

# APOLLO

# CNX80

## Color GPS/WAAS/Nav/Com Pilot's Guide



Airworthiness certification support for non-TSO functions is available from AT upon request (see the installation manual for details).

This document and the information disclosed herein are proprietary information of Garmin AT. Neither this document nor the information contained herein shall be transmitted, reproduced, copied, or disclosed in any form or by any means without the written authorization of Garmin AT.

The information disclosed herein includes trade secrets and confidential business and/or financial information and falls within exemption (b) (4) of 5 USC 552 (FOIA) and the prohibitions of 18 USC 1905.

Garmin AT™ is a trademark of Garmin International, Inc.

© 2003 by Garmin AT, Inc. All rights reserved.

Garmin AT, Inc.  
PO Box 13549  
Salem, OR 97309

2345 Turner Rd., SE  
Salem, OR 97302  
USA

Phone (503) 581-8101  
1-800-525-6726  
In Canada 1-800-654-3415  
FAX (503) 364-2138

[www.garminat.com](http://www.garminat.com)

Cage Code: OXCJ6

## History of Revisions

April 2003	SW Ver. 1.0	560-0984-00 Rev --
April 2003	SW Ver. 1.0	560-0984-00 Rev A
May 2003	SW Ver. 1.0	560-0984-00 Rev B
August 2003	SW Ver 1.0	560-0984-00 Rev C

# Table of Contents

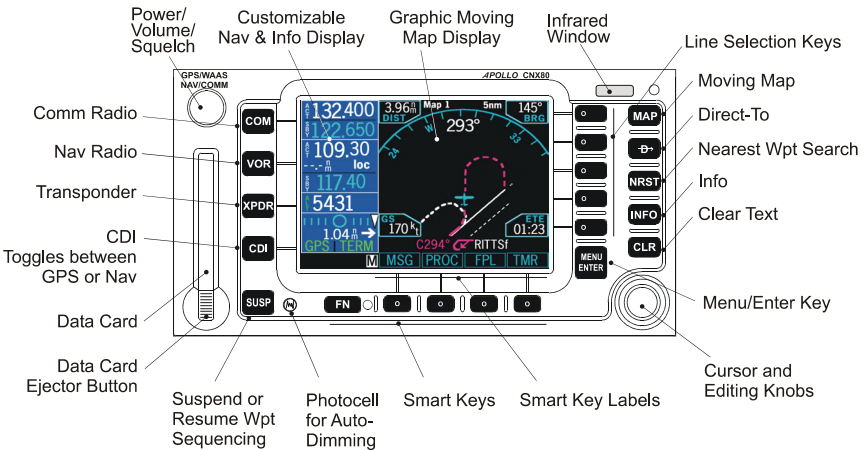
<b>Introduction</b> .....	<b>1</b>
<b>Controls</b> .....	<b>2</b>
Power/Volume .....	2
Datacard .....	3
<b>Display</b> .....	<b>4</b>
Annunciations .....	5
<b>Starting Up</b> .....	<b>6</b>
Power Up .....	6
Database Check .....	6
<b>Map Mode (MAP)</b> .....	<b>7</b>
<b>Panning (PAN)</b> .....	<b>9</b>
Range .....	9
Create a New User waypoint .....	9
<b>Direct-To</b> .....	<b>10</b>
WPTS .....	10
DB .....	10
Direct .....	10
Inserting a Hold .....	10
Destination (Dest) .....	11
Course To (CrsTo) .....	12
Course From (CrsFr) .....	12
OBS .....	13
FlyLeg .....	14
<b>Nearest Waypoints (NRST)</b> .....	<b>15</b>
Nearest Frequency .....	15
Info on Nearest Waypoint .....	16
Fly Direct-To a Nearest Waypoint .....	16
Change Your Approach to a Nearest Waypoint .....	16
<b>Information on Waypoints (INFO)</b> .....	<b>17</b>
<b>Com Radio (COM)</b> .....	<b>18</b>
<b>Nav Radio (VOR)</b> .....	<b>21</b>
<b>Transponder Control (XPDR)</b> .....	<b>24</b>
Ident .....	24
Standby .....	24
ON .....	24
Alt .....	24
Transponder Line Selection Keys .....	24
Manually Select a Squawk Code .....	25
<b>Flight Planning (FPL)</b> .....	<b>26</b>
View .....	26
Reverse (Rvrse) .....	26
Save .....	27
Edit .....	27

Execute (Exec) . . . . .	27
Comment (Cmnt) . . . . .	27
Copy . . . . .	27
Discontinuity . . . . .	27
Pilot Nav Legs . . . . .	28
Searching for Waypoints to Insert into a Flight Plan . . . . .	28
Steps for Setting Up a Simple Flight Plan . . . . .	29
Steps for Setting Up an IFR Flight Plan . . . . .	30
Vector To Final . . . . .	33
Missed Approach . . . . .	33
<b>Timer (TMR) . . . . .</b>	<b>34</b>
Timer 1 and Timer 2 . . . . .	34
Trip Time and Distance . . . . .	34
Flight Time and Distance . . . . .	34
Trigger Speed . . . . .	35
<b>Checklist (CHK) . . . . .</b>	<b>35</b>
Creating a New or Editing an Existing Checklist . . . . .	35
Using Your Checklist . . . . .	36
Move a Checklist . . . . .	36
<b>User Waypoints (USER) . . . . .</b>	<b>37</b>
Creating or Editing a User Waypoint . . . . .	37
Searching for a User Waypoint . . . . .	37
<b>System Mode (SYS) . . . . .</b>	<b>38</b>
GPS Status . . . . .	38
Software Versions . . . . .	38
Configuration . . . . .	39
<b>Parallel Track (PTK) . . . . .</b>	<b>40</b>
Activating Parallel Track . . . . .	40
<b>Simulator Mode . . . . .</b>	<b>41</b>
Automatic Track (ATK) . . . . .	41
Present Position (PPOS) . . . . .	42
Airspeed . . . . .	42
<b>Messages (MSG) . . . . .</b>	<b>42</b>

# Introduction

This guide describes the operation of the CNX80 Color GPS/WAAS NavCom. The CNX80 provides a new, higher level of accuracy, integrity, integration, flight planning capability, and convenience for the pilot. The CNX80 combines a large number of easily accessible controls to use the high-resolution color multi-function display, Nav and Com transceivers, GPS/WAAS navigator, and transponder controller all in a single unit. The CNX80 with the GPS/WAAS navigator is certified for use as primary navigation.

This User's Guide focuses on the basics, so you can get the most out of your CNX80, quickly. For more details and examples, refer to the CNX80 User Reference Manual and the CNX80 Computer-Based Training (CBT), both of which are provided on Compact Disc for your convenience. These documents and the Quick Reference Guide, when used with the simulator for practice, will prepare you to get the most out of your equipment.



## Controls

### Power/Volume

The knob at the top left corner of the CNX80 controls power on/off and the radio volume. Push the **PWR/VOL** knob in to turn power on. Pull the knob out to turn power off. When the power knob is pulled out, a time-out message and counter will appear for five seconds. Turning the knob will control the volume of the COM radio, unless the NAV radio is active then the NAV volume is controlled.

### COM

Select Com radio mode. Press **COM**.

### VOR

Select Nav radio mode. Press **VOR**.

### XPDR

Select the Transponder mode, if installed. Press **XPDR**.

### CDI

Toggles the CDI indication between GPS and internal VOR/LOC radio sources.

### SUSP

Suspends or resumes flight plan waypoint sequencing. When waypoint sequencing is suspended, the SUSP annunciator will be displayed in the bottom left corner of the display.

### MAP

Selects Map mode. Press **MAP** twice to view Map page 1.

### Direct-To

Selects the Direct-To menu. Menu options allow setting up Direct-To (D->), setting a customized holding pattern around a waypoint (Hold), Course To (CrsTo) a waypoint, Course From (CrsFr) a waypoint, OBS mode, and jumping to a given leg of your active flight plan (FlyLeg). Bearings can be TO or FROM. Radials are only FROM.

### NRST

Activates Nearest Waypoint Search. You can search through the closest 20 of airports, NDBs, VORs, intersections, airspaces, user-created waypoints, FSS, and ARTCC.

### INFO

Activates Info mode for the highlighted waypoint or the TO waypoint.

### CLR

Clears text when editing or deletes selected items depending on the mode.

## **MENU/ENTER and Line Selection Keys**

When editing information, or a response is required, pressing this key accepts the value. In other cases, pressing this key will bring up a series of menu items on the right side of the display. The menu items are then selected by pressing the key to the right of it. Pressing the **Menu/Enter** key while the menu items are shown will make them disappear.

## **Large/Small Knobs**

You can move the cursor or highlight information by turning the **Large** knob. Turn the **Small** knob to change information.

## **CRSR**

Press the **Small** knob in to activate the cursor. The area on the display that you can now edit will be highlighted. Now you can change information with the **Small** knob and move the cursor to the next area to edit with the **Large** knob. If you are in Map mode, pressing the **CRSR** activates PAN mode. In Transponder mode, it allows editing codes.

## **FN**

Press the **FN** key to page through the available group of Functions that appear at the bottom display. The “smart” keys located below each label will activate that function.

## **Datacard**

The Map database and other information is stored on a data card. The use of a data card allows you to easily update information.

### **Note**

*Only change the data card when the power is turned off or you may damage your unit.*

Handle your data card carefully. Do not touch the connector edge of the data card. To eject the card, press the data card ejector. Gently pull the card straight out of the slot. Insert a data card by pushing the card straight into the slot. When fully inserted, the data card and eject button will be flush and slightly recessed into the bezel.

When contacting your dealer or the Garmin AT technical services staff, eject the data card and write down the information shown on the label.

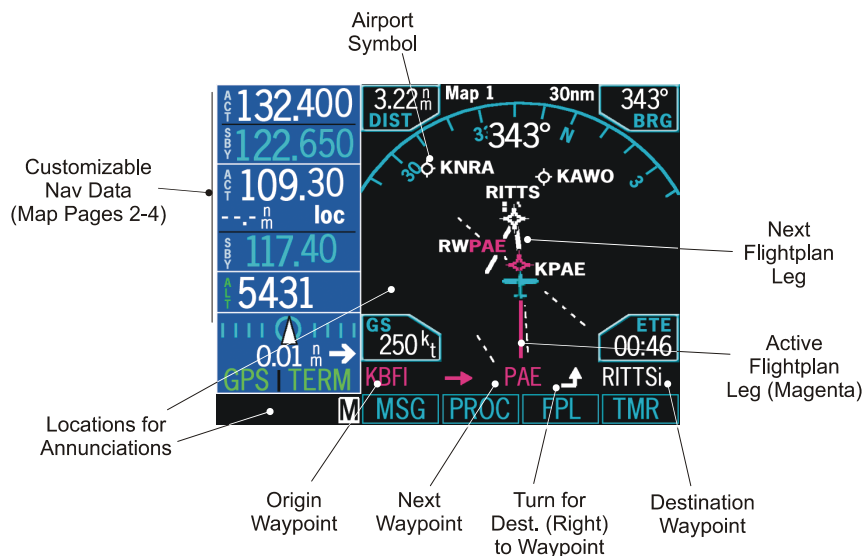
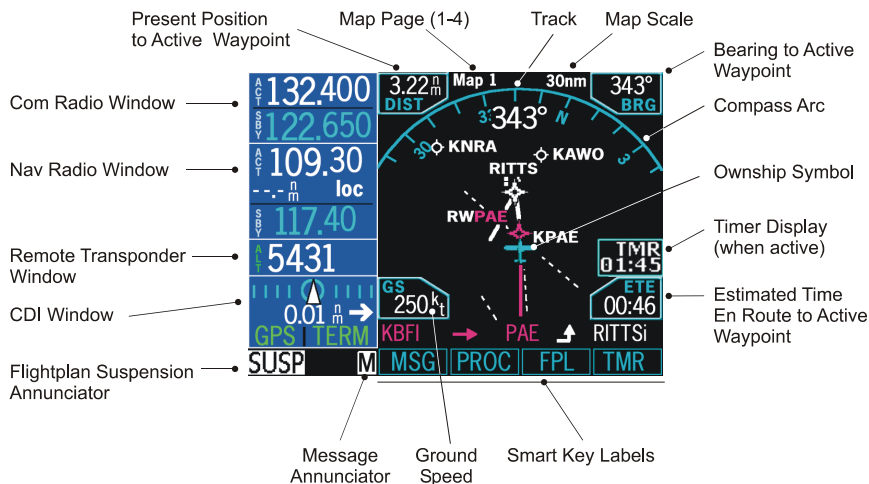
### **Note**

*Never insert or eject the data card with the power on.*

## Display

The CNX80 uses a high-resolution color display to provide information about the different functions. Information and “smart keys” unique for each mode of operation are displayed. Sample displays with a description of common elements are shown below.

Display



When you press the COM, VOR, XPDR, or CDI keys on the left side of the display, the display area for that function will be outlined and the information active for editing will be highlighted. The labels for the bottom row of smart keys will change for each function selected.



## Annunciations

The following annunciations appear on the display to provide status or information. All annunciations are available on the display. Annunciations may be output to external annunciators, but are not required.

Annunciation	Description
GPS	Indicates when GPS is being used as the source. Appears in lower left corner of the display.
VOR/ILS/LOC	Indicates when VOR/ILS/LOC is being used as the source. Appears in lower left corner of the display.
ENR	Appears to the right of the "GPS" annunciator when in En Route mode.
TER	Appears to the right of the "GPS" annunciator when performing approach navigation within 30 nm of departure or arrival airport.
APPR	Appears to the right of the "GPS" annunciator when GPS approach is active.
LOI	"LOI" (Loss of Integrity) appears on the left side of the map display when WAAS/GPS detects a position error or is unable to calculate the integrity of the position.
BC	The Back Course annunciation appears to the right of "LOC" when the Back Course Localizer mode is enabled.
DR	The Dead Reckoning annunciator appears on the left side of the map display when GPS position is lost and the CNX80 is in Dead Reckoning mode. Dead Reckoning mode will continue until GPS position is restored or the first Pilot Nav leg is reached.
PTK	The Parallel Track annunciator appears in the lower left corner of the display when parallel track is active.
SUSP	Suspend annunciation appears in the lower left corner of the display when automatic sequencing of waypoints in the active flight plan is suspended.
M	Message annunciation appears in the lower left corner of the display when a message is available for viewing. A blinking "M" indicates a new message.
VTF	Vector To Final annunciation appears in the lower left corner of the display when "Vector To Final" is active.

## Starting Up

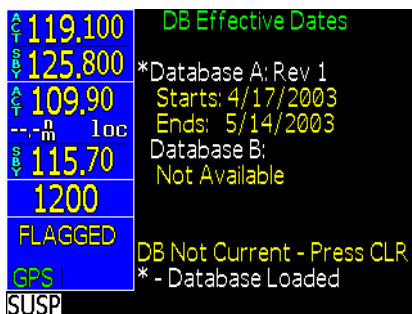
The CNX80 performs internal checks and shows the status of the tests during start up. The startup screen, owner name (if entered), testing, position, and database information shows on the screen for several seconds and then shows the first Map page. It is not generally necessary to enter a GPS seed position.

### Power Up

1. Push the **PWR/VOL** knob in to turn on power.
2. When the position display appears, you can press **CHG** to manually enter your present position or just wait a few seconds for the CNX80 to establish your position.
3. The CNX80 performs a number of tests at startup to ensure proper operation. You may press **SKIP** to bypass the startup tests, however, completing these tests is required for IFR flight. Any failures will be noted by a message.

### Database Check

The CNX80 verifies the integrity and expiration date of the database. Up to two database cycles are supported. The CNX80 will load the appropriate current database cycle and also let you know if a database is not current (dates invalid).



## Map Mode (MAP)















The Map mode provides a moving map for a graphic display of your flight including the surrounding area as well as navigation information. Maps are generally drawn with Ground Track True North at the top of the display (Up). True North is at the top of the display for the mini-maps for inserting holds, procedures, and intercepts.

1. Press **MAP** to reach Map mode. Radio, Nav, Transponder, CDI, Annunciator, or pilot-customized information is shown on the left side of the display and the map display is shown on the right side.
2. There are four Map pages that you select by turning the **Large** knob.
3. Turn the **Small** knob to change the Map scale. Map pages 2-4 allow you to customize the Nav display items on the left side of the display and map display detail.
4. Press **Menu/Enter** to view the Menu items for the choices to customize your display.
5. Press the key next to the Menu item to change the values.
6. Press the **More** key to go to the next page of Menu items.

Menu Item	Description
Airports, VORs, NDBs, Intersections, User Waypoints, Lo and Hi Airways	Solid reversed label means identifier and location symbol are displayed. A bold outline means only the location symbol will be displayed. A thin outline means this item will not be displayed on the map.
Airspace	Solid reversed means the airspace outline and sector lines are displayed. A bold outline means that only the outline of airspace is displayed. A thin outline means that airspaces will not be displayed on the map.
Flight Plan	Map pages 2-4. Toggles display of route line on/off.
Declutter	Auto-Declutter - Toggles display of labels and icons on/off at the higher zoom levels.
Nav Data/Sel Data	Customize the Nav information on map pages 2-4. Press the <b>Nav Data</b> key and then the <b>Sel Data</b> key. Then turn the <b>Large</b> knob to move the cursor to the different fields in the Nav information part of the Map display. Turn the <b>Small</b> knob to view the available choices of information. Press <b>Menu/Enter</b> to confirm and save your choices.

## Map Symbols

Map

Symbol Type	Symbol Graphic
Airport	
VOR	 
VORTAC	
VOR-DME	
NDB	
User Waypoint	
Flight Plan Waypoint	
Intersection	 
Ownship - Single	
Ownship - Twin	
Ownship - Jet	
Ownship - Helicopter	

## Panning (PAN)

The Panning feature of the Map mode allows you to check out the area near your present position. You can activate the Panning feature by pressing the **PAN** key or by pressing the **CRSR** button on the **Small** knob when in Map mode.



The cursor starts at your present position when you start the Pan function. The crosshair cursor remains in the center of the map display. Move the map around the crosshair by turning the **Large** (N/S) and **Small** (E/W) knobs. A green line will be drawn between your present position and the crosshair position. The range and bearing to the crosshair from your present position and the Lat/Lon of the crosshair position is shown at the bottom of the map display.

### Range

Press the **Range** key to highlight the Range menu item. When Range is selected, turning the **Small** knob will change the map range instead of moving the crosshair.

**MRK** Create a User Waypoint at the cursor position.

### Create a New User waypoint

User waypoints allow you to create unique waypoints not already present in the database or to instantly mark your present position for future reference.

1. While in the Pan function, press **MRK**.
2. Press **Menu/Enter** to save the displayed user name.  
or
3. Create a name of your choice and add other information as desired using the **Small** knob to change characters and the **Large** knob to move the cursor. Press **CLR** to delete a highlighted character. Then, press **Menu/Enter** to save the information.

## Direct-To

Press the **Direct-To** key to get to the Direct-To function which allows you to quickly set up a flight from your present position directly to a selected waypoint. You can also use this function to make changes to a flight plan, set up a user-defined holding pattern, sequence directly to a selected leg in your flight plan, and fly a Course To or Course From a selected waypoint.

### WPTS

Press the **WPTS** key to select a given leg from the active flight plan. Turn the **Large** knob to highlight waypoints in your flight plan.

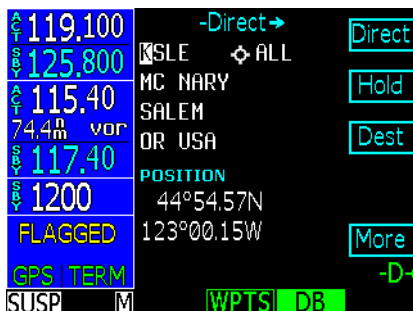
### DB

Press the **DB** key to select any waypoint from the database. Use the **Large** and **Small** knobs to select the waypoint.

### Direct

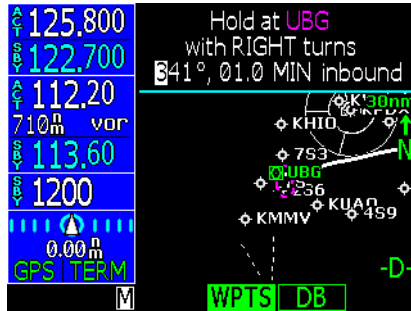
The **Direct** Menu selection key activates the direct course to the displayed waypoint.

1. When you press **Direct-To**, the default waypoint shown will be the highlighted waypoint in your flight plan (unless another waypoint is highlighted in another operation, then that waypoint would be used). You can turn the **Large** knob to select a different waypoint in your flight plan.
2. You may select a waypoint that is not in your flight plan by pressing the **DB** key and then use the **Large** and **Small** knobs.
3. Press the **Direct** key to navigate directly to the selected waypoint.



### Inserting a Hold

The Hold function of the Direct-To mode prepares you for entering a holding pattern at a waypoint either in your flight plan or from the database.



1. Press **Direct-To**.
2. Select a waypoint for the holding pattern.
  - a. Press **WPTS** (default) to select a waypoint along your flight plan by turning the **Large** knob to highlight the waypoint. Press **Hold**.
  - or
  - b. Press **DB** to select a waypoint from the database with the **Large** and **Small** knobs. Press **Hold**.
3. Use the **Large** and **Small** knobs to select Right or Left turns, hold course, and hold length (nm or km) or hold time (minutes).
4. Press **Menu/Enter**. The Hold pattern will be drawn on the display and the CNX80 will provide guidance for the holding pattern. when you near the holding pattern flight plan sequencing is suspended. Press **SUSP** (SUSP annunciator will turn off) to exit the holding pattern and return to the flight plan.

### Destination (Dest)

The **Dest** Menu selection key replaces the active flight plan with a direct course to the displayed waypoint. You can choose a waypoint from your flight plan (**WPTS**) or another waypoint from the database (**DB**).

1. When you press **Direct-To**, the default waypoint shown will be the highlighted waypoint in your flight plan when the **WPTS** smart key is highlighted. You can turn the **Large** knob to select a different a different waypoint in your flight plan.
2. You may select a waypoint that is not in your flight plan by pressing the **DB** smart key and then use the **Large** and **Small** knobs to select the new waypoint.
3. Press the **Dest** key to navigate directly to the selected waypoint.
4. Press **Menu/Enter** to accept the new destination waypoint. Press **Menu/Enter** again to activate it.

## Course To (CrsTo)

Course To operation allows you to select an inbound to the intercept course for the selected waypoint. The default course for the operation is the course from the present position to the selected waypoint. The length of the magenta course to line will be the distance from the present position to the selected waypoint or 20 NM; whichever is larger to a maximum of 300 NM. Upon reaching the selected waypoint, if the waypoint is in the active flight plan, the flightplan will sequence to the next waypoint in the flightplan normally. Maps are always drawn with True North at the top of the display (Up).

Direct-To

1. Press **Direct-To**. Select a new waypoint, if desired, with the **Large** and **Small** knobs.
2. Press **CrsTo**. A map is displayed showing the selected course.
3. Change the course bearing, if desired. Turn the **Large** knob to change the 10's value. Turn the **Small** knob to change the 1's value.
4. Press **Menu/Enter**.



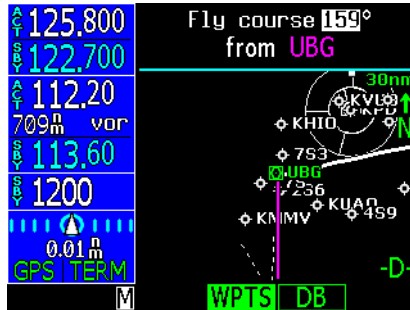
## Course From (CrsFr)

The Course From operation allows you to navigate from a waypoint on a pre-defined course. The default course for the Course From operation will depend on whether the ownship symbol is heading toward the selected waypoint or away from it. If the ownship symbol is heading toward the selected waypoint, the default course will be the bearing from the present position to the selected waypoint. If the ownship symbol is heading away from the waypoint, the default course will be the bearing from your present position to the selected waypoint plus 180°. The length of the magenta course line will always be 100 NM.



When the Course From operation is executed, the CDI will indicate FROM and the flightplan will go into suspend mode (SUSP); it will not automatically sequence the flightplan waypoints.

1. Press **Direct-To**. Select a new waypoint, if desired, with the **Large** and **Small** knobs.
2. Press **CrsFr**. A map is displayed showing the selected course.
3. Change the course bearing, if desired. Turn the **Large** knob to change the 10's value. Turn the **Small** knob to change the 1's value.
4. Press **Menu/Enter**.



Direct-To

## OBS

This function activates the OBS mode where the CDI/HSI resolver controls the selected course to a selected waypoint when an external resolver is installed. This allows you to treat any waypoint as though it were a VOR station. Automatic flight plan sequencing will be suspended initially.

### Note

*When using OBS mode for a VOR, station declination provided by the database is used. This corresponds to the magnetic variation actually used by the VOR rather than the value calculated from your present position.*

### OBS to a Waypoint in Your Flight Plan

If the OBS waypoint is on the map display, a magenta line will be drawn for the Course-To. After you intercept that line, the CNX80 will track the course inbound to the selected OBS fix. The white line on the Map is the Course-From the OBS fix. Once the aircraft intercepts the OBS course, the CNX80 will fly the course inbound and then continue outbound until you terminate the OBS mode. However, if you unsuspend, the CNX80 will terminate OBS mode and continue to sequence en route on the flight plan. You will also

terminate OBS mode by making another flight leg active or going Direct-To another waypoint.

1. Press **Direct-To**. With the **WPTS** smart key highlighted, select a waypoint in the flight plan with the **Large** knob or with the **DB** smart key highlighted, select a new waypoint outside of your flight plan with the **Large** and **Small** knobs.
2. Press **OBS**. Now use the external CDI/HSI resolver to control the selected course. The CNX80 will read the OBS information and will change the course displayed on the Map displays.
3. After the course is selected, press **SUSP** to sequence normally on your flight plan.

### OBS to a Waypoint Not in Your Flight Plan

1. Press **Direct-To**. Press the **DB** smart key.
2. Select a new waypoint outside of your flight plan with the **Large** and **Small** knobs.
3. Press **OBS**. Now use the external CDI/HSI resolver to control the selected course. The CNX80 will read the OBS information and will change the course displayed on the Map displays.
4. After reaching the waypoint, you will need to select a new destination.

### FlyLeg

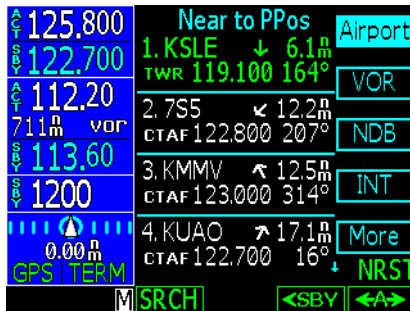
With the FlyLeg Menu selection you can activate a particular leg of your flight plan. This feature allows you to bypass a leg in your flight plan. If you have picked a leg that cannot be activated for navigation, a message will appear to warn you. Press **CLR** to exit.

1. Press **Direct-To**.
2. Select the desired leg of your flight plan with the **Large** knob (**WPTS** smart key is highlighted).
3. Press the **FlyLeg** key to activate the selected leg.

## Nearest Waypoints (NRST)

The Nearest Waypoint Search function allows you to search for the 20 waypoints nearest to your present position in each waypoint type. There are eight waypoint types: Airport, VOR, NDB, INT, User, FSS (Flight Service Station), and Air Route Traffic Control Center (ARTCC). The last Menu selection lets you set Limits to select a range of airport types to show up for the Nearest Airport type. You can then look up information about that waypoint by pressing **INFO** or fly direct to it by pressing the **Direct-To** key. See “Information on Waypoints (INFO)” on page 17 for more information on waypoint types.

1. Press **NRST** to display the Nearest waypoints.
2. The Nearest waypoint type labels are shown on the right side of the display. Press the Line Selection key next to the waypoint type label that you want.
3. Turn the **Large** knob to highlight (green) the waypoint you want to select.



### SRCH

Search near a selected waypoint.

## Nearest Frequency

While viewing the Nearest waypoints that have frequency information, you can transfer the displayed frequency to the Active or Standby frequency. The CNX80 automatically knows if it is a Com or a VOR frequency.

1. Press **NRST**.
2. Press the Line Selection key for the waypoint type you want to search.
3. Turn the **Large** knob to scroll thru the list of nearest waypoints, such as Airport, VOR, User if a frequency is present, FSS, or ARTCC. Highlight the desired waypoint.

4. Press **<-SBY** to insert the highlighted frequency into the Standby position or **<-A->** to insert the frequency into the Active position.

### Info on Nearest Waypoint

1. Press **NRST**.
2. Press the key for the waypoint type you want to search.
3. Turn the **Large** knob to select the nearest waypoint.
4. Press the **INFO** button.

### Fly Direct-To a Nearest Waypoint

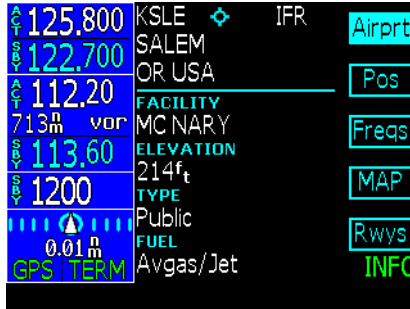
1. Press **NRST**.
2. Press the key for the waypoint type you want to search.
3. Turn the **Large** knob to scroll thru the list of nearest waypoints. Highlight the desired waypoint.
4. Press the **Direct-To** button.
5. Press the **Direct** key.

### Change Your Approach to a Nearest Waypoint

1. Press **NRST**.
2. Turn the **Large** knob to select the desired nearest waypoint.
3. Press the **INFO** button. Note, if "IFR" is listed with the identifier, instrument approaches are available. Press **INFO** again to toggle back to the Nearest Waypoint list.
4. With the desired airport selected, press the **D->** key.
5. Press the **Dest** key. Press **Menu/Enter** to accept the change to your flight plan. Press **Menu/Enter** to activate the new flight plan direct to the selected waypoint.
6. Press **FN** and then **PROC**.
7. Press **Appch** for the destination waypoint. Select the approach with the **Large** and **Small** knobs. You can also select the type of approach with the selection keys on the right side of the display. Press **Menu/Enter**.
7. Press **EXEC**. The CNX80 will ask if you want to replace the Active flight plan with the Modified flight plan. Press **Menu/Enter**.

## Information on Waypoints (INFO)

Info mode allows you to view information about the selected waypoint. Examples of selecting a waypoint can be: active Wpt in flight plan, item selected from Nearest Waypoint list, item selected in Pan mode, etc.



### Airport Information

- Identifier, city/facility name, state, country, elevation, type, and fuel
- Position: bearing and distance from present position, sunrise/sunset, lat/lon coordinates, and magnetic variation.
- Frequencies
- Map of area and runway
- Runway information: length, lighting, surface type, category type and frequency

### VOR Information

- Identifier, city, state, country, bearing and distance from present position, frequency, lat/lon coordinates, and magnetic variation.
- Map of area

### NDB Information

- Identifier, city, state, country, bearing and distance from present position, frequency, lat/lon coordinates, and magnetic variation.
- Map of area

### Airway Intersection Information

- Identifier, country, bearing and distance from present position, lat/lon coordinates, and magnetic variation.
- Map of area

## Com Radio (COM)

Press **COM** to activate control of the internal Com Radio. All other functions will continue to function normally, such as active flight plans. Turn the **PWR/VOL** knob to control the Com volume.

### Squelch (SQ)

Press the **SQ** key to toggle the Com receiver squelch function. When squelch is active, the Squelch (SQ) annunciator will appear on the left side of the active frequency display and the SQ function label will be highlighted.

### Monitor (MON)

Press the **MON** key to toggle the Standby channel monitoring function. When Monitor mode is active, the MON annunciator will appear on the left side of the standby frequency and the MON function label will be highlighted.

Frequency monitoring allows you to listen to the Standby frequency while the CNX80 monitors the Active frequency for activity. When Active frequency receives a signal, you will hear the Active frequency until its activity stops. The frequency monitoring function is inhibited while you are transmitting.

### Recall (RCL)

1. Press the **RCL** key to display the menu of Recent, User, or Emergency frequencies.
2. Press the **<SBY** key to insert the selected frequency as the Standby frequency.
3. Press the **<A>** key to insert the selected frequency as the Active frequency and set the previous Active frequency as Standby frequency.

#### Recent

1. Press the **Recent** key to bring up a list of the last eight frequencies used as the Active frequency.
2. Turn the **Large** knob to highlight a frequency.
3. Press the **<SBY** or **<A>** keys to insert the frequency.
4. Press the **Menu/Enter** key if no choice is desired.

#### User

1. Press the **User** key to bring up a list of the 100 User created frequencies.
2. Turn the **Large** knob to highlight a frequency.
3. Press the **<SBY** or **<A>** keys to insert the frequency.

4. Press the **Menu/Enter** key if no choice is desired.

### Emergency

Press the **Emergncy** key to insert the Emergency frequency (121.500) as the Standby frequency.

### Flip/Flop

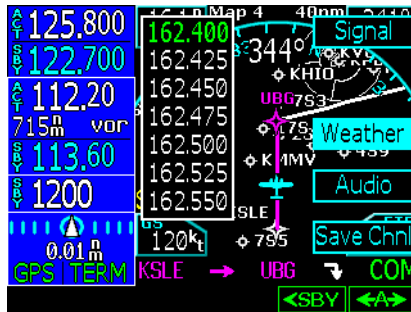
Press the <-> (flip/flop) key to swap the Active and Standby frequencies.

### Signal

1. Press **Menu/Enter** and then the **Signal** key to bring up the RF Level and Noise Level values. The Signal menu label will be highlighted. These values are useful for troubleshooting installations as a measure of signal quality. You won't normally need to use these values.
2. Press the **Signal** key again to turn the value display off.

### Weather

1. Press **Menu/Enter** and then the **Weather** key to bring up the list of Weather frequencies (where available). The Weather menu label will be highlighted.



2. Turn the **Large** knob to highlight a frequency.
3. Press **<SBY>** to insert the highlighted frequency as the Standby frequency or **<A>** to insert it as the Active frequency.
4. Press the **Weather** key again to turn the value display off.

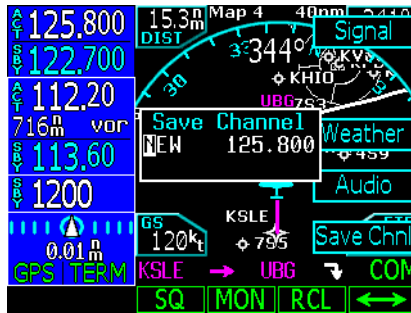
### Audio

1. Press **Menu/Enter** and then the **Audio** key to bring up the Audio Level values. The Audio menu label will be highlighted.
2. Press the **Audio** key again to turn the value display off.
3. Turn the **Large** knob to highlight the Audio Message Annunciator (AMA) volume, Com radio volume, Sidetone level, and Nav radio volume.
4. Use the **Small** knob to adjust the values.

## Save Channel

This function allows you to save and name the current Active frequency in the User frequency list.

1. Press **Menu/Enter** and then the **Save Chnl** key to bring up the Save Channel box. The Save Chnl menu label will be highlighted.
2. Press the **Save Chnl** key again to turn the value display off.



3. Turn the **Small** knob to change the value.
4. Turn the **Large** knob to move the cursor to another character.
5. Press the **Menu/Enter** key to save the name and frequency.

Com Radio



## Nav Radio (VOR)

Press **VOR** to activate control of the internal Nav Radio. All other functions will continue to function normally, such as active flight plans. Note that distances, such as to a Localizer, are based on calculated distances from GPS information.

### ID

Press the **ID** key to toggle the Nav audio between Off, On and Voice only. The On selection is indicated by ID replacing the ACT annunciator to the left of the Active frequency and pressing the ID key so ID is highlighted. The Voice selection is indicated by VOX replacing the ACT annunciator to the left of the Active frequency. The ID function label will be partially highlighted when Voice is selected and fully highlighted when On is selected. The Monitor function is turned off when any ID mode is active.

### Monitor (MON)

Press the **MON** key to toggle the Nav channel monitoring function. When monitor mode is active, a MON annunciator will appear on the left side of the standby frequency, the standby radial replaces the active identifier, and the MON function label will be highlighted.

Frequency monitoring allows you to listen to the Standby VOR frequency while the CNX80 monitors the Active frequency for activity. When Active frequency receives a signal, you will hear the Active frequency until its activity stops. Pressing **MON** will be ignored for ILS frequencies. If Voice or ID functions are active, the Nav radio will temporarily turn off the ID function until the Monitor function is turned off.

### Recall (RCL)

1. Press the **RCL** key to bring up a list of the last eight VOR/ILS frequencies used as the Active frequency.
2. Turn the **Large** knob to highlight a frequency.
3. Press the **<SBY** or **<A>** keys to insert the frequency.
4. Press the **VOR** key again if no choice is desired.

### Flip/Flop

Press the **<->** (flip/flop) key to swap the Active and Standby frequencies.

## ID/To/Fr

When the Active frequency is a VOR, you can view the current course To/Fr the VOR as well as the Identifier and distance. This value appears between the Active and Standby VOR frequencies and to the right. Press **Menu/Enter** and then each press of the **ID/To/Fr** key will toggle between the display of the ID (Identifier), To bearing, or From bearing values.

## Back Course

When the Active frequency is an ILS, the Back Course mode will be available for ILS frequencies. Press **Menu/Enter** and then the **Back CRS** key to turn Back Course mode on. Back Course mode reverses needle sensing. When on, the Back CRS menu label will be high-lighted.

## Audio

This function operates the same as in Com mode.

## Save Channel

This function operates the same as in Com mode.

## Test Log

The Test Log function allows you to store information about the last time you tested your Nav receiver. The information you can enter includes: Date (month, day, year), Type of test (Differential, Ground, Air), Location (text), Bearing Error (-5 to +5), and name of person logging the test information (text).



1. In the Nav function, Press **Menu/Enter** and then the **Test Log** key.
2. Press the **EDIT** key. The month of the Date will be highlighted.
3. Turn the **Small** knob the change the month of the date. Turn the **Large** knob to move to Day of the Date.
4. Turn the **Small** knob to change the day. Turn the **Large** knob to move to the year. Turn the **Small** knob to change the year.

5. Turn the **Large** knob to move to the Type selection. Turn the **Small** knob to choose between Differential, Ground, or Air. Differential means the value was referenced to another calibrated source or unit. Ground means the unit was calibrated while on the ground. Air means the unit was calibrated while in the air.
6. Turn the **Large** knob to move to the Location selection. Press the **Cursor** knob in to start editing. Turn the **Small** knob to change the character. Turn the **Large** knob to the next character and turn the **Small** knob to change the character. When editing is complete, press the **Cursor** knob again to exit editing the Location.
7. Turn the **Large** knob to move to the Brg Error selection. Turn the **Small** knob the change the value required to center the needle. Left for “-” and right for “+” corrections.
8. Turn the **Large** knob to move to the Name selection. This value if for recording the name of the person entering the values in the Test Log. Press the **Cursor** knob in to start editing. Turn the **Small** knob to change the character. Turn the **Large** knob to the next character and turn the **Small** knob to change the character. When editing is complete, press the **Cursor** knob again to exit editing the Name.

## Transponder Control (XPDR)

If a remote Apollo SL70 transponder is connected and setup to operate with the CNX80, the Transponder Control Mode will allow you to control your transponder from the CNX80 front panel. Press **XPDR** to activate Transponder mode.



### Ident

Press the **IDNT** key once to activate the Ident mode. The key label will be highlighted and an IDNT annunciator will appear by the squawk code for 20 seconds.

### Standby

Press the **STBY** key to place the transponder in Standby mode. No information will be transmitted while in Standby mode. A SBY annunciator will appear to the left of the squawk code.

### ON

Press the **ON** key to enable Mode A operation, which shows the four-digit squawk code. An ON annunciator will appear to the left of the squawk code.

### Alt

Press the **Alt** key to enable Mode C operation, which also sends altitude data along with your squawk code. An ALT annunciator will appear to the left of the squawk code.

## Transponder Line Selection Keys

Press the **Menu/Enter** key to display the keys on the right side of the screen.

### Emergency

Press the **Emergncy** key to select the emergency 7700 squawk code.

**VFR**

Press the **VFR** key to select the VOR 1200 squawk code.

**TrgrSpd**

The **TrgrSpd** key allows you to edit the aircraft speed that will switch the transponder automatically between active and standby. See the Auto mode description below.

**Auto**

When Auto mode is selected, the transponder will automatically become active after the aircraft reaches the Trigger speed. While the aircraft is below the Trigger speed, your transponder will not send any information.

1. In Transponder mode, press **Menu/Enter**.
2. If necessary, edit the Trigger Speed. Press **TrgrSpd**. Select the desired Trigger Speed with the **Large** and **Small** knobs. Press **Menu/Enter**.
3. Press **Menu/Enter**. Press the **Auto** key. Auto mode is active when it is highlighted. Press **Auto** again when you want to deactivate the Auto mode.

**Manually Select a Squawk Code**

1. Press the **CRSR** in or turn the **Large** knob to activate squawk code editing. Numbers 0 - 7 will be displayed adjacent to the **Smart** and **Line Selection** keys.
2. Press the key for the desired number. After pressing a numbered key, the next number to the right will be active for editing.

**OR**

1. Change the number value with the **Small** knob and move to the next number with the **Large** knob.
2. After selecting the fourth number, turning the **Large** knob or pressing **Menu/Enter** key will end editing.
3. You can press the **CRSR** knob while editing to cancel any changes.

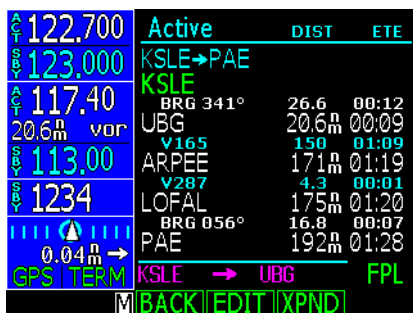
## Flight Planning (FPL)

The Flight Planning function lets you set up and store flight plans where you can name the flight plan, insert a series of waypoints, and then add comments.



### View

Display the active flight plan.



### Back

Press the **BACK** smart key to return to the previous display.

### Edit

Use this feature to edit an existing flight plan. Editing a displayed flight plan will not change the active flight plan.

### Expand (XPND)

Pressing the **XPND** key toggles between a simple view of the waypoints in the flight plan and one that shows the details of the procedures and airways.

### Reverse (Rvrse)

Pressing the **Rvrse** key will create a copy of the active flight plan and reverse the waypoints. Any procedures or approaches will be removed from the copied flight plan.

## Save

Press the **Save** key to save the active flight plan to memory. If a flight plan exists with the same name, the CNX80 will add a suffix (such as a “2”) to the flight plan to show the difference. Press **Menu/Enter** for Yes or **CLR** for No.

## Edit

Pressing the **Edit** key creates a copy of the active flight plan. Making a copy protects you from accidentally changing your active flight plan. You can now edit the “Modified” flight plan. If you are already viewing a “Modified” flight plan, you will be prompted to replace the current modified flight plan (**Menu/Enter**) or keep the current one (**CLR**).

1. Turn the **Large** knob to move to the waypoint to modify (highlighted in green).
2. Press **Modify** to change the selected waypoint. Use the **Large** and **Small** knobs to select a new waypoint and press **Menu/Enter**.
2. Press the **Wpt** key to insert another Waypoint or press the **Arwy** key to insert an Airway.
3. After modifying the flight plan, the smart keys give you the choice of Back, Executing, or Expanding and viewing details in the new Flight Plan

## Execute (Exec)

Use the Execute command to make the modified flight plan the Active flight plan. A flight plan that is being modified will not be used until you press **Exec** and confirm the activation.

## Comment (Cmnt)

This function allows you to place a comment, of up to one line of text, for the flight plan. The comment will be placed just below the flight plan name.

## Copy

The Copy function creates a duplicate of the selected flight plan. You can use the Copy function as a timesaving method to create a new flight plan when you will reuse many of the same waypoints and procedures.

## Discontinuity

A Discontinuity is a message placed in the affected position in a flight plan indicating the pilot needs to fill in more detail about the flight plan. The CNX80 either needs to know how you want to go from waypoint A to B or an inserted procedure doesn't match the end of the en route structure. You may delete the Discontinuity message after

resolving any conflicts by turning the **Large** knob to highlight it and then pressing the **CLR** key. Deleting a discontinuity results in a fix-to-fix direct nav path between those waypoints.

### Pilot Nav Legs

When the “Pilot Nav” message appears on a leg in your flight plan it means the CNX80 will not provide guidance on that leg. You will have to use other flight instruments or autopilot modes to fly the given procedure leg until intercepting the course to the next waypoint. Once the intercept is complete the flight plan will sequence and begin providing guidance to the waypoint.

The CNX80 will go into Suspend mode when the current leg is a Pilot Nav leg. Pressing **SUSP** again sequences you to the next leg in the procedure. As you arrive at the course the course deviation indicator will begin to center and once again you may engage the appropriate NAV mode on your autopilot or flight director.

### Searching for Waypoints to Insert into a Flight Plan

The following steps describe in general how you can select a waypoint for one of the points in a flight plan.

1. Press the **FN** key (if necessary) and then the **FPL** key.
2. Press the **NEW** key. The waypoint database will be displayed. You can choose to search for a waypoint by the Identifier, Facility Name, Location, or Waypoint Type.
3. Select by Identifier
  - a. With the first character of the Identifier highlighted, turn the **Small** knob to select the desired character.
  - b. Turn the **Large** knob CW to the next character and select the character by turning the **Small** knob.
4. Select by Waypoint Type
  - a. With the first character of the Identifier highlighted, press the **CRSR** knob in. The whole Identifier field will be highlighted. Now turn the **Large** knob CCW one turn to highlight the waypoint type field.
  - b. Turn the **Small** knob to display the different waypoint types.
5. Select by Facility Name
  - a. With the first character of the Identifier highlighted, press the **CRSR** knob in. The whole Identifier field will be highlighted. Now turn the **Large** knob CCW one turn to highlight the Facility Name field.
  - b. Turn the **Small** knob to display the facilities in alphabetic sequence.

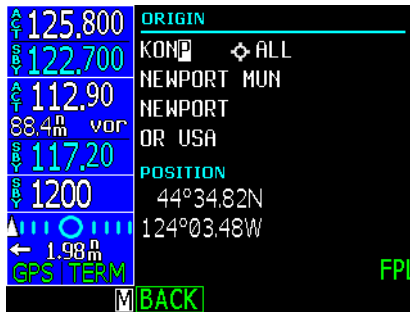


## 6. Select by Location

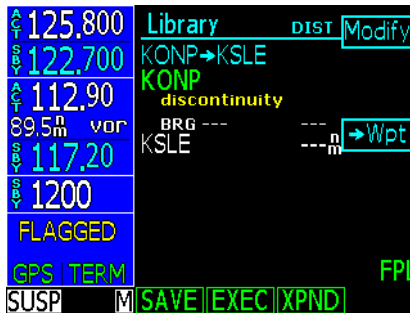
- With the first character of the Identifier highlighted, press the **CRSR** knob in. The whole Identifier field will be highlighted. Now turn the **Large** knob CCW one turn to highlight the Location field.
- Turn the **Small** knob to display the facilities in alphabetic sequence.

### Steps for Setting Up a Simple Flight Plan

- Press the **FN** key (if necessary) and then the **FPL** key.
- Press the **NEW** key. The waypoint database will be displayed. You can choose to search for a waypoint by the identifier, facility name, city, or waypoint type.
- Select the Origin waypoint as described in *Building a New Flight Plan* above. Press **Menu/Enter**.



- Select the Destination waypoint. Press **Menu/Enter**.



- Turn the **Large** knob to highlight the “Discontinuity.” Press **CLR** to remove the Discontinuity. This creates a direct path between waypoints.
- Select the final operation for creating this flight plan: Save or Execute. Press **SAVE** to store the flight plan in the Library for future use or press **EXEC** to both save the Library plan and make the plan the Active flight plan.

## Steps for Setting Up an IFR Flight Plan

Procedures can be inserted at the time you are creating the flight plan (as described here) or later with the Procedure (PROC) function.

### Note

*If datum for an airport is unknown, no terminal or instrument procedures will be displayed. The Jeppesen database can only show one procedure type per runway (i.e. ILS, GPS, VOR). The procedures are present, but must be selected from multiple transitions. Note that the name may not match the paper approach. Verify the sequence of waypoints to ensure you have selected the desired procedure.*

- A. Set Origin, Destination, and Alternate Waypoints.
- B. Add Departure Procedure (DP).
- C. Insert en route flight plan of Airways and/or Waypoints.
- D. Modifying a Flight Plan While in Flight
- E. Add Arrival Procedures (STARS).
- F. Add Approach Procedures when you receive clearance.



Flightplan

### A. Set Origin, Destination, and Alternate Waypoints

1. In Flightplan mode, press the **NEW** key.
2. Use the **Large** and **Small** knobs to select the Origin waypoint. Press **Menu/Enter**.
3. The Destination waypoint selection page will now be displayed. Select the Destination waypoint and press **Menu/Enter**.
4. Set an Alternate airport, if desired. Turn the **Large** knob CCW to highlight the flight plan name. Press the **Altrnt** key and select an alternate airport/waypoint along the flight plan with the **Large** and **Small** knobs. The alternate airport will be added in parentheses to the flight plan name.
5. Press **SAVE**.

## B. Add Departure Procedure (DP)

Departure procedures may be modified in either the Flight Plan (FPL) or Procedure (PROC) modes. The Procedure mode method is shown.

1. In Flight Plan mode, highlight the flight plan name and press **EXEC**.
2. Press **FN** and then **PROC**.
3. In the Origin section press the **Depart** key.

### Note

*Guidance is not provided for Pilot Nav legs or Vectored DPs.*

4. The runway is highlighted. Use the **Small** knob or Line Selection keys on the right side of the display to select a runway.
5. Turn the **Large** knob to select the departure procedure and transition.
6. Verify your flight plan and resolve any discontinuities. Press **Menu/Enter**.

## C. Insert En Route Flight Plan Airways and/or Waypoints

1. Turn the **Large** knob CW to highlight the waypoint where you want to insert a waypoint or Airway in your flight plan after it. Press **→Wpt** or **→Arwy**. In this example, Airway is selected.
2. Turn the **Small** knob to select the desired point to enter the airway. You may also press one of the Line Selection keys that display the available airways.
3. Turn the **Large** knob CW one position to highlight the Intersection choices. Turn the **Small** knob to choose the desired point to exit the Airway. Press **Menu/Enter**.

## D. Modifying a Flight Plan While In Flight

Flight plans may be modified in either the Flight Plan (FPL) or Procedure (PROC) modes. In Flight Plan mode you can modify the entire flight plan. In Procedure mode you can modify procedures for the Origin, Destination, or Alternate airports. Both methods are shown below.

### Flight Plan Mode

1. Press the **FN** key and then the **FPL** key.
2. Highlight the Active flight plan and press the **EDIT** key.
3. If you want to change the Origin, Destination, or Alternate waypoints, press the appropriate selection key on the left side of the display when the flight plan name is highlighted. If you want to insert a waypoint or airway, go to step 5.
4. Turn the **Large** knob to highlight the leg where you want to make the change.

5. Press **->Wpt** to insert a waypoint or **->Arwy** to insert an airway following the highlighted leg. If the airway choice is not available there are no airways available for that waypoint. Delete a waypoint or airway by pressing the **CLR** key.
6. Press **XPND** to display all of the parts of the flight plan.
7. Review your flight plan to clear up any discontinuities as desired and then press the **EXEC** key to execute.

### Procedure Mode

#### **Selecting an Arrival or Approach**

1. Press **FN** and then **PROC** to go to the Procedure Mode.
2. Press the **Arrival** or **Appch** key in the Destination section.
3. Use the **Large** and **Small** knobs to select the desired selections.
4. Press **Menu/Enter**.
5. Resolve any discontinuities and then press **EXEC**.

#### **Selecting an Alternate Airport**

1. Press **FN** and then **PROC** to go to the Procedure Mode.
2. Press the **Select** key next to the Alternate airport.
3. Next, press the **Load** key to load the selected airport into your flight plan. If you want to choose a different Alternate airport, press **Modify**, choose another airport with the **Large** and **Small** knobs and press **Menu/Enter**, and then press the **Load** key. If you do not have an Alternate airport, select one by pressing **Modify** and select one with the **Large** and **Small** knobs followed by pressing **Menu/Enter** and then pressing the **Load** key.
4. Insert any waypoints, or airways, for the diversion and then press **EXEC**.

#### **Note**

*Note that when you execute the changed plan, you will not have an active leg until you activate a new flight plan leg with either the FlyLeg, Direct-To, or CrsTo functions.*

#### **Flying Direct to a Waypoint in a Flight Plan**

1. Press **Direct-To**. The flight plan waypoint list will be displayed.
2. Turn the **Large** knob to highlight the desired waypoint.
3. Press the **Direct** key on the right side of the display.

#### **Making a Flight Plan Leg Active**

With the FlyLeg Menu selection you can activate a particular leg of your flight plan. This feature allows you to bypass a waypoint in your flight plan.

1. Press **Direct-To**.

2. Select the desired leg of your flight plan with the **Large** knob (**WPTS** smart key is highlighted).
3. Press the **FlyLeg** key to activate the selected leg.

#### E. Add Arrival Procedures (STARS)

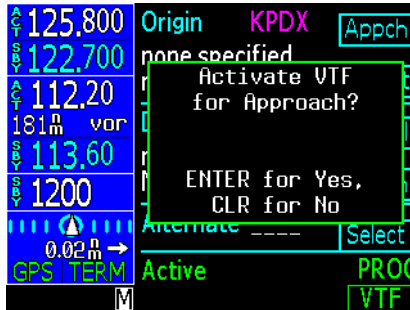
1. Press the **Arrival** key in the Destination section.
2. Use the **Large** and **Small** knobs to select the runway, arrival, and transition.
3. Press **Menu/Enter**.

#### F. Add Approach Procedures

1. Press the **Appr** key. Select the approach with the **Large** and **Small** knobs, or the keys on the right side of the display. Press **Menu/Enter**.
2. Press the **XPND** (Expand) key to view all waypoints and legs in the flight plan. Every waypoint, airway, procedure, and intersection is shown with the bearing and distance of each leg. Verify the waypoints in your flight plan and resolve any discontinuities.
3. Press **EXEC**.

#### Vector To Final

When you are in the Terminal area, you may be directed to fly a vector to final approach.



1. Press **FN** and then **PROC**.
2. Press **VTF**.
3. Follow the guidance from the CNX80 as the inbound course to the Final Approach Fix (FAF) is now active.

#### Missed Approach

1. Press **SUSP** to deselect the suspend state (while the Missed Approach point is the TO waypoint) and allow flight plan sequencing after the FAF.
2. Follow the guidance of the CNX80 to the Missed Approach Hold Point.
3. If missed approach clearance differs from the published information, use Direct-To and manual hold as required.

## Timer (TMR)

The Timer Mode allows you to set or view several timing functions. You can set one or two timers as count up or count down timers. You can view the Trip Time, Trip Distance, Flight Time, and Flight Distance. The Trip Time and Trip Distance show the time and distance traveled since being reset. The Flight Time and Flight Distance show the time and distance traveled since the Trigger Speed was reached. Enter the Trigger Speed to set the threshold where the Flight timers start after the aircraft reaches the selected speed. Use the **Large** knob to highlight the selection to change.

118.100	Timer 1	0:00:56	Disp
118.475	Timer 2	0:01:08	
108.15	Trip Time	0:07:35*	
117.40	Trip Dist.	13.6 m	
1200	Flight T.	0:01:06	
	Flight D.	2.1 m	
	Trigger Speed	60 kt	
	* - Displayed on Map		TMR
	M	MSG	PROC
		FPL	TMR

### Timer 1 and Timer 2

Edit the Timer values by pressing in the CRSR knob, move the cursor with the **Large** knob, change the value with the **Small** knob, and then press the **Enter** key. Press the **1 Min** or **2 Min** keys to instantly insert 1 or two minutes as the time. Press the **Disp** key to display the Timer value on the Map pages. The **Disp** key will be highlighted and an asterisk will appear next to the value that will be displayed on the Map pages. Press the **CLR** key to reset the values to 0.

### Trip Time and Distance

The Trip Time and Distance counters display the time and distance traveled since the last time they were reset.

1. Turn the **Large** knob to highlight Trip Time.
2. Press the **Disp** key to display the Trip Timer value on the Map pages.
3. To clear the Trip Time and Trip Distance values, press the **CLR** key.

### Flight Time and Distance

The Flight Time and Distance counters start and stop according to two rules:

- 1) The counters reset and start once the aircraft goes above the Trigger Speed for ten seconds.
- 2) The counters stop after the aircraft has been below the Trigger Speed for 30 seconds or more.

## Trigger Speed

Set the Trigger Speed for the speed where you want the Flight Time and Distance counters to start and stop.

1. Turn the **Large** knob to highlight Trigger Speed.
2. Press the **CRSR** knob in. The Trigger Speed will now be highlighted.
3. Turn the **Small** knob to the desired speed and then press the **CRSR** knob again or press the Menu/Enter key.

## Checklist (CHK)

The Checklist function allows you to create up to eight checklists with up to 100 lines of text in each. You can use this feature as a method to create customized checklists for in-cockpit review.



### Creating a New or Editing an Existing Checklist

1. Press **FN** and then the **CHK** key to start the Checklist function.
2. Press the **NEW** or **EDIT** key. Press the **CRSR** knob in and use the **Small** and **Large** knobs to name the new list. Press **Menu/Enter** when finished.
3. With the name of your new list highlighted, press the **EDIT** key.
4. Turn the **Small** knob to choose the desired checklist item. See the following table for available checklist items. If you want to make your own item, press the **CRSR** knob in and use the **Small** and **Large** knobs to name the new item. Press **Menu/Enter** when finished.
5. Then, turn the **Large** knob to the checklist result for that item. Turn the **Small** knob to choose the desired checklist result. See the following table for available checklist results. If you want to make your own result, press the **CRSR** knob in and use the **Small** and **Large** knobs to name the new result. Press **Menu/Enter** when finished.
6. Turn the **Large** knob to the next checklist item. Continue with the process in the previous steps until finished with your list. Press the **LIST** key or other key to leave the Checklist function.

## Using Your Checklist

1. Press **FN** and then the **CHK** key to start the Checklist function.



2. Turn the **Large** knob to highlight the desired list and then press **Enter/Menu**. The selected list will be displayed with the first line highlighted.
3. Press the **CHK** key, or the **Menu/Enter** key, as you check each item in the list. After pressing the **CHK** key, the next item in the list will be highlighted.
4. After the last item is checked, the >CHECKLIST COMPLETE< line will be highlighted. Press **CHK** to check this item and return to the main Checklist page.

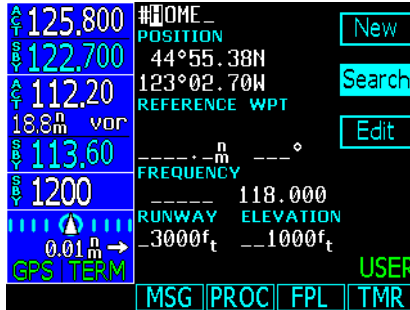
## Move a Checklist

1. Press **FN** and then the **CHK** key to start the Checklist function.
2. Press the **MOV** key.
3. Turn the **Large** knob to the position in the order of lists where you want to put the highlighted list and press the **Menu/Enter** key.



## User Waypoints (USER)

The CNX80 can hold up to 500 user-defined waypoints. These waypoints can be based on either lat/lon position or range and bearing from a reference point. In the User Waypoint function, you can create new waypoint, edit existing ones, or search for a User waypoint.



### Creating or Editing a User Waypoint

1. Press **FN** and then the **USER** key to start the User Waypoint function. You can also create User waypoint by using the PAN function.
2. Press the **NEW** or **EDIT** key.
3. Use the **Small** and **Large** knobs to name or edit the waypoint name.
4. Turn the **Large** knob to go to each field on the page and edit the values.
5. Press **Menu/Enter** when finished.

### Searching for a User Waypoint

1. Press **FN** and then the **USER** key to start the User Waypoint function.
2. Press the **SEARCH** key.
3. Use the **Small** and **Large** knobs to select the waypoint name. You can also search through a given field by pressing the **CRSR** knob, moving to a field with the **Large** knob, and then searching within a field by turning the **Small** knob.
4. Press **Menu/Enter** when finished.

## System Mode (SYS)

The System mode provides information about GPS status (GPS), System Software Versions (VERS), and allows for configuring the system for individual installations (CNFG).

### GPS Status

1. Press **FN** and then the **SYS** key to reach the System functions.
2. The GPS function shows a map of the satellite locations with ID and other system information. On the right side of the display, a bar graph is shown for each satellite ID.

**WAAS:** In use indicates WAAS corrections are being used. Standby is shown if WAAS corrections are not being used.

**Time:** Current UTC time computed from the GPS constellation.

**EPU:** Estimated Position uncertainty in meters. Dashes are shown if the value is not valid.

**HPL:** Horizontal Protection Level in meters. Dashes are shown if the value is not valid.

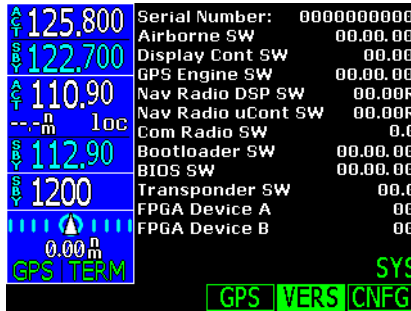
**VPL:** Vertical Protection Level in meters. Dashes are shown if the value is not valid.

**Lat/Lon:** Current position in degrees, minutes, and hundredths of minutes.



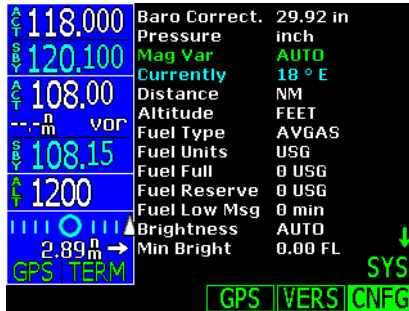
### Software Versions

The Software Version page shows you the serial number for the CNX80 and the versions of the software in your unit. This information is useful should you need to talk with Technical Support at Garmin AT. Please copy the values for the information on this display before calling Garmin AT Technical Support (1-800-525-6726).



## Configuration

The Configuration page lets you customize many of the settings and unit measurements for your installation or local needs.



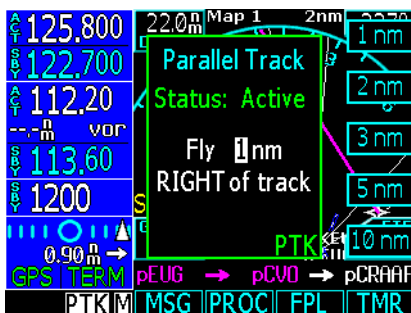
1. Press **FN** and then the **CNFG** key to reach the Configuration functions.
2. Turn the **Large** knob to highlight the value you want to change. The green arrow on the right side of the display indicates the direction to turn the **Large** knob to view more choices.
3. Press the **CRSR** knob in to start editing.
4. Turn the **Small** knob to change the value.
5. Press the **CRSR** knob in again or press the **Menu/Enter** key to save the value.

## Parallel Track (PTK)

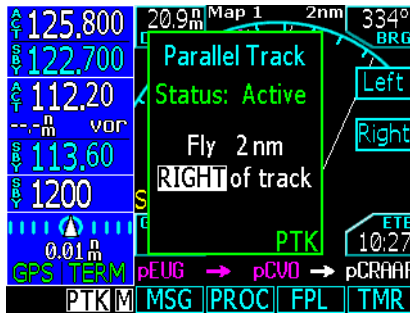
The Parallel Track function allows you to create a parallel course offset of 1 to 99 nm to the left or right of your current flight plan. You must have FROM and TO waypoints defined. Parallel Track cannot be activated if you set a course using Direct-To. Choose Left or Right of the current course, and the offset distance. When Parallel Track is activated, the course line drawn on the Map pages will show the parallel course, a PTK annunciation will be shown in the lower left corner of the display, and waypoint names will have a lower case “p” preceding their identifier. Using Direct-To, loading an approach, holding pattern, or editing and executing your flight plan will automatically cancel Parallel Track. Parallel track is cancelled if a course change occurs greater than 120° or the parallel tracks overlap as a result of the course change.

### Activating Parallel Track

1. Press **FN** and then the **PTK** key to reach the Parallel Track function.
2. Press the **CRSR** knob.



3. Turn the **Small** knob to change the value for the Distance parallel from the flight track. With the Distance field showing, selections of 1 nm, 2 nm, 3 nm, 5 nm, or 10 nm can be selected by pressing the appropriate Menu Selection key.
4. Turn the **Large** knob to move between the Distance and the Direction from Track. With the Direction selection highlighted, turn the **Small** knob to select between Right or Left of Track. When the Direction field is shown, selections of Right and Left can be selected by pressing the appropriate Menu Selection key.



4. Press the **Menu/Enter** key or the **CRSR** knob when you are finished making selections.
5. Press the **Activate** or **Standby** key to activate or deactivate the Parallel Track values selected.

## Simulator Mode

The CNX80 has a built-in simulator so you can practice with your unit without being in flight. You can set your present position, ground speed, and track. The track can also be set to Auto to simulate use with an autopilot. The Com and Nav radios, and transponder will appear to operate normally, but will not send any signals.

1. After the CNX80 start-up screen (clouds and title) ends and the left side of the display information just appears, press **SUSP** three times.
2. Press **Menu/Enter** to continue in Simulator mode or press CLR to continue with normal operation.
3. Turn the **Small** knob, if desired, to change the Local Altimeter Setting. Press **Menu/Enter** to continue to the start-up test phase. Press **SKIP** to bypass the start-up tests.
4. Select Automatic Track mode, present position, and airspeed as described below.

### Automatic Track (ATK)

Press the **ATK** key to enable/disable the Automatic Track mode. When enabled, the simulator ownership will follow the tracking of the flight plan. Press **CLR** to exit and enable Automatic Track. Press **ATK** and **CLR** again to disable Automatic Track.

## Present Position (PPOS)

Press the **PPOS** key to bring up a display for selecting a Lat/Lon position for your ownship starting point.

1. Turn the **Large** knob to select the item to change.
2. Turn the **Small** knob to change the values.
3. Press **Menu/Enter** to accept the displayed values or press **CLR** to cancel the selection and return to the previous display.

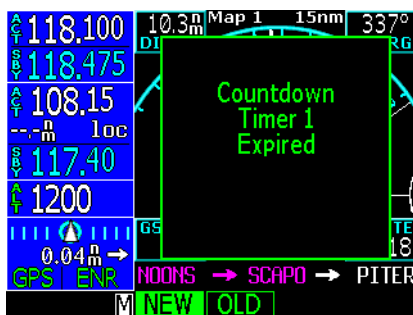
## Airspeed

The Airspeed (**SPD**) key brings up a display where you can select the Track, Speed, and Altitude.

1. Turn the **Large** knob to select the item to change.
2. Turn the **Small** knob to change the values.
3. Press **Menu/Enter** to accept the displayed values or press **CLR** to cancel the selection and return to the previous display.

## Messages (MSG)

Message mode lets the pilot know about conditions that require immediate attention. Depending on the level of importance, a message box may appear on the display over the active mode. A flashing annunciator “M” will appear at the bottom of the display when a message is available for viewing. The CNX80 provides both visual text and audio messages. Audio messages do not require pilot input and can be turned on or off in the System mode.



1. Press the **FN** key until the **MSG** key label is available.
2. Press the **MSG** key.
3. Turn the **Large** knob, or press the **New** or **Old** keys, to switch between the Old and New Messages.
4. Turn the **Small** knob to list the available New or Old messages.

## Text Messages

Message	Description
Inside of x, Within x nm of x, Within x min of x	Special Use Area alert. Pilot awareness of upcoming pilot action required.
For Loaded Approach Do NOT use GPS For Primary Navigation Guidance	Selected approach does not meet requirements for primary guidance by GPS.
PTK end in x sec	Parallel track course ending.
GPS Fault Code: xxxx	GPS error report. Note fault code to notify Customer Service.
WARNING Low Battery Voltage: Unit Needs Service	Low internal battery voltage is detected. This battery backs up memory for user entered information, such as user waypoints and stored flight plans. Battery requires replacement.
Parallel Track Ending within x minutes/x seconds	Pilot awareness of upcoming pilot action required.
WARNING Communications lost with external CNX	Communications have failed between the reporting and an external CNX.
WARNING Communications lost with Com Radio	Communications have failed between the CNX and its Com radio
WARNING Stuck Microphone	Mic key has been pressed for a continuous period and should be checked.
WARNING Communications lost with Nav Radio	CNX80 has not received any valid messages for 2 second. Active/standby frequency digits changed to yellow. No Nav radio changes are allowed.
Altitude Out of Range, Check Altitude Encoder	Pilot awareness. Check unit prior to next flight.
WARNING Altitude Encoder Communications Failure	Altitude information is not being received by the CNX.
WARNING Fuel/Air Data Communications Failure	Fuel/Air Data information is not being received by the CNX.
Library Flight Plan Memory Loss x Library Plans Deleted	A checksum error has occurred and x number of plans have been deleted.
WARNING Low Fuel Less Than x Min Check Tanks	Fuel air data computer reports remaining fuel is below the user-selected value.
Countdown Timer 1 Expired	User selected timer value has expired.
Countdown Timer 2 Expired	User selected timer value has expired.
Database Invalid: Integrity check failed	Check to see if card is seated properly. Replace datacard if necessary.
Using Manual Mag Var: <deg>°<E or W>	User may have set Mag Var to manual. If received with Database Invalid message, see above.
NAV Radio Memory Error Unit Requires Service	Nav radio still usable, but automatic features are not available. Contact factory service.
NAV Radio Resolver Error Recalibration Necessary	Do not use CDI for instrument approach or navigation in IMC.
WARNING Transponder Failure	Pilot awareness.
WARNING Unable to Command Transponder	Pilot awareness.
Active Flight Plan Memory Loss	Reload flight plan and activate as required.
Initiating Auto Track Mode Following Flight Plan	Simulator mode only.

Message	Description
Initiating Manual Track Using Manual Track, Speed, and Altitude	Simulator mode only.
Steep Turn Ahead (or others)	Pilot awareness.
Arrival (or) Arrival in x sec	Pilot awareness.
Pilot Nav (or) Pilot Nav in x sec	Pilot awareness.
DISCONTINUITY Ahead	Modify flight plan or perform Direct-To function.
DISCONTINUITY	Modify flight plan or perform Direct-To function to reestablish navigation.
Hold (Parallel, Teardrop, or Direct)	Pilot awareness.
Excessive Heat, Possible loss of cooling	CNX may fail or behave erratically.
WARNING Loss of Integrity Cross-Check NAV	GPS position integrity lost. Verify by cross-checking with VHF Nav.
Integrity Restored Normal Ops	Pilot awareness.
WARNING Loss of Navigation (Insufficient Sats, Position Error, Loss of GPS Com)	GPS position lost. Use other Nav equipment.
Configuration Failure: Unit needs servicing	Do not use for IFR ops or primary navigation. Contact dealer or Customer Service.
Configuration Corrupt: Use Ground Maint Mode to correct	Checked on power-up. System configuration invalid. See dealer or call Customer Service.
Configuration Error: Verify User Settings	Go to System Configuration page and check user settings.
CDI Selection Should be set To ( <i>Localizer, ILS, or VOR</i> )	Pilot awareness.
VOR Receiver Should Be Tuned To xxx.xx For ( <i>name of approach</i> )	Pilot awareness.
Database Invalid: Database needs updating	Database unavailable until updated.
Database Invalid: Software needs updating	Database unavailable until unit software is updated.
Database Expired on ( <i>date</i> )	Database should be updated.
Altimeter correction failed switching to alternate correction mode	Altimeter corrections failed. Unit will prompt for other inputs.
Flight Plan Mismatch with Database Invalid Waypoints Found	Flight plan waypoints are no longer in the Nav database.
Baro Correction xx.yy CRSR to Change, ENTER to Accept	Input correct baro setting.
Warning Loss of Navigation LOI On Approach	Execute missed approach using other nav equipment.







© 2003 by Garmin AT, Inc.  
2345 Turner Rd., S.E.  
Salem, OR 97302 U.S.A.  
Phone 503.581.8101  
800.525.6726  
In Canada 800.654.3415  
FAX 503.364.2138  
<http://www.garminat.com>  
Part #560-0984-00 Rev C  
August 2003