ENT] twice. The waypoint appears along the airway.
6. PRESS [FPL] to return to the map. The waypoint will not be stored with the flight plan unless you store the active flight plan after adding the waypoint.

F. Closest Point of a Flight Plan

This feature allows you to place a waypoint in the active flight plan that will be closest to a reference waypoint off to the side of the flight plan track. After the flight plan is activated:

1. PRESS [FPL] to view the active flight plan.
2. PRESS [MENU] to show the Page Menu Options.
3. ROTATE Large Knob to Highlight "Closest Point of FPL".
4. PRESS [ENT]. The Closest Point window appears that allows you to enter the waypoint identifier, facility name or city.
5. ROTATE Small and Large FMS Knobs to spell out the information for the reference waypoint that is off to the side of your planned track. When the identifier is complete, the latitude, longitude, bearing and distance to the closest point along your route is displayed.
6. To create a user waypoint at this location and add it to the flight plan PRESS [ENT]. It appears as a solid orange square. The waypoint will not be stored with the flight plan unless you store the active flight plan after adding the waypoint.

G. Change Views from Wide to Narrow (MFD only)

This feature allows you to change the look of the Flight Plan Page. Instead of the leg data being constrained to the right half of the screen, it can be changed to encompass the top half of the screen to allow access to more information such as Fuel Remaining, ETE, ETA and BRG. This affects ONLY the Active Flight Plan Page until changed back.

1. PRESS [FPL].
2. PRESS **VIEW** [△] Soft Key.
3. PRESS **WIDE** [△] Soft Key.

NOTE: To change the view back, PRESS **NARROW** [△] Soft Key and then **BACK** [△] Soft Key.

H. Along-Track Waypoints

The pilot may elect to modify the active flight plan by adding waypoints along a selected track. The example uses a simple flight plan from KICT, ICT, HUT, KHUT. (Wichita, KS to Hutchinson, KS)

Creating Along-Track Waypoints

1. PRESS [FPL] to display the Active Flight Plan page. (FPL 1 on the MFD.)
2. ROTATE Small FMS Knob to display the Flight Plan Catalog Page (FPL 2).
3. PRESS FMS Knob to activate the cursor.
4. ROTATE Large FMS Knob to highlight the desired flight plan.
5. PRESS **ACTIVE** [△] Soft Key and then PRESS [ENT].
6. PRESS Small FMS Knob to activate the cursor.
7. ROTATE Large FMS Knob to highlight the desired waypoint (HUT).
8. PRESS **ATK OFST** [△] Soft Key. A new field is created next to the waypoint.
9. ROTATE Small FMS Knob to select the number of miles. Clockwise will increase numbers for a positive value (after the waypoint) and counterclockwise will increase numbers for a negative value (before the waypoint). Select 9MN before HUT.
10. PRESS [ENT]. A new waypoint is added to the flight plan as shown to the right. It appears on the map as an orange open square along the track with the offset miles.
11. PRESS Small FMS Knob to deactivate the cursor when finished.

NOTE: Instead of choosing -9NM in the above example, a similar result would occur if you highlight ICT and then choose +13NM. (The distance between HUT and ICT is 22.5NM.)
NOTE: Placing an Along-Track Waypoint cannot be placed after the Final Approach Fix of an approach.
NOTE: The Along-Track Waypoints are not stored, even if the flight plan is saved after the waypoint has been created.

Deleting Along-Track Waypoints

Once entered, an Along-Track Waypoint cannot be modified. If necessary, it may be deleted and then re-entered with the new values.

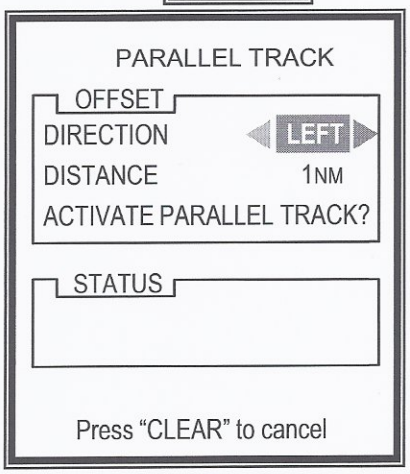
1. With the Active Flight Plan showing, PRESS Small FMS Knob to activate cursor.
2. ROTATE Large FMS Knob to highlight the existing Along-Track Waypoint that is to be deleted.
3. PRESS [CLR] and then PRESS [ENT].

I. Parallel Tracking

The pilot may elect to modify the active flight plan in order to fly a track that is parallel to, but offset from, the existing track. Up to a 99NM offset may be selected. The example uses a simple flight plan from KICT, ICT, HUT, KHUT. (Wichita, KS to Hutchinson, KS)

Creating a Parallel Track

1. PRESS FPL to display the Active Flight Plan page. (FPL 1 on the MFD.)
2. ROTATE Small FMS Knob to display the Flight Plan Catalog Page (FPL 2).
3. PRESS FMS Knob to activate the cursor.
4. ROTATE Large FMS Knob to highlight the desired flight plan.
5. PRESS **ACTIVE** Soft Key and then PRESS ENT .
6. PRESS MENU to view the options available.



7. ROTATE Large FMS Knob to highlight "Parallel Track". PRESS ENT . The Parallel Track window opens with the offset direction "Left" highlighted. (If desired ROTATE Small FMS Knob clockwise to select "Right".)
8. PRESS ENT . The cursor moves to the "Distance" field.
9. ROTATE Small FMS Knob to increase the distance until the desired value is reached. (The example will use 2NM.)
10. PRESS ENT twice to activate the selection. The waypoints in the active flight plan now have a "-p" appended to them. They appear on the map as orange circles along with the original ones.

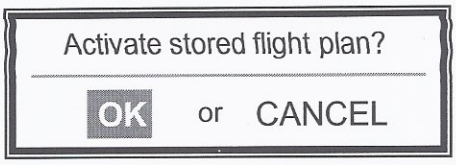
NOTE: If an approach is activated after a Parallel Track is in effect, the Parallel Track waypoints revert to the waypoints stored in the database and a Direct-To track is established to the IAF.
NOTE: Selecting a Parallel Track is not allowed if an approach leg has become active, the Initial Approach Fix has been passed, or a Direct-To is used for the first leg.
NOTE: If you try to activate the Parallel Track feature when outside the parameters, the "Parallel Track Unavailable" message appears in the Status window and no waypoints are added.
NOTE: The Parallel Track Waypoints are not stored, even if the flight plan is saved after the waypoint has been created.
NOTE: During Parallel Track operations, all vertical aspects of the flight plan are inoperative.

Cancel Parallel Track Operation

1. After PRESSing ENT in step #7 above, "ACTIVATE PARALLEL TRACK?" is replaced with "CANCEL PARALLEL TRACK?".
2. PRESS ENT to complete the operation.

J. Activating a Stored Flight Plan

1. PRESS (FPL) to display the Active Flight Plan page. (FPL 1 on the MFD.)
2. ROTATE the Small FMS Knob to display the Flight Plan Catalog Page (FPL 2).
3. PRESS the FMS Knob to activate the cursor.
4. ROTATE the Large FMS Knob to highlight desired flight plan.
5. PRESS **ACTIVE** (△) Soft Key, **OR** PRESS (MENU) twice.
   The confirmation window with "OK" highlighted appears.



6. If correct, PRESS (ENT). The screen returns to FPL 1 Active Flight Plan page and the symbol " ↳ " appears between the first two waypoints. The Desired Track and Cumulative Distance to the waypoints is displayed.

NOTE: If you did not want to activate this flight plan, ROTATE Large FMS Knob to highlight "CANCEL" and PRESS (ENT). The screen returns to the Flight Plan Catalog page (FPL 2).

K. Activating a Stored Flight Plan in Reverse

In order to use a stored flight plan in reverse (Inverted) it must first be chosen by using steps 1 through 4 above.

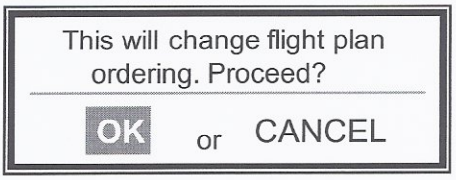
1. PRESS **INVERT** (△) Soft Key.
   The confirmation window with "OK" highlighted appears.
2. PRESS (ENT). The screen returns to FPL 1, Active Flight Plan Page, with the waypoints reversed from its stored order.

NOTE: The stored flight plan remains stored in its original order unless it is Inverted, Activated, and Stored.

NOTE: The flight plan may be stored in reverse from the PFD also.

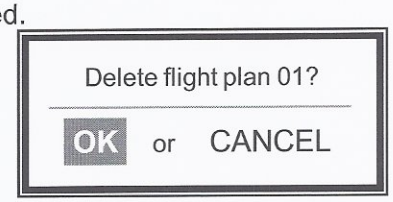
L. Alphabetizing the Stored Flight Plans

1. PRESS (FPL) from any page and ROTATE the Small FMS Knob 1 click clockwise.
2. PRESS (MENU), ROTATE Large FMS Knob, select **"Sort By Comment"** and PRESS (ENT).
3. PRESS (ENT) again to change the flight plan order. This sorts the flight plans in alphabetical order and eliminates any blank spaces that resulted from previously deleted flight plans.



M. Deleting a Numbered Flight Plan

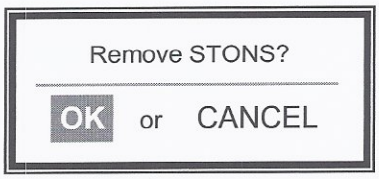
1. PRESS (FPL) on the MFD.
2. ROTATE Small FMS Knob to view Flight Plan Catalog page (FPL 2).
3. PRESS Small FMS Knob to activate cursor.
4. ROTATE Large FMS Knob to highlight the flight plan to be deleted.
5. PRESS **DELETE** (△) Soft Key or (CLR). A dialog box appears to ask if you really want to delete this numbered flight plan.
6. PRESS (ENT). The screen returns to the Flight Plan Catalog page (FPL 2) showing the flight plan has been deleted.
7. PRESS (FPL) to return to the original page.



NOTE: If you decide to not delete the flight plan PUSH (CLR) instead of (ENT) in step #6 above .
NOTE: The active flight plan may not be deleted from the PFD.

N. Deleting a waypoint (Delete STONS)

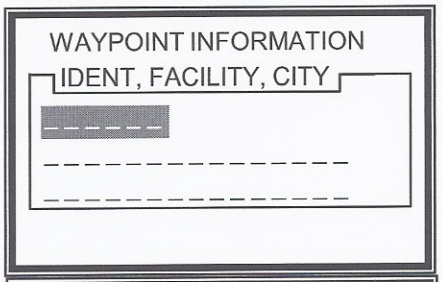
1. PUSH (FPL).
2. ROTATE Small FMS Knob to view Flight Plan Catalog page (FPL 2).
3. PUSH FMS Knob to activate cursor.
4. ROTATE Large FMS Knob to highlight the flight plan that contains the waypoint to be deleted.
5. PUSH **EDIT** (△) Soft Key.
6. ROTATE Large FMS Knob to highlight the waypoint to be deleted (STONS).
7. PUSH (CLR). A dialog box appears to ask if you really want to remove this waypoint.
8. PUSH (ENT). The screen shows the flight plan with the waypoint deleted.
9. PUSH (FPL) to return to the original page.

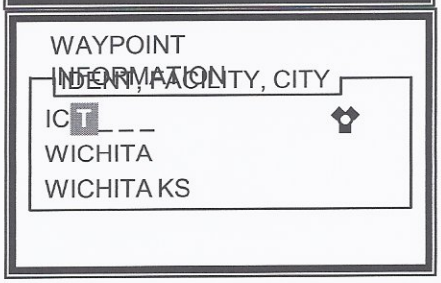


NOTE: If you decide to not delete the waypoint PUSH (CLR) again instead of (ENT) in step #8 above.
NOTE: Deleting a waypoint from the Active Flight Plan will not change how the flight plan is stored unless it is stored after the waypoint is deleted.

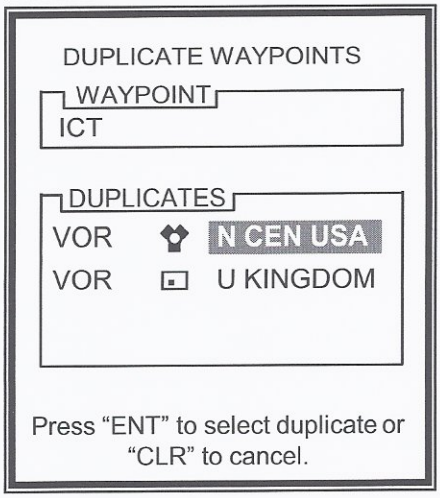
O. Adding a Waypoint (Adding Wichita VOR between KICT and KSLN)

1. PRESS FPL on the MFD.
2. ROTATE Small FMS Knob to view the Flight Plan Catalog page (FPL 2).
3. PRESS the FMS Knob to activate cursor.
4. ROTATE Large Knob to highlight the flight plan to be modified. (KICT / KSLN)
5. PRESS **EDIT** (△) Soft Key. **If the flight plan is active see Note below.**
6. ROTATE Large FMS Knob to highlight the waypoint which will follow the to-be-added waypoint (KSLN).
7. ROTATE the Small FMS Knob to open the Waypoint Information window with the IDENT Field highlighted.
8. ROTATE the Small FMS Knob to select desired character.
9. ROTATE the Large FMS Knob to move the cursor.
10. Continue to use the Large and Small FMS Knobs to DIAL IN the remainder of the waypoint identifier. (ICT for the Wichita VOR) As the last character of the waypoint is entered, the symbol, facility name and city/state appear. Also the small map shows the waypoint centered.
11. PRESS ENT to add the waypoint.





NOTE: If there was another waypoint in the database with ICT as an identifier the Duplicate Waypoints window appears. ROTATE the Large FMS Knob to select the waypoint desired.



12. PRESS ENT. The Stored Flight Plan window appears with the new waypoint (ICT) added between KICT and STONS.
13. PRESS the FMS Knob. This turns the cursor off and the screen returns to the Flight Plan Catalog.
14. PRESS FPL to return to Navigation Map Page.

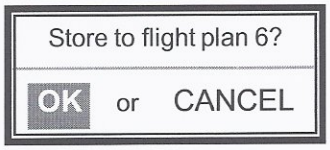
NOTE: This operation can only be done on the PFD if the flight plan is active. It is not necessary to use the MENU function. Just activate the cursor, highlight the waypoint that will follow the to-be-added waypoint and ROTATE Small FMS Knob to begin the entry process. When finished PRESS ENT.

NOTE: If the waypoint is added to the Active Flight Plan it will not change how the flight plan is stored unless you first PRESS MENU, ROTATE the Large FMS Knob to highlight "Store Flight Plan" and PRESS ENT twice. The modified flight plan will be stored under a different number.

P. Storing the Active or Changed Flight Plan

NOTE: This procedure is necessary only if you have added or deleted waypoints, a DP, STAR, Approach, airway or modified the flight plan in any way since activating it.

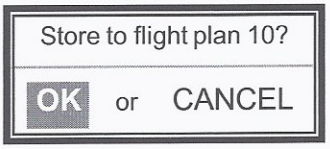
1. PRESS [FPL] to view the Active Flight Plan (FPL 1).
2. PRESS [MENU] to show Flight Plan Options.
3. If necessary ROTATE Large FMS Knob to highlight "Store Flight Plan".
4. PRESS [ENT] to view the confirmation selection.
5. PRESS [ENT] to store the flight plan in the next available numbered space. **OR** ROTATE Large FMS Knob to highlight "CANCEL" and PRESS [ENT].



NOTE: If the change to the original flight plan was to add or activate an approach, the new flight plan is stored with the approach as if it was LOADED but not ACTIVATED. It also will be stored in the Flight Plan List with the same beginning and ending waypoints. You may want to rename the new flight plan. Assume we added the RNAV 35GPS LPV approach at KSLN and stored the flight plan. The Catalog Page now shows 2 flight plans named KICT / KSLN.
NOTE: If the stored flight plan contains an airway, approach, SID or STAR, they will not be retained when the database is updated because waypoints may have changed.

Q. Rename a Stored Flight Plan

1. PRESS [FPL] then ROTATE Small FMS Knob to Flight Plan Catalog Page (FPL 2).
2. PRESS FMS Knob to activate cursor and ROTATE Large FMS Knob to highlight the flight plan to be renamed.
3. PRESS **EDIT** [△] Soft Key. This displays the Stored Flight Plan with the first waypoint highlighted.
4. ROTATE Large FMS Knob counterclockwise to highlight the flight plan name.
5. ROTATE Small FMS Knob to begin the naming process.
6. ROTATE Small and Large FMS Knobs to spell out the new name (KICT KSLN 2).
7. PRESS [ENT] then the Small FMS knob to deactivate the cursor and return to the Flight Plan Catalog page. The newly named flight plan has been added to the Catalog.



R. Departure Procedures (DP's, formerly SID's)

(See Page 70 of this manual for a map of DP.)

Let's assume we are at the Dallas-Ft Worth airport and want to load the Texoma Nine Departure with the Ardmore Transition. To select and load the DP into the Active Flight Plan (KDFW - KICT) first select the FPL 1 Page.

1. PRESS (PROC).
2. ROTATE Large FMS Knob to highlight "SELECT DEPARTURE".
3. PRESS (ENT) to view available DP's.
4. PRESS **LD DP** (△) Soft Key on the MFD ROTATE either FMS Knob to highlight "**TEX9**" and PRESS (ENT).
   A window appears for you to select the desired Transition.

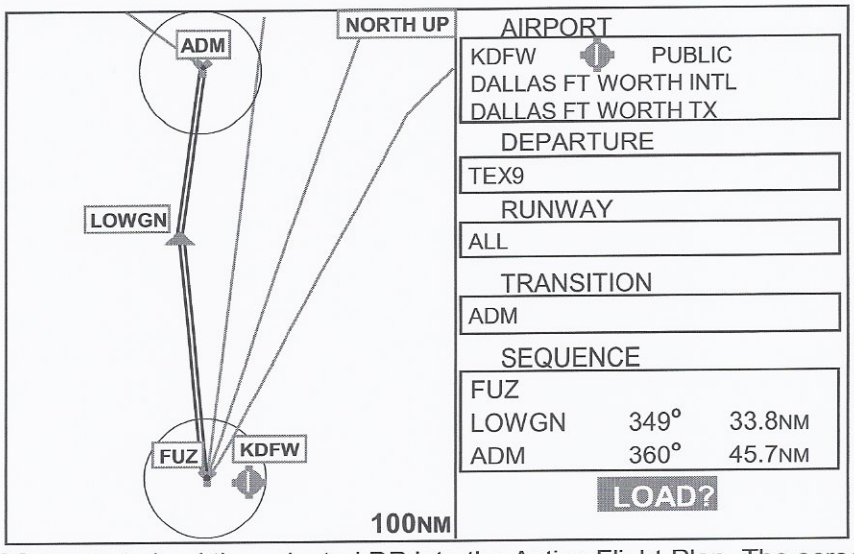
DEPARTURE

JASPA2
JPOOL3
KING5
LOWGN2
NELYN2
NOBLY2
PODDE3
SLOTT2
SOLDO2
TEX9

TRANSITION

ADM
BLECO
EAKER
GRABE
IRW
MLC
OKM
ROLLS
TUL
ZEMMA

5. If necessary ROTATE either FMS Knob to highlight "**ADM**" and PRESS (ENT). Cursor highlights **"LOAD?"** and the DP waypoints are shown in the "SEQUENCE" box. The departure is depicted on the map.



6. PRESS (ENT) to load the selected DP into the Active Flight Plan. The screen reverts to FPL 1 and shows the waypoints have been added. **The active leg is from the end of the departure to the destination airport.**
7. PRESS Small FMS Knob to activate the cursor.
8. ROTATE Large FMS Knob to highlight the desired waypoint (FUZ).
9. PRESS (D▶) and PRESS (ENT) twice.
10. PRESS Small FMS Knob to deactivate the cursor and return to the Active Flight Plan page.

NOTE: The DP can be stored as part of this Active Flight Plan by PRESSing (MENU), select "Store Flight Plan" and PRESS (ENT) twice. A second KDFW / KICT flight plan is generated. One contains the DP and one does not.
NOTE: Inverting a flight plan that includes a DP will not include the DP as part of the inverted plan.

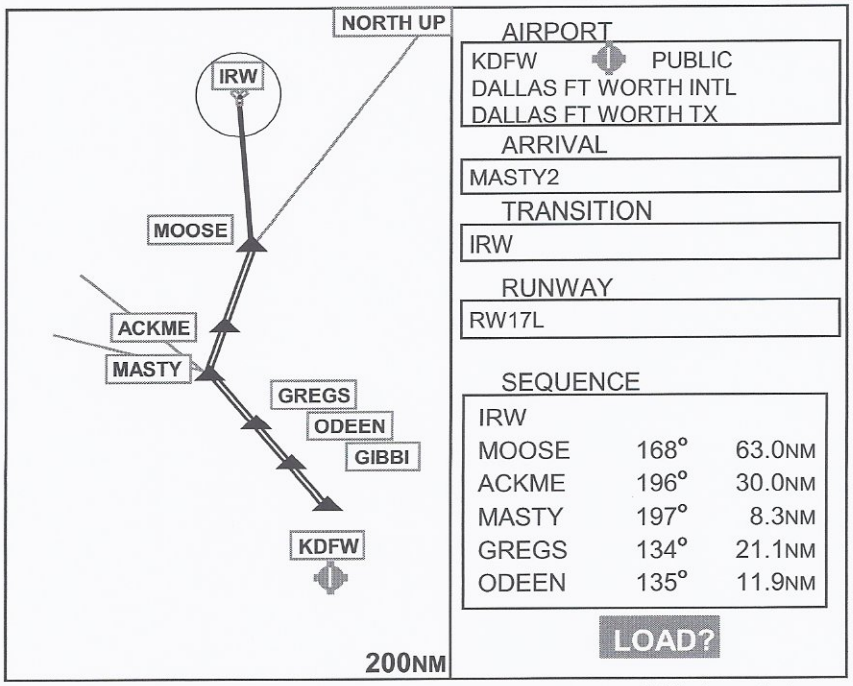
S. Standard Terminal Arrivals (STAR's)

(See Page 70 of this manual for a map of the STAR).

Let's assume we are on a flight from Wichita to the Dallas-Ft Worth airport and want to load the Masty Two Arrival with the Will Rogers Transition and landing to the south on runway 17L. To select and load the STAR into the Active Flight Plan (KICT - KDFW) first select the FPL 1 Page.

1. PRESS (PROC) .
2. ROTATE Large FMS Knob to highlight "SELECT ARRIVAL".
3. PRESS (ENT) to view available STARs.
4. ROTATE either FMS Knob to highlight "**MASTY2"** and PRESS (ENT). A window appears for you to select the desired Transition.
5. ROTATE either FMS Knob to highlight **"IRW"** and PRESS (ENT). Another window opens for you to select the runway.

6. ROTATE either FMS Knob to highlight desired runway (17L) and PRESS (ENT). Cursor highlights **"LOAD?"**. The STAR waypoints are shown in the "SEQUENCE" field and the Arrival is depicted.



7. PRESS (ENT) to load the STAR. The screen reverts to FPL 1 and shows the waypoints have been added. **The active leg is still to KDFW.**

ARRIVAL

BYP5
CQY6
DUMPY2
JAGGO2
JEN8
JONEZ4
JUMBO2
MASTY2
UKW8
WILBR3

TRANSITION

HYDES
IRW
SPS
TUL

RUNWAY

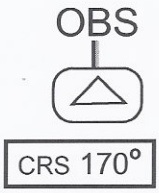
RW13L
RW13R
RW17C
RW17L
RW17R
RW18L
RW18R
RW31L
RW31R
4235C

NOTE: To proceed to any STAR waypoint, from the FPL 1 page, PRESS the FMS knob to activate the cursor. ROTATE the Large FMS Knob to highlight the desired waypoint, PRESS (D▶) and then (ENT) twice. PRESS the FMS knob to deactivate the cursor and return to FPL 1, the Active Flight Plan page.
NOTE: The STAR can be stored as part of this Active Flight Plan by PRESSing (MENU), select "Store Flight Plan" and PRESS (ENT) twice. A second KICT / KDFW flight plan is generated. One contains the STAR and one does not.
NOTE: Inverting a flight plan that includes a STAR will not include the STAR as part of the inverted plan.

T. OBS Mode

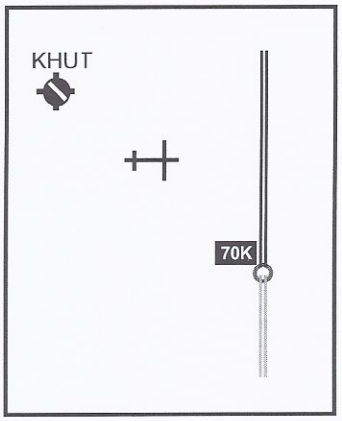
The OBS mode allows you to select a specific course to fly to the active waypoint. When selected, the OBS mode also stops automatically sequencing waypoints and vertical navigation is inhibited. Besides holding, another use is to approach an airport on a course that is very close to the extended centerline of any runway. This can be extremely useful when flying in reduced visibility. **It won't be the exact centerline** because the course line is drawn from the airport reference point.

For our example, we are on a flight plan from Hutchinson, KS (KHUT) to Maize, KS (70K) and the surface wind is 180 at 25 knots. It would be to our advantage to land on runway 17 at the Maize airport.



With 70K as the active waypoint, if necessary, move the heading bug to the present heading and PRESS [HDG] to change the autopilot to Heading Mode.

1. PRESS the **OBS** [△] Soft Key on the PFD. The "OBS" flag appears in the HSI.
2. ROTATE the Course Knob until the "CRS" window shows 170°. As the course knob is rotated the magenta line on both the PFD Inset and the MFD Map also rotate to show the course, which helps visualize the selection.
3. ROTATE HDG Knob to change to a more easterly heading to intercept the selected course, north of the airport as shown to the right.
4. Monitor your progress on the PFD's inset or on the MFD map.
5. PRESS [NAV] to arm the Navigation Mode of the autopilot. As the aircraft approaches the selected course, the autopilot will intercept the desired course southbound.
6. PRESS the **OBS** [△] Soft Key again to return to normal navigation.



NOTE: The Navigation Status Bar above the PFD shows distance to the center of the airport. The course and distance information to the airport is now displayed.
NOTE: While in the OBS mode, the desired course may be selected from either the PFD or MFD.

U. Holding

At an Enroute Waypoint

To hold at a waypoint that is not part of an approach or missed approach, use the OBS mode as described above. The holding waypoint must be the active waypoint. Select the course INBOUND to the holding fix. As the waypoint nears, the message "ARRIVING AT WAYPOINT" appears. After the waypoint is reached turn the heading bug to the outbound leg and turn to that heading. (The autopilot may also be used.)The TO/FROM flag on the HSI changes to FROM, the Distance on the PFD begins counting up and the ETE field on the MFD changes to a timer counting up. All the turns must be made manually or with the heading bug. PRESS the **OBS** [△] Soft Key and [NAV] button to return to normal navigation. Reactivate the autopilot if desired.

At a Waypoint that is Part of an Approach Transition

After the aircraft enters the holding pattern, PRESS the **SUSP** [△] Soft Key. The autopilot will continue to fly the holding pattern until the **SUSP** [△] Soft Key is pressed again. The remaining approach procedure will then be followed.

At a Waypoint that is Part of the Published Missed Approach

After the missed approach is executed and the autopilot is reinstated, there is no further pilot input required. The aircraft will fly the holding pattern until the pilot chooses another action.

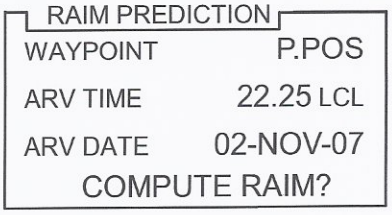
RAIM

The acronym RAIM stands for Receiver Autonomous Integrity Monitoring. In more meaningful terms it means the reception is such that enough satellites and their alignment results in a level of accuracy resulting in a certain level of CDI deflection. It is achieved by a consistency check among the redundant pseudorange measurements.

With the advent of WAAS-enabled receivers, RAIM prediction will normally not be necessary unless operating outside the WAAS coverage. When RAIM is available it ensures that the receiver can calculate position within the specified RAIM protection limits which are: 4 NM for Oceanic, 2 NM for Enroute, 1 NM for Terminal, and 0.3 NM for non-precision approaches. Since some approaches include tighter protection limits, there may be times when RAIM is not available. In those cases the approach will not become active and messages "Approach is not active" and "RAIM not available from FAF to MAP" alert the pilot. RAIM must be available when crossing the FAF or the missed approach procedure must be flown.

V. RAIM Prediction

To Perform a RAIM Prediction:

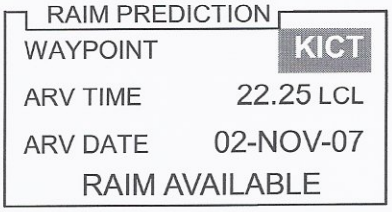


PRESS and HOLD (CLR) to display the Default MAP Page on MFD.

1. ROTATE Large FMS Knob to display AUX pages.
2. ROTATE Small FMS Knob to AUX 3 page. The RAIM Prediction window is in the upper right corner of the display.
3. If necessary PRESS **RAIM** (△) Soft Key and PRESS FMS Knob to activate the cursor over the Present Position in the Waypoint field.
4. ROTATE Small FMS Knob to begin selection process. Type in the waypoint identifier and PRESS (ENT) twice. The cursor moves to Arrival Time field.

Or

4. ROTATE Small FMS Knob counterclockwise to access the FPL, NRST and RECENT waypoint lists. ROTATE Large FMS Knob to highlight desired waypoint, PRESS (ENT) twice.
5. ROTATE Small FMS Knob to begin time selection. Type in the desired time and PRESS (ENT). Cursor moves to Arrival Date field.
6. ROTATE Small FMS Knob to begin date selection. Type in the desired date and PRESS (ENT). Cursor moves to "**COMPUTE RAIM?**".
7. PRESS (ENT). **COMPUTE RAIM?** Is replaced with **RAIM AVAILABLE** or **RAIM NOT AVAILABLE**. If RAIM is not available, changing the time and/or date may change the availability.
8. PRESS and HOLD (CLR) to return to the Default MAP Page.



NOTE: The RAIM computation predicts satellite coverage within +/- 15 minutes of the selected date and time.

NOTE: Since the example shown began with Present Position, the Raim Prediction indicates the applicable waypoint. If an approach was already loaded or activated, the prediction defaults to the destination airport's waypoint.

NOTE: If RAIM is predicted to NOT BE available for the final approach course, the approach will not become active. Also the messages **"APPR INACTV"** (Approach is not active) and **"RAIM NOT AVAILABLE"** (RAIM is not available from FAF to MAP waypoints) will appear.

W. Vertical Navigation

In addition to WAAS approaches with vertical guidance, the WAAS capable system can provide vertical guidance for all descents. It can also be configured to reach an altitude prior to arriving at the waypoint. The example begins with a flight plan from Wichita, KS to Salina, KS via the Wichita VOR, STONS intersection and the Salina VOR as shown on the Active Flight Plan Page (FPL 1) illustrated below. The plan is to be at 7,000 ft when crossing ICT and then establish a profile to cross STONS at 6,000 ft with a 500 ft/min descent and then descend to be at 4,000 ft 5 nm prior to reaching the Salina VOR (SLN).

Enter Desired Altitudes

These altitudes may be entered before takeoff or when airborne.

1. PRESS Small FMS Knob to turn cursor ON.
2. ROTATE Large FMS Knob to highlight the altitude field opposite STONS.
3. ROTATE Small FMS Knob to highlight only the first digit of the field.
4. ROTATE Large and Small FMS Knobs to enter the 6000 ft value and PRESS [ENT].

NOTE: As soon as [ENT] is pressed the "Current VNV Profile" displays 6000 FT at STONS with a Flight Path Angle (FPA) of -2.5° which is the default value.

5. If desired, repeat steps #2 thru 4 to enter 4000 ft in the ALT field for SLN.
6. PRESS Small FMS Knob to turn cursor OFF.

ACTIVE FLIGHT PLAN

KICT / KSLN

	DTK	CUM DIS	ALT
KICT			_____FT
ICT	304°	9.2NM	_____FT
STONS	009°	38.0NM	6000 FT
SLN	344°	81.6NM	4000 FT
KSLN	185°	89.8NM	_____FT

_ _ _ _ _ _ _ _ _

CURRENT VNV PROFILE

ACTIVE VNV WPT	6000FT at STONS		
VS TGT	_____FPM	FPA	-2.5°
VS REQ	_____FPM	TIME TO TOD	__:__
V DEV	____FT		

NOTE: As soon as the aircraft takes off, the VS TGT (Vertical Speed to Target) and Time To TOD (Time to Top of Descent) values appear. A circle also appears along the flight track just prior to STONS intersection and is labeled "TOD" (Top of Descent) so you have a visual reference for when to begin the descent manually. See our page 31 on programming the AFCS to automatically descend. The figures are shown for a ground speed of 100 kts.

CURRENT VNV PROFILE

ACTIVE VNV WPT	6000FT at STONS		
VS TGT	-442 FPM	FPA	-2.5°
VS REQ	_____FPM	TIME TO TOD	19:59
V DEV	____FT		

NOTE: If the autopilot is not on when reaching 7,000 ft, PRESS [AP] to engage the autopilot, PRESS [NAV] to follow the GPS Track and PRESS [ALT] to hold altitude at 7,000 ft. The annunciators above the PFD are shown to the right with the top line (except for the white labels "DIS" and "BRG") are colored magenta and the values in the bottom line are all green.

KICT ➡ ICT		DIS 7.3NM	BRG 303°
GPS	AP	ALT 7000FT	

W. Vertical Navigation (cont'd)

Change VS TGT Rate

1. PRESS **VN PROF** (△) Soft Key on the MFD to highlight the "FPM" field.
2. ROTATE Small FMS Knob until desired rate of 500 ft/min appears. (The FPA also changes.)
3. PRESS Small FMS Knob to turn cursor OFF.

CURRENT VNV PROFILE

ACTIVE VNV WPT	6000FT	at	STONS
VS TGT	-500 FPM	FPA	-2.8°
VS REQ	_____FPM	TIME TO TOD	19:59
V DEV	____FT		

NOTE: If a certain FPA is desired, ROTATE Large FMS Knob after Step 1 above to highlight the angle. Then ROTATE Small Knob for desired angle and PRESS Small FMS Knob to turn cursor OFF.

Move the Top of Descent (TOD)

NOTE: The TOD may be moved **ONLY** after the applicable leg is the active leg (magenta).
NOTE: Only 1 offset waypoint is allowed based on the same waypoint.

With the Active Flight Plan Page (FPL 1) showing,

1. PRESS Small FMS Knob to turn cursor ON.
2. ROTATE Large FMS Knob **counterclockwise** to highlight "STONS".
3. PRESS (D▸) button to open the Direct To window.
4. ROTATE Large FMS Knob to highlight the distance field in the VNV window.
5. ROTATE Small Knob **counterclockwise** until the desired offset distance is shown. In the example 10NM is used.
6. PRESS (ENT) twice. The offset waypoint appears on the map as an orange square. The flight plan waypoints have been modified as shown to the right showing the Direct-To operation and the offset waypoint.
7. PRESS Small FMS Knob to turn cursor OFF.

		DTK	CUM DIS	ALT
	KICT			
	ICT	304°	9.2NM	_____FT
	STONS -10NM	009°	5.8NM	6000FT
➡	STONS	009°	15.8NM	6000FT
	SLN	344°	81.6NM	4000FT
	KSLN	185°	89.8NM	_____FT
	_____			

NOTE: The Navigation Status Box and the AFCS Status Box continue to show the Direct-To status, Distance and Bearing to the original waypoint (STONS) along with the programmed AFCS functions.

D▸ STONS	DIS 15.8NM	BRG 009°	
GPS	AP	ALT 7000FT	

NOTE: The Current VNAV PROFILE window shows the Active VNV Wpt as STONS -10NM and the FPA has reverted to the default setting of -2.5°. It may be changed as shown at the top of this page. Additionally, the "Time To TOD" has filled in. A small orange square has been placed on the active leg with the -10 label to depict the Bottom of Descent (BOD) point "□ -10". In effect, the BOD point is the same as STONS -10NM. The TOD circle has moved accordingly. (See next page to change the BOD value.)

CURRENT VNV PROFILE

ACTIVE VNV WPT	6000FT	at	STONS -10NM
VS TGT	-442 FPM	FPA	-2.5°
VS REQ	_____FPM	TIME TO TOD	19:59
V DEV	____FT		

W. Vertical Navigation (cont'd)

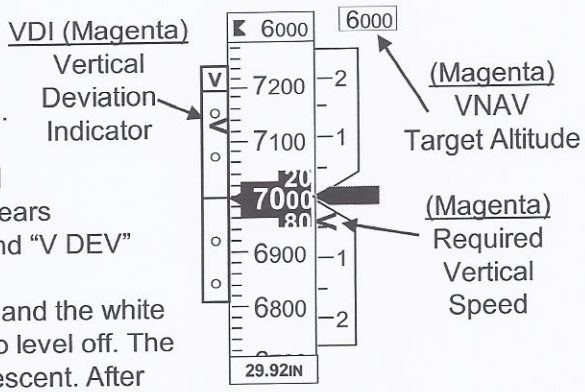
Program the AFCS for Descent

NOTE: In order for the autopilot to capture and track the defined vertical profile, two things are necessary: First, the Selected Altitude must be below the current altitude, and second, the VNAV button must be pressed within 5 minutes from the TOD. The order is not important. If both are not accomplished, the "VPTH" and the TOD alert messages will appear flashing in white which tells you something is wrong.

1. ROTATE the ALT knobs until "6000" is displayed above the altimeter.
2. PRESS [VNV] to program the AFCS. The white "VPTH" message appears next to 7000 FT in the AFCS Status Box on the PFD.

D▶ STONS	DIS 15.8NM	BRG 009°	
GPS	AP	ALT 7000FT	VPTH

When the white message "TOD within 1 minute" appears flashing, the Vertical Deviation Indicator (VDI) appears on the left side of the altimeter. It is a single, magenta chevron. Additionally, in the VSI, a single magenta chevron appears to indicate the rate of descent required for the programmed descent. The VNAV Target Altitude (6000 in this case) appears in a box at the top of the scale. The values for "VS REQ" and "V DEV" in the VNV Profile appear also.



When the TOD point is reached, "ALT" changes to "VPTH" and the white "VPTH" changes to "ALTS" showing that 6000 ft is armed to level off. The Aircraft pitches down to achieve the programmed rate of descent. After the aircraft levels off at 6000 ft the green "VPTH" changes to "ALT" and the VDI, rate of descent chevron and the Target Altitude box all disappear.

Both the TOD and BOD points on the map disappear when passed. The programmed altitudes for the waypoints in the flight plan also disappear when the waypoint is passed.

NOTE: Once a vertical profile has been defined the ONLY ETA source to the TOD is in the Current VNV Profile window. The normal ETE values are to the actual waypoint.

Change the Bottom of Descent (BOD)

Once a vertical profile has been established with a specified BOD, it may be moved by the following steps. The example changes the BOD "STONS -10NM" to "STONS -6NM ". With the Active Flight Plan page showing:

1. PRESS Small FMS Knob to turn cursor ON.
2. ROTATE Large FMS Knob **counterclockwise** to highlight the waypoint to be changed "STONS -10NM".
3. PRESS [D▶] button to open the Direct To window.
4. ROTATE Large FMS Knob to highlight the distance field in the VNV window. (-10NM)
5. ROTATE Small Knob **counterclockwise** until the desired offset distance is shown. (-6NM)
6. PRESS [ENT] twice. The flight plan waypoints have been modified showing the Direct-To operation and the new offset waypoint.
7. PRESS Small FMS Knob to turn cursor OFF.

NOTE: If for some reason the automatic descent did not begin when the TOD is passed, PRESS [VS] and then [NOSE DN] buttons to establish a manual descent. Each push of the [NOSE DN] button equals 100 fpm. As long as the target altitude has been reset the aircraft will level off as desired.

NOTE: If the altitudes in the flight plan are displayed in white as with GPS approaches, the autopilot will NOT automatically establish descents. They will have to be done manually as noted in the NOTE above.

X. User Waypoints

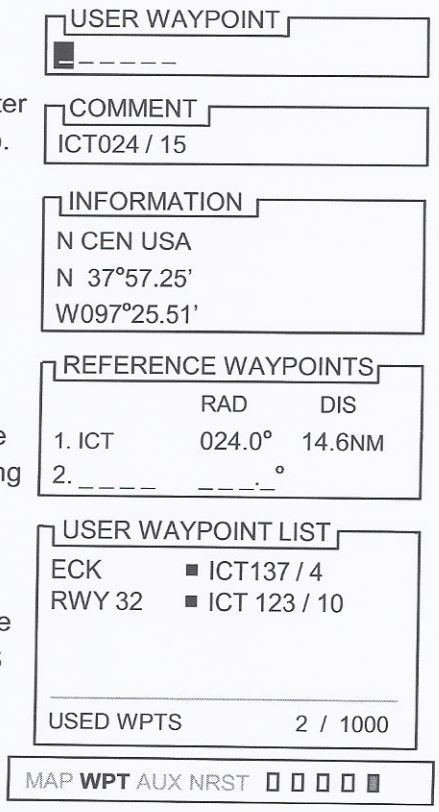
The G1000 allows you to create and store up to 1,000 user-defined waypoints in addition to the airport, VOR, NDB and intersection information furnished in the Jeppesen Database. The identifier may contain up to six characters. Waypoints may be created at Present Position, by latitude and longitude, with reference to an existing waypoint or by using the Panning Arrow. The methods are basically the same. Creating and changing User Waypoints can be done from only the MFD.

To Create a User Waypoint at Present Position

1. PRESS and HOLD (CLR) to select the Navigation Map Page if necessary. (MAP 1)
2. PRESS the Joystick to activate the panning function. The Map Pointer appears and your present position is displayed at the top of the map. As the aircraft continues to fly, the distance and bearing from your present position to the point also appear.

MAP POINTER 0.2NM 173° ELEV 1404FT		N 37°57.25' W097°25.51'

3. PRESS (ENT). The Panning arrow changes to a cross hair, the position window and course line disappear and the User Waypoint page appears as shown to the right. (The data shown in the example is based upon a flight from Wichita. The specific data varies according to the aircraft's position.)
4. ROTATE the Small and Large FMS Knobs to spell out the desired waypoint name.
5. PRESS (ENT). The flashing cursor moves to the Identifier field in the Reference Waypoints box. If desired ROTATE Small and Large FMS Knobs to spell out a different reference waypoint name and PRESS (ENT). Several things occur:
   The flashing cursor moves to the Radial field.
   The waypoint is added to the Waypoint List Alphabetically, and
   The waypoint appears on the map as an orange square.
6. PRESS and HOLD (CLR) to return to the Navigation Map.



NOTE: Whenever the User Waypoint Information page is displayed, you can move the selected waypoint by first highlighting the desired field then ROTATE Small and Large FMS Knobs to spell out a different reference waypoint or Latitude and/or Longitude. The Comment window may be changed to enter more descriptive information. The waypoint is stored alphanumerically by the name (top window).

NOTE: Whenever a waypoint in the User List is highlighted, its Name, Comment, Information and Reference Waypoints are displayed and the map displays the waypoint with its name highlighted in white. PRESS and HOLD (CLR) to have the screen return to its original presentation.

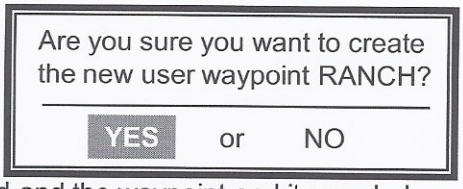
NOTE: If the map pointer is within a special use airspace, a dialog box appears: ROTATE Large FMS Knob to highlight "Create User Waypoint". PRESS (ENT) to open the User Waypoint Information Page.

(Continued on next page)

X. User Waypoints (cont'd)

Create a User Waypoint Not at Present Position - Method 1

1. ROTATE Large FMS Knob to select WPT Pages.
2. ROTATE Small FMS Knob to select User Wpt Information Page (WPT 5 Page).
3. PRESS the FMS Knob to activate the cursor and highlight the name field.
4. ROTATE Small and Large FMS Knobs to spell out desired name.
5. PRESS ENT . A window appears to ask if you want to create the new user waypoint with that name.
6. PRESS ENT to accept, (or ROTATE Large FMS Knob to highlight "NO" and PRESS ENT). The description screen appears with the name field in the Reference Waypoints highlighted and the waypoint and its symbol appear in the List and on the map.
7. ROTATE Large and Small FMS Knobs to change the reference waypoint identifier, highlight and enter the desired radial/distance of the reference waypoint or enter the desired latitude/longitude in the Information window.
8. When finished PRESS and HOLD CLR to return to Map Page.

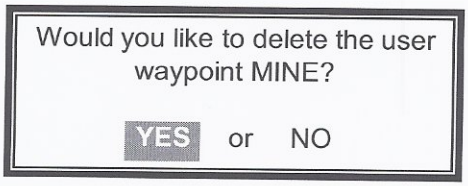


Create a User Waypoint Not at Present Position - Method 2

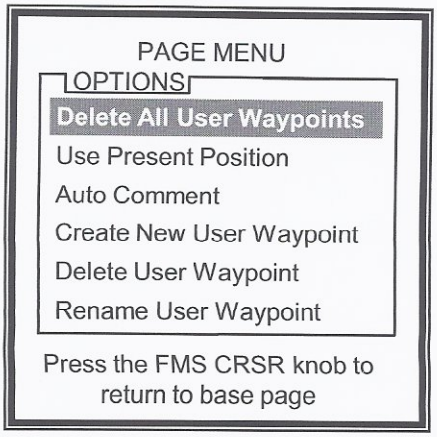
1. ROTATE Large FMS Knob to select WPT Pages.
2. ROTATE Small FMS Knob to select User Wpt Information Page (WPT 5 Page).
3. PRESS the "NEW" Soft Key. This activates the cursor in the first character of the user waypoint field and a crosshair appears on the map.
4. ROTATE Small and Large FMS Knobs to spell out desired name.
5. PRESS ENT . The flashing cursor moves to the identifier in the Reference Waypoints window. ROTATE Small and Large FMS Knobs to change the reference waypoint, highlight and enter the radial and or distance of the reference waypoint or enter the desired latitude/longitude in the Information window.
6. When finished PRESS and HOLD CLR to return to Map Page.

Delete a User Waypoint

1. ROTATE Large FMS Knob to select WPT Pages.
2. ROTATE Small FMS Knob to select User Wpt Information Page (WPT 5 Page).
3. PRESS Small FMS Knob to activate the cursor.
4. ROTATE Large FMS Knob to highlight the waypoint to delete.
5. PRESS CLR to view the question shown at right. PRESS ENT .
6. When finished PRESS and HOLD CLR to return to Map Page.



NOTE: If the user waypoint is being used in a flight plan it cannot be deleted unless the flight plan is deleted first.
NOTE: To delete **ALL** user waypoints, PRESS MENU after step #2 above to view the Page Menu shown at right. With "Delete All User Waypoints" highlighted, PRESS ENT .



Y. VOR Navigation

Although the unit can create a flight plan from Departure point, then VOR to VOR, and finally the destination the unit can also provide guidance using the VOR signals instead of the GPS signals. All the procedures of VOR navigation prior to the arrival of GPS navigation apply. CDI Course selection, TO/FROM flag and manual use of the heading bug all come into play. The course on the MFD still appears in magenta and normal waypoint alerting and turn anticipation messages appear.

This exercise flies a flight plan from Wichita Mid-Continent Airport (KICT) to the Wichita VOR (ICT) to the Hutchinson VOR (HUT) and finally to the Hutchinson Municipal Airport (KHUT). Tune the frequency into the desired radio and move it to the Active position. All course and waypoint selections must be done manually. No vertical navigation is available with the CDI set to a VOR.

PRESS the **CDI** (△) Soft Key until the CDI agrees with the desired NAV radio (VOR1 or VOR2). After takeoff, PUSH (⇹) then (ENT) twice to establish the desired track from the aircraft to the VOR. PUSH the CRS Knob to center the CDI needle with a TO indication and manually turn the aircraft to that heading. Normal waypoint and turn alerting occurs and the active leg is colored magenta. After crossing the Wichita VOR the active waypoint updates as if in GPS mode. However, the TO/FROM flag changes to FROM. The information displayed at the top of the PFD is for the next VOR and the Distance and Time are counting DOWN FROM the next VOR. The FROM indication will change only when the next VOR frequency is tuned and moved to the Active position of the radio in use. All CDI, frequency and altitude changes must be done manually.

NOTE: If the NAV radio is not receiving the tuned VOR station, the CDI portion of the bearing pointer is removed from the HSI.

VOR and ILS/LOC approaches may still be activated although any course reversals, turns and altitude changes must be accomplished manually during VOR approaches. Procedures for the VOR 04 approach at KHUT follow using the autopilot. Begin by flying to the VOR at the appropriate altitude.

NOTE: During an ILS, the CDI will automatically turn to the inbound localize course after the IAF has been passed and the localizer frequency is moved to the active position. Glide Slope tracking is also available.

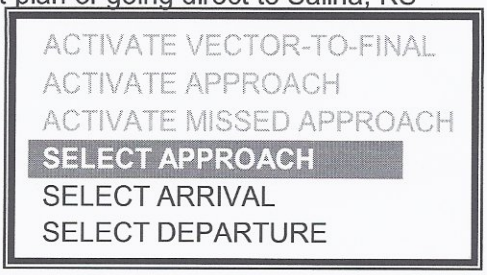
As the VOR (IAF) is approached the Holding Entry, "Next DTK" and Turn To (HDG) messages appear at the appropriate times. ROTATE HDG Knob to the suggested heading or to your desired heading from the chart and PRESS HDG button to change to heading mode. ROTATE CRS Knob to the inbound course as shown in flight plan or approach chart.

After the 1 minute has elapsed the Turn To (HDG) message appears. ROTATE HDG knob to the heading so the aircraft turns to intercept the inbound course. PRESS NAV or APR buttons to have the autopilot intercept and track the inbound course.

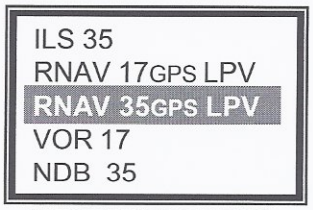
When the VOR is passed, the TO/FROM flag changes to FROM and the **SUSP** (△) Soft Key is replaced by a dimmed **OBS** (△) Soft Key.
When the MAP is reached, the **SUSP** (△) Soft Key reappears along with SUSP in the HSI.

A. GPS Approaches

There are several steps required before the G1000 will provide guidance for an approach. The destination must be an airport with a published approach. The steps are: Select the approach, choose the transition, then activate the approach. Assume you are on a flight plan or going direct to Salina, KS and want to use the GPS approach to runway 35 and OYATI as IAF.



1. From either the MFD or PFD PRESS PROC to view the available options shown to the right.
2. If necessary, ROTATE Large FMS Knob to highlight **"SELECT APPROACH"** and PRESS ENT.
3. ROTATE either FMS Knob to highlight the desired approach (RNAV 35GPS LPV).
4. PRESS ENT. A box appears which allows you your choice of transitions. "VECTORS" is always at the top and is highlighted.
5. ROTATE either FMS Knob to highlight "OYATI iaf".
6. PRESS ENT. The airport, selected approach, transition and Sequence is displayed and "LOAD" is highlighted. This allows you to choose between Loading or Activating the approach.
7. Assume we have clearance for the approach, ROTATE Large FMS Knob to highlight "ACTIVATE?" and PRESS ENT. The active waypoint changes to OYATI, the initial approach fix as depicted by the magenta arrow.

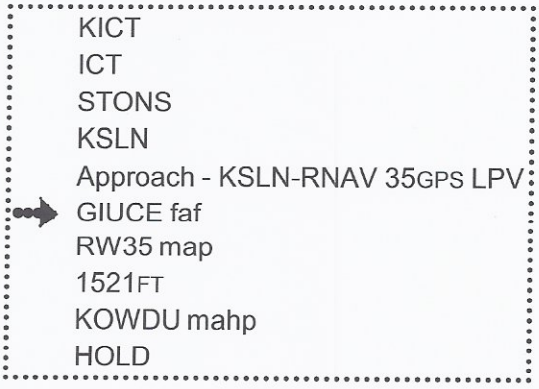


NOTE: Activating **"VECTORS"** deletes the IAF and any turning waypoints. The map shows only an extended centerline from the missed approach point through the final approach fix.

LOADING an approach will add the appropriate waypoints **after** the airport waypoint and does **NOT** change the active waypoint.

ACTIVATING the approach loads the approach **AND** Changes the active waypoint to the first waypoint of the approach procedure. The desired track will be from your present position to this waypoint. See the 3 examples.

VECTORS
Activated



Approach
LOADED

Approach
ACTIVATED

A. GPS Approaches (cont'd)

NOTE: To remove an already loaded approach PRESS (FPL) then PRESS Small FMS Knob to activate the cursor. ROTATE Large FMS Knob to highlight the "Approach" Header. PRESS (CLR) then (ENT) .

OR Activate another approach at the same airport.

NOTE: To activate an already loaded approach PRESS (PROC). "ACTIVATE APPROACH" is highlighted. PRESS (ENT) to activate the approach and change the active waypoint to the iaf for the selected transition.

NOTE: When Loading or Activating an ILS, LOC or VOR approach, the "NOT APPROVED FOR GPS" dialog box appears to alert you as shown to the right. The appropriate VHF frequency is automatically loaded into the active frequency position of NAV 1. During an ILS it is not necessary, to select the CDI on the PFD to display the LOC 1 as it will automatically change when turning onto the final approach course. During a VOR an ALERT in the PFD will prompt the CDI change.

- NOT APPROVED FOR GPS -

GPS guidance is for monitoring only.

Load approach?

YES or NO

NOTE: Some of the waypoints that make up the approach and missed approach are appended by three or four letters. Those meanings are:

iaf - Initial Approach Fix
faf - Final Approach Fix
map - Missed Approach Point
mahp - Missed Approach Holding Point

SEQUENCE

OYATI iaf	011°	6.3NM
DIGBE	265°	
GUYCE faf	355°	14.0NM
RW35 map	355°	18.9NM
1521FT	353°	19.3NM
DUMYE mahp		
HOLD	173°	4.0NM

As the aircraft proceeds to within 30 NM from the destination airport, the CDI sensitivity will automatically tighten and the annunciator "**ENR**" will change to "**TERM**" which is 1.0 NM for full scale deflection. When the aircraft intercepts the Final Approach Course inbound, the CDI sensitivity will automatically change from **"TERM"** to **"LPV", "LNAV", LNAV + V",** or **"L/VNAV"** which describes the approach minima. The Glidepath Indicator also appears next to the altimeter. It looks identical to the Glideslope Indicator except it is colored magenta.

When the Missed Approach waypoint is reached, **"SUSP"** automatically appears in the HSI, the **SUSP** (△) Soft Key replaces the **OBS** (△) Soft Key, the TO/FROM flag changes to FROM and the distance begins counting up.

When reaching the Missed Approach Point, to perform the published missed approach procedure, PUSH the **SUSP** (△) Soft Key on the PFD. The active waypoint changes to the Missed Approach Holding Point (mahp). The ETE field on the top of the MFD screen begins counting up.

CAUTION: Always fly the approach and missed approach as directed on the approach plate.

B. ILS Approach

When the approach is added to the flight plan or Direct-To operation (loaded or activated), the Localizer frequency is automatically loaded into the NAV 1 Active Frequency window but you are still navigating by GPS. A note appears to remind you that it is not a GPS approach. PRESS ENT .

NOTE: If it is necessary to Activate the approach, PRESS PROC , highlight "ACTIVATE APPROACH" and PRESS ENT .

The procedures and events are very similar for either type of course reversal, Holding Pattern or Procedure Turn. The examples show both a Holding Pattern and Procedure Turn course reversal. Normal waypoint and turn alerting occurs throughout. The autopilot is ON in NAV and ALT hold modes.

Holding Pattern

When the IAF is passed: **(Holding Pattern)**

- The appropriate part of the course reversal path changes to magenta and the CDI rotates to the inbound course.
- The flag in the HSI changes to FROM,
- The **OBS** Soft Key is replaced with the **SUSP** Soft Key, and
- The time and distance begin counting up.

PRESS APR to arm Localizer and Glide Slope if not already done.

As the aircraft turns back to intercept the inbound course:

- The CDI changes from GPS (magenta) to LOC1 (green),
- The localizer frequency and IDENT also change to green,
- The Glide Slope indicator appears next to the altimeter, and
- The time and distance begin counting down.

When the FAF is passed:

- the **SUSP** Soft Key is replaced with a dimmed **OBS** Soft Key, and
- The Glide Slope should be captured.

When the MAP is passed:

- The SUSP annunciator in the HSI appears,
- The distance and time begin counting up, and
- The **SUSP** Soft Key replaces the dimmed **OBS** Soft Key.

PRESS the **SUSP** Soft Key to begin your missed approach procedure.

If desired, PRESS the **CDI** Soft Key to return to GPS navigation.

Procedure Turn

When the IAF is passed: **(Procedure Turn)**

- The appropriate part of the course reversal path changes to magenta.
- A 10NM radius circle appears around the IAF to depict the distance restriction.
- The time and distance begin counting up.
- The flag in the HSI changes to FROM.

PRESS APR to arm Localizer and Glide Slope if not already done.

As the aircraft turns to intercept the inbound course:

- The 10NM circle disappears.
- The CDI changes from GPS (magenta) to LOC1 (green) and rotates to the inbound course,
- The localizer frequency and IDENT also change to green,
- The Glide Slope indicator appears next to the altimeter,
- The **OBS** Soft Key dims to indicate that it is unusable, and
- The time and distance begin counting down.

When the FAF is passed:

- The Glideslope should be captured.

When the MAP is passed:

- The SUSP annunciator in the HSI appears,
- The distance and time begin counting up, and
- The **SUSP** Soft Key replaces the dimmed **OBS** Soft Key.

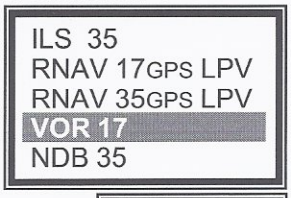
PRESS the **SUSP** Soft Key to begin your missed approach procedure.

If desired, PRESS the **CDI** Soft Key to return to GPS navigation.

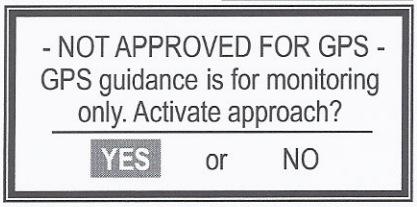
NOTE: The glideslope will not capture unless the localizer has less than a 2 dot deviation on the CDI.

C. DME Arc Transitions

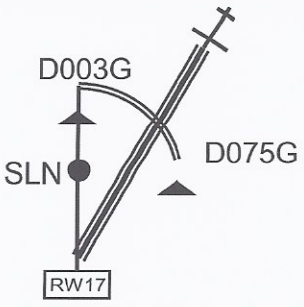
DME Arc waypoints are somewhat unique in how they are described. Assume we are proceeding to KSLN from the NNE on a heading of 217°. Selecting the VOR approach to runway 17 at Salina presents you with a choice of three transitions: Vectors, D075G iaf, D260G iaf and SLN iaf. SLN is the VOR. The other two designated waypoints, prefixed by the letter "D", are on the DME arc . The D075G and D260G mean the 075° and 260° radials respectively. The arc is at 7 miles because "G" is the seventh letter of the alphabet.

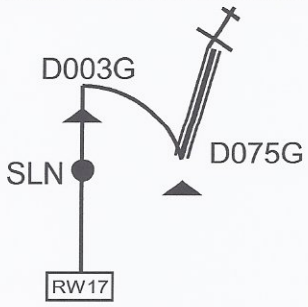


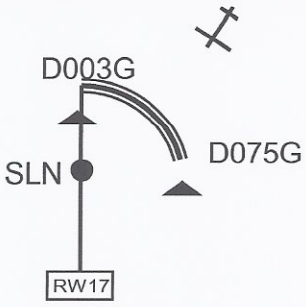
1. With the destination airport (KSLN) as the active waypoint PRESS (PROC).
2. ROTATE the Large FMS Knob to highlight "SELECT APPROACH?".
3. PRESS (ENT) to view the available approaches.
4. If necessary, ROTATE the Large Knob to highlight the desired approach (VOR 17).
5. PRESS (ENT) to bring up the available transitions.
6. If necessary, ROTATE the Large Knob to highlight the desired transition (D075G iaf). The approach waypoints are shown in the "Sequence" box.
7. ROTATE the Large FMS Knob to highlight "ACTIVATE?".
8. PRESS (ENT) . Since it is a VOR approach, the "NOT APPROVED FOR GPS" dialogue box appears.
9. PRESS (ENT) to acknowledge and return to FPL 1 Page.



NOTE: Your original track would have intercepted the DME Arc somewhere between the chosen iaf and the Turning fix as shown in the figure below left. After the transition is activated the G1000 automatically makes D075G the active waypoint, shown below center, which results in an awkward, backtracking turn. If ATC clears you, you can activate the arc and intercept it on your original course as shown below right.

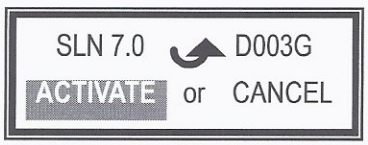






To Activate the DME Arc:

1. PRESS (FPL) to display the approach waypoints.
2. PRESS Small FMS Knob to activate the cursor.
3. ROTATE Large FMS Knob to highlight "DME ARC".
4. PRESS (⊕). The message box at right appears with the cursor flashing over "ACTIVATE?". (If the autopilot is in NAV mode, change to HDG mode.) PRESS (ENT).
5. PRESS the Small FMS Knob to turn the cursor off. The FPL 1 page shows the active waypoint is the turning fix. Continue on present heading.
6. Change back to NAV mode as the CDI begins to center. The autopilot will track the remaining portion of the arc. As you approach the turning fix, waypoint alerting and automatic sequencing will resume.



D. VOR Approach - Using GPS for Transition (Holding Pattern Course Reversal)

NOTE: See following page for Procedure Turn Course Reversals

When the approach is activated in the flight plan or Direct-To operation, the VOR frequency is automatically loaded into the NAV 1 Active Frequency window but the aircraft is still navigating by GPS. A note appears to remind you that it is not a GPS approach. PRESS ENT .

NOTE: When the approach is activated, VNAV is also available until the aircraft turns inbound to the FAF and navigation source is changed to VOR.

The procedures for a Holding Pattern course reversal are shown below. Normal waypoint and turn alerting occurs throughout. The autopilot is ON in NAV and ALT hold modes.

As the aircraft turns to the outbound heading:

- The appropriate part of the course reversal path changes to magenta and the CDI rotates to the inbound course with a TO indication,
- The time and distance begin counting up, and
- The **ADVISORY** Soft Key may begin flashing. If it does, PRESS it to view message shown below. When finished, PRESS **ALERTS** Soft Key to close the window. (This message depends upon the type of leg required in the procedure so it may or may not appear.)

ALERTS
VNV - Unavailable: Unsupported leg type in flight plan.

As the aircraft turns back to intercept the inbound course the time and distance begin counting down.

2NM from the FAF, or as the CDI begins centering, the **ADVISORY** Soft Key begins flashing. PRESS it to view message. When finished, Press **ALERTS** Soft Key to close the window.

ALERTS
SLCT NAV - Select NAV on CDI for approach

- PRESS the **CDI** Soft Key to select VOR1,
- The CDI changes from GPS (magenta) to VOR1 (green) and centers with a TO indication,
- PRESS APR to resume navigating via VOR, and
- The VOR freq and IDENT change to green.

When the FAF is passed:

- The TO/FROM flag changes to FROM,
- Use the VS function on autopilot or manually begin descent to next altitude, and
- The **OBS** Soft Key dims to indicate that it is unusable.

When the MAP is passed:

- The SUSP annunciator in the HSI appears,
- The **SUSP** Soft Key replaces the dimmed **OBS** Soft Key, and
- The distance and time begin counting up.

Land the aircraft or PRESS the **SUSP** Soft Key to begin your missed approach procedure.

E. VOR Approach - Using GPS for Transition (Procedure Turn Course Reversal)

NOTE: See preceding page for Holding Pattern Course Reversals

When the approach is activated in the flight plan or Direct-To operation, the VOR frequency is automatically loaded into the NAV 1 Active Frequency window but the aircraft is still navigating by GPS. A note appears to remind you that it is not a GPS approach. PRESS ENT .

NOTE: When the approach is activated, VNAV is also available until the aircraft turns inbound to the FAF and navigation source is changed to VOR.

The procedures for a Holding Pattern course reversal are shown below. Normal waypoint and turn alerting occurs throughout. The autopilot is ON in NAV and ALT hold modes.

As the aircraft turns to the outbound heading:

- The appropriate part of the course reversal path changes to magenta and the CDI rotates to the outbound course with a FROM indication,
- The time and distance begin counting up, and
- A 10NM circle appears around the IAF to depict the distance restriction.
- The **ADVISORY** Soft Key may begin flashing. If it does, PRESS it to view message shown below. When finished, PRESS **ALERTS** Soft Key to close the window. (This message depends upon the type of leg required in the procedure so it may or may not appear.)

ALERTS
VNV - Unavailable: Unsupported leg type in flight plan.

As the aircraft turns back to intercept the inbound course :

- The time and distance begin counting down,
- The CDI rotates to the inbound course with a TO indication, and
- The 10NM circle disappears.

2NM from the FAF the **ADVISORY** Soft Key begins flashing. PRESS it to view message. When finished, Press **ALERTS** Soft Key to close the window.

ALERTS
SLCT NAV - Select NAV on CDI for approach

- PRESS the **CDI** Soft Key to select VOR1,
- The CDI changes from GPS (magenta) to VOR1 (green),
- PRESS APR to begin navigating via VOR in approach mode,
- If necessary PRESS **CRS** Knob to center the CDI with a TO indication, and
- The VOR freq and IDENT change to green.

When the FAF is passed:

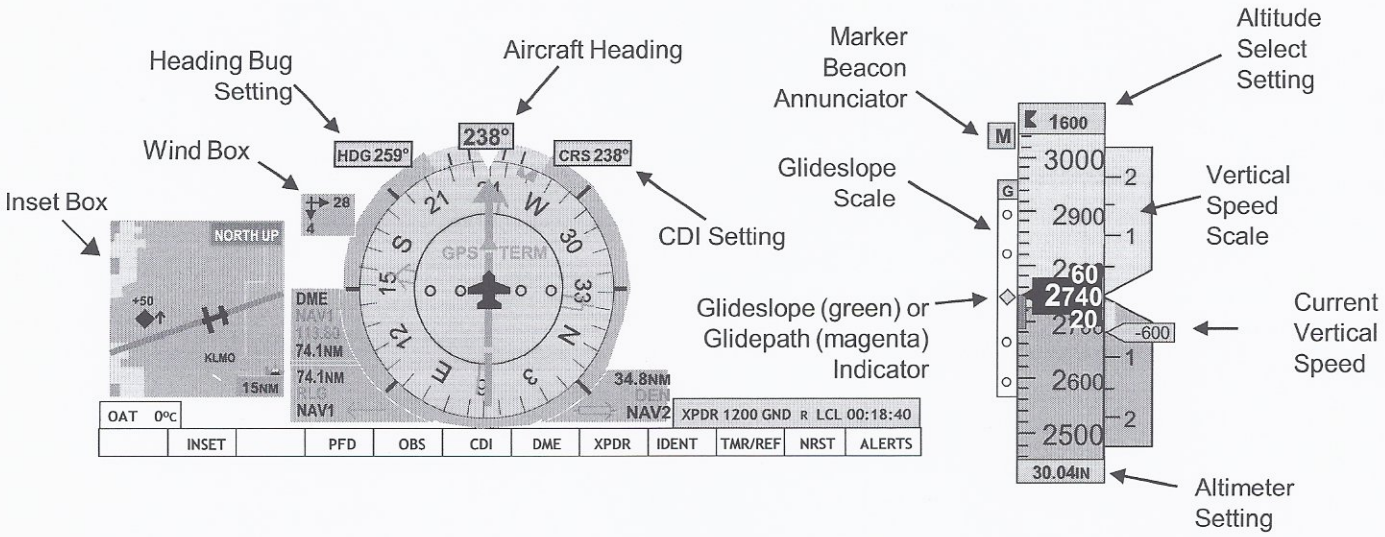
- The TO/FROM flag changes to FROM,
- Use the VS function on autopilot or manually begin descent to next altitude, and
- The **OBS** Soft Key dims to indicate that it is unusable.

When the MAP is passed:

- The SUSP annunciator in the HSI appears,
- The **SUSP** Soft Key replaces the dimmed **OBS** Soft Key, and
- The distance and time begin counting up.

Land the aircraft or PRESS the **SUSP** Soft Key to begin your missed approach procedure.

Soft Keys



INSET - PRESS this Soft Key to view the Soft Keys which allow features to be displayed in the inset box (the box in the lower left corner of the PFD). They are:

OFF - This removes the Inset box from the display.

DCLTR - Repeated presses of this Soft Key toggles between the 4 levels of declutter. See our Page 49 for the declutter levels.

TRAFFIC, TOPO, TERRAIN, STRMSCP, NEXRAD and **XM LTNG** - PRESS each Soft Key to include its features along with their appropriate legend in the Inset box.

PFD - PRESS this Soft Key to view following additional Soft Keys to customize the display.

	DFLTS	WIND	DME	BRG1	HSI FRMT	BRG2		ALT UNIT	STD BARO	BACK	

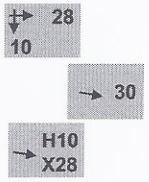
DFLTS - (Defaults) which restores the factory defaults.

WIND - (3 options of graphical display of headwinds/tailwinds and crosswinds).

Option 1 - Shows 2 wind vector arrows with crosswind and headwind/tailwind components.

Option 2 - Shows a single wind vector arrow and speed.

Option 3 - Shows the Headwind/Tailwind and Crosswind components and a single wind vector arrow.



OFF - Removes window from display.

DME - Displays a window next to the HSI which shows the navigation radio, frequency and DME miles.

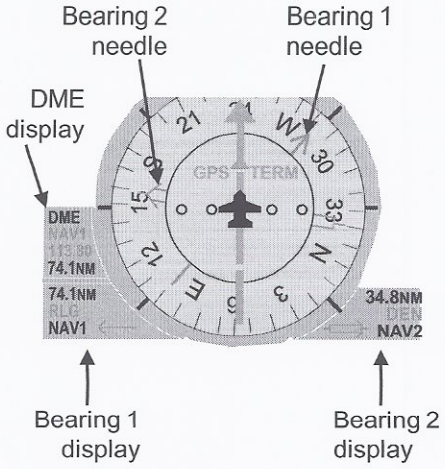
BRG1 - Displays a window below the DME window (shown above) along with a single cyan pointer in the HSI. Repeated presses of the Soft Key toggles between the available navigation sources of NAV 1, GPS, ADF and no display.

HSI FRMT - Choice between the 360° or Arc presentation:

360° - HSI displays the full compass rose.

ARC HSI - Displays only 70° either side of the present heading. (The BRG1 and BRG2 information and windows are not displayed in this view.)

BRG2 - Same as BRG1 above (except references NAV 2) but with a double cyan arrow. The window is located to the right of the HSI.



(continued)

Soft Keys (cont'd)

	DFLTS	WIND	DME	BRG1	HSI FRMT	BRG2		ALT UNIT	STD BARO	BACK	

ALT UNIT - PRESS this Soft Key for other altimeter pressure units.

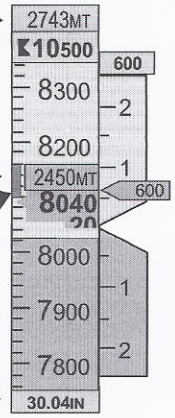
	METERS		IN	HPA		BACK

IN - Inches of Mercury.
HPA - Hectopascals.
} **30.04IN** or **1017HPA**

METERS - Adds altitude readout in meters above the current altitude and Altitude Select values.

Altitude Trend Indicator - Shows projected altitude in 6 seconds.

STD BARO - resets the altimeter setting to standard (29.92 IN or 1013 HPA).

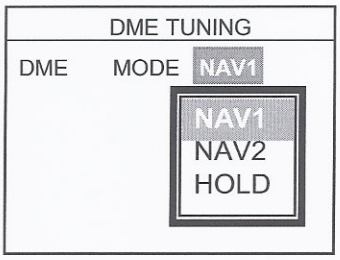


	INSET		PFD	OBS	CDI	DME	XPDR	IDENT	TMR/REF	NRST	ALERTS

OBS - Selects the OBS mode of operation. See our Page 27 for OBS operations.

CDI - Selects the navigation source for the CDI. Repeated presses of the Soft Key cycle between: GPS, VOR1 (or LOC1) and VOR2 (or LOC2).

DME - Opens a window in place of the "ALERT" window in the bottom right corner of the screen to select the DME source.
ROTATE Small FMS Knob to open selection window.
ROTATE Either FMS Knot to highlight choice and PRESS (ENT).
When finished, PRESS Small FMS Knob to turn the cursor OFF and then (CLR) to close the window.



XPDR - PRESS this Soft Key for the Transponder options.

		STBY	ON	ALT	GND	VFR	CODE	IDENT		BACK	ALERTS

STBY - The transponder does not reply to interrogations but new codes can be entered. "STBY" in white appears in the transponder mode field in the bottom right corner of the screen.

ON - This mode allows the transponder to generate Mode A and Mode S replies but Mode C is inhibited. "ON" in green appears in the transponder mode field.

ALT - The transponder replies to all requests for altitude information with pressure altitude information. It is automatically selected when the aircraft becomes airborne. "ALT" appears in green in the transponder mode field.

GND - The transponder does not allow Mode A and Mode C replies. It is normally automatically selected when the aircraft is on the ground. "GND" appears in green in the transponder mode field.

VFR - Selecting this Soft Key changes the transponder code to 1200, the factory default setting. If a VFR code change is required, contact a Garmin-authorized service center. PRESS VFR Soft Key again to restore the previous transponder code. The VFR code "1200" will be displayed in green in the transponder mode field.

CODE - Changes the Soft Keys values to the numbers zero through seven. PRESS the appropriate Soft Keys in sequence to enter the transponder code. If an error is made, PRESS "BACK" soft key to move the selection cursor to the previous digit. Codes may also be entered with the FMS Knobs but not a combination of FMS Knobs and Soft Keys.The selected code appears in green in the transponder mode field.

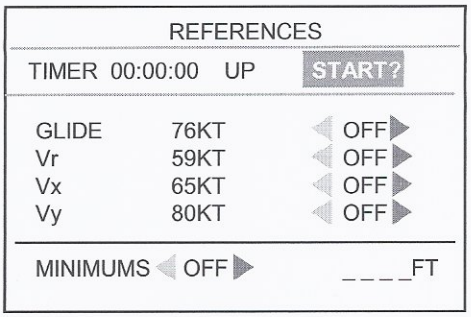
IDENT - Commands the transponder to reply with an ID identification. "IDENT" in green appears in the transponder mode field for 18 seconds.

(continued)

Soft Keys (cont'd)

	INSET		PFD	OBS	CDI	DME	XPDR	IDENT	TMR/REF	NRST	ALERTS

TMR/REF - Opens a window in the lower right corner of the display to set a count up or count down timer and the capability to start it. Also allows you to select certain "V-Speeds" to be displayed as reference "bugs" on the airspeed indicator.



Change to Count Down

1. ROTATE Large FMS Knob to highlight the field.
2. ROTATE Small FMS Knob to view selection.
3. ROTATE Large FMS Knob to highlight "DN" selection.
4. PRESS (ENT) to accept selection. "UP" changes to "DN".

Set Timer

1. ROTATE Large FMS Knob to highlight the time field.
2. ROTATE Small FMS Knob to highlight the first 2 digits (hours).
3. ROTATE Small FMS Knob to select hour value.
4. ROTATE Large FMS Knob to move cursor to minute field.
5. ROTATE Small FMS Knob to select desired minutes.
6. Repeat steps 4 and 5 above to select desired seconds.
7. PRESS (ENT) twice to highlight the "START?" selection.
8. PRESS (ENT) to start the timer. ("START?" changes to "STOP?").

NOTE: If the timer is configured to "count down" and is then started, when it gets to Zero it begins counting back up. This feature shows how long ago Zero was reached. The **"ADVISORY"** (△) Soft Key begins flashing when Zero is reached. PRESS the **ADVISORY** (△) Soft Key to view the message: "TIMER EXPIRD - Timer has expired."

To display a "V-Speed" on the Airspeed Indicator

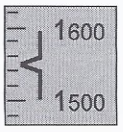
1. ROTATE Large FMS Knob to highlight "OFF" for the "V" speed to be displayed.
2. ROTATE Small FMS Knob in the direction of the highlighted arrow. (The appropriate letter "G", "R", "X", and/or "Y" appears next to the value in the airspeed indicator.)
3. When finished PRESS the **TMR/REF** (△) Soft Key again to close the window.

NOTE: While the "V-Speeds" shown are specific to the airframe, they may be changed to reflect modifications of the airframe such as a STOL kit. Highlight the speed and ROTATE Small FMS Knob until the desired value appears. The changed speed will be followed by an asterisk in the References Box only.

MINIMUMS - PRESS the **TMR/REF** (△) Soft Key to open the References window

1. ROTATE Large FMS Knob to highlight "OFF" in the "MINIMUMS" field.
2. ROTATE Small FMS Knob one click clockwise. "OFF" changes to "BARO".
3. PRESS (ENT) to move cursor to "FT" field.
4. ROTATE Small FMS Knob to set MDA altitude. (MSL setting)
5. PRESS **TMR/REF** (△) Soft Key to close window.

A "BARO MIN" box (This is an MSL altitude.) appears near the bottom on the left side of the altimeter tape when descending to within 2500 feet of the setting. The color of the altitude changes as the altitude is approached: Blue - above 100 ft above the MDA; White - within 100 ft of MDA; and Yellow - when the aircraft reaches MDA. The aural alert "Minimums, Minimums" is also generated at that time. An altitude "bug" appears on the altitude tape once in range.

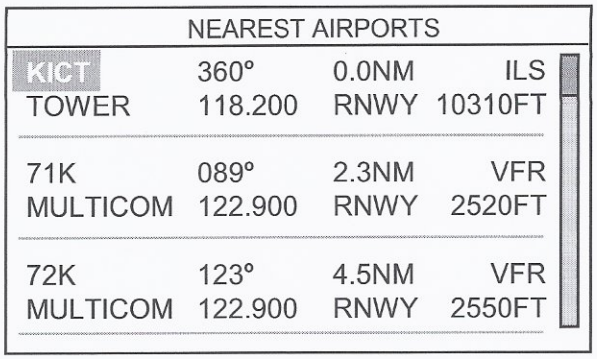


NOTE: The MDA automatically resets to zero when power is removed from the unit.

Soft Keys (cont'd)

	INSET		PFD	OBS	CDI	DME	XPDR	IDENT	TMR/REF	NRST	ALERTS

NRST - PRESS this Soft Key to open the Window to access the nearest 25 airports. Only 3 are shown at once. ROTATE Large FMS Knob to scroll through the list. Only the airport identifier and frequency can be highlighted. Direct-To and Autotuning operations can be accomplished from this window when the identifier field or frequency field is highlighted. PRESS the **NRST** Soft Key again to close the window.



ALERTS - This Soft Key assumes the label of the appropriate alert level (ADVISORY, CAUTION, or WARNING) colored accordingly (White, Yellow, or red). PRESS the Soft Key to open the Alerts window in the lower right corner of the display which can show several messages simultaneously. If necessary ROTATE either FMS knob to scroll through all the alerts.

The appropriate alert level will replace the **ALERTS** Soft Key and flash continuously until the soft key is pressed. This is considered an acknowledgment by the pilot and the label returns to "**ALERTS**". Once the alerts window is open it is closed by pressing the soft key again.

The three levels of alerts are:

ADVISORY - (White) Indicates a message of general information that may or may not require immediate attention. Examples are: **"VNAV Unavailable. Unsupported leg type in flight plan"** or **"ARSPC AHEAD - Airspace ahead - less than 10 minutes."** It will continue to flash until acknowledged by pressing the **ADVISORY** Soft Key.

CAUTION - (Yellow) Indicates an abnormal condition that may require pilot intervention. It is accompanied by a single chime and will continue to flash until it is acknowledged by pressing the **CAUTION** Soft Key. An example is: "**LOW VACUUM**".

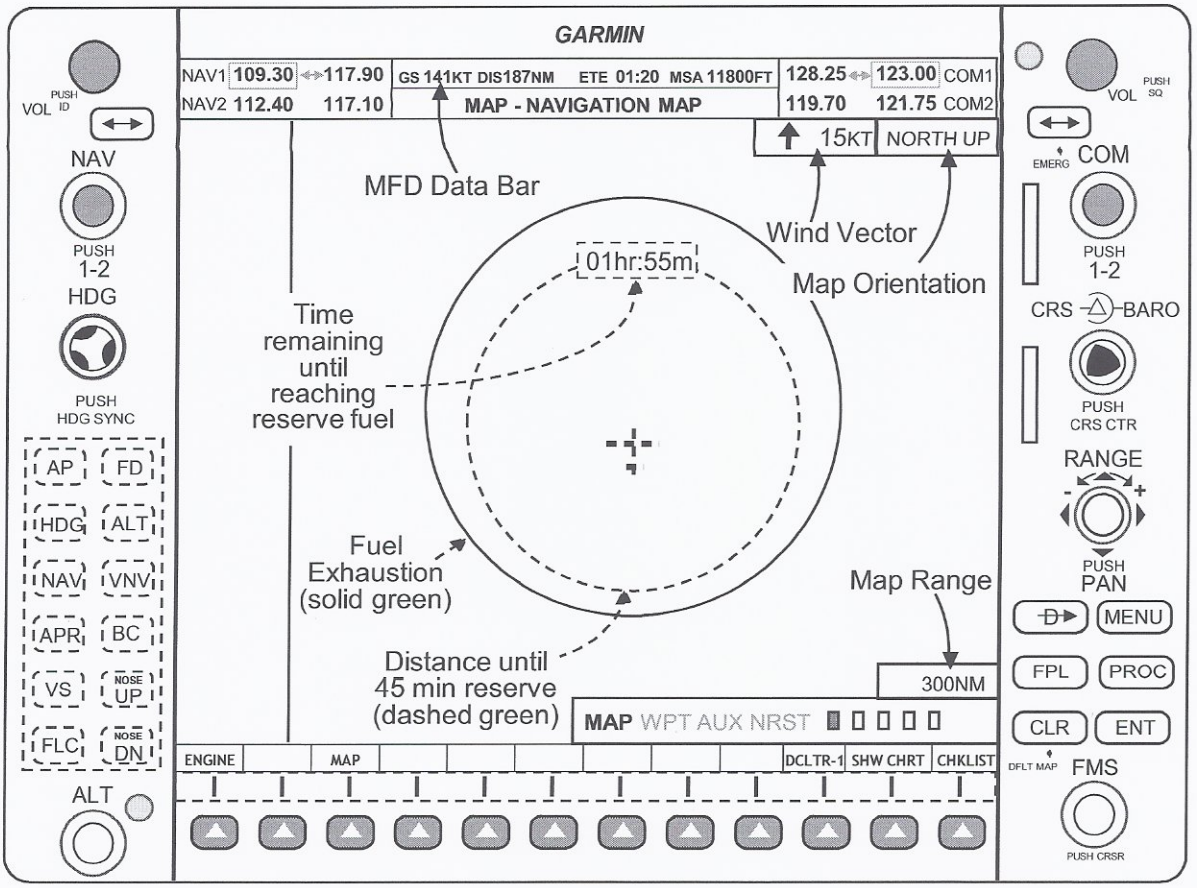
WARNING - (Red) Indicates a time-critical item that requires immediate pilot attention. It is accompanied by a single chime every 2 seconds which will continue until acknowledged by pressing the **WARNING** Soft Key. An example is: "**LOW VOLTS**".

Other alerts such as "TRAFFIC" and "TERRAIN" will appear in the upper part of the screen when conditions warrant.

Refer to Appendix A of the Garmin G1000 Pilot's Guide for Cessna Nav III for more complete information regarding alerts.

Appendix B - MFD Map Pages

MAP Page 1



The 4 fields in the MFD Data Bar Window are user selectable.
To change the fields, select the AUX Page 4, System Setup. The MFD Data Bar Fields are shown in the upper right corner.

1. PRESS Small FMS Knob to activate the cursor.
2. ROTATE Large FMS Knob to move the cursor to the desired field.
3. ROTATE Small FMS Knob to view the field list.
4. ROTATE Large FMS Knob to highlight the desired label.
5. PRESS [ENT]. The cursor moves to the next field. Repeat steps #3, 4 and 5 above. When finished, PRESS Small FMS Knob to turn cursor off.
6. PRESS and HOLD the [CLR] button to return to Map Page 1.

BRG
DIS
DTK
ESA
ETA
ETE
GS
MSA
TAS
TKE
TRK
VSR
XTK

The Map Orientation, Wind Vector, and Fuel Rings are all selectable from the map setup selection in the Map Page Menu covered on the following pages.

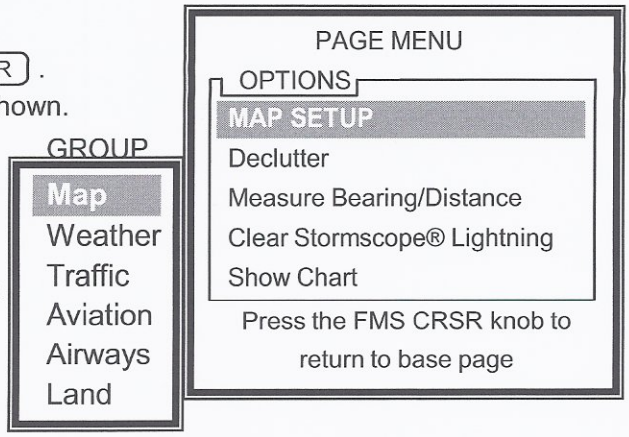
MAP Page 1 - PAGE MENU

Map Setup

A - Map Group

To access the MAP SETUP Page, PRESS and HOLD (CLR).

1. PRESS (MENU) to display the Page Menu window as shown.
2. With **"MAP SETUP"** highlighted, PRESS (ENT) to view the possible selections as shown at right. Only the last-used group shows. To view all the groups as shown, ROTATE Small FMS Knob one click. To change groups, ROTATE Large FMS Knob to highlight the desired group and PRESS (ENT).
3. With **"MAP"** highlighted PRESS (ENT) to view all the changeable features in the map group as shown in the large graphic to the lower right.

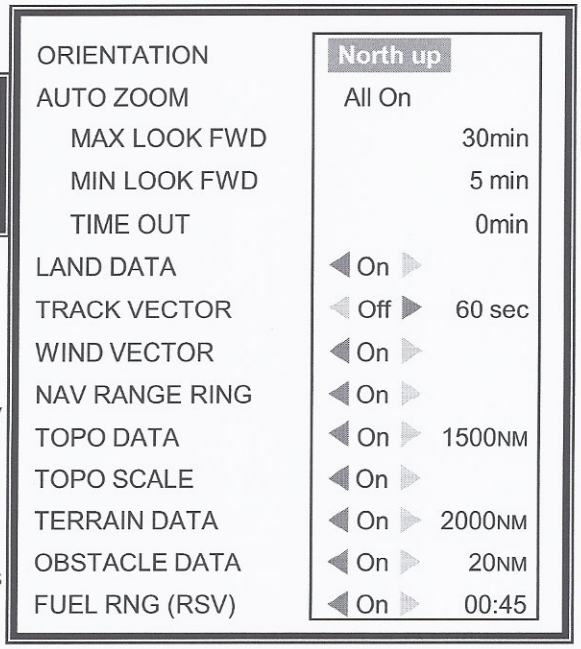


NOTE: To exit the Page Menu at any time, PRESS SMALL FMS Knob.

ORIENTATION - With "Orientation" highlighted, ROTATE Small FMS Knob to view options shown: ROTATE Large FMS Knob to highlight the desired orientation and PRESS (ENT). The orientation is displayed in the upper right corner of the MFD. The aircraft symbol is centered on the screen only in NORTH UP orientation. The symbol is centered in the lower part of the map for all other orientations.

North up
Track up
DTK up
HDG up

AUTO ZOOM - With the value highlighted, ROTATE Small FMS Knob to view the options of: Off, MFD Only, PFD Only and ALL On. When ON, it will automatically adjust the map range as the aircraft approaches the active waypoint. The range will change when the new value will keep the active waypoint displayed. It normally will not scale down past 1.5 nm as it approaches the active waypoint. This feature is automatically suspended if a terrain alert or traffic advisory alert occurs.



The "MAX LOOK FWD", "MIN LOOK FWD" and "TIME OUT" time selections constitute the basis for which the zoom range is determined to display the active waypoint. See the Garmin G1000 Pilot's Guide for detailed information.

The remaining selections may be turned ON or OFF by ROTATING the Large FMS Knob to highlight the item, then ROTATE the Small FMS Knob in the direction of the highlighted arrow. This changes the status of the highlighted selection.The range can also be changed for TOPO DATA, TERRAIN DATA and OBSTACLE DATA. The RESERVE time in the FUEL RANGE can also be modified.

TRACK VECTOR - When ON, it draws a light blue colored dashed line with an arrowhead along the aircraft's track. The tip of the arrow head predicts the aircraft position in 30 or 60 seconds, or 2, 5, 10 or 20 minutes.

WIND VECTOR - When ON, the wind direction and velocity are displayed in the upper right corner, next to the map orientation. ↖ 15KT | NORTH UP

Continued on next page

MAP Page 1 - PAGE MENU

Map Setup (cont'd)

A - Map Group (cont'd)

NAV RANGE RING - Displays a compass rose around the airplane symbol. A box appears in the upper right sector to show radius of compass rose. This number depends upon the map scale in use at the time and ranges from 125 feet to 500 nm. It is very useful to help judge distances and angles.

TOPO DATA - Enables you to establish the maximum range that topographical data will be displayed. The max range can be selected between OFF and all ranges between 500ft and 2000nm.

TOPO SCALE - When this feature is turned ON, the colored topographical scale is displayed in the lower right corner of the Navigation Map when TOPO DATA is also selected ON.

TERRAIN DATA - In addition to OFF the max range can be selected between 500ft and 2000nm.

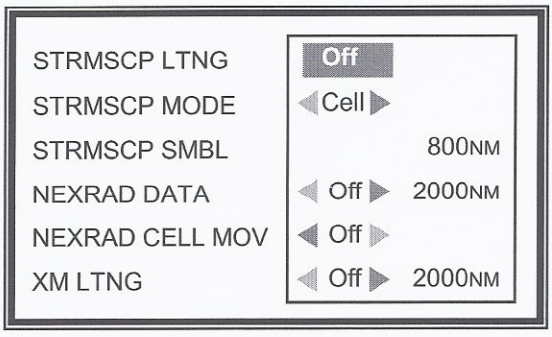
OBSTACLE DATA - In addition to OFF the ranges are selectable from 500ft to 50nm.

FUEL RNG (RSV) - When activated, draws two rings around the airplane. The dashed green circle represents position when fuel remaining is down to the reserve setting. The time in hours and minutes is displayed on the circle. The larger, solid green circle represents fuel exhaustion. If only reserve fuel remains, the circle and the remaining time will both be shown in yellow. The reserve fuel in minutes is selectable.

B - Weather Group

The Weather Group is used to customize the weather data to be displayed on the Navigation Map Page.

With **"Weather"** highlighted, PRESS (ENT) to view the choices seen to the right. Changes are made exactly as in the Map mode above. The Stormscope Mode choices are "Cell" and "Strike".



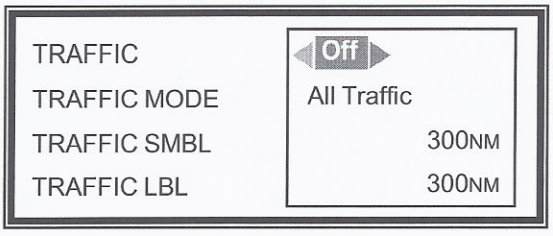
The maximum ranges are shown.

Stormscope data can be manually cleared from the Navigation Map by: PRESS (MENU), ROTATE Large FMS Knob to highlight "Clear Stormscope Lightning" and PRESS (ENT). See NOTE below.

C - Traffic Group

The Traffic Group is used to customize the traffic data to be displayed on the Navigation Map Page.

With **"Traffic"** highlighted, PRESS (ENT) to view the choices seen to the right. Changes are made exactly as in the Map mode above. The Traffic Mode choices are "All Traffic", "TA/PA", and "TA Only".



The maximum ranges are shown.

NOTE: Stormscope, NEXRAD, XM Lightning and Traffic can be displayed on the Navigation Map Page by: PRESS **MAP** (△) Soft Key then PRESS Soft Key of your choice.

MAP Page 1 - PAGE MENU

Map Setup (cont'd)

D - Aviation Group

The Aviation Group is used to customize the text size for some items and the maximum range that each item is visible on the map page. With **"Aviation"** highlighted, PRESS (ENT) to view the choices seen to the right.

The available text sizes for all choices are: None, Small, Medium and Large.

The minimum range for all items is 500FT. The max ranges are shown to the right. All ranges in between these values are available.

The available Text Size for Airport Labels and Waypoint Labels are: None, Small, Med and Large. The default values are shown.

	TEXT	RNG
ACTIVE FPL		2000NM
ACTIVE FPL WPT	Med	2000NM
LARGE APT	Lrg	500NM
MEDIUM APT	Med	300NM
SMALL APT	Med	100NM
SAFETAXI		20NM
RWY EXTENSION		100NM
INT WAYPOINT	Med	30NM
NDB WAYPOINT	Med	30NM
VOR WAYPOINT	Med	300NM
CLASS B/TMA		500NM
CLASS C/TCA		500NM
CLASS D		300NM
RESTRICTED		500NM
MOA (MILITARY)		500NM
OTHER/ADIZ		500NM
TFR		2000NM

E - Airways Group

The Airways Group is used to customize the type of airways and the maximum range they can be viewed on the map page. With **"Airways"** highlighted, PRESS (ENT) to view the choices seen to the right.

The Airways selections are: Off, All, LO Only and HI Only.

The available ranges for both Low Alt Airways and Hi Alt Airways to be displayed are: Off and 500FT to 500NM.

AIRWAYS	Off	
LOW ALT AIRWAY		500NM
HI ALT AIRWAY		500NM

F - Land Group

The Land Group is used to customize the land data to be displayed on the Navigation Map Page.

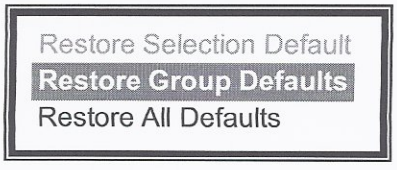
With **"Land"** highlighted, PRESS (ENT) to view the choices seen to the right. Changes are made exactly as in the Map mode covered at the beginning of this Appendix.

The Text size choices are: None, Small, Med and Lrg.

The maximum range values are shown.

	TEXT	RNG
LAT/LON	Small	2000NM
FREEWAY		800NM
NATIONAL HWY		80NM
LOCAL HWY		30NM
LOCAL ROAD		15NM
RAILROAD		30NM
LARGE CITY	Med	1500NM
MEDIUM CITY	Med	200NM
SMALL CITY	Med	50NM
STATE/PROV	Lrg	1500NM
RIVER/LAKE	Small	500NM
USER WAYPOINT	Med	300NM

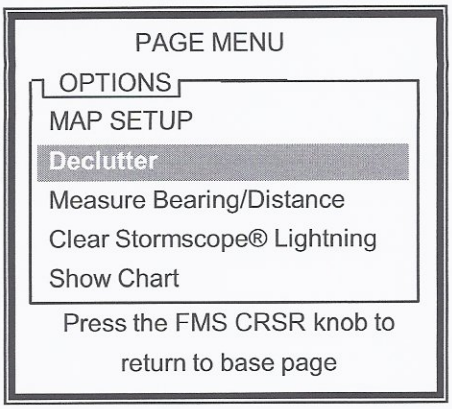
To restore the default settings PRESS (MENU) with any item highlighted to view the Page Menu Options shown to the right. Highlight the desired action and PRESS (ENT) .



MAP Page 1 - PAGE MENU
(cont'd)

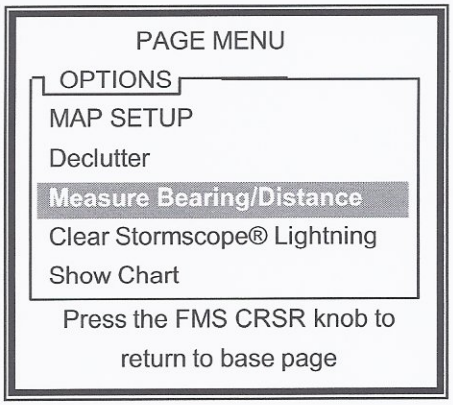
To Declutter Map

The map may be decluttered by either selecting "Declutter" from the Page Menu and PRESS (ENT) or PRESS **DCLTR** (△) Soft Key on the bottom of the screen which results in decluttering one level. There are 3 levels of declutter. Repeated presses of the **DCLTR** (△) Soft Key toggles through the options of DCLTR-1, -2, -3 and none. Features that are cleared from the map at the 3 declutter levels are shown below.



DCLTR-1	DCLTR-2	DCLTR-3
Land/Country Text	User Waypoints	Traffic
Cities	Lat/Lon Grid	Airports
Roads	VORs	Runway Labels
Railroads	NDBs	Restricted
Major Political Boundaries	Intersections	MOAs(Military)
River/Lake Names	Class B/TMA	
	Class C/TCA	
	Class D	
	Other/ADIZ	
	Obstacles	

To Measure Bearing/Distance



While at the Wichita airport, lets measure the distance between the Newton, KS airport (KEWK) and Salina, KS airport (KSLN).

1. With the Page Menu showing, ROTATE either FMS knob, highlight **"Measure Bearing/Distance"** option and PRESS (ENT) .
   A window at the top of the display appears as shown below and a flashing arrow appears at your present position.

MEASURE POINTER 4FT 000° ELEV 1333FT	WICHITA WICHITA APP (CL C)	5300FT msl Surface	N 37°39.00' W097°25.98'

2. TILT the Joystick to move the arrow in the desired direction. As the arrow moves, a dashed line is drawn from the starting point to its present position. The bearing and distance from the starting point is shown in the upper left while the new coordinates are displayed in the upper right. Move the cursor towards KEWK until the waypoint is highlighted and PRESS (ENT). The Distance and Bearing values return to ZERO since this is the starting point of a new measurement.

MEASURE POINTER 0FT 000° ELEV 1533FT	(Blank because uncontrolled airspace)	N 38°03.15' W097°16.79'

3. TILT the Joystick to move the arrow north until KSLN is highlighted. Don't worry about panning out of sight because the map will scroll to keep the pointer in view.

MEASURE POINTER 47.4NM 333° ELEV 1288FT	SALINA SALINA TWR (CL D)	3800FT msl Surface	N 38°47.53' W097°39.80'

   Now you can view the distance and bearing from the first selection to the second one in the upper left corner of the window. (47.4NM at 333 degrees.)
4. PUSH the Joystick to exit the operation. The operation will also automatically cancel itself after about one minute of inactivity.

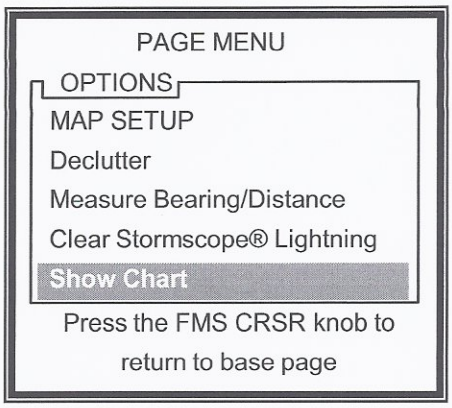
To Clear Stormscope® Lightning

With "Clear Stormscope® Lightning highlighted in the Page Menu, PRESS (ENT) or with the Map page showing, PRESS the **MAP** (△) Soft Key and then PRESS **STRMSCP** (△) Soft Key.

MAP Page 1 - PAGE MENU
(cont'd)

To Show Chart

Select "Show Chart" from the Page Menu and PRESS (ENT) which results in the appropriate chart appearing. An easier way is with the map showing, PRESS the **SHW CHRT** (△) Soft Key on the bottom of the screen. The SafeTaxi™ diagrams and Optional ChartView or FliteCharts™ may be configured in the system. The SafeTaxi™ feature can be seen on most information pages, the Navigation Map Page and the Inset Map on the PFD. If an airport is the active waypoint, its airport diagram or SafeTaxi™ diagram appears. If an approach is active, the approach chart appears. See also the **SHW CHRT** (△) Soft Key explanation on following page.



Map Page 1 Soft Keys

		MAP							DCLTR	SHW CHRT	CHKLIST

MAP - PRESS this Soft Key to display the following additional Soft Keys. The display will automatically revert to the Map after approximately 45 seconds of inactivity. To return to the Map display sooner, PRESS the **BACK** (△) Soft Key or PRESS and HOLD (CLR) .

TRAFFIC		TOPO	TERRAIN	AIRWAYS	STRMSCP	NEXRAD	XM LTNG			BACK	CHKLIST

TRAFFIC - PRESS this Soft Key to activate your traffic system. At the time of this writing, there were 3 possible types: Traffic Information Service (TIS), Traffic Advisory System (TAS) and Automatic Dependent Surveillance-Broadcast (ADS-B). Refer to the Hazard Avoidance section of your G1000 Pilot's Guide for further guidance.

TOPO - PRESS this Soft Key to display the topographical shading on the map page. If the TOPO SCALE feature is also turned on under Map Setup, the scale will appear in the lower right corner of the map.

TERRAIN - PRESS this Soft Key to display the Red, Yellow and Black Terrain colors.

AIRWAYS - PRESS this Soft Key to toggle between the selections of airways that are displayed on the map. AIRWY ON - shows both HI and LO Airways; AIRWY LO shows just the Low Altitude Airways; AIRWY HI shows only the High Altitude Airways; AIRWAYS means no airways are being shown. The airways are shown only if the range selected in the MAP SETUP Menu is not exceeded. (See Item E of this Appendix, Page 48.)

STRMSCP - PRESS this Soft Key to toggle the optional WX-500 Stormscope® On or OFF. It may also be turned ON or OFF as well as setting the parameters in the MAP SETUP Menu. (See Item B of this Appendix, Page 47.) To Clear Stormscope® Lightning from the Map page, highlight it in the Page Menu and then PRESS (ENT) .

NEXRAD and **XM LTNG -** PRESS these Soft Keys to toggle the optional XM Satellite NEXRAD or XM Lightning features ON or OFF. XM Satellite products are available only through a monthly subscription. The refresh rate for both products is 5 minutes. Refer to the G1000 Pilot's Guide for further information.

BACK - PRESS this Soft Key to return the menu items to the original labels.

Continued on next page

MAP Page 1 - SOFT KEYS (cont'd)

DCLTR - Certain items may be removed from view by pressing the **DCLTR** Soft Key. (See the description of Declutter under Page Menu on Page 49.) Items that cannot be removed from view by this method are shown in the table to the right.

Flight Plan Route Lines
Flight Plan Route Waypoints
Rivers/Lakes
Topography Data
Terrain Proximity Data
Map Borders
Bearing Line
Stormscope Lightning Strike Data
NEXRAD
XM Lightning Data

SHW CHRT - PRESS this Soft Key to display **Terminal Procedures Charts** with the available Soft Keys shown below.

		CHRT OPT	CHRT	INFO	DP	STAR	APR	WX	NOTAM	GO BACK	CHKLIST

There are presently 2 optional versions of electronic charts: FliteCharts™ and ChartView. They both provide on-board electronic terminal procedures charts. Either may be configured in the G1000 but not both. FliteCharts™ presents the NACO charts with the subscription obtained from Garmin. ChartView is the Jeppesen version with the subscription obtained from Jeppesen. ChartView will show the aircraft position on the charts and also includes NOTAMS. Both charts show the Arrival, Departure, Approach and Airport Diagrams As of this writing, AC 91-78 dated 07/20/07, allows the Part 91 operator to go "paperless" with some caveats. Refer to the latest version of the Advisory Circular for clarification. Charts may be selected from the Map 1 Page (Navigation Map), Nearest 1 Page (Nearest Airports) or Flight Plan 1 Page (Active Flight Plan).

Whenever a chart is being displayed the normal Joystick functions apply.

ROTATE the Joystick to zoom in or out on the displayed chart.
TILT the Joystick to pan the chart.
PRESS the Joystick to center the chart.

Any available chart may be displayed. The chart that appears first is usually the airport diagram for the destination airport or the nearest airport. Prior to becoming airborne, the displayed chart is the departure airport. Whenever the airport diagram is displayed, the screen is associated with the WPT Page 1, Airport Information Page and the "CHRT and INFO" Soft Keys are grayed (selected).

SHW CHRT Soft Keys

CHRT OPT - PRESS this key to view the following soft keys. The **CHRT OPT** Soft Key changes to the **ALL** Soft Key. (PRESS **BACK** Soft Key to view the original soft keys again.)

		ALL					FIT WDTH	FULL SCN		BACK

FIT WDTH - PRESS this Soft Key to scale the chart to fill the screen from left to right. PRESS the **ALL** Soft Key to view the entire chart again.

FULL SCN - PRESS this Soft Key repeatedly to toggle between only the chart and the chart along with airport information. When selected, the airport information moves to the top of the screen.

CHRT - PRESS this key repeatedly to toggle between the Airport Diagram chart and the Airport Diagram (WPT Page 1) which displays the airport information and frequencies.

INFO - When another chart is being viewed PRESS this key to return to the airport information page (WPT 1).

DP, STAR, APR - are Soft Keys that enable the operator to select the appropriate chart.

WX - This Soft Key displays the METAR and TAF if available for the selected airport.

NOTAM - When available, PRESS this Soft Key to display applicable NOTAMs.

Continued on next page

MAP Page 1 - SOFT KEYS (cont'd)

SHW CHRT (cont'd)

To VIEW a different airport. With the airport diagram showing:

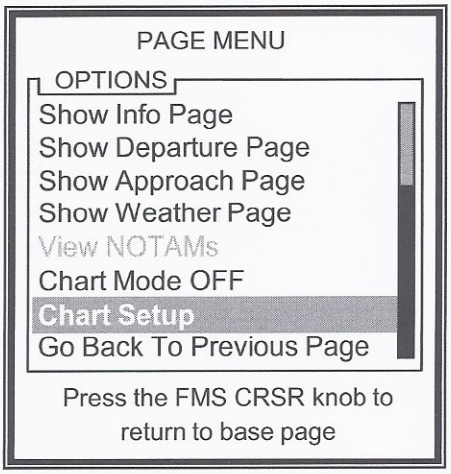
1. PRESS Small FMS Knob to activate the cursor.
2. ROTATE Large FMS Knob if necessary to highlight the the airport identifier, the facility name, or the associated city as applicable.
3. ROTATE Small FMS Knob to highlight only the first character of the field.
4. ROTATE Small Knob to select the desired character.
5. ROTATE Large Knob to move the cursor to the desired character and repeat #4 and #5 until the desired results have been completed.
6. PRESS [ENT] to accept the choice.

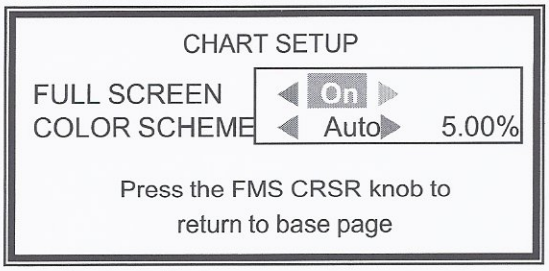
View Alternate Minimums or Take Off Minimums:

When the Airport Diagram is displayed, PRESS Small FMS Knob to activate the cursor over the airport identifier. ROTATE Large FMS Knob to highlight "AIRPORT DIAGRAM". ROTATE Small FMS Knob one click to view the selections shown to the right. Not all selections may be available. ROTATE either FMS Knob to highlight the desired chart and PRESS [ENT]. When finished viewing, you can return to the Airport Diagram by rotating the Large FMS Knob to highlight the "INFO" box. ROTATE Small FMS Knob to display the same selections shown above. ROTATE Large FMS Knob to highlight "AIRPORT DIAGRAM" and PRESS [ENT].

NOTE: The charts may be displayed on a white or black background for day or night viewing. With a terminal chart being displayed, PRESS [MENU] to display the Page Menu Options shown to the right.

ROTATE Large FMS Knob to highlight "Chart Setup" (toward the bottom of the list of options) and PRESS [ENT] to view the selections shown below.





To Change Color Scheme

ROTATE Large FMS Knob to highlight the color scheme "AUTO".
ROTATE Small FMS Knob one click counterclockwise to choose "Day" or one click clockwise to choose "Night" and PRESS [ENT].
The percentage field is changeable only when "Auto" is selected. This controls the day-night changeover based on backlighting intensity.
When finished, PRESS Small FMS Knob to remove the menus.

MAP Page 1 - SOFT KEYS (cont'd)

CHKLIST PRESS this Soft Key to access the optional electronic checklists. They are created by the aircraft manufacturer. The user cannot edit these checklists and Garmin claims no responsibility for the content of the checklists. The Soft Key is available on all pages of the MFD. When pressed, the soft keys change to those shown.

		EXIT	EMERGCY

PRESS Small FMS Knob to activate the cursor.
ROTATE Small FMS Knob to view the available checklists.
ROTATE Either FMS Knob to highlight the desired checklist.
PRESS ENT to view the checklist.

EMERGENCY PROCEDURES 182T
NORMAL
BEFORE TAKEOFF
TAKEOFF
ENROUTE
LANDING

Once selected, PRESS ENT to highlight first item.
White - Item is highlighted for selection.
Blue - Checklist items not highlighted.
Green - Checklist has been acknowledged (by pressing ENT).
Yellow - Used for any warning notes.

PRESS ENT to advance to the next checklist item. The previous item turns green with a check in its box.

NOTE: If there are additional checklists for that subject. They are accessed by highlighting "GO TO NEXT CHECKLIST?" at the bottom of the screen. When there are no more checklists "EXIT CHECKLISTS?" appears.

NORMAL
BEFORE STARTING ENGINE
STARTING ENGINE (USING BATTERY)
STARTING ENGINE (USING EXTERNAL POWER)

NOTE: Whenever the checklists are in view, the Emergency Checklists are always accessible by pressing the **EMERGCY** Soft Key.

PRESS **EXIT** Soft Key to return to the page last viewed.
PRESS **CHKLIST** Soft Key again to return the display to the checklist page last viewed.

MAP Pages 2, 3 and 5

These pages are not described in detail due to the possibilities of many variants of installed equipment. Some features are still evolving so any attempt to describe them today can be outdated tomorrow.

The MAP Page 2 is the TRAFFIC MAP Page. There are several optional Traffic Advisory Systems and Traffic Information Systems that can be used with the G1000. Refer to the Hazardous Awareness section of Garmin's G1000 Pilot's Guide or the specific manufacturer's Pilot Guide for more detailed information on utilizing this equipment.

The MAP Page 3 is the STORMSCOPE® Page. The G1000 is capable of providing a visual representation of recent lightning strikes utilizing the optional Stormscope® WX-500 Series II Weather Mapping Sensor. Refer to the Hazardous Awareness section of Garmin's G1000 Pilot's Guide or the specific manufacturer's Pilot Guide for more detailed information on utilizing this equipment.

The MAP Page 4 Weather Data Link Page, is covered on the next page.

The MAP Page 5 is the TERRAIN PROXIMITY Page. This page is dedicated to the display of terrain that is within 1000 feet of the aircraft's altitude. It is only valid between 75 degrees north and 60 degrees south latitude. PRESS **VIEW** Soft Key to reveal the **360** and **ARC** Soft Keys. The ARC view displays the 120° ahead of the aircraft. Refer to the Hazardous Awareness section of Garmin's G1000 Pilot's Guide for more specific information.

NOTE: The terrain shown on the MAP Page 5 is independent of the setting for the terrain feature in the Navigation Map's menu.

MAP Page 4

The MAP Page 4 is the WEATHER DATA LINK Page. This page is used in conjunction with the GDL 69 or GDL 69A to display XM® Weather Services. The following Soft Keys are available on this page.

NEXRAD	ECHO TOP	CLD TOP	LTNG	CELL MOV	SIG/AIR	METAR	LEGEND	MORE WX	CHKLIST

PRESS a Soft Key to select the product to be displayed along with its information on the right side of the screen. The Soft Key will then dim. PRESS the same Soft Key again to deselect the product.
PRESS the **MORE WX** (△) Soft Key to view the Soft Keys shown below and thus making those products available.

	SFC OFF	FRZ LVL	WIND OFF	COUNTY	CYCLONE		LEGEND	BACK	CHKLIST

PRESS the **WIND OFF** (△) Soft Key to view the Soft Keys shown below and thus allowing you to choose the winds at the desired altitude.

SFC	3000	6000	9000	12000	15000	NEXT	LEGEND	BACK	CHKLIST

PRESS the **NEXT** (△) Soft Key to view higher level winds. Winds are available from the Surface to FL420 in 3,000 ft increments. When the terrain elevation is higher than the chosen wind level, there will be no depiction on the screen.

NOTE: After a product has been selected, the Soft Keys will revert back to the original values if no activity occurs for approximately 45 seconds. The product remains selected as evidenced by the legend in the upper right corner of the screen.
NOTE: If **ECHO TOP** is selected, pressing **NEXRAD** or **CLD TOP** will de-select **ECHO TOP**.
NOTE: See our page 64 for a description of the XM Weather Information (AUX Page 5). Also, see the Hazardous Awareness section of Garmin's G1000 Pilot's Guide for more information.

PRESS (MENU) to view the Page Menu show to the right. With **"Weather Setup"** selected, PRESS (ENT) to view the Data Link Setup window shown to the right, below the Page Menu. The various weather products may be turned on or off from this window also. More importantly, the maximum range for each product can be customized. The example shows the 15000 FT winds aloft is selected and they will be viewed at a maximum range of 800NM. With **"Weather Legend"** highlighted, PRESS (ENT) to view the legends for all the products that are selected. PRESS **LEGEND** (△) Soft Key or (ENT) to remove the legend from the screen.

PAGE MENU

OPTIONS
- **Weather Setup**
- Weather Legend

Press the FMS CRSR knob to return to base page

VIEW METARS. To view individual METARS, PRESS **METAR** (△) Soft Key. Each airport that reports weather is depicted with a triangular-shaped pennant. Choose "Weather Legend" to view the colors that depict VFR, MVFR, IFR and LIFR. The scale of the map must be such that the airport symbols are visible.
PRESS the Joystick to activate the panning arrow. TILT the joystick until an airport is highlighted. The following message appears at the top of the screen.

> Press "ENT" to view METAR and TAF textual information

When (ENT) is pressed, the screen changes to the WPT 1 Page with the **WX** (△) Soft Key pressed. (See our page 57 for an example of METAR and TAF presentations.) When finished, PRESS (CLR) and then the Joystick to turn the panning arrow off.

DATA LINK SETUP

NEXRAD DATA	Off	2000NM
ECHO TOP DATA	Off	2000NM
CLOUD TOP DATA	Off	2000NM
LTNG DATA	Off	2000NM
CELL MOV DATA	Off	2000NM
SIG/AIR	Off	2000NM
METAR DATA	Off	2000NM
SFC DATA	Off	2000NM
SFC TIME		CURRENT
FRZ LVL DATA	Off	2000NM
WND ALF DATA	Off	800NM
WIND ALF ALT		15000FT
COUNTA DATA	Off	2000NM
CYCLONE DATA	Off	2000NM

Press the FMS CRSR knob to return to base page

MAP Page 4
(cont'd)

NOTE: Whenever one of the product soft keys is activated, a legend appears in the upper right corner of the screen that shows the age of each product. In the case of winds, the altitude or flight level chosen is also displayed.

To View Cell Movement, Base and Tops:

From the MAP 4 Page with the **NEXRAD and CELL MOV** (△) Soft Keys selected:

1. PRESS Joystick to activate the panning function.
2. TILT the Joystick until the panning arrow highlights one of the cells. The cell symbol changes from a square with arrow  to a circle around the square. 

   A window appears at the top of the screen showing the position of the Map Pointer, cell movement, cell's base and top along with the cell's latitude and longitude.

MAP POINTER 250NM 083°	CELL MOVEMENT (PATH 045° AT 29KT) BASE: 19000FT TOP: 30000FT	N 37°43.36' W092°07.12'

3. PRESS Joystick to return the map to its original state.

NOTE: After about 1 minute of inactivity the map will return to its original state.

To View Echo Tops or Cloud Tops:

PRESS **CLD TOP or ECHO TOP** (△) Soft Keys to activate that feature.

NOTE: Only one of the features **NEXRAD, ECHO TOP or CLD TOP** may be active at a time.

1. PRESS Joystick to activate the panning function.
2. TILT the Joystick until the panning arrow highlights an area that shows ECHOs or CLOUDS. A window again appears at the top of the screen (same as Cell Movement above) to show the Echo tops or Cloud tops whichever is selected.
3. PRESS Joystick to return the map to its original state.

To View Current Surface, 12 Hr, 24 Hr, 36 Hr or 48 Hr forecast conditions, Freezing Level, County Warnings or Cyclone Warnings:

1. PRESS **MORE WX** (△) Soft Key to view soft keys shown below.

	SFC OFF	FRZ LVL	WIND 150	COUNTY	CYCLONE		LEGEND	BACK	CHKLIST

2. PRESS the appropriate soft key to view the desired selection.
   SFC OFF (△) Soft Key provides the choices of Current,12, 24,36 and 48 Hr forecasts. Any of these will result in showing any fronts, wind shift lines, high and low pressure centers, and sky conditions along with precipitation in the form of icons. (Press the other soft keys to view the Freezing Level, County Warnings or Cyclone Warnings.)
3. To remove a selected feature, PRESS **MORE WX** (△) Soft Key, then the appropriate soft key.
4. PRESS the **BACK** (△) Soft Key twice.

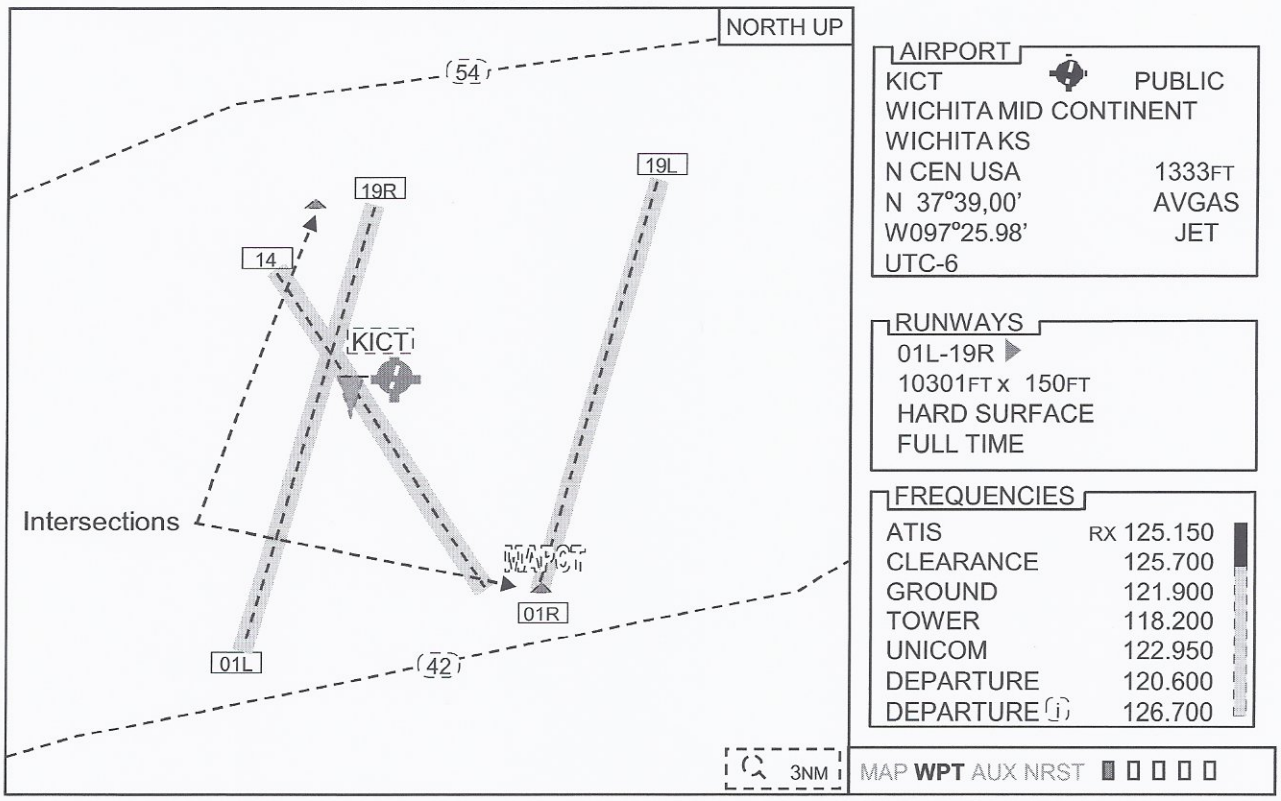
Waypoint Page 1

There are five Waypoint Pages which display the following:

WPT 1: Airports. Includes Location, Runways and Frequencies
WPT 2: Intersections. Includes Information and nearest VOR.
WPT 3: NDBs. Includes Information, Frequency and Nearest Airport.
WPT 4: VORs. Includes Information, Frequency and Nearest Airport.
WPT 5: User Waypoints. Includes Comments, Information, Reference Waypoints and User Waypoint List.

The Waypoint Page group is accessed easiest from any page by: PRESS and HOLD CLR to go to the default NAV page and ROTATE the Large FMS Knob one click clockwise. The Small FMS Knob is now used to select the desired page. An example of the Waypoint Page One is shown below.

WPT - AIRPORT INFORMATION



The other runways at Wichita are shown below. Their description can be accessed by PUSHing the FMS knob to activate the cursor then ROTATE the Large FMS knob to highlight the runway field. ROTATE the small FMS knob one click to see the next runway. The arrowheads indicate you can rotate the knob in that direction to see another runway.

01R-19L ▶	7301FT x 150FT HARD SURFACE FULL TIME
◀14-32	6301FT x 150FT HARD SURFACE FULL TIME

The remaining available frequencies at Wichita are shown below. The (i) symbol indicates there is more information regarding that frequency. With the cursor ON, ROTATE the large knob to highlight the frequency name as shown. PRESS ENT to view the info as shown.

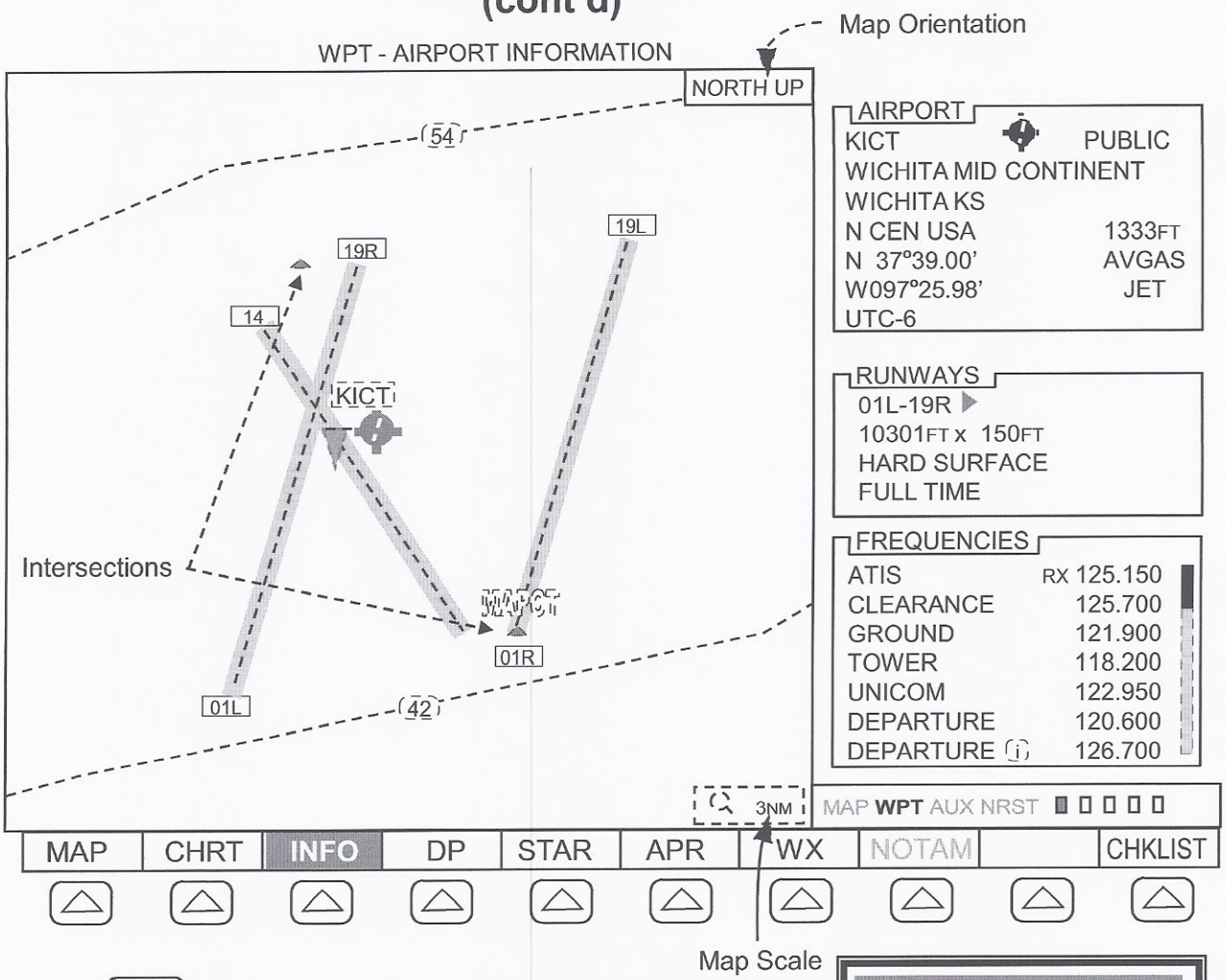
DEPARTURE	(i)	134.850
APPROACH	(i)	125.500
APPROACH	(i)	126.700
APPROACH	(i)	134.850
CLASS C	(i)	126.700
CLASS C	(i)	134.800
CLASS C	(i)	134.850
FSS		122.200
FSS		122.650
ILS 19R		110.500
ILS 01R		110.300
ILS 19L		111.550
ILS 01L		109.100

DEPARTURE

FREQUENCY	126.700
BEARING	191° - 009°
ALTITUDE	None
NARRATIVE	

Press the "ENT" key to return to the base page

Waypoint Page 1
(cont'd)



PRESS (MENU) to view the selections shown to the right. ROTATE either FMS Knob to highlight the desired action and PRESS (ENT). Or, instead, use the soft keys on the bottom of the screen to select one of the lower six choices of the menu.

WX (△) Soft Key or **"Show Weather Page"** selection shows both the METAR and TAF for the airport. Of special interest is that the METAR is decoded but the original METAR text is also available by using the scroll bar.

METAR

WIND DIR: 190
WIND SPD: 18KT
WIND GUSTS: 28KT
VISIBILITY: 10SM
CLOUDS: CLEAR
TEMPERATURE: 37°C
DEW POINT: 19°C
ALTIMETER: 29.70IN

ORIGINAL METAR TEXT:

TAF

FT KICT 261735Z
261818 19016G25KT
P6SM SKC
FM0100 18012KT P6SM
SCT250
FM1500 20010KT P6SM
BKN050=

Waypoint Pages 2 thru 5

The remaining Waypoint Page descriptions follow:

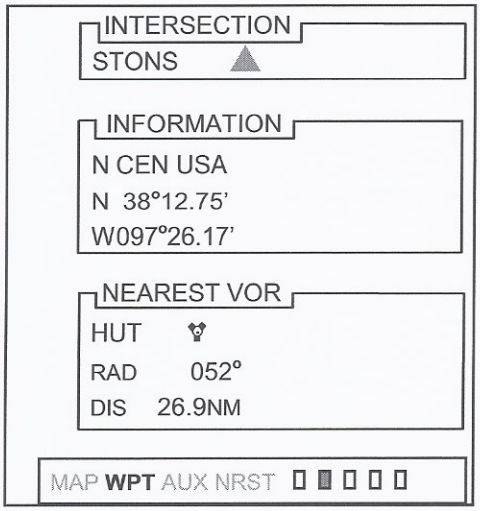
WPT 2: Intersections. Includes Information and nearest VOR.
WPT 3: NDBs. Includes Information, Frequency and Nearest Airport.
WPT 4: VORs. Includes Information, Frequency and Nearest Airport.
WPT 5: User Waypoints. Includes Comments, Information, Reference Waypoints and User Waypoint List.

The Waypoint Page group is accessed easiest by: PRESS and HOLD (CLR) to go to the default NAV page, ROTATE the Large FMS Knob one click. The Small FMS Knob is now used to select the desired page. An example of waypoint Page 2 (Intersections) is shown below.

Name and map symbol.

Location

Nearest VOR and map symbol, Radial and Distance. (Not necessarily the VOR that defines the intersection.



The (WPT 3) NDB, (WPT 4) VOR and (WPT 5) User Waypoint Information pages are basically the same. The VOR information page includes ILSs. All 3 types of waypoints may be selected by its Identifier, Name, or closest city.

To find a waypoint by Identifier, first display that page group. Then:

1. PRESS the FMS knob to activate the cursor. The identifier is highlighted.
2. ROTATE the Small FMS Knob to highlight only the first character of the identifier.
3. ROTATE the Small FMS Knob to change the highlighted character.
4. ROTATE the Large FMS Knob to move the cursor to another character.
5. Continue with steps #3 and #4 until the identifier appears and PRESS (ENT) .

When finished, PRESS the Small FMS Knob to turn the cursor off.

To find an Airport, NDB or VOR by Name or City, first display that page group. Then:

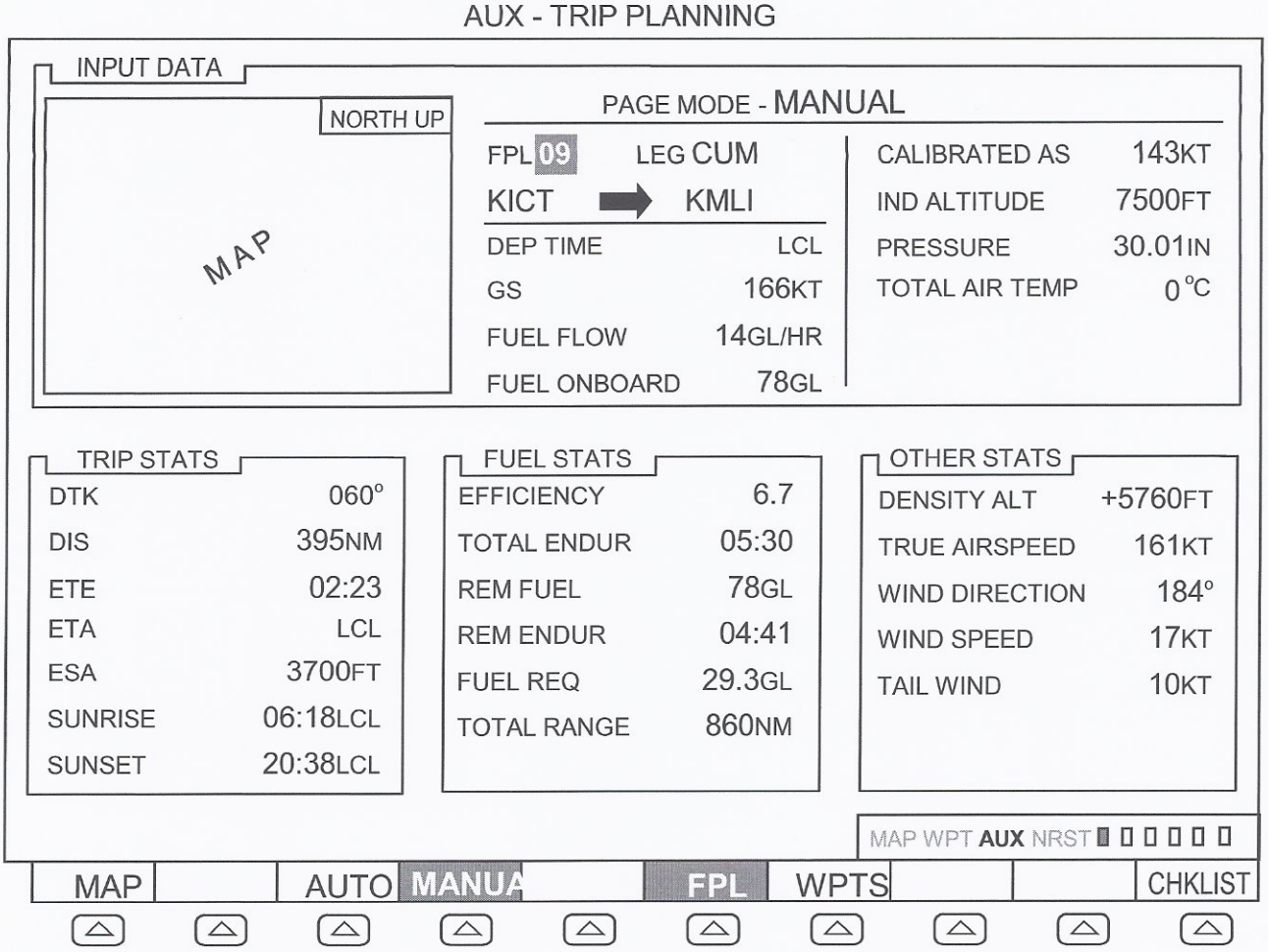
- PRESS the FMS knob to activate the cursor. The identifier is highlighted.
- ROTATE the Large FMS Knob to highlight the Name or City field.
- ROTATE the Small FMS Knob to highlight only the first character of the field.
- ROTATE the Small FMS Knob to change the highlighted character.
- ROTATE the Large FMS Knob to move the cursor to the next character.
- Continue with steps #4 and #5 until the name or city appears and PRESS (ENT).

When finished, PRESS the Small FMS Knob to turn the cursor off.

NOTE: If there is more than one facility at that city, once the facility is displayed continue ROTATING Small FMS Knob one click at a time to view the other waypoints. For instance, there are 9 airports and 5 VOR/ILSs listed for Wichita.

Appendix D - MFD Auxiliary Pages

Auxiliary Page 1 - Trip Planning

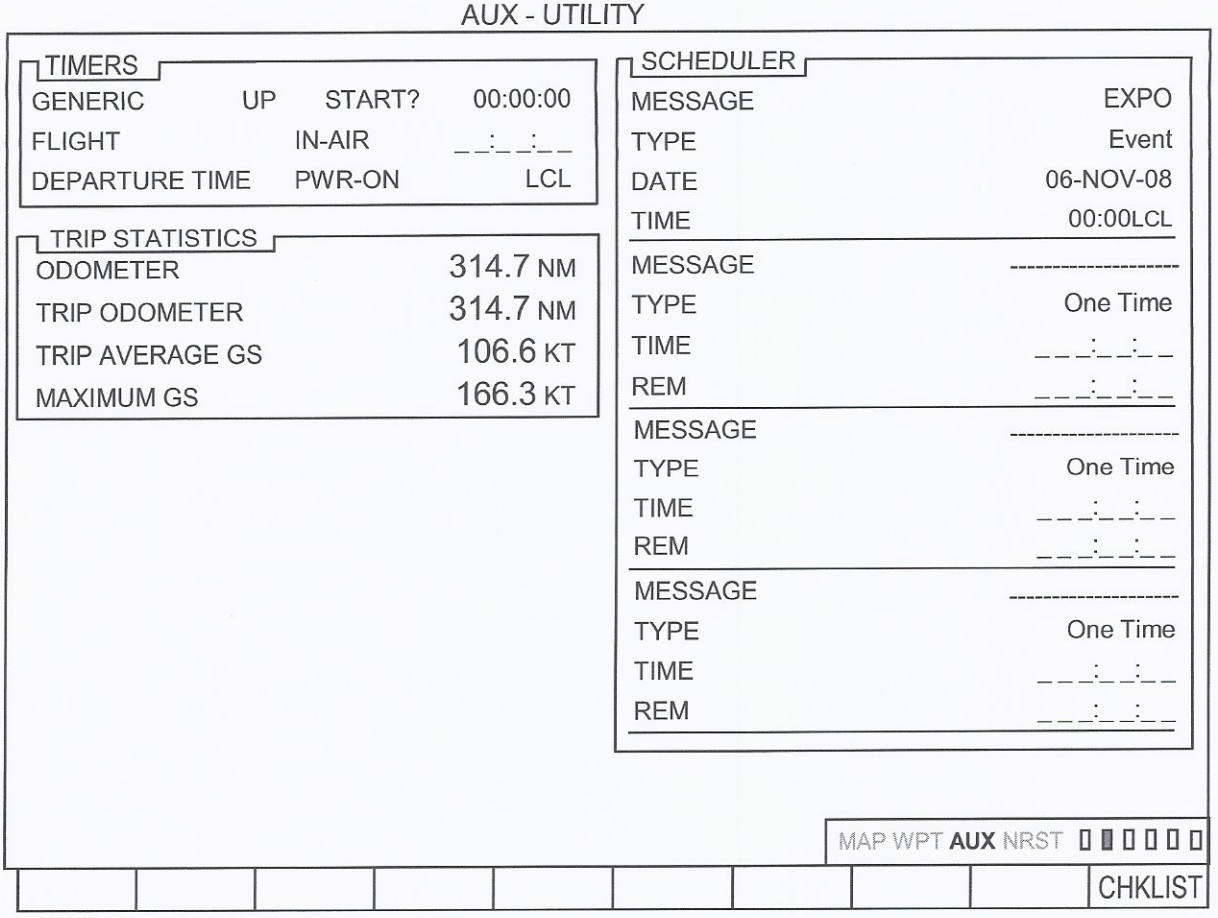


The Trip Planning Page allows you to see statistics for any selected flight plan or route. This page could also be called the "What if?" page. The right 2 boxes in the top row contain fields that may be selected and changed. The upper left box displays the route selected. The bottom 3 boxes show the statistics for what is selected in the upper boxes. The trip planning page has several options that are selected by the four Soft Keys. You may select "AUTO" or "MANUAL" and with either of them you can select "FLP" or "WPTS".

With the **MANUAL** (△) Soft Key activated, the cursor may be positioned in **ANY** field in the top right two boxes. ROTATE Large FMS Knob to move the cursor and ROTATE Small FMS Knob to change the value. PRESS (ENT) to view the new TRIP and FUEL STATS. The **FPL** (△) Soft Key allows you to select any numbered flight plan or any specific leg of that flight plan. The **WPTS** (△) Soft Key allows you to enter any two waypoints and see those STATS.

With the **AUTO** (△) Soft Key and the **FPL** (△) Soft Key selected PUSH the Small FMS Knob to activate the cursor in the Flight Plan "Number" Field. ROTATE Small FMS Knob to select the desired flight plan number. If **"CUM",** or cumulative, is showing in the "LEG" field, all the data shown in the "TRIP STATS" box is for the entire flight plan. Rotating the Small FMS Knob changes the number of the stored flight plan being displayed. ROTATE the Large FMS Knob to highlight **"CUM"**. You can now view the TRIP STATS for each leg by ROTATING the Small FMS Knob to select the desired leg number. The MAP area displays the selected data also. PRESS the **WPTS** (△) Soft Key to position the cursor in the first waypoint identifier field which is directly belowthe FPL field. ROTATE Small and Large FMS Knobs to enter the desired waypoint information. Then ROTATE Large FMS Knob to move the cursor to the second waypoint field. ROTATE Small and Large FMS Knobs to enter the second waypoint. These define the TRIP STATS and trip on the MAP. (These are the only four fields that may be changed in "AUTO".)

Auxiliary Page 2 - Utility

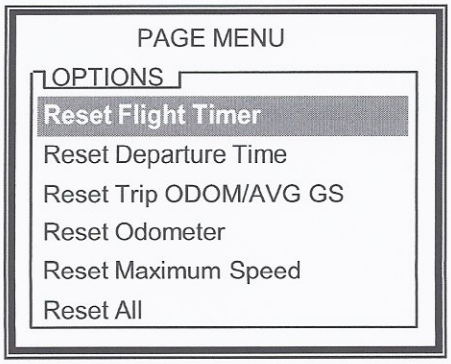


On the left side, the generic timer can be set to count up or down. It has to be manually started or stopped by PRESSing the Small FMS Knob to turn the cursor on. ROTATE Large FMS Knob to highlight **"START"** or **"STOP"** and PRESS ENT .

The FLIGHT TIMER can be set to begin when power is turned ON or when the aircraft lifts off. The DEPARTURE TIME can be recorded automatically when power is turned ON or when the aircraft lifts off.

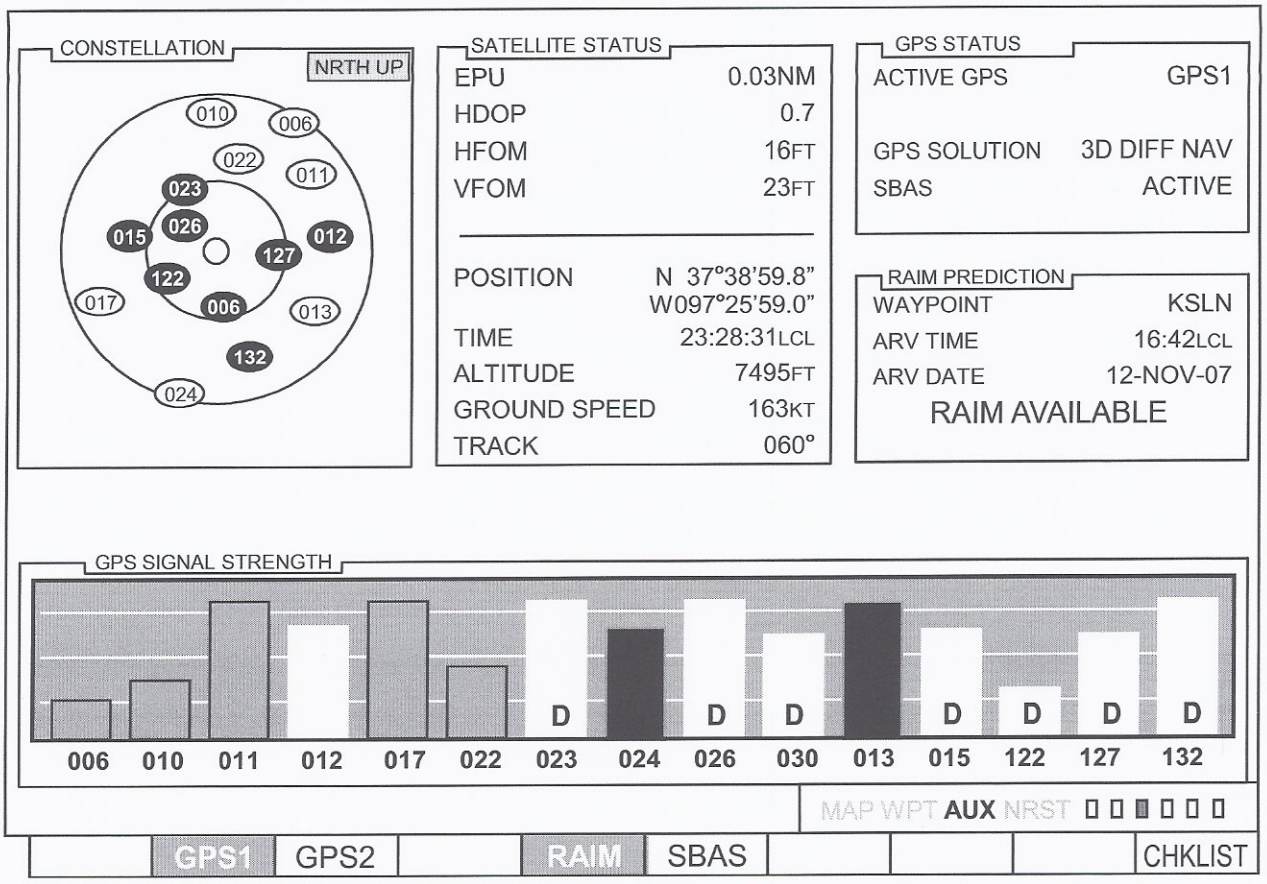
In each of the Scheduler boxes a reminder may be entered. The reminder can be classed as an Event, One Time, or Periodic. If Event is chosen you can set the date and time. Both One Time and Periodic classes allow you to set a time up to 999 hours, 59 minutes and 59 seconds. They begin counting down as soon as the choice is made and ENT is pressed.

PRESS MENU to view the options shown to the right. Any or all of the timers can be reset by highlighting the desired outcome and PRESS ENT .



AUX Page 3 - GPS Status

To access the GPS Status Page, ROTATE the Large FMS Knob until AUX is highlighted, then ROTATE the Small FMS Knob to select Page 3.



The sky view in the upper left corner depicts the satellites that are in view along with their relative position. The outer circle represents the horizon, the inner circle represents straight up and the middle circle denotes 45° above the horizon.

EPU is Estimated Position Uncertainty. This is a number calculated by the receiver. It is a statistical error indication and not an actual measurement.
HDOP is Dilution of Precision. Numbers of satellites and their geometry are used for this number. Accuracy is presented on a scale of 0.0 to 9.9 with lower numbers equaling better accuracy.
HFOM and VFOM are Horizontal and Vertical Figures of Merit. They are the current 95% confidence horizontal and vertical accuracy values reported by the GPS receiver.

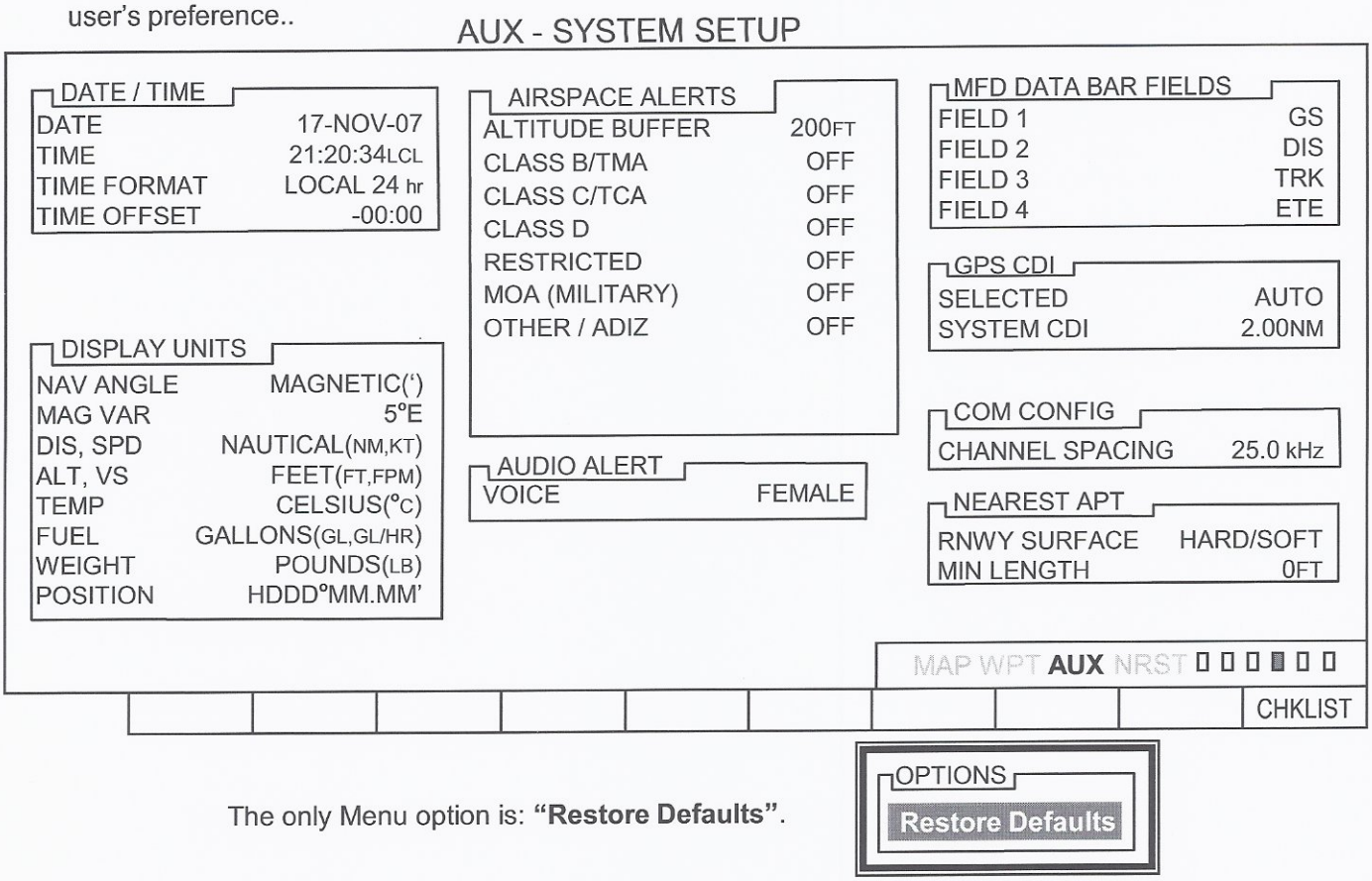
The upper right box displays GPS Status for the active receiver. The GPS Solution changes when the receiver is first turned on. "3D DIFF NAV" means the receiver has finished the differential fix acquisition. SBAS stands for Satellite-Based Augmentation System. A generic term that refers to a system that transmits in a specific message format and frequency which matches the design of WAAS.

The bottom box is used for RAIM Prediction. See RAIM Prediction under Flight Plans in this manual on Page 28. The depiction above shows that RAIM was available at Salina at 4:42 pm, on 12 November 2007.

The 2 Soft Keys on the bottom allow selection of either GPS receiver.

AUX Page 4 - System Setup

To access the System Setup Page, ROTATE Large the FMS Knob until AUX is highlighted, then ROTATE the Small FMS Knob to select Page 4. This page is used to customize the various fields to the user's preference..



The only Menu option is: **"Restore Defaults"**.

A complete list of selections for each group and subject is presented below

GROUP	SUBJECT	CHOICES
Date / Time	Date	Displays date
	Time	Displays Time in format selected
	Time Format	Local 12hr, Local 24 hr, and UTC.
	Time Offset	Hours and minutes ahead of or behind the present time.
Display Units	NAV Angle	MAGNETIC (°) or TRUE (°T)
	MAG VAR	(Blank) if "True" is chosen for NAV Angle
	DIST, SPD	METRIC (KM, KPH) or NAUTICAL (NM, KT)
	ALT, VS	FEET (FT, FPM) or METERS (MT, MPM)
	TEMP	CELSIUS (°C) or FAHRENHEIT (°F)
	FUEL	GALLONS (GL, GL/HR) or LITERS (LT, LT/HR)
	WEIGHT	POUNDS (LB) or KILOGRAMS (KG)
	POSITION	HDDD°MM.MM' or HDDD°MM'SS.S"

Continued on next page

AUX Page 4 - SYSTEM Setup
(cont'd)

GROUP	SUBJECT	CHOICES
Airspace Alerts	Altitude Buffer Class B /TMA Class C/TCA Class D RESTRICTED MOA (MILITARY) OTHER/ADIZ	Any amount up to 9,999 units. ON or OFF. ON or OFF. ON or OFF. ON or OFF. ON or OFF. ON or OFF.
Audio Alert	Voice	MALE or FEMALE
MFD Data Bar (See Below)	Field 1 Field 2 Field 3 Field 4	Each field can be configured to display any of the choices listed below. The default settings are: Ground Speed (GS), Desired Track (DTK), Track (TRK) and Estimated Time Enroute (ETE).
GPS CDI	Selected System CDI	0.30 NM, 1.00 NM, 2.00 NM or AUTO. (Shows present value.)
COM Configuration	Channel Spacing	8.33 kHz or 25.0 kHz.
Nearest APT	RNWY Surface Minimum Length	Any, Hard only, Hard / Soft, Water. Any value from zero to 99,999 ft.

MFD Data Bar Fields.

BRG - Bearing DIS - Distance DTK - Desired Track ESA - En Route Safe Altitude ETA - Estimated Time of Arrival ETE - Estimated Time En Route	GS - Ground Speed MSA - Minimum Safe Altitude TAS - True Airspeed TKE - Track Angle Error TRK - Track VSR - Vertical Speed Required XTK - Cross Track Error

Auxiliary Page 5 - XM WX

The Auxiliary Page 5 provides access to both XM Radio and XM Weather information Pages through the **RADIO** and **INFO** (△) Soft Keys. These features are available from XM Radio with a one-time activation fee and a monthly subscription. Either the GDL 69 or 69A receiver can display XM Satellite Weather data but only the 69A can receive XM Satellite Radio. Go to their website (xmradio.com) for additional information. Click on the "What is XM"/"Specialty Services" link and then the Aviation link in the bottom right corner for information on the XM Weather product. See next page for XM Radio information.

Levels of Service: At the time of this writing (November 2007) XM Weather has 2 levels of service: Aviator Light (LT) at $29.99/month and Aviator at $49.99/month. There is also a one-time activation fee of $75.00. Aviator LT includes the following products: Doppler Radar, TFRs, County Warnings, City Forecasts, METARs, TAFs and Precipitation Type at the surface. The Aviator package includes all the products listed below in the "Weather Products" window. The update frequency is different for the products and it can be as long as 15 minutes. Therefore it is not "Real Time" weather.

	Aviator LT	Aviator	Frequency of Broadcast
TFRs	X	X	12 Minutes
County Warnings	X	X	5 Minutes
City Forecasts	X	X	12 Minutes
Echo Tops		X	7.5 Minutes
AIRMETs		X	12 Minutes
Lightning		X	5 Minutes
METARs	X	X	12 Minutes
TAFs	X	X	12 Minutes
Winds Aloft		X	12 Minutes
SIGMETs		X	12 Minutes
Precip Type	X	X	5 Minutes
Severe Wx Storm Tracks		X	1.25 Minutes
Satellite Mosaic		X	15 Minutes
Surface Analysis		X	12 Minutes

Product Viewing:

Weather Data Link Page (Map 4):
All of the products are viewable.

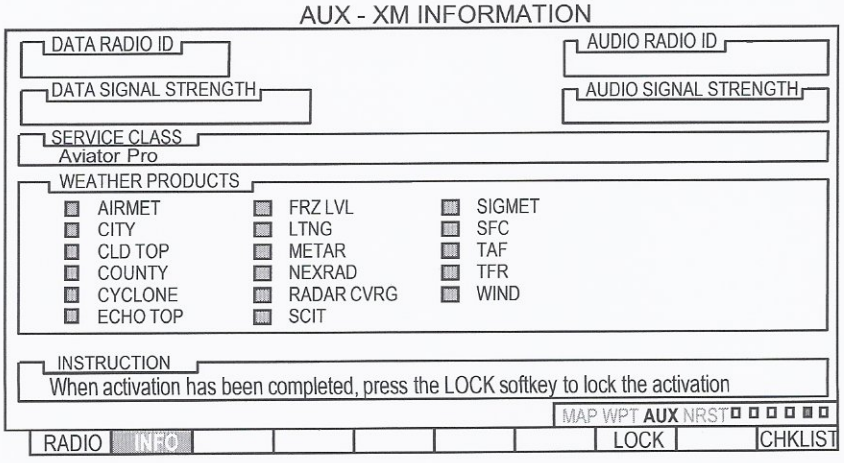
The PFD Insert Map:
NEXRAD, XM Lightning, Cell Movement and TFRs.

Navigation Map Page (Map 1):
NEXRAD, XM Lightning, Cell Movement, TFRs and Radar Coverage.

Airport Information Page (WPT 1) - PRESS WX (△) Soft Key:
METAR and TAFs.

Trip Planning Page (Aux 1), Nearest Page Group and Flight Plan Page Group:
NEXRAD XM Lightning, Cell Movement and TFRs.

AUX - XM INFORMATION



See our page 54 for a description of the Weather Data Link Page (Map 4). Also, see the Hazardous Avoidance section in Garmin's G1000 Pilot's Guide for more information.

See next page for XM Radio

Auxiliary Page 5 - XM Radio

The Auxiliary Page 5 provides access to both XM Radio and XM Weather information Pages through the **RADIO** and **INFO** (⏢) Soft Keys. These features are available from XM Radio with a one-time activation fee and a monthly subscription. The 69A receiver is necessary to receive XM Satellite Radio. See previous page for XM Weather information.

Levels of Service: At the time of this writing (November 2007) XM Radio is available for $6.99/month if used with XM Weather since they treat it as adding a radio. The subscription is good for reception throughout the Continental U.S. See their website at xmradio.com, click on the link "What is XM" then the "Pricing" link. You can also call them at 1-800-XM-RADIO for pricing and activation information.

Product Viewing:

XM RADIO Page (Aux 5): PRESS the **RADIO** (⏢) Soft Key to view the Soft Key choices shown below.

AUX - XM RADIO

ACTIVE CHANNEL

Steve Winwood	XM 8	Decades
Higher Love	The 80s	

CHANNELS

CHANNEL	NAME	TITLE	CATEGORY
0	RADIO ID:	G386308N	
1 XM Preview	Snoop Dog	Coming to XM	
2 The 40s	Savoy Express	Savoy Express	Decades
4 The 50s	Pat Boone	Remember You're	Decades
6 The 60s	Young Rascals	Good Lovin'	Decades
7 The 70s	Gladys Knight &	Neither One of U	Decades
8 The 80s	Steve Winwood	Higher Love	Decades
9 The 90s	Pearl Jam	Even Flow	Decades
10 America	Clint Black	A Better Man	Country
11 Nashville!	Trisha Yearwood	Reindeer Boogie	Country
12 X Country	Rod Picott	Up All Night	Country
13 Hank's Place	Justin Trevino	Teardrops Don't	Country
14 Bluegrass Juncti	Valerie Smith &	No Summer Storm	Country
15 Folk Village	Jackson Browne	Daddy's Tune	Country

CATEGORY: ALL CATEGORIES

VOLUME: MUTE

MAP WPT **AUX** NRST

RADIO | INFO | | CHNL | CATGRY | VOL | | PRESETS | | CHKLIST

The channels and categories may be directly selected and the volume can be controlled by using Soft Keys on this page. Refer to Section 8, Additional Features, of The Garmin G1000 Pilot's Guide for more information.

Auxiliary Page 6 - System Status

The System Status Page shows the status and software versions for all the system LRUs. Database information is also shown. If a red "X" appears in the status column, it means that LRU has failed. Inform your Cessna Service Center or Garmin.

AUX - SYSTEM STATUS

LRU INFO

	STATUS	SERIAL NUMBER	VERSION
CO GUARDIAN	✓		7.00
COM1	✓		7.00
COM2	✓	27000006	2.02d
GDC1	✓	47801548	1.05
GDL69	✓	47801373	1.05
GEA1	✓	47750372	3.02.00
GIA1	✓	46701911	2.07
GIA2	✓	46701913	2.07
GMA1	✓	FFFFFFFF	1.02
GMU1	✓	68500319	1.02
GPS1	✓	48400000	3.01
GPS2	✓	48400001	3.01
GRS1	✓		2.02d
GS1	✓	47500593	2.01
GS2	✓	47500607	2.01
GSA PITCH CTL	✓	AB0062149	2.3

AIRFRAME

AIRFRAME	Cessna 182T
SYSTEM SOFTWARE VERSION	0563.02
CRG PART NUMBER	GPN 190-00384-07
SYSTEM ID	200000000
CHECKLIST	182TCLAUSGWS-00
	Copyright Information Cessna

DATABASE

BASEMAP	
REGION	WORLDWIDE
VERSION	2.00
	GARMIN CORPORATION 1995-2006
SAFETAXI	
REGION	US
VERSION	2.07
CYCLE	07S6
EFFECTIVE	25-OCT-07
EXPIRES	20-DEC-07
	GARMIN LTD. AND ITS SUBSIDIARIES 2006
AVIATION	
REGION	WORLDWIDE

MAP WPT **AUX** NRST

LRU | ARFRM | DBASE | ANN TEST | CHKLIST

NOTE: The databases for Expanded Basemap, Terrain, Airport Terrain, Obstacle, SafeTaxi™ and FliteCharts™ are contained on two supplemental data cards and are provided on a subscription basis (FliteCharts™ or ChartView is contained on only 1 data card.) These data cards MUST be installed in the lower slot on the right side of PFD and MFD. The database versions on both cards must be identical.

NOTE: The Database for the SafeTaxi™ i is updated every 56 days. The cycle shown above (07S6) indicates the year (07), SafeTaxi™ (S) and the 6th cycle in the year 07 (6).

NOTE: The FliteCharts™ and ChartView data is updated on a 28-day cycle. If they are not updated within 180 days of the expiration date, they will no longer function. The card containing this database must be inserted in the MFD.

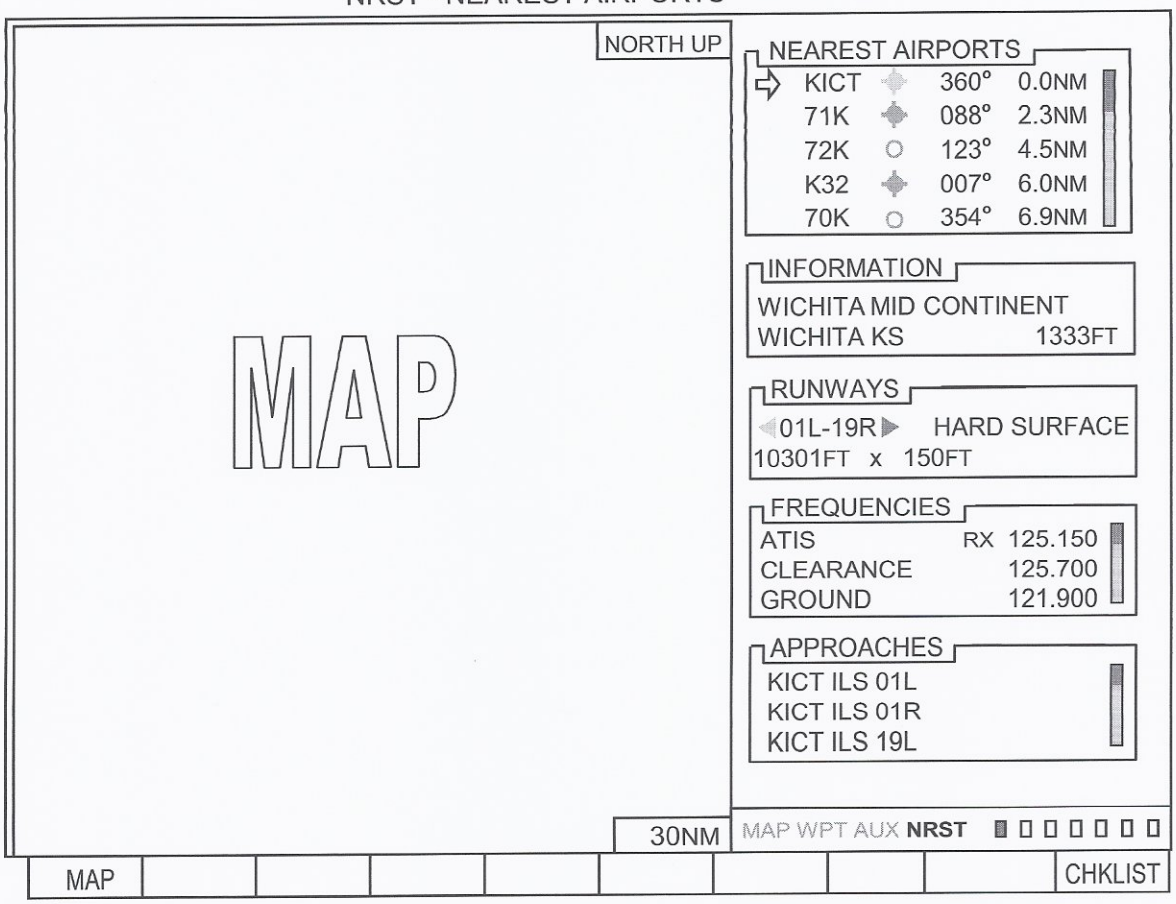
NOTE: If "REGION" and "CYCLE" versions are showing "NOT AVAILABLE" in blue, it means that no ChartView data is available on the database card or the card is not inserted.

NOTE: See Appendix B of the Garmin G1000 Pilot's Guide for information on updating the databases.

Appendix E - MFD Nearest Pages

Nearest Page 1 - Airports

NRST - NEAREST AIRPORTS



Nearest Airports (NRST Page 1), gives access to information for up to 25 airports within 200 NM of present position. Your list may look different than what is shown in the top block because your nearest airport criteria, set on the AUX 4 page, may be different.

To view other airports, PRESS **APT** (△) Soft Key and ROTATE Large FMS Knob to highlight the next identifier. When a different identifier is highlighted, the Information, Runways, Frequencies and Approaches change to reflect the highlighted identifier. Additionally, the map expands its coverage to include the airport and a white line, consisting of alternating dots and dashes, is drawn from the airplane symbol to the airport. Remember, with any airport identifier highlighted, you may push (D▶) then (ENT) twice to create a direct course to that airport.

To view other runway information PRESS **RWY** (△) Soft Key and ROTATE Small FMS Knob in the direction of the highlighted arrow.

To view frequency information PRESS the **FREQ** (△) Soft Key and ROTATE either FMS Knob. When a frequency is highlighted it may be loaded into the standby frequency position. PRESS (ENT).

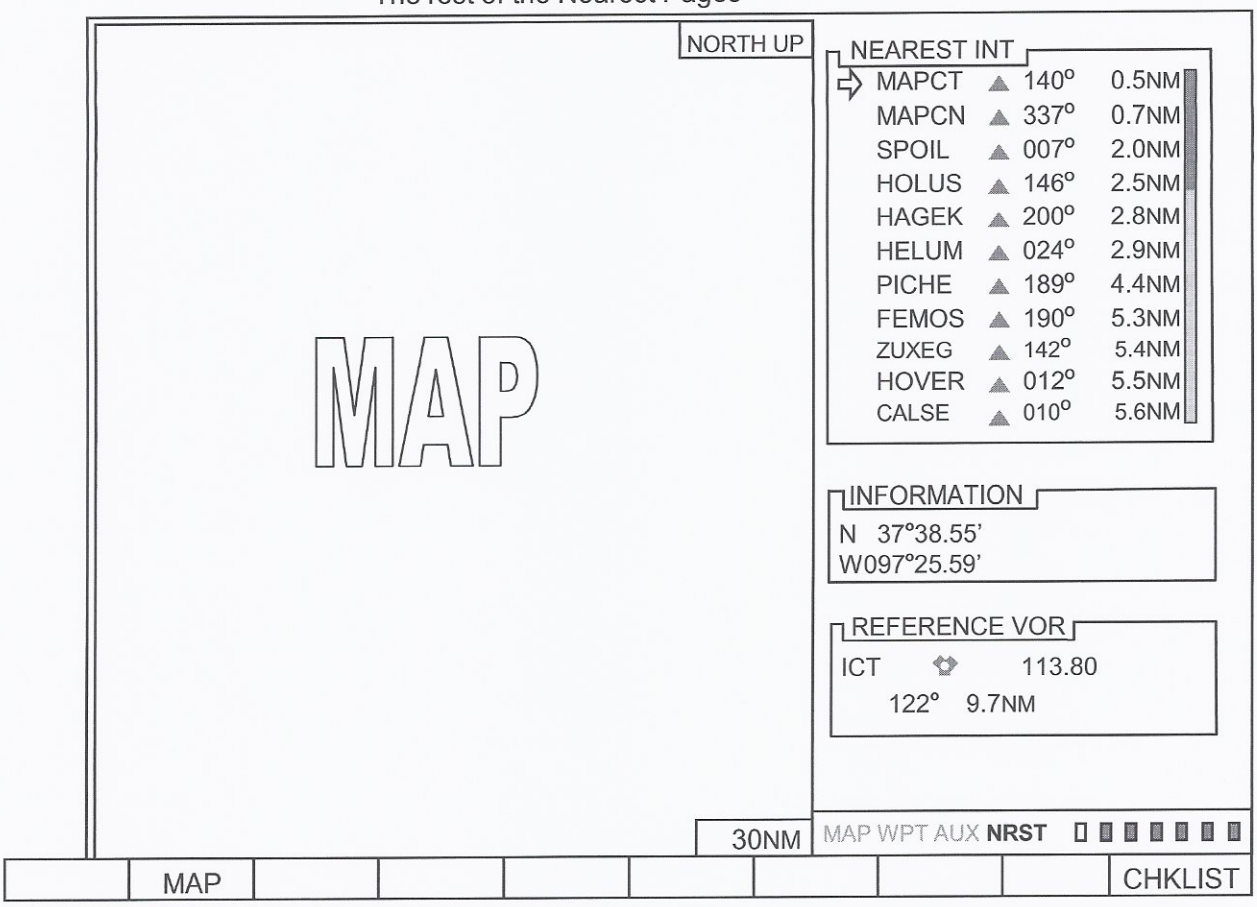
To load an approach PRESS the **APR** (△) Soft Key, ROTATE the either FMS Knob to highlight the desired approach and PRESS the **LD APR** (△) Soft Key. If necessary ROTATE either FMS Knob to highlight the desired transition, PRESS (ENT) twice. The approach frequency is automatically loaded into the standby frequency position if it is not a GPS approach.

NOTE: While flying, all of the Nearest Pages continuously update and the white, dashed line also continues to update from the aircraft to the highlighted airport.
NOTE: The Nearest Airport function can be accessed on the PFD also. PRESS **NRST** (△) Soft key. Only the best approach is shown but all are selectable by pressing (PROC).

Appendix E - MFD Nearest Pages

Nearest Pages 2 thru 7

The rest of the Nearest Pages



The **Nearest Intersections (Page 2)**, gives access to information for up to 25 intersections within 200 NM of present position. To view other intersections, PUSH the Small FMS Knob to turn the cursor ON and ROTATE Large FMS Knob to highlight the next identifier. When a different identifier is highlighted, the Information and Reference VOR change to reflect the highlighted identifier. Additionally, the map expands its coverage to include the intersection and a white dashed line is drawn from the airplane symbol to the airport. With any intersection identifier highlighted, you may push (D▶) then (ENT) twice to create a direct course to that intersection. There are no Soft Keys or Menu functions on this page.

The **Nearest NDB (Page 3) and Nearest VOR (Page 4)**, operate the same as above. The Information box gives the name, location, type of facility and coordinates while the bottom box shows the frequency. The pages can show the nearest 25 facilities within 200 NM.

The **Nearest User Waypoints Page (Page 5)**, looks almost identical to the Intersections Page.

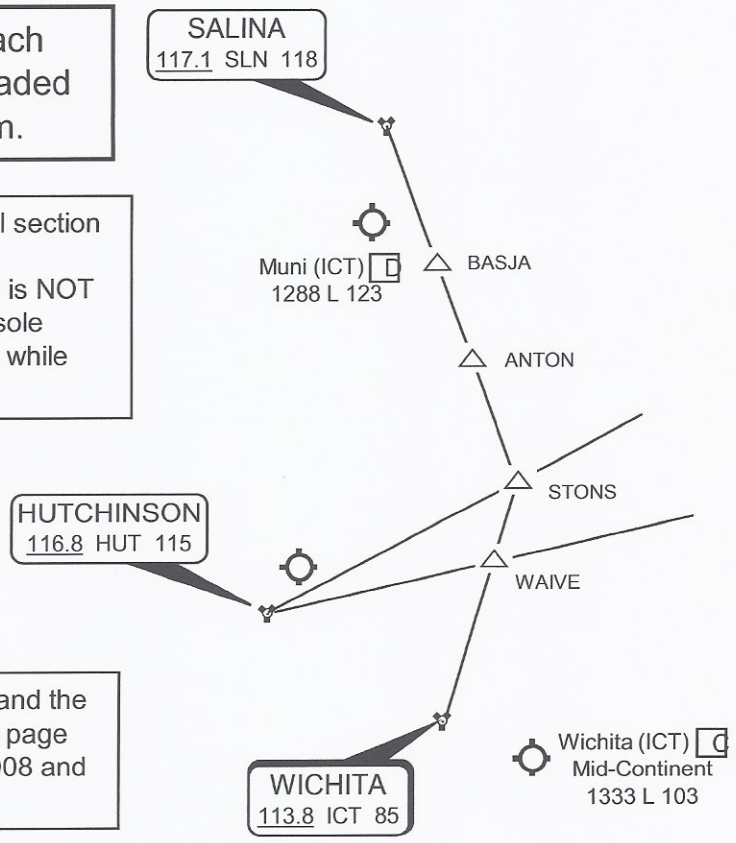
The **Nearest Frequencies (Page 6),** displays the frequencies for the nearest 5 ARTCC, 5 FSS and 8 Weather Broadcast facilities (ATIS, AWOS and ASOS). This page incorporates Soft Keys for the 3 types of facilities. [ARTCC] [FSS] [WX] To view other ARTCC or FSS facilities, PRESS the appropriate Soft Key and ROTATE Small FMS Knob. These functions can also be accessed through the (MENU) button.

The last **Nearest Airspaces (Page 7)**, displays name of the airspace, show its class and controlling agency, vertical limits and appropriate frequencies.

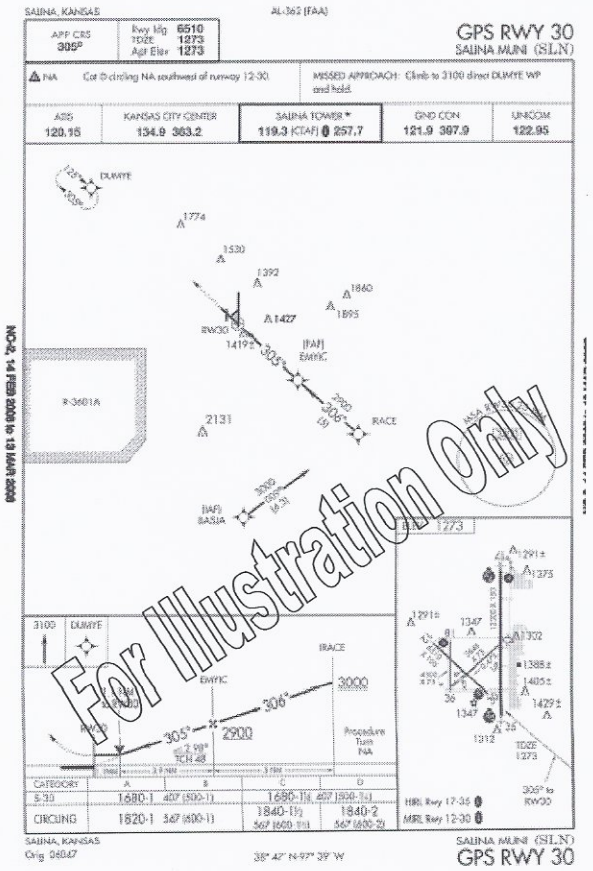
Appendix F
Map and Approaches

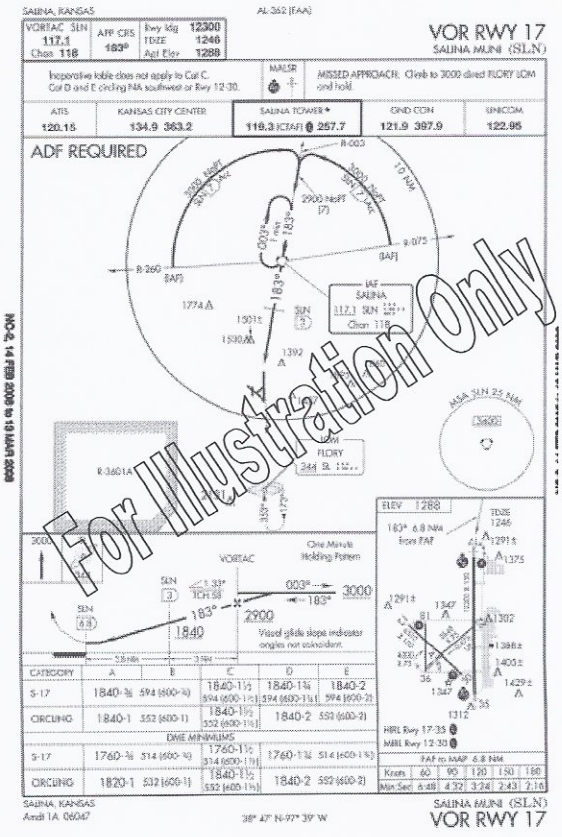
NOTE: The current NACA approach charts may be found and downloaded from the website www.airnav.com.

This is a only a representation of a small section of Panel 6 of the IFR ENROUTE LOW ALTITUDE Chart. It is NOT to scale and is NOT to be used for navigation purposes. It's sole purpose is to give a sense of orientation while entering the flight plan on our Page 14.

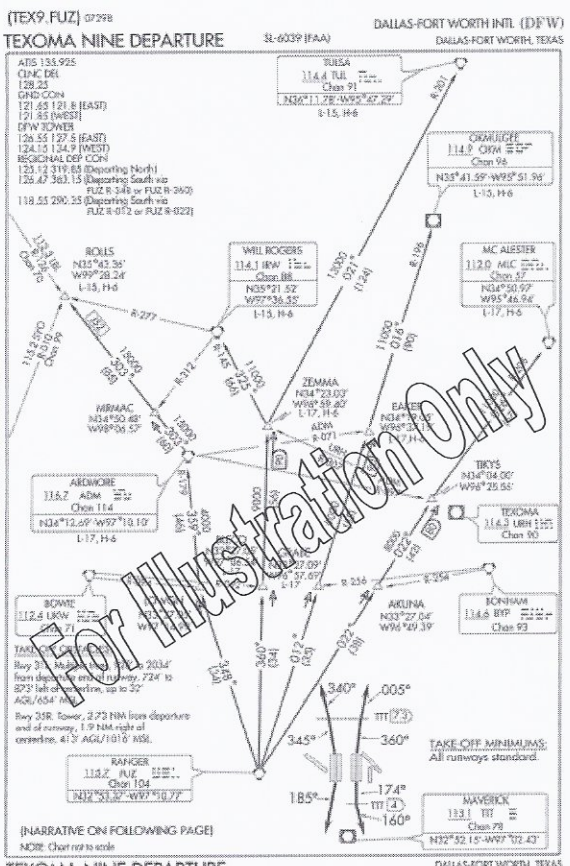


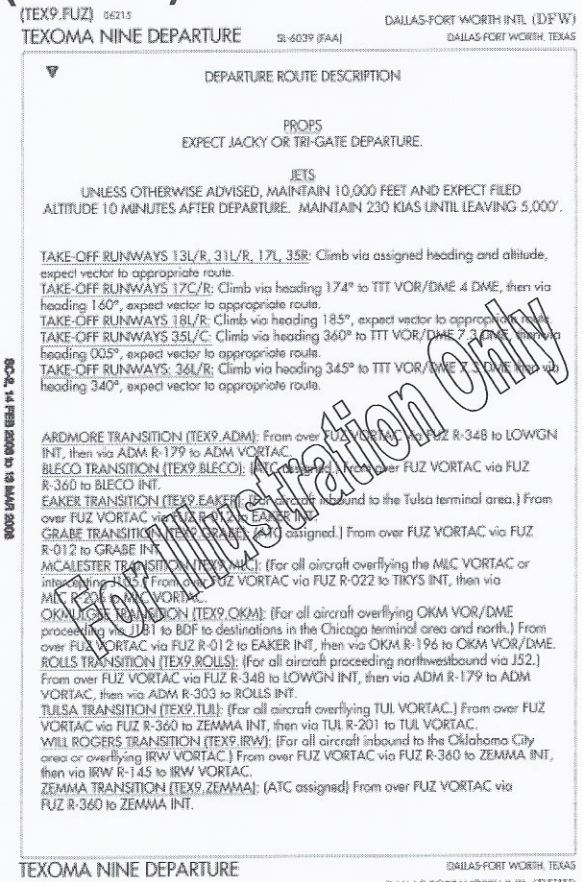
The two approach plates shown below, and the Departure and Arrival charts on the next page are copies of the charts as of 08 Feb, 2008 and are for orientation purposes only.

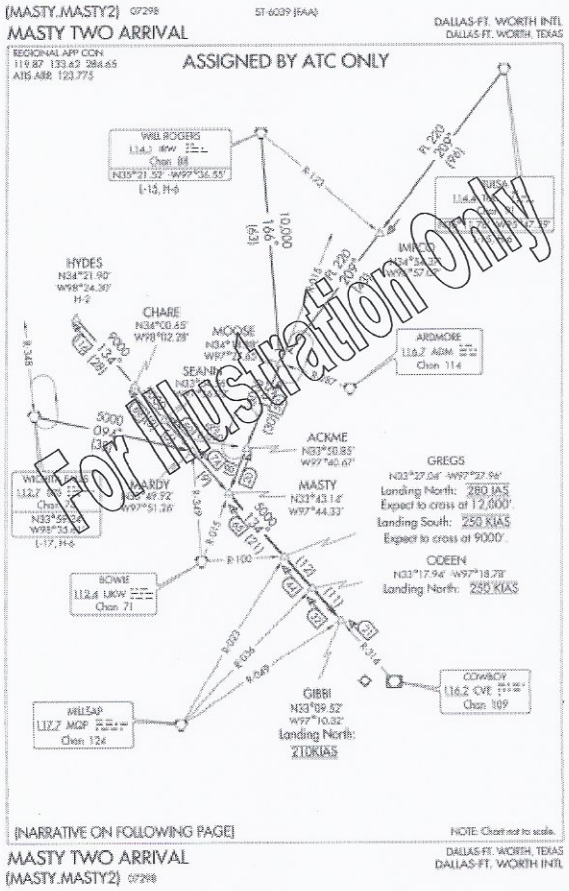




DP and STAR (KDFW)



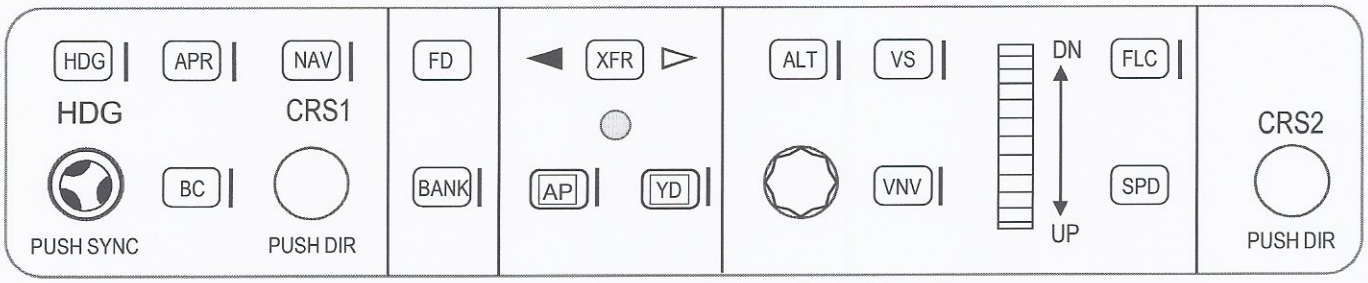




Appendix H - AFCS Varients

Cessna 207, Citation Mustang, Beechcraft C90A/GT and Socata TBM 850

The following dedicated AFCS keys are located above the MFD. There may be 2 Flight Directors, a Pilot and CoPilot located in the respective PFD. Only one Flight Director can be selected at a time. Both PFDs display the selected Flight Director as evidenced by the illuminated arrow next to the XFR key and by an arrow in the center of the AFCS Status Box pointing toward the pilot or copilot side. When certain functions are selected, the annunciator light next to the appropriate key illuminates.



HDG Key Selects/deselects Heading Select Mode to track the selected heading.
APR Key Selects/deselects Approach Mode to include Vertical tracking for ILS Glideslope and WAAS GPS Glidepath during approaches.
NAV Key Selects/deselects Navigation Mode. (Captures and Tracks GPS or VOR/LOC.)
HDG Knob adjusts the heading and bug in 1° increments on the HIS in both PFDs. PRESS it to synchronize the selected heading to the current heading on the pilot-side PFD.
BC Key Selects/deselects Backcourse Mode. (Captures and Tracks a localizer for a backcourse approach.) When making a backcourse approach, the selected course should be set to the localizer front course.
CRS1 Knob adjusts the selected course in 1° increments on the HSI of the pilot's PFD when operating in VOR, LOC or OBS Modes. PRESS to re-center the CDI and return the course pointer directly TO the bearing of the active waypoint or station.

FD Key Activates/deactivates the selected flight director only. Pressing once turns on the selected flight director in the default pitch and roll modes. Pressing again deactivates the selected flight director and removes the Command Bars. If the autopilot is engaged, the key is disabled.
BANK Key Selects/deselects Low Bank Mode (15° maximum bank). It is automatically activated above 25,000 ft. When active, the annunciator light next to the BANK key is illuminated and the Low Bank limits are depicted with a green arc on the Roll Scale in the PFD.

XFR Key selects the other Flight Director. Both PFDs display the selected flight director as indicated by the illuminated arrow beside the XFR Key and in the center of the AFCS Status Box. When the flight directors are switched, both the vertical and lateral modes revert to their default values.
AP Key Engages/disengages the autopilot and yaw damper. It also activates the flight director.
YD Key Selects/deselects the yaw damper independently of the autopilot.

ALT Key Selects/deselects Altitude Hold Mode.
VS Key Selects/deselects Vertical Speed Mode. (Manual vertical speed control.)
NOSE UP/NOSE DN Trim Wheel controls the mode reference in Pitch Hold, Vertical Speed, and Flight Level.
FLC Key Selects/deselects Flight Level Change Mode. It keeps the aircraft IAS constant while climbing or descending to the selected altitude. The referenced airspeed is set when the mode is activated.
ALT SEL Knob adjusts the selected altitude in 100-ft increments. During approach conditions the altitude is adjusted in 10-ft increments.
VNV Key Selects/deselects Vertical Path Tracking Mode for Vertical Navigation flight control. It captures and tracks descent legs of an active vertical profile.
SPD Key is disabled in the Cessna application. In the King Air and Mustang, it toggles the airspeed reference between IAS and Mach for Flight Level Change Mode.

CRS2 Knob is same as CRS1 Knob but for the HSI on the co-pilot's PFD.

GA Switch disengages the autopilot and programs the flight director for a wings-level, pitch-up attitude. The table shows the degrees of pitch-up when the aircraft is on the ground and in the air. The GA switch is located on the throttle for single-engine or left throttle for twin-engine aircraft.

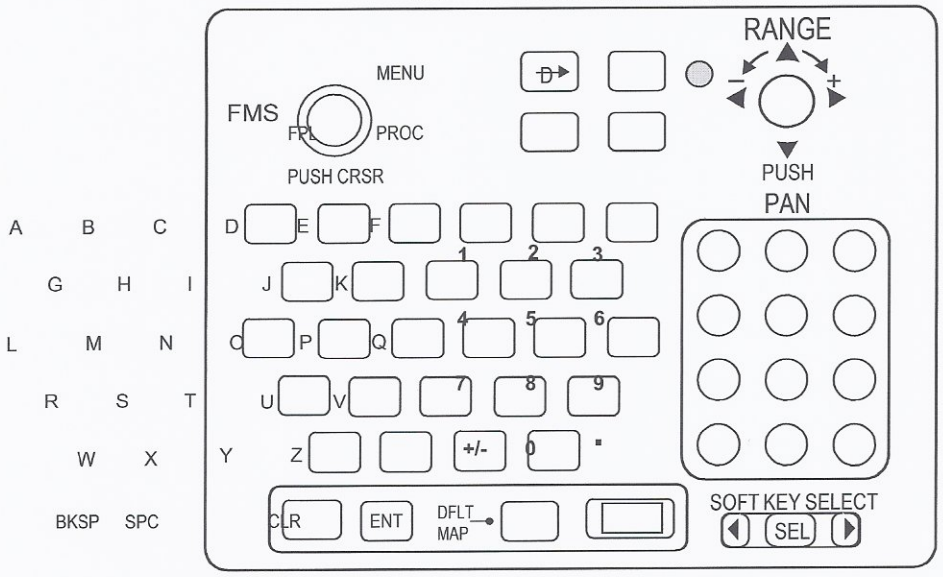
Aircraft	Ground	Air
Cessna 207	7°	7°
Citation Mustang	10°	8°
King Air C90/GT	8.6°	8°
Socata TBM 850	7.5°	7.5°

Appendix I - AFCS Varients

Cessna 207, Citation Mustang, Beechcraft C90A/GT and Socata TBM 850

Besides having controls on the MFD bezel, the above aircraft also have controls for the MFD on the MFD Control Unit shown below. The controls across the top, FMS Knob, the four function keys and the Joystick, perform the same functions as the controls on the MFD bezel. The following controls have unique functions only accessible from the Control Unit:

MFD Control Unit



The Alphanumeric Keys allow the operator to enter data directly instead of selecting individual characters with the FMS Knob.

The **Plus/Minus** Key switches between a (+) and (-) character.

The **Decimal** Key enters a decimal point.

The **BKSP** Key moves the cursor back one space.

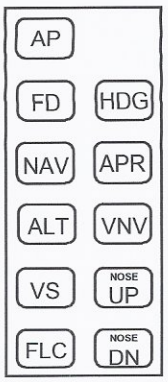
The **SPC** Key adds a space character.

The **CLR** Key either erases information, cancels an entry or removes a page menu. PRESS and Hold this key to return to the Navigation Map Page.

PRESS the arrows on the Soft Key Select button ◀ SEL ▶ to highlight the next soft key to the left or right on the MFD. PRESS the center of the key activates the highlighted soft key.

Appendix J - AFCS Varients

Cessna 350/400, Mooney M20M/M20R/M20TN and Diamond DA40/40F



The following dedicated AFCS keys are located on the left side of the MFD. When certain functions are selected, the annunciator appears on the PFD. White indicates an armed mode and green is the active mode. Note the absence of a Back Course key. (See Appendix

AP Key Engages/disengages the autopilot and yaw damper. It also activates the flight director.
FD Key Activates/deactivates the selected flight director only. Pressing once turns on the selected flight director in the default pitch and roll modes. Pressing again deactivates the selected flight director and removes the Command Bars. If the autopilot is engaged, the key is disabled.
HDG Key Selects/deselects Heading Select Mode to track the selected heading.
NAV Key Selects/deselects Navigation Mode. (Captures and Tracks GPS or VOR/LOC.)
APR Key Selects/deselects Approach Mode to include Vertical tracking for ILS Glideslope and WAAS GPS Glidepath during approaches.
ALT Key Selects/deselects Altitude Hold Mode.
VNV Key Selects/deselects the Vertical Navigation Mode. (Used only in WAAS equipped aircraft.)
VS Key Selects/deselects Vertical Speed Mode. (Manual vertical speed control.)
NOSE UP Key changes the pitch mode while operating under Pitch Hold, Vertical Speed or Flight Level Change Mode. Each press results in 0.5° pitch, 100 fpm or 1 kt change.
FLC Key Selects/deselects Flight Level Change Mode. It keeps the aircraft IAS constant while climbing or descending to the selected altitude. The referenced airspeed is set when the mode is activated.
NOSE DN Key changes the pitch mode while operating under Pitch Hold, Vertical Speed or Flight Level Change Mode. Each press results in 0.5° pitch, 100 fpm or 1 kt change.

The **GA** Switch for the Cessna is located on the throttle. When pressed, it disengages the autopilot and programs the flight director for a wings-level, 7° pitch-up attitude. It also automatically arms the Altitude Hold Mode.
The **GA** Switch for the Mooney is located on the instrument panel. When pressed, it also provides a wings-level, 7° pitch-up attitude.

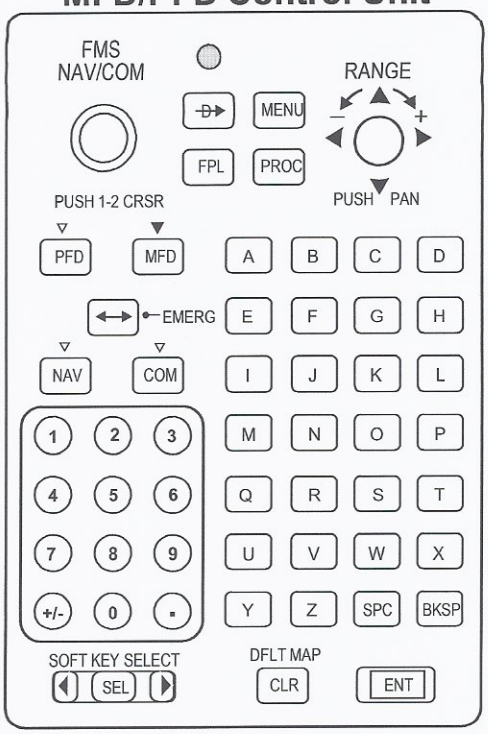
NOTE: There is no Back Course Key. When executing a Back Course Approach, remain in the GPS mode for navigation until on a course to intercept the final approach course inbound. PRESS the **CDI** Key to change the needle over to VOR/LOC 1 (or 2) and insure the course needle is aligned with the inbound course for the FRONT COURSE Localizer.
PRESS the **NAV** Key. (DO NOT PRESS the **APR** Key. Since your heading is more than 105° from the inbound front course the unit recognizes that and the **BC** annunciator will appear in white (armed). As the CDI centers, it will change to green and the aircraft will turn inbound.

NOTE: As of this writing, the CD Trainer for the unit does not operate correctly in the Back Course Mode.

Appendix K - AFCS Varients

Cessna 350/400 MFD/PFD Control Unit

MFD/PFD Control Unit



Cessna 350/400 MFD/PFD Control Unit

The Cessna 350/400 also has an MFD/PFD Control Unit mounted on the pedestal which facilitates data entry, tuning of the NAV/COMs and PFD/MFD Operation. Indicators above the keys labeled: PFD, MFD, NAV and COM, illuminate when their mode(s) are selected. When powered up, the unit defaults to MFD control mode.

Keys that are different from the bezel-located ones are:

The Alphanumeric Keys which include a backspace (BKSP) and space (SPC) key.

The NAV and COM Keys select or deselect the radio tuning mode on the Control Unit.

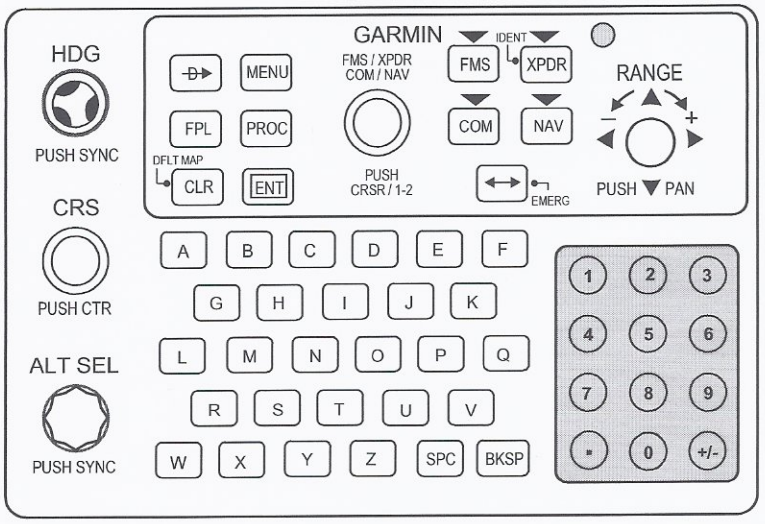
The [↔] Frequency Transfer Key transfers between the active and standby selected tuning frequencies. When held for two seconds the emergency frequency (121.5) is tuned into the active frequency field.

Press the [◀] [SEL] [▶] Soft Key Select Key arrows to move the highlighted soft key on the chosen display. In the example it is the MFD because the arrow above the MFD Key is illuminated. When the desired soft key is highlighted, PRESS the center to activate the soft key.

Appendix L - AFCS Varients

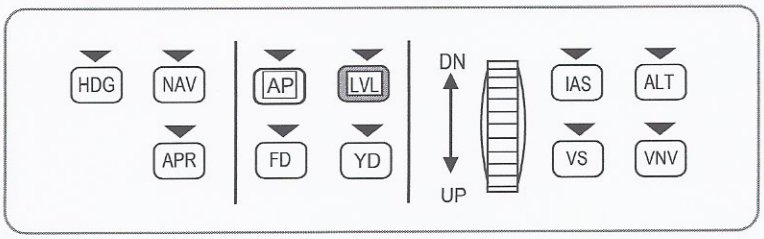
Cirrus Perspective

Control Unit



Rotating the FMS / XPDR / COM / NAV large and small knobs tune the Communications, Navigation, Transponder or selects data when the COM, NAV, XPDR or FMS button is pressed. The annunciator above the button illuminate when the mode is selected.

GMC 705 AFCS Control Unit



The IAS button replaces the FLC button to better reflect its actual function.
The LVL button, when pressed, engages the autopilot, rolls the wings level and returns the pitch to level.
The pitch trim is adjusted with a thumb wheel which is more intuitive.

NOTE: There is no Back Course Key. When executing a Back Course Approach, remain in the GPS mode for navigation until on a course to intercept the final approach course inbound. PRESS the **CDI** Key to change the needle over to VOR/LOC 1 (or 2) and insure the course needle is aligned with the inbound course for the FRONT COURSE Localizer. PRESS the **NAV** Key. (DO NOT PRESS the **APR** Key. Since your heading is more than 105° from the inbound front course the unit recognizes that and the **BC** annunciator will appear in white (armed). As the CDI centers, it will change to green and the aircraft will turn inbound.

NOTE: As of this writing, the CD Trainer for the unit does not operate correctly in the Back Course Mode.

Appendix M - SVS Operations

Cirrus Perspective™

NOTE: At the time of this writing, July 2008, Synthetic Vision is only available on the Cirrus Perspective version of the G1000. It will appear in the other manufacturer's offerings in the near future.

	INSET		PFD	OBS	CDI	DME	XPDR	IDENT	TMR/REF	NRST	ALERTS

1. On the bottom of the PFD screen, PRESS **PFD** (△) Soft key to view the **SYN VIS** (△) Soft Key shown below.

SYN VIS										BACK	

2. PRESS THE **SYN VIS** Soft Key to view the following Soft Key choices:

PATHWAY	SYN TERR	HRZN HDG	APTSIGNS							BACK	

PRESS each Soft Key to activate that feature.
NOTE: The **SYN TERR** feature must be active before any other SVS feature may be activated.
NOTE: When system power is removed and reinstated, the system remembers the state (ON or OFF) of each soft key.

SYN TERR feature must be activated before the other features may be activated in any order and/or combination. The **Flight Path Marker** or **Velocity Marker** appears when the groundspeed is above 30 kts and the Synthetic Terrain feature is in operation. It represents the direction of flight path, not the aircraft heading.

The **Zero Pitch Line** is drawn completely across the display and shows the aircraft attitude with respect to the actual horizon, not necessarily the visible horizon such as when in mountainous terrain or between cloud layers. It does not appear behind the Airspeed and Altitude displays.

HRZN HDG - is synchronized with the HSI and appears on the Zero Pitch Line in 30° increments. It displays for approximately 30° left and right of the flight path. Neither the Zero Pitch Line or the Horizon Heading is visible behind the Airspeed and Altitude displays.

PATHWAY - Pathways provide supplemental information and are intended as an AID to situational awareness and should not be used independently of the CDI or VDI. When activated, it presents a series of rectangular boxes that depict course guidance. Other applications term this feature as Highway In The Sky (HITS). The rectangles are color coordinated with the navigation source (Magenta - GPS, Green - VOR or LOC, White - an inactive leg of an active flight plan). Normal dimensions of the boxes are 700' wide and 200' tall although during an approach, they diminish in size to coincide with one-half full scale deflection of the CDI and VDI. Climb profiles are not displayed and descent profiles are shown only for a programmed descent.

Airport Signs - Provides a visual representation of airport location and identification. A sign first appears when the aircraft is approximately 15 nm away and will include the identifier when the aircraft is approximately 8 nm away. They disappear when within 4.5 nm. They are not shown behind the Airspeed or Altitude displays.

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