
GARMIN
NavTalk PILOT ™
AirCell
NavTalk PILOT
SPEED
150
TIME TO NEXT
02:54
DIST TO NEXT
7.28
POINTER
BERLIN
OSHKOSH
RIFON
WAUPUN
GARMIN
QUIT
MENU
PAGE
SEND
ENTER
END
NavTalk
Pilot's Guide
& Reference

GARMIN International, Inc.
1200 E 151st Street, Olathe, Kansas 66062 U.S.A.
Tel. 913/397.8200 or 800/800.1020
Fax 913/397.8282

GARMIN (Europe) Ltd.
Unit 5, The Quadrangle, Abbey Park, Romsey, SO51 9AQ U.K.
Tel. 44/1794.519944
Fax 44/1794.519222

GARMIN (Asia) Corp.
No. 68, Jangshu 2nd Road,Shijr Taipei County, Taiwan
Tel. 886/2.2642.9199
Fax 886/2.2642.9099

Information in this manual is subject to change without notice. GARMIN Corporation reserves the right to change or improve its products and to make changes in the content without obligation to notify any person or organization of such changes. Visit the GARMIN website for current updates and supplemental information concerning the use and operation of this and other GARMIN products.

Website address: www.garmin.com

May 2000 Part Number: 190-00189-00 Rev.A Printed in Taiwan

About This Manual

Thank you for choosing the GARMIN NavTalk Pilot. To get the most from your new NavTalk Pilot, take the time to read through this owner's manual in order to understand all of the operating features. The manual is organized into seven sections for your convenience:

The **Introduction To GPS and Cellular Phone Features** section gives you an overview of the NavTalk Pilot functional features.

The **Getting Started Tour** section introduces you to the basic features to get you started using the Cellular Phone and GPS Receiver features.

The **Basic Phone Operation** and **Basic GPS Using the Simulator** sections get you started on using the NavTalk Pilot for basic Phone and GPS uses.

The **Cellular Phone Reference** and **GPS Receiver Reference** sections provide details about the advanced features of the NavTalk Pilot according to topic.

The **Appendix** contains information on items such as charging the battery, accessories, specifications, glossary of terms and index.

Before getting started, check to see that your NavTalk Pilot package includes the following items. If you are missing anything, please contact your dealer immediately.

Standard Package:

- NavTalk Pilot Unit
- Trickle Charger
- Lanyard
- NiMH* Battery Pack
- Owner's Manual
- Quick Reference Guide

Refer to Appendix A for a list of additional accessories available from your Garmin Dealer.

*Rechargeable Nickel Metal Hydride Battery Cell

Cautions and Warnings

Exposure to Radio Frequency Signals— Your wireless hand-held portable telephone is a low power radio transmitter and receiver. When it is ON, it receives and also sends out radio frequency (RF) signals.

In August, 1996, the Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless phones. Those guidelines are consistent with the safety standards previously set by both U.S. and international standards bodies: ANSI C95.1 (1992)*, NCRP Report 89 (1986)*, ICNIRP (1996)*

Those standards were based on comprehensive and periodic evaluations for the relevant scientific literature. For example, over 120 scientists, engineers, and physicians from universities, government health agencies, and industry reviewed the available body of research to develop the ANSI Standard (C95.1). The design of your NavTalk Pilot phone complies with FCC guidelines and those standards.

FCC Compliance Statement— The NavTalk Pilot GPS Receiver/Cellular Phone meets compliance requirements for maximum Specific Absorption Rate of radio wave emissions for the limit given in the FCC 96-326 Guideline. Tested by APREL Laboratories, an agent of the Telecommunications Board of the Spectrum Scientific Institute, Nepean, Ontario, Canada.

Antenna Care— Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the phone and may violate FCC regulations.

Phone Operation— Hold the phone as you would any other telephone with the antenna pointed up and over your shoulder.

* American National Standards Institute; National Council on Radiation Protection and Measurements; International Commission on Non-Ionizing Radiation Protection.

TIPS ON EFFICIENT OPERATION: For your phone to operate most efficiently: Do not touch the antenna unnecessarily when the phone is in use. Contact with the antenna affects call quality and may cause the phone to operate at a higher power level than otherwise needed.

Electronic Devices— Most modern electronic equipment is shielded from RF signals. However, certain electronic equipment may not be shielded against the RF signals from our wireless phone. Pacemakers: The Health Industry Manufacturer's Association recommends that a minimum separation of six (6") inches be maintained between a handheld wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. Persons with pacemakers should ALWAYS keep the phone more than six inches from their pacemaker when the phone is turned ON, should not carry the phone in a breast pocket, and should use the ear opposite the pacemaker to minimize the potential for interference. If you have any reason to suspect that interference is taking place, turn your phone OFF immediately.

Other Medical Devices— If you use any other personal medical device, consult the manufacturer of your device to determine if they are adequately shielded from external RF energy. Your physician may be able to assist you in obtaining this information. Turn you phone OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals and health care facilities may be using equipment that could be sensitive to external RF energy.

Posted Facilities— Turn your phone OFF in any facility where posted notices so require.

Blasting Areas— To avoid interfering with blasting operations, turn your phone OFF when in a "blasting area" or in areas posted: "Turn off two-way radio". Obey all signs and instructions.

Cautions and Warnings

Notice!

AirCell airborne service is available to your airborne phone only when the phone is within operating range of the AirCell cellular base stations.

AirCell service relies on radio frequencies, and is subject to transmission limitations caused by atmospheric, geographic and topographic conditions. Airborne coverage is designed for altitudes above 5,000 ft. AGL, and service will improve with increasing altitude above ground.

Cautions and Warnings

Notice!

The service does not guarantee 9-1-1 or other emergency response capabilities, and the phone is not intended to be flight critical equipment.

Although laws prohibit listening in on telephone calls, your privacy cannot be guaranteed.

Noise or other interference may be observed at the airborne unit when flying over major metropolitan areas. Such interference may affect the quality of the call.

Operation of this service may be temporarily refused, limited, interrupted or curtailed as appropriate for the proper operation of this service and for other business purposes. The AirCell service will be limited, at least initially, and may change from time to time. Airborne cellular service is currently provided under a waiver granted by the FCC, and is subject to the renewal of that waiver by the FCC on a biennial basis.

Potentially Explosive Atmospheres— Turn your phone OFF when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Areas with a potentially explosive atmosphere are often, but not always clearly marked. They include fueling areas such as gasoline stations, below deck on boats: fuel or chemical transfer or storage facilities; vehicles using liquefied petroleum gas (such as propane or butane); areas where the air contains chemicals or particles, such as graindust or metal powders and any other area where you would normally be advised to turn off your vehicle engine.

Aboard Aircraft— Federal Communications Commission (FCC) regulations prohibit the use of conventional cellular telephones while an aircraft is in flight. Signals from conventional cellular telephones travel much further when airborne and may interfere with cellular communications on the ground. These signals may also interfere with other equipment aboard the aircraft. Regulations authorize the air cellular feature of the NavTalk Pilot to be used in flight.

Operation of the NavTalk Pilot aboard an aircraft in flight is permitted only when connected to the aircraft adapter supplied with the NavTalk Pilot system. In this configuration transmit power is reduced and routed to an external, horizontally polarized antenna, minimizing the potential for interference.

Driving— Check the laws and regulations on the use of wireless telephones in the areas where you drive. Always obey them. Also, if using your phone while driving, please: Give full attention to driving-- driving safely is your first responsibility. Use hands-free operation, if available. Pull off the road and park before making or answering a call if driving conditions so require.

Vehicles— RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Warning— For use in vehicles, it is the sole responsibility of the owner/operator of the NavTalk Pilot to secure the unit so that it will not interfere with the vehicle's operating controls, obstruct the driver's view of driving conditions, or cause damage or personal injury in the event of an accident. Do not mount the unit over airbag panels or in the field of airbag deployment. Airbags expand with a rapid force that can propel objects in their path toward the driver or passengers causing possible injury. Refer to airbag safety precautions contained in the vehicle owner's manual. Do not mount the NavTalk Pilot in a place where the driver or passengers are likely to impact it in an accident or collision. The optional mounting hardware provided by GARMIN is not warranted against collision damage or the consequences thereof.

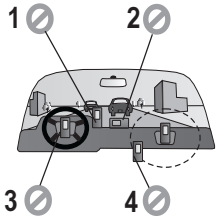
Warning— When used in vehicles, it is the sole responsibility of the driver of the vehicle to operate the vehicle in a safe manner, maintain full surveillance of all driving conditions at all times and not become distracted by the unit to the exclusion of safe operating practices. It is unsafe to operate the controls of the unit while you are driving. Failure by the driver of a vehicle equipped with a NavTalk Pilot to pay full attention to operation of the vehicle and road conditions while the vehicle is in motion could result in an accident or collision with property damage and personal injury.

Caution— The Global Positioning System (GPS) is operated by the government of the United States, which is solely responsible for its accuracy and maintenance. The system is subject to changes that could affect the accuracy and performance of all GPS equipment. Although the

Cautions and Warnings

1 *Do Not Mount Where Driver's Field of Vision is Blocked*

2 *Do Not Place Unsecured on the Vehicle Dash*



3 *Do Not Mount Over Airbag Panels*

4 *Do Not Mount in Front of an Airbag Field of Deployment*

Cautions and Warnings

GARMIN NavTalk Pilot is a precision electronic NAVigation AID (NAVAID), any NAVAID can be misused or misinterpreted and therefore, become unsafe.

To reduce the risk of unsafe operation, carefully review and understand all aspects of this Pilot 's Guide and thoroughly practice operation using the simulator mode prior to actual use. When in actual use, carefully compare indications from the NavTalk Pilot to all available navigation sources including the information from other NAVAIDs, visual sightings, maps, etc. For safety, always resolve any discrepancies before continuing navigation.

Map Data Information— One of the goals of GARMIN is to provide customers with the most complete and accurate cartography that is available to us at a reasonable cost. We use a combination of governmental and private data sources that we identify as required in product literature and copyright messages displayed to the consumer. Virtually all data sources contain inaccurate or incomplete data to some degree. This is particularly true outside the United States, where complete and accurate digital data is either not available or prohibitively expensive.

CAUTION— IT IS THE USER'S RESPONSIBILITY TO USE THIS PRODUCT PRUDENTLY. THIS PRODUCT IS INTENDED TO BE USED ONLY AS A TRAVEL AID AND MUST NOT BE USED FOR ANY PURPOSE REQUIRING PRECISE MEASUREMENT OF DIRECTION, DISTANCE, LOCATION, OR TOPOGRAPHY. THIS PRODUCT SHOULD NOT BE USED AS AN AID TO DETERMINE GROUND PROXIMITY FOR AIRCRAFT NAVIGATION.

Service and Repair— The NavTalk Pilot does not contain any user-serviceable parts. Repairs should be made only by an authorized GARMIN service center. Unauthorized repairs or modifications could void your warranty.

Table of Contents

Table of Contents

Table of Contents

Table of Contents

"HowTo" Index

The list below is provided to help you quickly find some of the more important procedures you will use on your new NavTalk Pilot.

"HowTo" Index Cont'd

Section 1 - Introduction to the NavTalk Pilot

The first time you power-up your NavTalk Pilot is an important step in getting off to the right start in achieving desired results and satisfactory operation. A basic understanding of the capabilities of the NavTalk Pilot and how its two main features function is essential to proper operation and maximum performance.

Before you can actually turn on your unit, the power source (rechargeable battery pack) must be fully charged. So, you may want to jump ahead to "Battery Installation" on page11 to begin that process, then read this manual while waiting for the battery to complete its charging cycle.

This section introduces you to the NavTalk Pilot List of Features and a basic overview of GPS Navigation and Cellular Phone usage. Because both NavTalk Pilot GPS and Cellular Phone functions are full-featured and go beyond conventional equipment, you will need to become familiar with their use before using this unit.

Introduction to NavTalk Pilot

Introduction to NavTalk Pilot

Unit Features

NavTalk Pilot Cellular Features

DTMF Location Reporting with Query, and Peer-To-Peer Display on Map Page

Phone Book for 100 Names and Numbers

Spell N' Find

Three Cellular Phone Number Assignment Modules (NAMs)

One Button Speed Dial

Last Number Redial with List and Time/Date Stamp

Auto-Redial

Auto-Answer with Missed Call Indicator and Missed Calls List with Time/Date Stamp

Signal Strength and Battery Power Level Indicators

DTMF Numeric Paging

Intelligent Security Lock

Audio, Beep, and Ring Volume Adjustment

Lifetime and Resettable Call Timers

Preferred SID List

Call Restriction

Minute Call Timer Reminder Beep

Mute Control

Emergency Auto-Dialing

NavTalk Pilot GPS Receiver Features

Navigation Features

250 Total Waypoints, Each with Name, Symbol and Map Display Option

Nine Each Continuous, Automatically Updated Nearest Waypoints (Airports, Runway, Comm.,VOR, NDB, Int., User WPT, User List, Cities, GeoPoints)

Twenty Reversible Routes with up to 30 Waypoints Each plus TracBack® Modes

Cities Listings with Database Information

Interstate Exits with Services Information

106 Map Datums

Coordinates Include, Lat/Lon, UTM/UPS, and Maidenhead

Introduction to NavTalk Pilot

Introduction to NavTalk Pilot

Important!

Make sure you charge the NiMH battery pack for 14 to 16 hours (Trickle Charger) before using your NavTalk Pilot to ensure optimum capacity and performance. Complete instructions on charging the battery pack are on Pages 11-12.

Cellular Phone Overview

Now it's time to learn the basics of operating the cell phone. Let's begin with a brief overview of the cellular telephone system. Your NavTalk Pilot cell phone uses radio waves instead of conventional telephone lines to place and receive calls. A ground based cellular telephone network consists of individual coverage areas (small sections of a city, typically several miles in diameter) called "cells". An air based cellular network is structured in a similar manner with separate air cellular frequencies that are linked to a conventional cellular network.

Each cell site has its own antenna located on a tower which is linked to a Mobile Telephone Switching Office (MTSO), which connects your call to the public switched telephone network or transfers it to another cellular phone.

As you move from one location to another, your call is handed off to the next cell site to provide the best signal coverage and call quality. This arrangement of multiple cells allows you to travel throughout a geographical area and maintain a quality conversation as the call is handed off from cell site to cell site. The signal is affected by atmospheric and geographic conditions that exist at the time you place or receive a call. The NavTalk Pilot is preprogrammed with a Number Assignment Module (NAM) for AirCell® service. You can only use AirCell service when the unit is connected to the AirCell adapter installed in your aircraft. To view the current status of AirCell coverage access the AirCell website at: www.aircell.com.

Remember, you must subscribe to a ground cellular system (to get a ground based phone number) before you can use your cell phone for ground based cellular phone calls. If you haven't been provided with a list of ground cellular service providers by your GARMIN Dealer, then you need to determine which of the service providers in your area that you want to use. You may already have a service provider for a current cell phone and you may want to have your NavTalk Pilot programmed to accept your current number or add a new one.

Remember that:

1. There are three cellular Number Assignment Modules (NAM's) on the NavTalk Pilot. Two modules are reserved for ground cellular service and one for AirCell service which is pre-programmed at the factory.
2. If you want to use AirCell as your cellular provider on the ground, you may subscribe to AirCell's ground cellular system. Otherwise, you may want to have your ground cellular phone number "Call Forwarded" to your NavTalk Pilot AirCell number to eliminate the need to provide potential callers with two phone numbers.
3. You need to have your battery pack charged and installed prior to taking your NavTalk Pilot to a Service Provider. Be certain to take along the trickle charger in the event that the service provider can not program your unit immediately.
4. Be certain to give the service provider the Service Provider Instruction Card packaged with your NavTalk Pilot. This will tell the service provider how to access special programming information needed to assign a phone number to the NavTalk Pilot.
5. The service provider will ask you questions about the type of service options you desire and then program your NavTalk Pilot accordingly.

Important!

For problems with air cellular service, or if you wish to change your air cellular number, contact AirCell at 1-888-286-9876.

GPS Navigation Overview

The Global Positioning System (GPS) is a system of 24 satellites that circle the earth twice a day in a very precise orbit and transmit information to earth.

The NavTalk Pilot must continuously "see" at least three of these satellites to calculate your position and track your movement. At times, additional satellites may be needed to determine a position.

By using an almanac (a timetable of satellite numbers and their orbits) stored in the receiver's memory, the NavTalk Pilot can determine the distance and position of any GPS satellite and use this information to compute your position.

Introduction to NavTalk Pilot

Your GPS receiver can only see satellites above the horizon, so it needs to know what satellites to look for at any given time. To use this almanac data, your GPS needs to either be told its general location "initialized" or given the opportunity to find itself.

Once you initialize the unit to a position, it will typically compute a fix within a few minutes. You'll learn how to initialize your new NavTalk Pilot on page 61.

Initialization is only necessary under the following conditions:

- The first time you use your receiver.
- After the receiver has been moved over 500 miles (with the power off) from the last time you used it.
- If the receiver's memory has been cleared and all internally stored data has been lost.

Because the NavTalk Pilot relies on satellite signals to provide you with navigation guidance, the receiver needs to have an unobstructed, clear view of the sky for best performance.

In a nutshell, the GPS receiver's view of the sky will generally determine how fast you get a position fix—or if you get a fix at all. GPS signals are relatively weak and do not travel through rocks, buildings, people, metal, or heavy tree cover, so remember to keep a clear view of the sky at all times for best performance.

Once the NavTalk Pilot has calculated a position fix, you'll usually have anywhere from five to twelve satellites in view. The receiver will then continuously select satellites in view to update your position. If some of the satellites in view get blocked or "shaded," the receiver can simply use an alternate satellite to maintain the position fix.

Although a GPS receiver needs four satellites to provide a three-dimensional (3D) fix, it can maintain a two-dimensional (2D) fix with only three satellites. A three-dimensional fix means the unit knows its latitude, longitude, and altitude, while a two-dimensional fix means the unit knows only its latitude and longitude.

Section 2 - Table of Contents

Getting Started Tour

The getting started tour is divided into two sections: Cell Phone and GPS. To begin using your NavTalk Pilot for navigation purposes, review the first part of the getting started "tour" and then complete the simulation exercise starting on page 61. To begin using the cellular phone, review the Basic Phone Operation information starting on page 29.

Getting Started Tour

Key Usage

To familiarize yourself with the placement of function keys on the NavTalk Pilot, refer to the foldout example in the Quick Reference Guide supplied with this manual. The keys on the NavTalk Pilot often have multiple functions and specific applications for Cellular and GPS use.

The POWER Key

The **POWER** Key turns the unit on and off and controls three levels of backlighting.

The PAGE Key

The **PAGE** Key scrolls through the main data pages in sequence and returns the display from a sub-menu page to a main page.

The ENTER Key

The **ENTER** Key confirms data entry and on-screen responses. This key also activates highlighted fields to allow data entry.

The SEND Key

The **SEND** Key dials phone numbers and answers phone calls. It also performs the "Flash Hook" function, pre-empts Auto-Pager mode, and sends position when held for more than one second during a call.

The QUIT Key

The **QUIT** Key returns you to a previous page, or clears data entry and restores a data field's previous value. It also mutes the microphone when held for one second during a phone call.

The END Key

The **END** Key ends a phone call and mutes ringer. It cancels Auto-Answer and Auto-Pager without answering a call.

The MENU Key

The **MENU** Key displays a menu of available options for the current page. Press twice to display the main menu. When held for one second it prompts for the Lock/Security Password to lock the phone.

The GPS/PHONE Key

The **GPS/PHONE** Key switches between the Cellular Phone and GPS Receiver operation. When held for one second it can turn off the GPS receiver as a battery-saver feature.

The ALPHANUMERIC Keys (Phone Keypad)

The phone keypad enters numbers for manual dialing and is used for Speed Dialing when keys are held for more than one second. They are also used for data entry. The **9** key is also used for Emergency dialing when held for more than one second.

The (*)MARK Key

The **(*)Mark** Key marks waypoints in the GPS mode and enters a (*) in the cellular mode.

The (#)GOTO (NRST) Key

The **(#)GOTO** Key displays the GOTO waypoint page in GPS mode, allowing you to select the destination waypoint. Press and hold this key to see a list of the nine nearest airports, VOR's, NDB's, intersections, etc. It also enters (#) in the cellular mode.

The ZOOM/VOLUME Keys

The **ZOOM/VOLUME** (in/out - up/down) Keys in the GPS mode allow you to zoom in and out on the Map page and adjust the range on the Highway page. In the cellular mode they adjust volume up or down for the phone ringer, beeper, and speaker. These keys pop-to-top, the volume adjustment window whenever pressed with the exception of the map and highway pages.

The ARROW Keypad

The **ARROW** keypad controls the movement of the cursor. It is used to select options and positions. It is used to enter both alpha characters and numeric data.

Battery Installation:

Before you can begin to explore the features and operational characteristics of the NavTalk Pilot, you must first install the NiMH Battery Pack and charge it for 14 to 16 hours (Trickle Charger).

1. Make certain the Battery Pack is securely in place in the cavity on the back of the NavTalk Pilot by aligning the two tabs of the base of the battery pack with the two small slots at the base of the cavity. Press the top portion of the battery pack in place until it clicks into position.

2. Place the plug end of the charger assembly into the power connection slot at the bottom of the NavTalk Pilot, (the plug is indexed to fit only in one direction). Insert the transformer portion of the charger into a 120VAC wall outlet.

3. Allow 14 to 16 hours for the initial charging of the Battery Pack. NiMH batteries require conditioning during the first charging to establish maximum charge capacity.

4. To determine if the battery pack has been fully charged, turn on the NavTalk Pilot and observe the battery icon in the status bar at the bottom of the display. The battery symbol should show solid black when fully charged.

5. Indications that the battery pack requires recharging are: the battery status symbol will appear "empty", a "Low Battery" message will appear and a short intermittent warning tone will be heard. If no image appears on the screen when the power button is pressed, the battery may be fully discharged or the contrast set too light.

Important Information about NiMH Batteries:

The trickle charger provided with the unit will charge the unit overnight and continue to keep it "topped off" as long as the unit is connected to the charger. However, leaving the unit connected to the trickle charger for extended periods, past the time required for charging, may reduce the duty cycle time of the battery.

The desktop charging stand and vehicular adapter both fast charge the unit, requiring approximately two to three hours to charge a completely depleted battery. At the end of the fast charge cycle the battery is then "topped off" by an applied trickle charge. The aircraft adapter automatically fast charges the unit battery in the same manner, but only when power to the aircraft is turned on (refer to page 14 for details).

Do not use a battery pack if it gets wet, as water can short across battery contacts. For the same reason, keep the battery pack away from loose metal objects such as keys, paper clips, etc.

Check contacts for dirt or corrosion if the battery pack does not charge properly.

If the battery pack has been stored at temperatures above or below the specified operating range for the NavTalk Pilot, allow the unit to cool down or warm up accordingly before use to achieve maximum battery power.

Be certain to turn the NavTalk Pilot off before removing the battery pack to prevent loss of current data.

The Battery Pack should recharge from 300 to 500 times before useful life is diminished.

In many states and cities Municipal Law requires for environmentally sound collection and recycling or disposal of Nickel Metal Hydride Batteries. Contact your local waste management official for instructions on disposal or recycling.

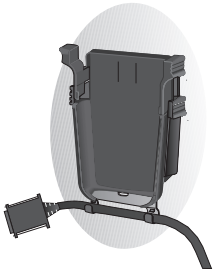
Operating the NavTalk Pilot from the Aircraft Adapter

For the NavTalk Pilot to operate in the air cellular mode, it must be connected to the aircraft adapter cord installed in your aircraft. Connection to the adapter automatically switches the unit from ground based cellular operation to air cellular operation. Air cellular will function only when the unit is connected to the adapter in the aircraft.

To connect the NavTalk Pilot to the aircraft adapter:

1. Locate the aircraft adapter cord. It should be stored on the two hooks at the bottom of NavTalk Pilot Cradle Assembly. (Upper right figure)
2. Connect the plug end of the cord into the slot at the bottom of the NavTalk Pilot. The plug is indexed to fit only one way. (Lower right figure) Press the springs on each side of the plug to fit it into the base of the unit. Press the springs again to remove the plug.
3. Turn on power to the aircraft and then turn on the NavTalk Pilot as explained on page 15 to check for proper connection. When the unit is operating from aircraft power the 'Power Status' icon will appear as an airplane symbol ( ). For additional information about 'Power Status' icons see page 19.

The Navtalk Pilot is designed to operate in the hand while connected to the adapter cord, allowing proper viewing of the screen and access to controls. However, when not in use or when operation of the controls is not required, it can be placed in the cradle for easy access when needed (see page 14). The Adapter Cord must be connected to the unit for air cellular operation and when connected to the adapter the unit cannot be used for ground based cellular communication. Mic gain and volume controls for use in the air cellular mode are independent of the same functions when the unit is used in the battery mode or in a vehicular adapter configuration. Thus readjustment of these features is not necessary. Refer to pages 16 and 128 for setting of mic and speaker volume.



Cradle Assembly with Adapter Cord

Press the springs on each side of the plug to connect and disconnect from the NavTalk Pilot.

Air Cell Adapter Cord Plug

Getting Started Tour

NavTalk Pilot Cradle with Locking Assembly

To insert the NavTalk Pilot into the NavTalk Pilot Cradle:

The NavTalk Pilot cradle secures the NavTalk Pilot in place when not in use or when holding the unit is not required. A locking assembly provides a secure mount to prevent disengagement. Two hooks at the base of the cradle provide for storage of the adapter cable when not connected to the unit.

1. Insert the NavTalk Pilot in the cradle by guiding the unit onto the two flanges on the base of the cradle and then pivoting back while pushing down until it clicks into place.
2. Slide the locking assembly up to secure the unit in place. Slide the locking assembly down and then press in on the two tabs on each side of the cradle to remove the unit.
3. When removing the NavTalk Pilot from the aircraft, place the adapter cable over the two hooks at the bottom of the cradle for secure storage.

Charging the battery using the aircraft adapter:

The aircraft adapter provides power to operate the NavTalk Pilot whenever it is connected to the aircraft adapter cord and aircraft power is turned on. Power is switched from battery to the adapter and the battery is fast charged (unless completely depleted, then a trickle charge will begin to protect the battery from damage) and when completely charged, a trickle charge will keep the battery "topped off". A safety feature terminates the fast charge after three hours if the charging process has not already completed. Fast charging is operational only if the battery temperature is between 32 and 100 degrees F and voltage limits are between 3.0 VDC and 6.0 VDC. If fast charging is disallowed because of these factors, then trickle charging begins. When the aircraft power is turned off, charging will stop. When fast charging the Battery Status icon will appear as a (**Chrg**). See page 19 for Power/Battery Status information.

Turning the NavTalk Pilot On and Off

1. Press and hold the **PWR** key to turn the NavTalk Pilot on.
2. Press and hold the **PWR** key to turn the NavTalk Pilot off.

Each time the Navtalk Pilot is turned on, the Welcome Page will appear while the unit conducts a self test. A Database Information Page and Warning Page appear, asking you to read and acknowledge important information regarding the proper use of the land data that is provided.

After approximately ten seconds, the Land Data Warning Page will be replaced by the Cellular Status Page. Press the **PAGE** or **ENTER** key twice to bypass these pages. (If the Satellite Status Page appears instead of the Cellular Status Page, it's because the unit was in the GPS receiver mode when it was turned off.) Refer to page 61 for more information on initialization.

To Switch from the Cellular to GPS Modes

1. Press the **GPS/PHONE** Mode key. Toggle the key to switch back and forth from GPS to Cellular.

At this point you may want to adjust the screen contrast which you can do by selecting the GPS mode Satellite Status Page or Cellular Mode Status Page.

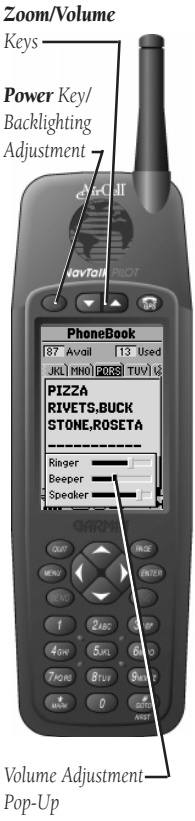
To Adjust the Screen Contrast

1. Press the **PAGE** key until you access either the Cellular Status page in the Phone Mode or the Satellite Status Page in the GPS Mode. Press the right arrow of the **ARROW** keypad. A pop up sliding indicator will appear. To increase the contrast, move the indicator to the right by pressing the right arrow key.
2. To decrease the screen contrast, press the left arrow of the **ARROW** keypad. Press the **PAGE** key to finish.

Contrast adjustment is also available from the Setup Menu/System Page (see page 50.)

Contrast Adjustment

Getting Started Tour



To Adjust Volume

The Zoom/Volume keys can be used to adjust the ringer, beeper, and speaker volume on any page (other than the GPS map and highway pages). Pressing these keys will cause a pop-up menu to appear, showing sliding indicators for each volume control. Each field must be selected prior to changing volume settings.

1. Press a **ZOOM/VOLUME** key. When the pop-up menu first appears the appropriate field is in edit mode: **beeper** (no call), **ringer** (when phone is ringing), and **speaker** (during a call).
2. Using the left and right arrow keys, move the indicator to the left for less volume and to the right for more volume.
3. To highlight a different field, use the up/down arrow keys. Use left and right arrow keys to move the indicator. Press **QUIT** to end or press no keys and allow to time-out.

The volume levels are different when the unit is in the airplane and car cradles. Volume is adjusted in the appropriate cradle in exactly the same way, but can only be done when in said cradle. When placed in the cradle, the volume setting will return to the former level for that cradle.

To Adjust Backlighting

The NavTalk Pilot's three-level backlighting is controlled with the **PWR** key and may be adjusted at any time, from any page.

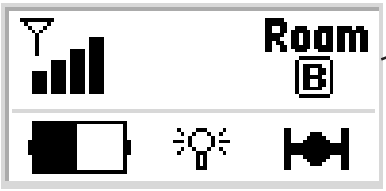
To turn the backlighting on:

1. Press **PWR** repeatedly until the backlighting is at the desired level (off, 1, 2, or 3). Extended press of the **PWR** key will shut the unit off.

Understanding the Status Bar

An important feature of the NavTalk Pilot is the combined GPS/Cellular Status Bar that appears at the bottom of every main GPS and Cellular Page. The Status Bar is important because it lets you know at a glance the status of all the primary functions of your NavTalk Pilot.

The Status Bar appears in two sizes: large and regular. The large size Status Bar is displayed only at the bottom of the Cellular Status Page and is divided into two lines (see figure below).



Status Bar at the base of the Cellular Status Page.

The top line is dedicated to providing cellular information and conveys three main pieces of information:

• **The Cellular Signal Strength -** is indicated by an antenna with 1 to 5 signal bars. The number of bars shows the strength of the signal received by your NavTalk Pilot. No bars means you may not be able to call.

The display will change as you move with your unit. If the signal is not strong enough to place a call, try moving to a different location.

Signal Strength Icon

• **The phone "In Use" indicator (displayed during placed or answered call) -** this symbol appears whenever you answer or place a phone call. When there is no call activity this space is blank or replaced by the Auto-Answer or Pager icon when these features are selected as shown on page 18. When the microphone is muted an "M" will appear next to the "In Use" icon.

Phone "In-Use" Icon

Getting Started Tour

Auto-Answer Icon

Auto-Pager Icon

Auto-Data Icon for Position Polling

Cell Phone Roaming Status Icon

• **The Answer Status Icons —** You can program the NavTalk Pilot to display the answering status of the phone. When set to 'Auto-Answer' the phone will automatically answer. When set to 'Pager' it will allow callers to enter their phone number for returning their call. When the 'Auto-Data' feature is active the Auto-Data icon will appear when automatic position reporting is taking place.

• **The Roaming Status —** (H means Home, A or B means roaming A or B, and P means roaming on a preferred SID).

The term "roaming" applies to the use of your NavTalk Pilot within ground based cellular systems other than those designated as your "home" system. As your NavTalk Pilot begins to roam, it seeks service according to the conditions you have selected. Contact your system operator, or that of the visited system, for information on billing and dialing services. When operating in the air cellular mode roaming does not apply, as the air cellular system is universal in coverage. You will switch from cell to cell as you travel but it will not be acknowledged by the NavTalk Pilot.

When the phone is not communicating with the cellular system, either because the system is down or the phone is out of range, the words "No Service" are displayed on the top line in place of the indicators described above. "Cellular Off" means the phone is off, but allows access to all cellular pages. You cannot send or receive calls with the exception of using Emergency Calling (refer to page 57.)

When the phone is not operating properly the words "Service Unit" are displayed on the top line and the phone cannot be used for calls.

The bottom line provides some general purpose information in addition to the current GPS status. Three indicators are displayed:

• **The Power/Battery Status —** (battery gauge, external plug-in or fast charge icon). The amount of shading left in the battery icon shows the amount of charge left in the battery pack. The more shading you see, the greater the charge. When the battery pack is low, the NavTalk Pilot alerts you in the following ways:

- 'Empty icon'—No charge left.
- 'Low Battery' message will appear, followed by a periodic short tone.

If you ignore these warnings, the NavTalk Pilot will automatically turn itself off when the battery has a very small charge left. Simply charge the battery to resume normal operation. A two prong plug icon indicates that you are using AC or DC power adapters. An automobile icon will appear when using the GARMIN Vehicular Adapter (Hands-Free) Kit. An airplane icon appears when the NavTalk Pilot is secured in the cradle in the airplane.

- **Backlight Icon —** shows active backlighting.
- **The GPS status —** (solid satellite icon means tracking satellites, flashing means searching satellites, SIM means simulator, OFF means GPS off). See the reference section for more information on satellite acquisition.

The regular size version of the Status Bar uses the same icons and text, except in a condensed size (see figure below).

Notice how the cellular portions of the regular Status Bar have been reduced to fit, but directly reflect the look and feel of the larger versions. The left half of the regular Status Bar equates to the top line of the larger version and the right half corresponds to the bottom line.

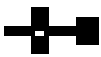
Battery Capacity Icon

Power Adapter Icon

Fast Charge Icon

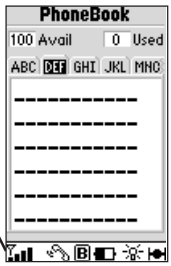
Automobile Icon

Backlighting "ON" Icon

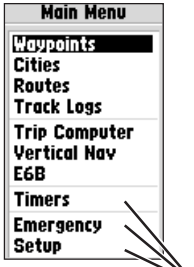


airplane Icon

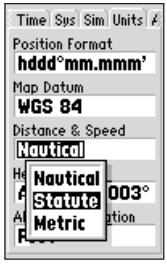
GPS Icon



Getting Started Tour



Menu Selections that are specific to Phone Functions are Timers, Emergency and Setup



"Units" Settings Sub-Menu

Main Menu Page

The Main Menu gives you access to the in-depth programming and features of the cellular phone. The pages are sub-menus that can be used to customize page displays and make changes to system settings.

The Main Menu has three selections that are specific to Cellular Phone use; Timers, Emergency and Setup.

To view the Main Menu:

1. Press **MENU** twice.

The Main Menu displays both GPS and Cellular programming features. Basic phone function can be performed without programming of the features accessed in the Main Menu. These features are explained in Section 4, "Cell Phone Reference" and Section 6, "GPS Receiver Reference."

To select Setup from the Main Menu:

1. Highlight "Setup" using the arrow keypad and press **ENTER**.

The "Setup" option provides a list of settings for both the GPS receiver and the cell phone (presented as a series of file tabs). For a brief look at how the "Setup" option works, change the units of measure for distance and speed.

1. Highlight the "Units" tab using the **ARROW** keypad. The "Units" settings are automatically displayed.
2. Highlight the "Distance & Speed" field using the **ARROW** keypad, and press **ENTER**. A pop-up menu appears showing the available options.
3. Select the desired option using the **ARROW** keypad, and press **ENTER**.
4. To return to the Main Menu, press **QUIT**.

Cell Phone Pages

All of NavTalk Pilot's cell phone menus and options are accessible through the four main cell phone pages. You can quickly scroll through the four pages in either direction by repeatedly pressing the **PAGE** or **QUIT** keys. Each of the cell phone pages are covered in detail in the reference section, but for now let's just briefly introduce each page. The first cellular phone page is the Cellular Status Page.

Cellular Status Page

The Cellular Status Page displays the following:

- **Your active phone number, view of ground number, view of air cellular number, time of your last call, last dialed number, or the date** — (you can switch between the six by pressing **ENTER**.)
- **A message center** — which gives you easy access to a list of missed calls. Detailed information on the message center is given in the reference section.
- **Configurable Data Fields** — These two data fields can be changed by selecting 'Change Fields' from the cellular page menu. The fields can be changed from 'Time of Day' and 'System I.D.' to two of 37 options (see pages 37 and 38.)
- **System Identification Number (SID)** — The numeric system ID for the cellular system the unit is currently communicating with.

The Cellular System Page also displays a status bar that was discussed on page 17.

There are two sub menu pages that are accessed from the Cellular Status Page: the Missed Calls Page and the Dialing Page. These two pages are discussed in detail on pages 37 and 38.

Cellular Status Page Displaying a Redial Number, Call Timer and "In-Use" Indicator

Getting Started Tour

Speed Dial Page with Number 0 Selected. Press SEND or hold the ZERO Key for more than 1 second to dial.

PhoneBook Page

- The PhoneBook Page gives you a handy way of recording and storing names and phone numbers for later use.
- The PhoneBook Page will hold up to 100 names in alphabetical order in tabbed sections. Tabs and names are selected using the **ARROW** keypad.
- The Spell'n Find feature allows you to select a name and number from the PhoneBook quickly by spelling the name starting with the first characters of the name. This is particularly useful when your Phonebook is nearly filled to capacity. Press **MENU** with the PhoneBook page displayed to access.

Last Dialed Page

- The Last Dialed Page gives you a convenient way of viewing and redialing the last nine phone numbers dialed. To redial, highlight the number and press **SEND** (see page 32.)
- Detailed information such as time of day and date is provided.
- A scroll bar will appear as the list grows too big for the page.

Speed Dial Page

- The Speed Dial Page gives you a handy way of dialing numbers that you have listed on the page. The page holds nine entries and an emergency number.
- These numbers may be entered into the Speed Dial Page list but will also become part of the listing in your PhoneBook Page.
- To make a call using Speed Dial, hold the number key corresponding to the name on the list for one second. Or, use the **ARROW** keypad to highlight the name or number you wish to call then press **SEND**.

GPS Pages

All of the NavTalk Pilot's GPS setup and options are accessible through six main GPS pages. You can quickly scroll through the six GPS pages in either direction using the **PAGE** or **QUIT** keys. Let's briefly look at each of these pages in order to give you some insight into how they help you navigate.

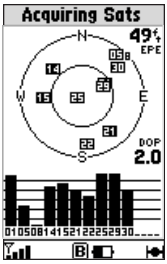
Satellite Status Page

Let's start with the Satellite Status Page. If you're not already on this page, press **PAGE** or **QUIT** until it appears.

The Satellite Status Page shows you satellite status information that helps you understand what the GPS receiver is doing.

It features a sky view of available satellites, corresponding signal strength bars, the status of your current position fix (acquiring, 2D, 3D, etc.), and your estimated position error (EPE).

The Satellite Page and all other GPS main pages display the Status Bar at the base of each page.



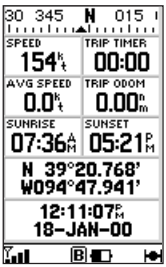
Satellite Page

Position Page

The Position Page shows you where you are, what direction you're heading, and how fast you're going.

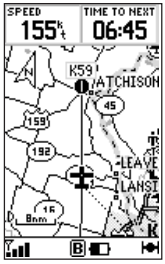
A graphic compass at the top of the page shows your direction of travel while you're moving (your track), and six user-selectable data fields below show your current speed, average speed, trip odometer, trip timer, and sunrise/sunset times at your current position.

"User-selectable" means you can change them to display other information. These fields are covered in more detail in the reference section. Below the user-selectable data fields are additional data fields that display your current position in latitude and longitude and current time and date.

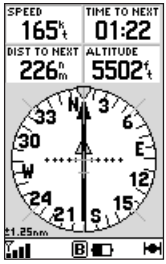


Position Page

Getting Started Tour



Map Page



HSI Page

Map Page

The Map Page shows your movement and surrounding detail (lakes, rivers, highways and towns). Your present position is identified by an airplane icon in the center of the map. You can use the Zoom/Volume keys to adjust the map range (800 feet to 500 miles).

To change the map range:

1. Press the **IN** zoom key (down arrow) to select a smaller range and more detail for a smaller area.
2. Press the **OUT** zoom key (up arrow) to select a larger range and display a larger area.

Nearby waypoints are depicted on the map with any one of over 40 different symbols, with the waypoint name shown directly above the symbol. More about the NavTalk Pilot's waypoint features and the Map Page is covered in the reference section, including how to change the map orientation if you desire.

HSI Page

The NavTalk Pilot features two different navigation pages: HSI (horizontal situation indicator) and Highway page. The HSI Page is first.

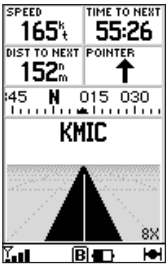
The HSI Page provides graphic steering guidance to a destination waypoint, with an emphasis on the bearing to your destination and current direction of travel. (The Highway page also provides graphic steering guidance by displaying a three-dimensional perspective of your course and the surrounding area.) The HSI graphically depicts a mechanical HSI, showing the desired course using a 'D-bar' (course deviation bar; which is part of the course deviation indicator, or 'CDI') and course pointer. If you move off course, the D-bar will indicate off course distance and direction. To return to the desired course, simply steer in the direction of the D-bar until it returns to the center of the CDI. The CDI scale is adjustable, with the current scale indicated at the bottom of the page. The scale setting represents the distance from the center of the CDI to full left or right limits.

The HSI depicts your (ground) track heading using a rotating 'compass card'. Don't confuse this with the aircraft heading indicated on your panel. On a windy day these two figures can differ significantly.

The HSI page also provides a TO/FROM indication and vertical guidance, when using the unit's vertical navigation (VNAV) features. Four user-selectable data fields indicate current speed, distance to destination, time enroute and time of day.

Highway Page

Like the HSI Page, the Highway Page also provides graphic steering guidance to a destination waypoint. You can use the Highway Page instead of the HSI Page as your primary navigation page when your main concern is following a defined course.



Highway Page

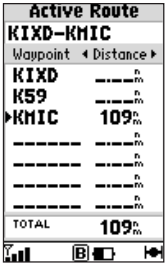
Your present position is at the bottom center of the highway display.

The line down the middle of the highway represents your desired course. As you navigate toward a waypoint, the highway will actually move—indicating the direction you're off course. To stay on course, simply move toward the center of the highway.

The fields at the top left of the page show speed and distance to your destination (or the next waypoint in a route), along with a track compass showing current direction of travel.

Across from the speed field is the time required to reach your destination (or the next waypoint in a route), in hours/minutes or minutes/seconds. The pointer shows the bearing to your destination, relative to your current track. If the pointer points straight ahead, you're heading directly to your destination.

Getting Started Tour



Active Route Page

"Pop-Up" Message

Active Route Page

The last of the six main GPS pages is the Active Route Page. This page shows the GOTO waypoint or each waypoint of a route, with waypoint name and the course along each leg (segment) of the route.

When using a route, the current destination is marked with an arrow on the left-hand side of the screen. If no destination has been specified using the **#/GOTO** key or a route, no waypoints will be listed on the page.

Messages

The NavTalk Pilot uses on-screen messages to alert you to important information. Whenever a message appears, press **ENTER** to acknowledge the message and return to the previous page you were viewing. Refer to Appendix D on pages 143-145 for a complete listing of these messages.

Section 3 - Table of Contents

Basic Phone Operation

The first time you use your NavTalk Pilot Cellular Phone you don't need to be completely familiar with every system feature to place and answer calls. Once your Cellular Service Provider has programmed the phone portion of the NavTalk Pilot for cellular use you can begin using it.

Basic Phone Operation

Important!

Remember that a cellular telephone is a radio that acts like a telephone and that all conversations on cell phones are unprotected and can be monitored.

There are laws that protect you against eavesdropping (the Electronic Communications Privacy Act of 1986 makes it a criminal offense to monitor cellular phone calls) but you'll still want to be careful of what you say on your NavTalk Pilot.

Antenna

***Power** ON/OFF*

***Volume** Adjust*

***GPS/Phone** Mode Select*

LCD Display Screen

***Arrow** Keypad*

***Send** Key*

***End** Key*

Phone Keypad

*Emergency dial Key **"9"***

Placing a Call

To place a call:

1. Manually enter the phone number from any page using the phone keypad and press **SEND**. The call timer starts counting after you place the call. *Or...*
2. From the PhoneBook Page highlight the name or number you want dialed and press **SEND**. The call timer starts counting after you place the call. Press **PAGE** or **QUIT** to access the PhoneBook Page. *Or...*
3. If the number is stored on the Speed Dial Page simply press the phone keypad number that corresponds to the phone numbers placed on the Speed Dial list. Hold the key down for more than one second to dial that number from any display on the NavTalk Pilot.

Answering a Call

To answer a call:

1. Press **SEND**. An incoming call is indicated by a ringing tone, and the '**Call—Press SEND**' message flashing on the display. Once answered, the call timer starts counting.

If a call is not answered, the 'Call—Press SEND' message will continue flashing and the ringing tone will continue until **SEND** is pressed. Pressing **END** will mute the ringer for this call. When placing a call, wait for the IN USE icon and the phone call should connect. If a connection cannot be made, fail tones will sound.

Unsuccessful Call Attempts

If you hear one of the following signals, you have not successfully completed your call:

- **Fast Busy —** The cellular system is busy. To correct, press **SEND** again after ending the call, to immediately redial the call, or press **END** and dial the number later.

Manual Dialing Page

Call Notification

Cellular Status Display when redialing a phone number

Basic Phone Operation

Important!
The NavTalk Pilot does not have an extendible antenna. Hold the phone as you would any other telephone. While speaking into the mouthpiece, position the antenna up and over your shoulder. Do not hold the antenna or allow it to come into contact with any other object while making a call or while talking. This can affect call quality.

- **Alternating High/Low Tone —** The cellular system could not complete the call. You may have tried to place a call before the NavTalk Pilot was fully operative or poor signal strength is preventing the celluar system from receiving the NavTalk Pilot signal. To correct, press **SEND** to immediately redial the call, or press **END** and dial the number again.
- **Busy signal —** The called party's phone is busy.

Dialing Errors

If you make an error while entering a phone number press the left arrow key of the arrow keypad to delete the last number. To delete the entire entry, press and hold the left arrow key of the arrow keypad or **END**. Now you can re-enter the number you want to call.

Auto-Redial

The phone features 'Auto-Redial' which makes it possible for you to repeat call attempts when the cellular system is busy. If you receive an alternating high/low signal or the fast busy tone when attempting to place a call and wish to retry the call you can program the phone to redial the number. The phone recognizes that the call was not completed, then it redials every 15 seconds. You can program this feature to redial up to nine times. If you do not want automatic redialing, press **END** at any time. 'Auto-Redial' is programmed in the Phone setup page accessed from the Setup portion of the Main Menu. See page 41 for information.

Ending a Call

To end a call Press **END**.

Missed Calls Indicator

The NavTalk Pilot counts up to 20 unanswered and Auto Pager calls. The number of missed calls are displayed below the telephone icon located in the message center on the Cellular Status Page.

To view the Missed Calls List:

1. Highlight the Message Center phone icon and press **ENTER** to view the list of missed calls. There are three types of listings:

   No Answer — Time/date stamp. Not answered, manually, by auto-answer or by Auto-pager.

   No Message — Time/date stamp. Answered by Auto-pager, but no message is left.

   Phone Number — Time/date stamp. Answered by Auto-pager and DTMF tones for number entered.

To return a call with a phone number:

1. Highlight a selected missed call phone number and press **SEND** to call that number.

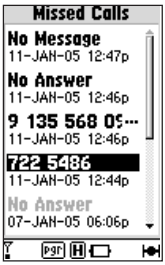
Missed Calls Indicator

Using the PhoneBook

The PhoneBook is your repository for all recorded names and phone numbers. It can store up to 100 numbers.

To View the PhoneBook Page:

1. Access the PhoneBook Page by pressing the **PAGE** key until the PhoneBook page is accessed.
2. Use the left or right arrow keys to move from tab to tab through the PhoneBook and the up/down keys to highlight the name you want to call.
3. Press the **SEND** key and your call will be placed.
4. The phone number dialed will be placed in the 'Last Dialed' directory even if the call is not answered. You can set the 'Auto-Redial' feature to continue calling the number for up to 9 tries if the cellular system is busy. Refer to the section on Auto-Redial, page 41.
5. To enter names into the PhoneBook directory press the **MENU** key after you have accessed the PhoneBook page. Information on programming phone numbers is contained on page 39 of the Cellular Phone Reference section.



Missed Calls List

PhoneBook Page with Index Tabs

Basic Phone Operation

Enter Names into the PhoneBook Using 'New PhoneBk #'. Find a Name Quickly by Using 'Spell 'n Find'

Enter this Number to Speed Dial from anywhere on the NavTalk Pilot

Speed Dialing

The Speed Dial feature allows you to store up to nine phone numbers from your PhoneBook directory for quick access for dialing.

1. To access the Speed Dial page, use the **PAGE** key to scroll through the pages until you reach Speed Dial.
2. If you know the list number of a name on the page, press the keypad key with that number for more than one second to Speed dial from any display on the NavTalk Pilot.
3. You can also highlight a name and press **SEND** to dial in a conventional manner.

Speed Dialing is programmed when you enter a name and number into the PhoneBook at the New Number programming page. For information on entering new numbers, refer to page 42 in the Cellular Phone Reference section.

Last Dialed

The Last Dialed feature automatically stores up to nine phone numbers you have previously dialed for quick access for redialing.

1. To access the Last Dialed page, use the **PAGE** key to scroll through the pages until you reach the Last Dialed Page.
2. Use the **ARROW** keypad to highlight the name you want to call again. Beneath each name is the date and time that you last placed a call to that person.
3. Once you have highlighted the name, press **SEND** and the call will be placed, and the date and time will automatically be updated.

The Last Dialed Page will display a scroll bar when more names than can be displayed are listed on the page. Whenever you place a call, the number is added to the page and the oldest last dialed name or number is deleted from the list whenever the page is filled with a maximum of nine numbers. You can edit entries on this page by pressing **MENU** to add a number to the PhoneBook, remove it from the list, etc.

Last Dialed Name with Time/Date Stamp

Last Dialed Edit Page

Call Timers

Call Timers are useful for recording the amount of time of your last call, the total elapsed time for all calls during a measured period of time, and the total lifetime use of your NavTalk Pilot. You can also set the NavTalk Pilot to signal each time a minute of your current call has elapsed. It beeps at 50 seconds into the first minute and at one minute intervals thereafter to help you save on minute increment call billing. Last Call and Elapsed Time are always active and can be reset through the Call Timers function of the Main Menu.

1. Access the Main Menu by pressing the **MENU** key twice.
2. Scroll down to **Timers** and press **ENTER** to view the timers page. On this page use the **ARROW** keypad to move to the 'Calls' tab.
3. To reset the Last Call, Elapsed timers and turn the Minute Timer on or off, highlight the selection and press **ENTER**.

Refer to page 51 of the Phone Reference Section. The Lifetime timer cannot be reset.

The Minute Timer signals with 2 Short Beeps every 60 Seconds which cannot be heard by other parties.

Operating Modes

The NavTalk Pilot automatically selects between airborne and ground modes based on docking (cradle) status. Under certain conditions, the cellular transceiver is disabled to prevent interference to both the airborne cellular and conventional cellular networks. The table below indicates the unit operating mode as it applies to ground speed and cradle docking.

Mode	Docking	GPS Velocity	Cellular Operation
Ground	Undocked	< 100 mph	Conventional
	Undocked	≥ 100 mph	Off
	Undocked	Undefined	Conventional
Airborne	Docked	< 20 mph	Off
	Docked	≥ 20 mph	AirCell
	Docked	Undefined	AirCell

Section 4 - Table of Contents

Cell Phone Reference

This section provides in-depth information on all of the NavTalk Pilot's advanced Cell Phone functions and features.

Cell Phone Reference

Antenna

Power *ON/OFF*

Volume *Adjust*

GPS/Phone *Mode Switch*

LCD Display Screen

Menu *Key (Access to Feature Options)*

Arrow *Keypad (Cursor and Data Entry)*

Enter *Key (Selects Fields and Options)*

Send *Key*

End *Key*

Phone *Keypad (Dialing and Data Entry)*

Emergency Dial Key ***"9"***

Introduction:

The NavTalk Pilot Cell Phone provides you with a full range of cell phone features as well as some unique to a GPS/Cell Phone device. This reference section will instruct you in how to use these features to enhance the efficiency of the cell phone. Section 3 of this manual titled, "Basic Phone Operation," has provided you with information on basic operation of the cell phone such as placing and answering calls, adjusting volume, the cell phone pages, auto-redial and missed call indicators. Now you will learn how to take advantage of NavTalk Pilot's advanced cell phone features.

Fields in the Cellular Status Page

The Cellular Status Page will be the page most often displayed during cell phone use. The fields displayed are:

Your Active Phone Number, Ground Phone Number, Air Phone Number, the Duration of Your Last Call, the Last Dialed number or the Date.

The Message Center

Two Configurable Data Fields — default to Cellular System Identification Number and Time of Day

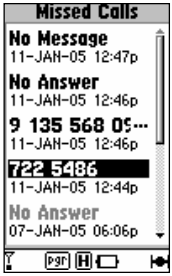
The Status Bar Symbols — which are explained in detail beginning on page 17.

There are three sub-menu pages accessed from the Cellular Status Page:

Missed Calls Page— Appears when you highlight Message Center and press **ENTER** to display a list of unanswered calls with numbers and date/time stamp.

Cellular Page Menu— Allows you to enter a PhoneBook Number, use Spell n' Find, Start/Stop Cellular, select from Manual Answer, Auto Answer or Auto Pager, Change Data Fields and to reset the page to default settings.

Cellular Status Page



Missed Calls Page

Cell Phone Reference

Manual Dial Display verifies dialed number

Select 'Active Phone #', 'Ground Phone #', 'Air Phone #', 'Last Call', 'Last Dialed' or 'Date'

Cellular Status Page Menu. Manual Answer currently selected, indicated by light gray shading.

Dialing Page— Appears when you dial a phone number manually, when using the PhoneBook, Speed Dial or answering a call.

The Dialing Page Menu— Allows new PhoneBook entry, Spell 'n Find, Manual, Auto Answer, Auto Pager, Send Location, and Query Location.

Programming Cellular Status Page Fields

To view the Active phone Number, Ground Phone Number, Air Phone Number, time of last call, last dialed number or the date:

1. Highlight the first field on the Cellular status Page and press **ENTER**. Then make your selection from the pop-up menu and press **ENTER**. The Cellular Status page will reappear with the phone number, time, or date as selected.

To change the data displayed in the two data fields:

1. Press **MENU** to access the page menu and select 'Change Fields'. Then choose two from the thirty-seven data options available.

To add or find a number in the PhoneBook and select the type of call answering:

1. Press **MENU** to access the Cellular Status page menu.
2. Scroll to the feature you want to program and press **ENTER**. If you selected 'New PhoneBk#' or 'Spell 'n Find' a new page will appear. If you selected Manual Answer, Auto Answer or Auto Pager, press **ENTER** to activate these features. Refer to page 41 for more information. 'Stop or Start Cellular' allows turning On or Off the cellular feature while still having access to the Phone data pages, Emergency Calling and GPS Receiver.

Changing the Ringer, Beeper and Speaker Volume Settings:

To change the volume settings:

1. From any page, press either of the **ZOOM/VOLUME** keys at the top of the display window. The volume control window will open at the lower part of the display screen.
2. Then use the up/down arrow keys to scroll to the control you want to change, then the left/right keys to move the control bar to increase or decrease the volume. The volume display will close five seconds after the last keystroke.

Using the PhoneBook

The PhoneBook is your repository for up to 100 phone numbers arranged in alphabetical order with tabs that group names in categories matching the alpha-numeric keys on your keypad. You can quickly select a tab by pressing the right/left **ARROW** keys and then scrolling down to a listed name and number. To view all data for a name, press **ENTER** and the 'Edit Number' display will appear. A category identified as 'Other' can be used to hold notes and temporary phone numbers recorded during phone conversations. The 'Other' category will store entries that begin with a numeral or other non-alpha characters only.

To dial a number using the PhoneBook:

1. Highlight the name of the person to be called and press **SEND**. The name and phone number of the person you are calling will appear on the Cellular Status page and the 'In Use' icon will appear in the Status Bar.

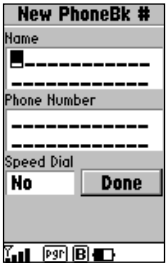
Add or delete names and numbers from the PhoneBook by pressing **MENU** once you have accessed the PhoneBook and selected a name.

Volume Control Panel with Control Bar Indicator

PhoneBook List and Phone Number Information Page

New Phone Number Option

Cell Phone Reference



Name and Phone No. entry in the PhoneBook

You are always prompted before a deletion is performed anywhere in the NavTalk Pilot Programming.

To enter a new number in the PhoneBook:

1. Access the PhoneBook page and press **MENU** to bring up the PhoneBook Menu.
2. Highlight 'New PhoneBk #' and press **ENTER**, to bring up the PhoneBook entry page. Press **ENTER** to begin entry and then use the phone keypad to enter the name. The character block moves to the next position when you pause after entry. Use the **1** key to enter spaces and a comma or the **0** key for this and other punctuation. Press **ENTER** when finished and cursor down to the number field.
3. Enter the phone number using the phone keypad. This field automatically spaces the dial string. To quickly remove an entry in either the name or number field, hold down the left arrow key with the field highlighted after pressing **ENTER**. Move to the Speed Dial field, press **ENTER** and assign a Speed Dial number if desired. Then cursor to 'Done' and press **ENTER** to complete the entry.

To remove a name from the PhoneBook:

1. Highlight 'Delete Number' and press **ENTER**. You will be prompted to confirm the deletion before pressing **ENTER** to remove.
2. To clear the PhoneBook of all names, highlight 'Delete All' and press **ENTER**. You will be prompted to confirm this deletion before pressing **ENTER** to remove all names from your directory.

You can use the Spell 'n Find feature to quickly find a name in the phonebook without scrolling through the name lists. Access the PhoneBook, select Menu and cursor down to 'Spell N' Find'. Then spell out the first part of the name you want to find until it appears on the display, and press **SEND**.

Redialing Numbers Previously Called Using the Last Dialed Page

You may often need to speak with the same person throughout the day or may not have made contact with that person when you last dialed their number. By accessing the Last Dialed Page you can recall from the list of last dialed numbers those that you would like to redial. The list will retain the last nine dialed numbers from the PhoneBook and manually dialed numbers. A scroll bar will appear when there are more numbers than can be displayed. Highlight the name or number and press **SEND** to redial.

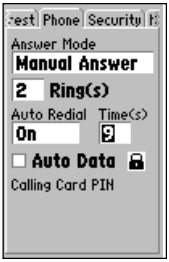
When a number from the Last Dialed List is redialed, it moves to the top of the list with a new Time/Date Stamp.

Redialing Using the Auto-Redial Feature

You can automatically redial a phone number when the cellular cannot be accessed because of system traffic, poor signal, etc. You can auto-redial the number up to nine times. This feature is programmed from the Phone Page of the Setup Program. It will not redial a busy number or an unanswered call (refer to Page 43-44.)

Using the Speed Dial Feature

The Speed Dial Feature allows you to view name or Phone Keypad number assignments, and hold the number key corresponding to the Speed Dial List number for more than one second to dial that phone number from anywhere on the unit. There are nine entry spaces on the Speed Dial list. Names and numbers may be added to the Speed Dial list when they are recorded using the 'New PhoneBk #' menu. They can also be added from the existing list of names in the PhoneBook by using the 'Edit' feature to assign a name to a Speed Dial position.



When using Auto-Redial, select the number of times (up to 9) for redialing a number.

Cell Phone Reference

Speed Dial Assignment

There are only nine positions on the Speed Dial List. Be sure to select an unused position or a Speed Dial number you want to overwrite.

Highlight Setup on the Main Menu. Press ***ENTER*** *to access the Setup pages.*

To enter new names and numbers on the Speed Dial Page:

1. Use the **PAGE** button to acquire the PhoneBook page. Then press **MENU** to enter a new name and number or edit an existing entry.
2. Highlight the desired entry from the PhoneBook and press **ENTER**. If entering a new name and number, press **MENU** instead of **ENTER** to bring up a 'New PhoneBk#' display.
3. Enter the name and number and select a position on the Speed Dial list that is unused, then highlight 'Done' and press **ENTER**. When you select a position that is already assigned (0 through 8) it will replace the old selection.

Setting Up NavTalk Pilot Phone Features

Access the Setup pages through the Main Menu by pressing the Menu button and using the **ARROW** keypad to scroll down to Menu Setup. Press **ENTER** to access the Setup pages. These pages are selected by tabs at the top of the screen. Use the right/left arrow keys to scroll from tab to tab.

There are several conventions for moving from field to field and making entries in each setup directory.

To setup phone features:

1. Use the **ARROW** keypad to move up, down and from side to side to cursor to and highlight a selected field.
2. Press **ENTER** to begin data entry, to "Pop Up" a sub-menu or activate a button or icon.
3. Enter data using the phone keypad to enter alphanumeric characters or cursor to a selection from a pop up menu.
4. Press **ENTER** to store data and programming selections for each field and then cursor to the next field.

Start with the first tab page titled, 'Phone.'

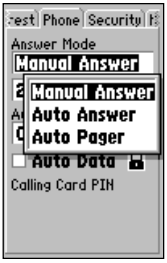
Programming Phone Setup (Answer Mode, Auto Redial, Auto Data and Calling Card PIN)

There are three Answer Mode options, Manual Answer, Auto Answer (Hands-Free, for headsets) and Auto Pager. When Auto Pager answers, the microphone is muted and the unit emits a beep tone to indicate the Auto Pager feature is active. The caller then enters their phone number that is placed in the 'Missed Calls' list along with a date/time stamp. Inform frequent callers about the Auto Pager beep tone signal. Pressing **SEND** pre-empts Auto Pager. Pressing **END** before answering any call cancels Auto Answer or Auto Pager. These two modes then resume for subsequent calls. Auto Redial allows you to redial the number you are calling up to nine times.

Auto Data provides for location data transmission without ringing the phone or requiring the **SEND** key to be pressed, and without displaying messages about location transfer. If data is not detected within three seconds, the call will ring for up to 50 seconds and is treated according to user selection (Auto Answer, Auto Pager or Manual Answer). Auto Data selection can be locked and unlocked using the Security Password.

To program Answer Mode:

1. Use the down arrow key to highlight the field.
2. Press **ENTER** to display Manual Answer, Auto-Answer or Auto-Pager from the pop-up menu.
3. If choosing Auto Answer or Auto Pager, press the right arrow key to move to the Number of Rings field, press **ENTER** and then use the up arrow key or phone keypad to enter the number of rings. You are limited to nine rings. Press **ENTER** to store your selection.



*Highlight 'Answer Mode" and press **ENTER** to display the pop-up Options Menu for phone answering modes. Highlight the desired option and press **ENTER**.*

The Auto Data and PIN selection fields require unlocking, using the Security Password

Cell Phone Reference

Phone Set-Up Directory programmed for Auto-Pager after 2 Rings and Auto-Redial turned Off

The Auto-Data switch can be turned On or Off using the Security Password

Padlock icon open and PIN field open for PIN entry. After entry, close padlock icon and the field will be closed to viewing.

To program Auto-Redial:

1. Use the **ARROW** keypad to highlight the On/Off field and press **ENTER**.
2. Highlight On or Off and press **ENTER**.
3. If you selected On, move to the Number of Times field and press **ENTER**. Use the **ARROW** or phone keypad to set the number of times you would like to redial any given number (the maximum is nine), then press **ENTER**. A "Redial" prompt will appear when active.

To program Auto Data:

1. Highlight the padlock icon and press **ENTER**. A pop up window will appear at the base of the display. Press **ENTER** to key in your password. After you have keyed in the password press **ENTER** and observe that the icon is now open and a PIN window appears at the base of the display.
2. Use the **ARROW** keypad to highlight the 'Auto Data' field and then press the **ENTER** key. To secure repeat Step 1.

To enter your Calling Card Access PIN into the phone programming:

To automate calling card dialing you can store your PIN number in the unit for entry into a dialing string as a code "C" as explained on pages 53 through 54. Your PIN is password protected. Refer to "Security" page 45.

1. Repeat the steps above for programming Auto Data.
2. Move to the PIN field and enter your PIN, then press **ENTER**.
3. Cursor back to the icon and press **ENTER**. Press **ENTER** again when the password window appears. Enter your password and then press **ENTER**. The lock icon will close and your displayed PIN will be hidden, but can be inserted in a call dial string by using the "C" code (see page 54.)

Programming Security to Lock the Phone and Selected Features

Lock Phone— To prevent unauthorized use of your phone, you can lock it so that before you use it again you must enter a lock password.

Auto Lock— To prevent unauthorized use of your phone, you can set it to lock each time it is powered up and the lock password or security password must be entered before the phone can be used. This setting, when checked, also allows 'Quick Lock' of the phone by using the 'Lock Phone' button on this page or by holding the Menu key from any page. When using 'Quick Lock' no password is required to lock the phone.

Call Blocking— When you enable this feature you can choose to exclude calls from these sources: All Incoming, All Outgoing, Less than 11 Digits, 1 Prefix and 011 Prefix.

About Passwords:

The NavTalk Pilot employs two types of passwords (actually number codes are created using the phone keypad to spell words) to secure use of the unit and its stored data. It can be programmed so that a **Lock Password** can be used to Lock or Unlock the Phone.

Stored Setup data and the Lock Password are protected by a **Security Password**. It secures settings such as Calling Card PIN, Auto Lock, Call Blocking, NAM Selection, Emergency Number, Remote Command and Scanning features. The Security Password can also be used to Lock or Unlock the phone.

NavTalk Pilot features that can be security protected are accompanied by a padlock icon. The icon is closed by default on each power cycle and can be opened by highlighting and entering the Security Password.

Each password is provided with a default:

Lock Password = 1234

Security Password = 1234567

Setup Menu Security Directory

Password Programming Page for Lock Password

'Locked Phone' Displays after power ON. Enter Lock or Security Password to Unlock.

Cell Phone Reference

Password Programming for Lock and Security Passwords

Auto Lock Selected. Enter Security Password to secure Auto Lock and Call Blocking

To program Lock and Security Passwords:

1. Highlight the 'Change Password' field and press **ENTER**. A 'Change Password' window will appear.
2. Press **ENTER** and choose 'Security' from the pop up menu, then cursor to the Security Field.
3. If you are entering a password for the first time, move to the Security field and enter the security password (if you haven't created a security password enter 1234567).
4. Press **ENTER** and cursor to the 'New' field to enter your new security password. The password must be from one to eight characters and entered from the phone keypad.
5. Press **ENTER** to move down to the 'Retype' field and re-enter the password. Press **ENTER** to record. If the entry numbers, disguised by asterisks disappears, your password has been changed. If not, enter again.
6. Repeat this process for the 'Lock' password.
7. Press **QUIT** to return to the security Setup page.

You can program the NavTalk Pilot to lock automatically each time you turn it On. Whenever you encounter a feature with a Padlock icon you must always enter the security password to access or change any programming.

To use Auto Lock:

1. In the Security directory highlight the Padlock Icon in the Auto Lock field and press **ENTER** to pop up the security password box. Press **ENTER** again to key in the Security Password.
2. Press **ENTER** to return to the 'Auto Lock' field. The Padlock icon will be open and highlighted. Cursor to the 'Auto Lock' box and press **ENTER** to activate the Auto Lock feature.
3. Cursor back to the Padlock icon and press **ENTER** to pop up the security password box. Re-enter the password and press **ENTER** to return to the Auto Lock field with the icon in the locked position.

To program Call Blocking:

1. Highlight the padlock icon in the 'Auto Lock' field and press **ENTER** to bring up the Password window.
2. Press **ENTER** to enter your password using the phone keypad.
3. Press **ENTER** to unlock the icon.
4. Move down the list of call blockers and press **ENTER** to activate blocking for those you have selected.
5. Cursor back to the icon and press **ENTER** to re-enter the password in the password window. Then press **ENTER**.

Programming Call Blocking

Selecting an Active NAM

In addition to the preprogrammed AirCell Number Assignment Module (NAM), you can store two ground based cellular numbers in the NavTalk Pilot. This page displays your Active NAM, the Phone Number for that NAM, the Home System ID, Side A or B and Electronic Serial Number (ESN). To select the phone number that is appropriate for the area you are in, highlight the Active NAM field, press **ENTER** and then select NAM #1 or #2. The NAM #3 is reserved for AirCell NAM which can only be used in the aircraft cradle. Therefore, this NAM is automatically selected and displayed on this page when in the cradle. The unit will automatically revert to the last selected ground NAM (#1 or #2) when removed from the cradle.

You can use the NAM page to select which phone number is appropriate for the area you are in. NAM programming must be done by your cellular service provider when you contract for service. This page is protected by a security password.

Secured NAM selection. Enter Security Password to unlock and change to NAM #2.

Cell Phone Reference

Secured Scanning Page information is programmable to meet your roaming requirements

Scanning for Cellular Service

The scanning feature allows you to access cellular service in the order and selection made on this page. Select Home to scan for your Home system first. You can enter SID's to the Preferred SID list and scan for those numbers next. If you select A then B, the phone will scan for a Side A system first, then for a Side B system. You can choose any combination of A/B Side scanning. The Preferred SID List holds the SID's that you have selected which will be scanned when you check the Preferred List box. The Status Bar at the base of the display indicates which type of service is active. Home = H, Preferred SID's = P, Side A Systems = A and Side B Systems = B. Emergency calling will override scan settings and use any available system. Scanning may be necessary for air cellular use and should remain active in case a non-home SID is in use. Scanning selections for the AIR and NAM are set at the factory and cannot be changed while using this setup page. The status bar will always show "Home" for AIR use, even when using the non-home SID.

To access scanning preferences:

1. Highlight the padlock symbol and press **ENTER**.
2. Enter your password using the phone keypad and press **ENTER**.
3. Scroll through the Home, Preferred List and system preference boxes and check those that you desire to scan. The preferred SID List can hold up to 15 entries per NAM programmed by you or your service provider.

The home system depends on the current NAM selection. Contact your cellular service provider for information about their roaming agreements with other companies. In some areas, scanning phones are automatically recognized by cellular systems with a roaming agreement. In others, you must contact the cellular provider before they can recognize your phone.

They will require your phone number and ESN number (found on the NAM page of the setup menu). For customer service regarding the AirCell NAM call AirCell at 1-888-286-9876.

Setting Sound Functions for the NavTalk Pilot Cell Phone Features

By scrolling through the Sound Page you can set the following sound features:

Microphone to Open or Mute during a call, Call Ring to Ring A, Ring B, Ring C, Ring D, Ring E, or Off, and Beeps to sound for Message and Key or only Message, or Key only, or Off for no Beeps.

When Call Ring is Off, a message with beeps indicates an incoming call. For total silence the 'Beeps' must also be set to Off. The microphone setting cannot be changed unless there is a call in progress. The microphone can be muted during a call by holding the **QUIT** key. The three volume settings can be set by pressing the **ZOOM/ VOLUME** keys at the top of the display screen anytime (with exception of the map page where Zoom is functional).

If you are using the NavTalk Pilot unit with the GARMIN Vehicular Adapter (Hands-Free) Kit, you can adjust the 'External Mic Gain' by highlighting that field and using the **ARROW** keypad left/right keys to raise or lower the gain as required, for both aircraft and auto.

Setting Date and Time

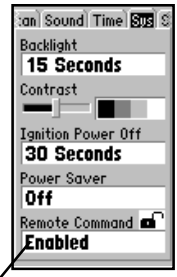
Date and Time are calculated directly from satellite signals and cannot be changed. The Time and Date settings are shown on Last Dialed and Missed Calls Lists and on the GPS Position Page. The current time is displayed on the Cellular Status Page. Refer to the GPS Reference Section for time options.

Cell Phone Reference

"Pop-up" menus appear for each of the Sound Page fields.

The 'External Mic Gain' feature is used with the Aircraft and Ground Vehicular Adapter Kit

The local time setting is adjusted on the Time Tab Page



Remote Command can be enabled or disabled and is protected by a security password.

Setting Backlighting Interval, Contrast, Power Saver, and Remote Command

Control of backlighting is accomplished on the System page along with Contrast adjustment and the Power Saver feature. Backlighting is important to efficient phone use at certain times of the day, such as early morning, late evening and at night. It is recommended that backlighting be set for 'Always On' when powered by external power sources such as AC or DC adapters and chargers.

Otherwise when operating on battery power, set for the time normally required for dialing or other phone functions that you normally use. When set for a specific time, backlighting will auto cancel at the expiration of the time set, which begins after the last key press, but will turn back on when an incoming call rings-in or any button on the unit is pressed.

Extensive use of backlighting will cause a significant reduction in battery life when powering the unit from the batteries only. Enabling the 'Always On' backlighting setting during charging will significantly lengthen charging time.

About Remote Command:

Remote Command is a feature that allows your NavTalk Pilot be be remotely queried for location by another NavTalk Pilot, or another DTMF capable device (i.e., a PC Modem). This can only take place during an "Active" cellular call. Remote Command can be 'Enabled' or 'Disabled' according to the privacy that you desire. When 'Enabled' the unit will respond to any DTMF tones to "Transfer Location" while in a call. If 'Disabled' it will not respond to these Tones. Remote Command is password protected to prevent unauthorized changing of the current setting.

To enable Remote Command:

1. Press the **MENU** key twice to access the Main Menu.
2. Cursor to the Setup Menu option and press **ENTER**.
3. Select the System Setup Page tab, then cursor down to the padlock icon above the 'Remote Command' field.
4. If the icon is locked, highlight it and press **ENTER** to pop up the Security window. Enter your Lock Code to open the lock. If the icon is not locked cursor to the 'Remote Command' field and press **ENTER** to enable or disable this feature.

To "Query" for a GPS location:

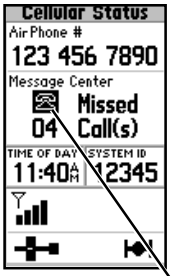
1. Dial the number of a NavTalk Pilot unit or similarly programmed cellular device. When the called number answers press **MENU** and cursor to 'Query Location' and press **ENTER**. You will hear the DTMF tones and the "Transferring Location" message will appear.
2. When the DTMF tone has been recognized, the other unit will transmit the GPS location to your unit, but only if it has the 'Remote Command' feature enabled. If it is not, the tones will stop and the new position will not be acknowledged. If the call is disconnected before the transfer is complete, the new position will not be acknowledged.
3. The new position is acknowledged by a confirmation message and the location marked as a "Phone" waypoint on the Map Page. Refer to Page 56 for more information.

Setting Call Timers

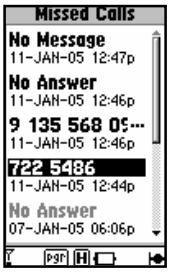
Call Timers are useful for recording the time of the last call you made, the elapsed time of all calls for a measured time period, and the total lifetime use of your NavTalk Pilot call time. You can also set the unit to signal each time a minute of your current call has elapsed.

The Minute Reminder will emit two beeps each minute unless turned Off

Cell Phone Reference



Missed Calls Icon



Missed Calls list

Menu entries 'Mark As Old', 'Mark As New', and 'Remove Entry'.

Call timers for Last Call and Elapsed Time are always active and can be reset through the Call Timer function of the Main Menu. Lifetime use timing cannot be reset.

The Minute Timer can be turned On or Off through the Call Timers function of the Main Menu. The first timed minute will beep at 50 seconds into the call and every minute thereafter in order to allow you to end the call prior to a full minute to help reduce minute charges.

Missed Calls List Features:

Because the Missed Calls list can display the phone numbers of calls received when you have enabled the Auto Pager feature you may want to manage this list to keep a record of returned calls.

To mark calls as old, or remove an entry:

1. Access the Phone page by pressing the **PAGE** key repeatedly.
2. Scroll to the Missed Call icon and press **ENTER**. The Missed Calls Page will display the list of calls in the order in which they were received. The list will state "No Answer" and the time/date for each call that was missed. If you had enabled the 'Auto Pager' feature and the caller entered their number, then that number or "No Message", if no numbers were entered, will appear on your list.
3. To be certain you have returned the missed calls, you can mark a missed call as old or remove it from your list.
4. Access the Cellular Status page, then scroll down to the Missed Calls icon and press **ENTER** to display the Missed Calls list, highlight the call you want to mark as old or remove from the list and press **MENU**. Select 'Mark As Old or 'Remove Entry' from the menu and press **ENTER**. Calls marked as Old will appear as gray text and Removed entries will no longer be listed. If an Old call is highlighted the menu will list, 'Mark As New'.

Setting Up Dial String Codes for Automated Phone Services

You can program the NavTalk Pilot to dial DTMF Tones for a wide variety of automated phone system services. You can program calling card PIN's, link phone numbers from the PhoneBook Page, pause in a dial string, stop dialing until you press send again after listening to prompts at the call destination, and transmit your GPS position via DTMF tones.

When you add a Dial String Code to a number string you must use the up or down arrows to enter the code. These keys display only the code letters and numerals used to create a dial string with DTMF tones.

To create a DTMF Dialing String:

Dial String codes are used to tell the NavTalk Pilot how and when to send DTMF tones to a call's destination and can allow you access to any service that employs DTMF tones. To create a dial string for your DTMF application use the following codes to create appropriate pauses, stops and links in the dial string. The chart on the next page lists DTMF codes and their function.

EXAMPLES OF CODED DIAL STRINGS:

1. Use a **"D"** code before a string of numbers and they will all be sent as DTMF tones.

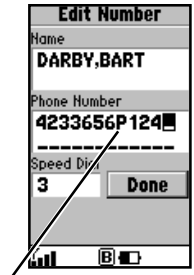
   Example: *D3124545 = the phone number*

2. Use the **"P"** code to create a 5 second pause in a dial string to allow for recorded messages or other delays in the dialing sequence.

   Example: *7654567PP234 = the phone number, a 10-second pause for the recorded message and then the extension number.*

3. Use the **"L"** code to link a phone number from the PhoneBook for insertion into the dial string.

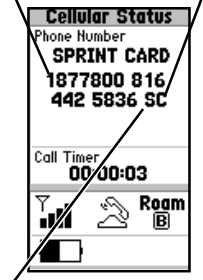
   Example: *555-1212L. Bob Anderson's extension number can be selected from the PhoneBook during the dial string allowing it to be sent as a DTMF tone.*



A "P" Code entered into the dial string inserts a 5 second pause before completing the dial string

Sprint Access Number

Calling Card "C" Code



"S" Code stops dialing to allow for phone number entry

Cell Phone Reference

Code	Function	When To Use
P	*Pauses Dialing for 5 seconds.*	*Insert where dialing must pause for recorded messages or switching functions before resuming.*
S	*Stops dialing to wait for **SEND** keystroke.*	*Insert when dialing time delays are unpredictable.*
D	*DTMF dialing string prefix*	*Place at beginning of a dial string you want to be sent as DTMF tones.*
L	*Stops to display PhoneBk and links the Highlighted number as the **SEND** key is pressed.*	*Insert when you want to call a number listed in your PhoneBk using a Calling Card, etc. for a prefix.*
T	*Transmits your GPS Position.*	*Inserted after a dial string to another NavTalk unit.*
C	*The code for your Calling Card PIN as entered in Phone Setup Directory.*	*Automatically enters your PIN when making a call.*
Q	*Queries another unit for its GPS position.*	*Insert at the end of a dialing string to another unit for position reporting.*
* #	*Star and Pound Keys.*	*Used for standard DTMF tones*

4. Use the **"C"** code to recall your Calling Card PIN from its stored and secured location on the Setup Menu Phone Directory sub-menu. ***Example:*** *Enter your access number to your carrier, wait for tone, enter **0**, area code, a 7 digit phone number, wait for tone, enter a **"C"** code for your calling card (18778000P09137226578PC).*
5. Use the **"S"** code to stop dialing and pause until you determine when to continue dialing. ***Example:*** *You dial to an automated phone service that provides you with voice prompts that you want to listen to before continuing to dial. (5666789S)*
6. Use the **"T"** code to transmit your GPS position using DTMF tones. ***Example:*** *19137223344T*
7. Use the **"Q"** code to query another NavTalk or NavTalk Pilot for its GPS position. The units will automatically communicate and transfer the GPS position. ***Example:*** *18164327890Q*
8. Use both **#** and ***** for typical DTMF tones in a string. ***Example:*** *19134569000 P *6674566P435#*

Keep in mind when sending DTMF tones for PIN's that the NavTalk Pilot is essentially a radio, and its signals can be monitored by radio receivers set to the same frequency. Considering the possibility, you may want to restrict the use of bank account PIN's, and credit card numbers as a security measure.

Using Prefix Dialing:

Prefix dialing allows you to insert an area code or long distance service number prefix in front of a phone number selected from the PhoneBook. This is helpful when you are outside your home cell or area code and want to dial a number from your PhoneBook, Speed Dial, Last Dialed, and Missed Calls pages.

To use Prefix Dialing:

1. Access any dialing related page and press **MENU**.
2. Cursor down to 'Use Prefix Dial' and press **ENTER**. The 'Enter Prefix' window will appear.
3. Press **ENTER**, then use the phone keypad to enter the dialing prefix. When finished, press **ENTER** to return to the PhoneBook Page.
4. Select the name from the Phonebook, or other page that lists numbers, that you wish to dial and press **SEND**. The prefix will be displayed on the Cellular Status display along with the number just selected.

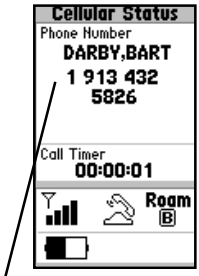
Prefix Dialing is a one time per call feature and the prefix dialing string is erased after the call has been placed.

Using Hook Flash

Hook Flash is used to access enhanced calling features which are offered by some cellular providers, such as Call Waiting and Conference Calling. During a call, pressing the **SEND** key performs a hook flash. For specific operation, contact your cellular provider.

The PhoneBook Pop-up Menu with 'Use Prefix Dial' highlighted

Enter the prefix number string



Dialed Number showing the prefix

Cell Phone Reference

*When you press **ENTER** to confirm the PHONE waypoint it will be centered on the Map Page. If you want to navigate to the PHONE waypoint, press the **#/GOTO** key, cursor to the PHONE waypoint and press **ENTER**. The phone number will appear just behind the PHONE waypoint.*

DTMF GPS Location Reporting

The NavTalk Pilot can transmit information about your geographic location to another NavTalk, NavTalk Pilot or other type device that can interpret DTMF tones to plot your GPS position. You can also record a GPS position from another unit and store that location in the GPS receiver data storage. Refer to pages 50 and 130 for Remote Command feature programming for querying a position report using an active call.

To report your GPS Position:

1. Make certain the GPS receiver is operating and collecting current data.
2. Connect to the reporting destination using the Phone portion of the NavTalk Pilot.
3. When contact has been made (your call has been answered) press and hold the **SEND** key for more than one second to send your position via DTMF tones... or press **MENU** and select 'Send Location' ... or use the **"T"** code in your dialing string and then press **ENTER**.

To receive a GPS Position Report:

1. Connect to the reporting caller using the Phone portion of the NavTalk Pilot.
2. Press **MENU** and select 'Query Location' from the Dialing Page... or use the **"Q"** code in your dialing string.
3. When the new position is received, a pop-up message, 'Do you want to save the PHONE waypoint?' will appear. Press **ENTER** to confirm and the new PHONE waypoint will be displayed.

If you have already received a previous Position Report and have not renamed it in order to save it, the incoming Position Report will overwrite it. Be certain to rename and save positions you want to keep for later use.

Programming Emergency Auto-Dialing

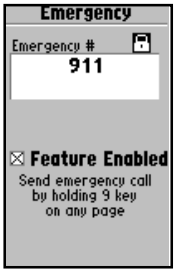
The NavTalk Pilot can be programmed to auto-dial a programmed emergency number such as 911, a security agency, or other emergency assistance service. The NavTalk Pilot will allow emergency auto-dialing even if the unit is locked or is not enabled for cellular service. Press and hold the red "**9**" key for more than three seconds. If you want to cancel before the call is connected, press **END**.

To program Emergency Calling:

1. Press the **MENU** key twice to access the Menu page.
2. Scroll down to 'Emergency' and press **ENTER**. The Emergency Programming Page will appear.
3. Cursor to the 'Emergency' number field and press **ENTER**. Use the phone keypad to enter the number. You may enter 911 or an emergency number of your choice, then press **ENTER** to record. If the padlock icon is closed you must enter the Security Lock Code to open before accessing the number field.
4. Cursor to the 'Feature Enabled' box and press **ENTER** to enable Emergency Calling. If you want to secure the emergency number use your security code to lock the padlock icon before exiting the page.
5. To place an Emergency call, hold down the red **"9"** key and continue holding for the two second countdown sequence before the call is placed. A pop-up window will announce 'Emergency Activation in two Seconds' and place the call at the end if you haven't released the **9** key to cancel the call.

Cell Phone Reference

Main Menu Selection



Programming Page

"Pop-up" Activation Countdown Message. Release the "9" key to cancel.

If you are programming a security assist number or number other than 911 you may want to test the Emergency Activation to insure that you have entered the correct number. You can activate this feature even when the phone is locked and you can also manually enter 911 while the unit is locked. The emergency number will not appear on the Last Dialed Number list to prevent inadvertent emergency calls. Emergency calling will override scan options and use any available system. Therefore, the NavTalk Pilot may roam for an emergency call, even though HOME is the only scan selected.

Section 5 - Table of Contents

Using the Simulator Program To Learn Basic GPS Operation

The first time you use your NavTalk Pilot GPS Receiver you won't need to be completely familiar with every feature to successfully navigate to and from locations of your choice.

Basic GPS Using the Simulator

GPS Overview

For an overview of the NavTalk Pilot GPS function, refer to Section 1 of this manual.

Using the GPS Simulator Program

The Simulator is designed to introduce you to the application of the NavTalk Pilot basic GPS features using a simulated trip. The simulator tour assumes that the receiver has been properly initialized as explained in this section, and that you have not changed any of the factory default settings. If you have changed any settings (position formats, units of measure, etc.) the descriptions and pictures in this section may not match your configuration.

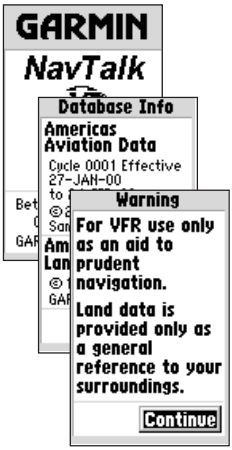
WARNING: *Keep in mind that the receiver does not actually track satellites when in the simulator mode and therefore should never be used for actual navigation. The receiver cannot be turned on with the simulator mode active. If you forget to return it to normal operation before turning the unit off, it will automatically return to normal operation the next time you use it. However, if you switch from simulated navigation to the cellular phone mode and then back to GPS mode, the unit will remain in the simulated navigation mode.*

Initializing the GPS Receiver

Before you can use the GPS Receiver it must be initialized (given an opportunity to determine where it is located on the globe). To initialize the NavTalk Pilot, take the unit outside and find an open area where the antenna has a clear view of the sky. Hold the unit at a comfortable height with the internal GPS antenna parallel to the ground.

Since basic operation involves getting acquainted with the GPS receiver, switch to the Satellite Status Page. If the Cellular Status Page appears first press the **GPS/PHONE** key.

Basic GPS Using the Simulator



*You can bypass both the Welcome Page and the Warning Page by pressing the **PAGE** key or the **ENTER** key twice.*

The Satellite Page Menu allows you to select an intialization method, orientation, and the Simulator Program.

Each time the NavTalk Pilot is turned on, the Welcome Page will appear while the unit conducts a self test. A Database Information Pages comes next giving the effective date of the Jeppesen Sanderson, Inc. Americas Aviation Data. Once the internal test is complete (after a few seconds), the Land Data Warning Page will appear, asking you to read and acknowledge important information regarding the proper use of the land data that is provided.

After approximately ten seconds, the Land Data Warning Page will be replaced by the Cellular Status Page. (If the Satellite Status Page appears instead of the Cellular Status Page, it's because the unit was in the GPS mode when it was turned off.) If the GPS receiver needs initialization before obtaining a position fix, a message will inform you to "select initialization method".

To initialize the GPS receiver:

1. Press **ENTER** to acknowledge the message and see a list of initialization options or select 'Initialize Position' from the Satellite Status Page Menu.
2. Use the **ARROW** keypad to highlight 'Use Map' and press **ENTER**.
3. Use the **ARROW** keypad to point the map cursor to your approximate location (within 250 miles). You can also use the IN/OUT zoom keys to make it easier to identify your approximate position.
4. Press **ENTER** to select the position and begin searching for satellites. Or...
5. Select AutoLocate, press **ENTER** and allow the unit to search for satellites automatically.

AutoLocate is the simplest method of initialization but may take several minutes longer to acquire satellites. You'll know you have a fix when the NavTalk Pilot automatically transitions from the satellite status page to the map page. The NavTalk Pilot is now ready to use.

Troubleshooting

If you have trouble initializing or getting a position fix, check for the following:

- **Does the receiver have a clear view of the sky?**

During automotive use, it may be necessary to mount an external antenna on your vehicle's roof or trunk in order to give the unit a better view of the sky. Refer to Appendix A for information about external antennas.

- **Have you selected the right area when initializing?**

Check for the correct approximate position on the Map Page (see page 24), reselect your approximate location to restart the initialization, or select AutoLocate and allow the unit to search the sky automatically.

Selecting the Simulator Mode

Using the Simulator Mode is the easiest method for learning the basics of GPS navigation and using the NavTalk Pilot GPS features. You do not need to be operating the NavTalk Pilot in the GPS Mode. The Main Menu is universal to both Phone and GPS modes.

To select the simulator mode:

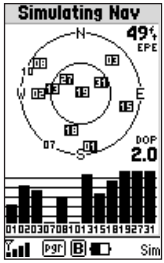
1. Press **MENU** twice to access the main menu.
2. Use the down **ARROW** key to scroll down the menu to 'Setup'.
3. Press the **ENTER** key to access the Setup Directory tabs then use the left/right arrow keys to scroll to the 'SIM' tab.
4. Press **ENTER** to highlight Mode. Then press **ENTER** again to pop up "Simulator Off"/"Simulator On". Use the **ARROW** keypad to select "Simulator On". Press **ENTER**.

Main Menu

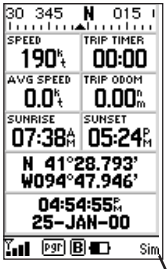
GPS Simulator Setup Directory

*From the Satellite Page Menu highlight Start Simulator and press **ENTER**.*

Basic GPS Using the Simulator



Satellite Status Page showing simulated satellite reception.



The Position Page, gives the position in Lat/Lon coordinates, with simulated data. Note the "Sim" indicator on right side of Status Bar.

5. Use the **ARROW** keypad and the **ENTER** key to scroll through and select the simulator settings for Speed, Track, Track Control, and Altitude.
6. After you have completed the desired simulator settings, press the **GPS/PHONE** key to return to the GPS main pages. Press the **PAGE** key repeatedly to access the Satellite Status Page. The banner above the page should state "Simulating Navigation".

These settings may be left as is during your first look at the simulator and then used later when you want to practice more advanced simulation techniques with the GPS receiver. The Cellular Phone feature is still active during GPS simulation and you can make and answer calls while in this mode. The satellite symbol in the status bar has been replaced by the letters "Sim" to provide constant indication that the GPS receiver is in the simulation mode. The GPS receiver will now simulate navigation based on the information acquired when you initialized the unit.

To Cycle Through the Main Pages:

1. Press **PAGE** to move forward through each of the main pages in sequence.
2. Press **QUIT** to move through the pages in reverse order.

In normal mode the unit would automatically sequence from the Satellite Status Page to the Map Page once enough satellites were received to determine your position. At that point the receiver would be ready to use for navigation. Because the unit is in simulation, you won't see this sequencing, but you will see simulation of signal strength and other attributes of satellite reception simulated on the Satellite Status Page.

The Position Page will show the last known position as a starting location. If you've already initialized the unit, the starting location should be very near to your current position. Now, move to the Map Page to create a destination and learn about navigation features.

Selecting the Map Page

Press the **PAGE** key repeatedly until the Map Page appears. The Map Page combines digital charting and Jeppesen data with a number of selectable features. The map display shows your present position using an airplane icon in the center of the screen. Map features such as lakes, rivers, towns, railways, background roads and highways are shown as well as nearby airports, navaids, airspace boundaries and user waypoints. The map can be oriented with the top of the map always pointing north ('North Up'), oriented along your desired course ('Course Up') or it can automatically rotate to keep your current direction of travel at the top of the screen ('Track Up'). You can use the **IN/OUT** zoom keys to adjust the map to the desired scale. The current scale is shown in the lower left-hand corner of the display.

Map Page with "Track Up" orientation and 5 NM Scale Displayed. ***IN/OUT*** *ZOOM keys adjust the map scale. Note the north indicator in upper-left corner.*

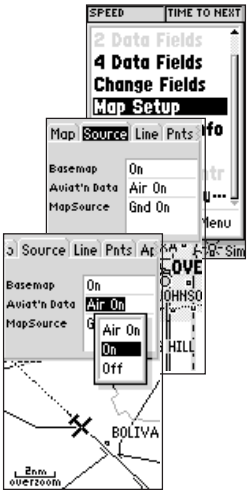
To change the map scale:

1. Press the zoom **IN** key to select a smaller map scale and display a smaller geographic area.
2. Press the zoom **OUT** key to select a larger map scale and display a larger geographic area.

Select a five mile scale by pressing the zoom **IN** or **OUT** key repeatedly.

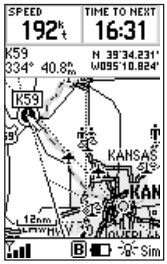
MapSource and Jeppesen databases are selectable as ON, OFF or Air On/Gnd On. The Air On/Gnd On selection is the default. When the unit is in the aircraft or automotive cradle Air On or Gnd On, as appropriate are selected automatically. For this simulation practice, let's configure the **Source Aviat'n Data** to ON, to display Jepessen data whether the unit is in or out of the aircraft cradle.

1. To display the Map Page options, press the **MENU** key.
3. Use the **ARROW** keypad to highlight MAP SETUP. Press **ENTER**.
4. Use the **ARROW** keypad to highlight the SOURCE tab.
5. Press the down arrow to 'AVIAT'N DATA'. Press **ENTER**.
6. Select 'ON'.

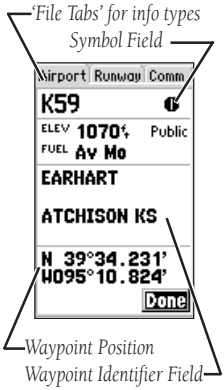


Select Aviation Data ON from the SOURCE tab of the Map Setup menu for Jepessen data.

Basic GPS Using the Simulator



Use the rocker keypad to pan to other areas on the map display. When panning, an on-screen cursor appears for reference. Place the cursor over an on-screen airport to highlight it, then press ***ENTER*** *to view database information (shown below) for the selected item.*



Working from the map page involves the use of the "Reference Arrow". The arrow is controlled by the **ARROW** keypad and is an important tool in allowing you to pan to other areas on the map to create waypoints, view waypoint information and to create routes. To familiarize yourself with the map page and reference arrow and waypoints, perform the following exercise:

1. Use the **ARROW** keypad to move the reference arrow. Try following a highway (or other feature) near your position. To move more quickly, press and hold the arrow key. A data field appears above the map, showing the bearing and distance from your present position to the cursor (arrow) along with the latitude and longitude of the arrow's position.
2. Using the **ARROW** keypad to move the arrow in any direction, find an airport or navaid. Once you find one, place the cursor over that waypoint so that its identifier is highlighted.
3. Press **ENTER** to view the database information for the selected waypoint. If an airport is selected, use the left/right arrow keys to select between 'Airport', 'Runway' and 'Comm' information pages.
4. When finished reviewing the information press **QUIT** to return to the Map Page. Pressing **QUIT** a second time will end the panning operation and return the map to your present position.

The cursor can be used to navigate to the waypoint just selected, or can also be used to GOTO any point on the map, even without a waypoint being at that location. You simply pan to a location and press the **#/GOTO** key. A numbered waypoint is automatically created that you can proceed directly TO.

To select the highlighted waypoint as a GOTO destination, press **#/GOTO** and **ENTER**.

To Select the GOTO Destination:

1. Press the **#/GOTO** key.
2. The GOTO directory will appear displaying tabs for the different categories; 'Recent', 'User', and 'Spell 'n Find'. Use the cursor to select "Spell 'n Find". This will provide a display of all waypoints currently stored in the database.
3. Use the cursor to find the location 'K59' (or another of your choice) and press **ENTER**.

You should notice that a course line now appears on the map showing the way to the Earhart Airport, your current GOTO destination. If you want to return to your present position after attaining that destination you have two options:

You can mark your present position now and save it as a waypoint, Or...

You can use the TracBack feature at the end of this exercise to retrace your path by observing all waypoints on the route in reverse order.

For now just mark your position as a waypoint.

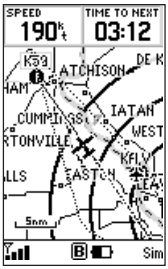
To Mark your Present Position:

1. Press the ***/MARK** key. The ***/MARK** key marks your present position whether in or out of the pan mode. The Mark Waypoint Page will appear with an automatically assigned three-digit identifier located at the top of the page. Identify your present position as "HOME" and enter that name into the name field on the Mark Waypoint page.

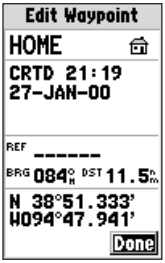
To rename the waypoint and change its symbol:

1. Use the cursor to highlight the name field, then press **ENTER**.
2. Enter the new waypoint name "HOME" using the phone keypad, then press **ENTER**.

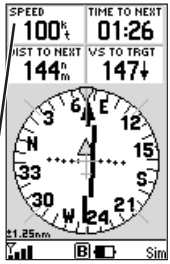
*Select a waypoint with the cursor and press **GOTO**, then **ENTER**.*



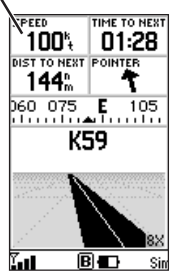
*Once the GOTO destination is selected, a course line appears on the map display. Press **QUIT** and the map re-centers itself around your current position.*



Basic GPS Using the Simulator



Entering a Simulated Speed



3. Cursor over to highlight the waypoint symbol field and press **ENTER**.
4. Scroll down the symbol menu and select the 'Residence' symbol and press **ENTER**.

You should now have a waypoint in memory and on the map named "HOME".

To enter or change a simulated speed and animate the displays:

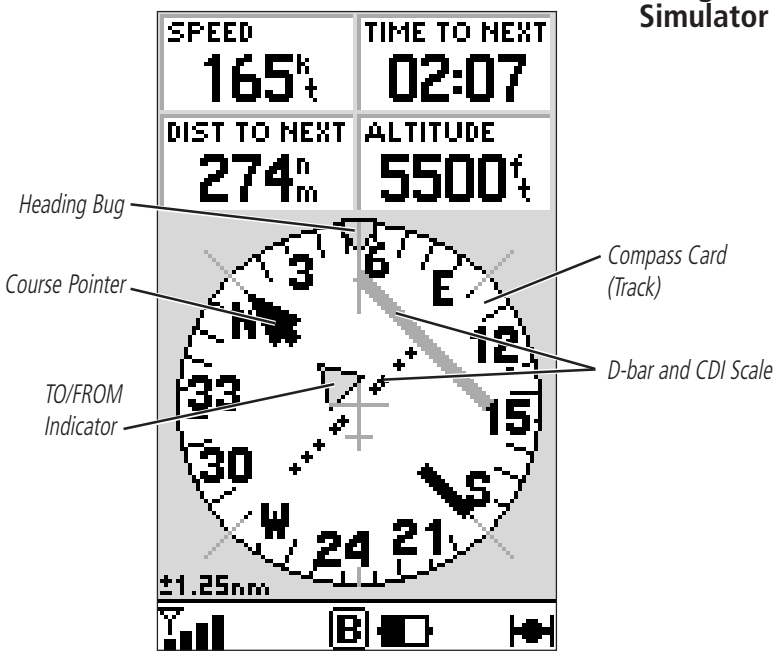
1. Press **PAGE** repeatedly until the HSI Page or Highway Page appears.
2. Enter a simulated speed of 100 knots using the **ARROW** keypad. Press the up or down arrow keys to select 100. Observe that the value of 100 is now assigned to the speed field of either page.
3. Press the **PAGE** (or **QUIT**) key repeatedly until you have returned to the Map Page.

Notice that the information displayed on the Map Page is slowly moving as it would in actual use. The primary navigation displays are the HSI Page, Position Page, Map Page and Highway Page.

To View the HSI Page:

1. Press the **PAGE** key repeatedly until the HSI (Horizontal Situation Indicator) Page is displayed.

The HSI Page provides graphic steering guidance to a destination waypoint. The page features a graphic HSI including a rotating compass card that shows your course over the ground (track) while you're moving, a course pointer and CDI (course deviation indicator) which indicate the desired course to your destination. The compass card, pointer arrow and CDI work independently to show the direction you're travelling, the desired course and whether or not you are off course.

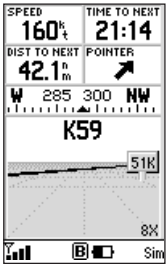


At the center of the CDI is a course deviation bar (D-bar). As you move off course, the D-bar indicates how far off course you are and in what direction. The scale for the CDI is indicated at the bottom of the page. The scale represents the distance from the center of the CDI to full left or right limits.

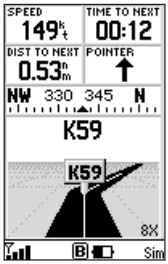
As you approach the waypoint, a TO/FROM indicator will signal waypoint crossing. The current speed, distance to the next waypoint, time to the next waypoint and vertical speed to target are all displayed above the graphic HSI. To see how all this works on the simulated trip, head off course and watch the displays change.

Use the left/right arrow keys to move off course/on course in simulator mode.

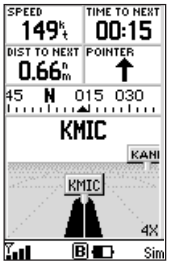
Basic GPS Using the Simulator



While intercepting the course line to K59 a signpost marks the position of airport 51K along the way.



The Highway Page route guides you to each waypoint.



The highway ends at the destination waypoint.

To View the Highway Page:

1. Press the **PAGE** key repeatedly until the Highway Page is displayed.

The Highway Page provides a graphic highway display that shows your movement relative to the desired course

The line down the middle of the highway represents course centerline. As you navigate to your destination, the highway will actually move and indicate the direction you are off course. To stay on course, steer toward the center of the highway. As you approach the waypoint, the highway will end at the final destination. When the waypoint marker is at the bottom of the highway display, you have arrived at your destination. A track compass also shows your current track directly above the highway display making it easy to determine the direction you're tracking.

The pointer arrow at the top of the page indicates the direction to the destination waypoint (bearing) relative to the direction you are moving (track). If the pointer points straight ahead, you're heading directly to the waypoint. If not, turn in the direction of the pointer and the pointer will turn around, pointing straight ahead when you begin moving toward the destination waypoint. Try moving on and off course again by using the left/right arrow keys and watch as the display and bearing pointer change.

Keep in mind, that for many of the features such as Routes, Track Logs and Waypoints List to function, you must first create the data to store in these directories.

For the direction arrow to point in the proper direction you must have been moving.

The side panel illustrations show, a route created from KIXD to K59 to KMIC, activated after the simulated take off. The aircraft intercepts the course line to K59. While approaching the course line, airport 51K, marked with a signpost, is adjacent to the route of flight. Approaching K59, a signpost gives the location of the airport with the route beyond indicated. As you approach the final destination, the highway ends at the destination airport.

Section 6 - Table of Contents

GPS Receiver Reference

GPS Receiver Reference

Entering Data and Accessing Programming

As you begin to explore the capabilities of the GPS receiver, learning how to use the GPS programming allows you to take full advantage of the features.

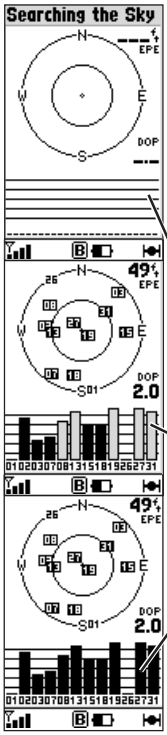
There are three keys that allow you to access pages, menus, and enter data. These are the **PAGE**, **MENU,** and **ENTER** keys. Movement from field to field within a screen display is accomplished using the **ARROW** keypad. Use the arrows to cursor to and highlight a field on the display, then press **ENTER** to either enter data or select from a 'pop up' menu. You can use either the phone keypad alphanumeric keys or the **ARROW** keypad to enter data in a field. Use the **QUIT** key to cancel any entry before it is completed.

Satellite Status Page

The NavTalk Pilot's Satellite Status Page provides a visual reference of various GPS receiver functions, including current satellite coverage, receiver operating mode, battery level and position accuracy. As the receiver locks onto satellites, a signal strength bar will appear for each satellite in view, with the appropriate satellite number (01-32) underneath each bar. The progress of satellite acquisition is shown in three stages:

- **No signal strength bars**—the receiver is looking for the satellites indicated.
- **Hollow signal strength bars**—the receiver has found the satellites and is collecting data.
- **Solid signal strength bars**—the receiver has collected the necessary data and the satellites are ready for use.

Each satellite has a 30-second data transmission that must be collected (hollow bar status) before that satellite may be used for navigation (solid bar status). Once a fix has been calculated, the unit will then update your position, track, and speed by selecting and using the best satellites in view.



The three stages of satellite acquisition

Sky View and Signal Strength Bars

The satellite sky view shows a bird's-eye view of the position of each available satellite relative to the unit's last known position. The outer circle represents the horizon (north up); the inner circle 45º above the horizon and the center point, directly overhead.

You can use the sky view to help determine if any satellites are being blocked and whether you have a current position fix, indicated by a '2D Navigation' or '3D Navigation' in the status field. You can also set the sky view to a 'Track Up' configuration, causing the top of the sky view to align along your current track heading.

As soon as the unit has collected the necessary data to calculate a fix, the status field will indicate a 2D or 3D status. For '2D', you may need to enter your altitude. See pages 75 and 76.

Receiver Status

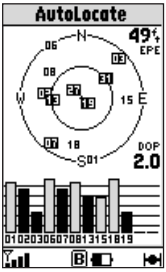
Receiver status is indicated at the top of the page. The status will be shown as one of the following conditions:

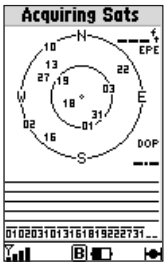
Searching - the unit is looking for any available satellites in view.

AutoLocate - the unit is initializing and collecting new almanac data. This process can take up to 5 minutes, depending on the satellites currently in view.

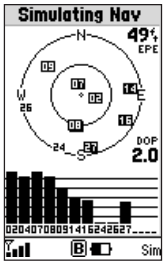
Acquiring - the receiver is collecting data from available satellites, but has not collected enough data to calculate a position fix.

2D Navigation - at least three satellites with good geometry have been locked onto and a 2-dimensional position fix (latitude and longitude) is being calculated. '2D Diff' will appear when you are receiving DGPS corrections in 2D mode.



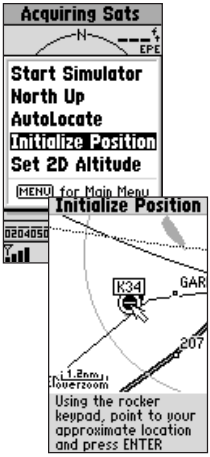


The unit is acquiring satellite data to establish a position fix.



Simulator On . "Sim' appears on all Main GPS and Cellular Page status bars.

GPS Receiver Reference



Using the Map to Initialize

3D Navigation - at least four satellites with good geometry have been locked onto, and your position is now being calculated in latitude, longitude and altitude. '3D Diff' will appear when you are receiving DGPS corrections in 3D mode.

Poor GPS Coverage - the receiver isn't tracking enough satellites for a 2D or 3D fix due to bad satellite geometry.

Not Usable - the receiver is unusable, possibly due to incorrect initialization or abnormal satellite conditions. Turn the unit off and back on to reset, and re-initialize the receiver if necessary.

Simulating Nav - the receiver is in simulator mode. The status bar displays 'Sim' on all main pages.

'Need to Select Initialization' Prompt

If no satellites are received for several minutes or an insufficient number of satellites are received to determine a position fix, a message will appear, prompting you to initialize the receiver. This allows you to specify a starting location from which to search for satellites, or to enable the AutoLocate feature. It is also useful if you have traveled over 500 miles with the receiver off. This message will automatically appear when you first use your NavTalk Pilot. The prompt may also appear during normal use if the antenna is shaded or the unit is used indoors.

EPE and DOP

The Satellite Status Page also indicates the accuracy of the position fix, using Estimated Position Error (EPE) and Dilution of Precision (DOP) figures. DOP measures satellite geometry quality (i.e., number of satellites received and where they are relative to each other) on a scale from one to ten. The lowest numbers are the best accuracy and the highest numbers are the worst. EPE uses DOP and other factors to calculate an estimated position error, in feet or meters.

Satellite Status Page Options Menu

Every NavTalk Pilot page has a corresponding options menu which allows you to customize that particular page. To display the Satellite Status Page options menu, press **MENU** from the Satellite Status Page.

The following options are available:

Start Simulator - starts the unit's built-in simulator (if 'Start Simulator' is selected, 'Stop Simulator' will appear as an option instead.)

Track Up - changes the sky view display from 'North Up' orientation to align to your current direction of travel (track). If 'Track Up' is selected, 'North Up' will appear as an option instead.

AutoLocate - forces the unit to search for any available satellites to determine your position. This option is useful if you've relocated a distance greater than 500 miles from the last location the unit was used.

To select 'AutoLocate', highlight 'AutoLocate' and press **ENTER**.

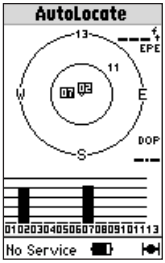
Initialize Position - designates your approximate position in order to speed up satellite acquisition. This option may be used instead of 'AutoLocate'.

To initialize your starting position:

1. Highlight 'Initialize Position' and press **ENTER**.
2. Designate your approximate position on the map using the **ARROW** keypad and press **ENTER**. (Use the zoom keys to adjust the level of detail displayed, as you determine your approximate position.)

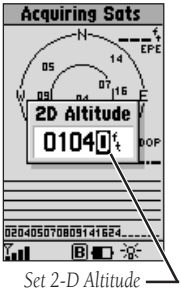
Set 2D Altitude - designates your approximate altitude, when the unit is acquiring satellites or navigating in 2D mode. By default, 2D navigation will attempt to use the last known altitude. If the altitude shown is off by several hundred feet or more, manually entering your approximate altitude will enable the receiver to more accurately determine a position fix. Altitude cannot be entered while in 3D mode.

Satellite Page Menu

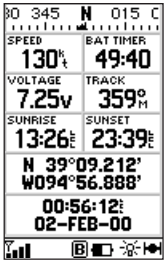


While it may take a few minutes longer, AutoLocate is the simplest method to initialize your unit.

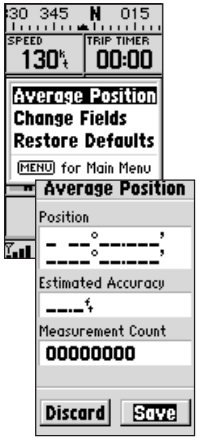
GPS Receiver Reference



Set 2-D Altitude "Pop-Up" Screen



The Position Page



Average Position Menu

To enter an altitude:

1. Highlight 'Set 2D Altitude' and press **ENTER**.
2. Enter your approximate altitude using the **ARROW** keypad, and press **ENTER**.

Position Page

The Position Page shows your location, what direction you're heading, and how fast you're going plus a multitude of optional data. It's most useful when you are traveling without an active destination waypoint.

The graphic heading display at the top of the page indicates the direction you're tracking, while you are moving.

Directly below this display are the speed, average speed, trip timer, trip odometer and sunrise/sunset fields (default). The sunrise/sunset times indicated are for your present position. These times, and the current time display at the bottom of the page, can be displayed in local or UTC (zulu) time. The lower left-hand corner of the page shows your current latitude and longitude in degrees and minutes (default).

The unit uses this basic information to mark exact positions as waypoints. Average speed, sunrise and sunset times also appear on the Position Page as default selections. Units of measure and the position readout are selectable from the Main Menu. 'Trip Computer' functions—such as average speed, max speed, trip odometer and trip timer—can each be reset from the Main Menu.

The following options are available:

Average Position - averages position samples over time. Averaging reduces the effects of selective availability on position error and results in a more accurate position reading.

To average position samples and save the result as a waypoint:

1. Highlight 'Average Position' and press **ENTER**. The Average Position Page will appear. Observe the 'Estimated Accuracy' and 'Measurement Time' fields.
2. When the 'Estimated Accuracy' and/or 'Measurement Count' figures reach the desired value, highlight 'Save' and press **ENTER**. To cancel the averaging function, highlight 'Discard' and press **ENTER**.
3. The New Waypoint Page appears with a three-digit number assigned as a name for the new waypoint. To save the waypoint with this name, highlight 'Done' and press **ENTER**.

Change Fields - allows you to choose the type of data you want displayed in the six data fields.

Available data types are: Altitude, Average (Avg) Speed, Battery (Bat) Timer, Call Timer, DOP, EPE, Last Call Time, Max Speed, Odometer, Speed, Sunrise (at present. position), Sunset (at present. position), System ID, Track, Trip Odometer, Trip Timer, User Timer and Voltage.

See Section 7 for descriptions of Navigation terms.

Restore Defaults - resets all data field readings to their factory default settings.

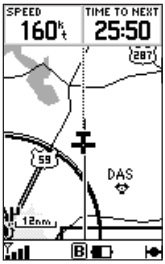
To restore the factory default settings, highlight 'Restore Defaults' and press ENTER.

Map Page

The unit features a powerful real-time moving map that can do much more than just plot your course and route. The Map Page also displays a digital chart, including airspace boundaries, airports, navaids, lakes, rivers, coastlines and highways. An on-screen cursor lets you pan ahead to other map areas, determine the distance and bearing to any map position, and perform various waypoint and route functions. The unit features dedicated zoom keys for instant zooming.

Change Fields Menu

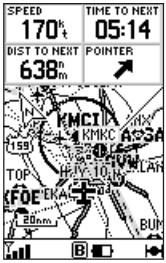
Restore Defaults Menu



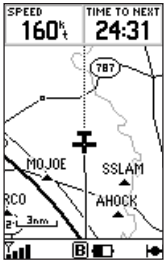
The Map Page displays a digital chart, including airspace boundaries, airports, navaids, rivers, lakes and highways.

The map portion of the page displays your present position using an aircraft icon, with your track displayed as small points on the screen (like an electronic bread crumb trail). You may select which features are shown via the Map Page Options.

The data window above the map displays the time and distance to next waypoint, plus your current speed (all defaults). A bearing pointer lets you know if you're heading toward your destination. If the pointer points straight ahead, you're heading directly to it. If the pointer points any direction other than up, turn toward the arrow until it points up—then continue in that direction. Each data field may be configured to display any one of thirty-three data options.



Map display, four data fields selected.



Zoom IN to see more detail for a smaller area. Zoom OUT to see a larger area.

Zooming, Panning and Pointing

There are three main functions you can perform from the Map Page: zooming, panning, and pointing. The map has 23 map scales (from 120 feet to 500 miles, or 30 meters to 800 km) which are selected by pressing the IN and OUT zoom keys. The current map scale is indicated in the bottom left corner of the map display.

To change the map scale:

1. Press ZOOM IN to see a smaller area with more detail.
2. Press ZOOM OUT to see a larger area with less detail.

Another function on the Map Page is the pan function, which allows you to move the map with the keypad in order to view areas beyond the current map.

To activate the pan function:

1. Use the **ARROW** keypad to move the map in any direction.

As you begin to pan on the map, an arrow appears. The point of this arrow serves as a target marker for the map. When the arrow point is placed on an object, the name of that object will be highlighted. If the name wasn't originally displayed it will appear when the pointer is placed on the object.

This feature applies to airports, navaids, user-created waypoints, roads, lakes, rivers—nearly everything displayed except route lines and track log data.

When a waypoint name is highlighted, you can review information about the waypoint, list waypoint options, or execute a GOTO right from the Map Page.

To select an on-screen airport or navaid with the panning pointer:

1. Use the **ARROW** keypad to highlight the desired item.
2. To view additional database information about the selected item, press **ENTER**.
3. To exit the information pages, press **QUIT**.

To GOTO a highlighted waypoint:

1. With the waypoint highlighted, press **#/GOTO**, followed by **ENTER**.

The GOTO function can be used anywhere on the map. If nothing currently exists at the pointer position, a new waypoint (called 'MAP') will be created at the location before the GOTO is initiated.

To cancel the pan function and re-center the map on your position:

1. Press the **QUIT** key.

*Use the **ARROW** keypad to pan away from your present position. Place the pointer over an airport or navaid and press **ENTER** to see more information.*

*By placing the panning pointer over an on-screen waypoint and pressing **#/GOTO**, you won't have to manually enter the identifier for the waypoint.*

Map Page Options

Many features of the unit are menu driven. Each of the main pages has an options menu, allowing you to custom tailor the corresponding page to your preferences and/or select special features which specifically relate to that page.

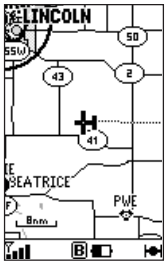
To display the Map Page Options:

1. Press **MENU** with the Map Page displayed.

The following options are available:

Data Fields Off— allows you to select a full-screen map display. If the data fields are off, 'Data Fields Off' appears shaded in light gray, allowing choices of the other two map display options; two data fields (default) or four data fields instead.

GPS Receiver Reference



Full-screen map display

'Map Setup' allows you to change map orientation, background map detail, on-screen Jeppesen data, text size, etc.

To turn the data fields off, highlight 'Data Fields Off' and press ENTER.

The next two options allow you to select either two (default) or four data fields at the top of the map screen.

Change fields— Similar to the Position Page, this feature allows you to choose the data displayed on four user-selectable data fields. There are thirty-three available data types, including Average (AVG) Speed, Bearing, Distance, ETA to Destination (DEST), Speed, Time to Destination, Track, a Trip Odometer, plus others. See section 7 for a description of navigation terms.

To change a data field:

1. Highlight 'Change Fields' and press **ENTER**.
2. Highlight the data field you wish to change and press **ENTER**.
3. Select the type of data you want to appear on this field and press **ENTER**.

MapSource Info— shows the number of maps downloaded from the optional MapSource software package and the amount of memory used (in kilobytes). MapSource allows you to supplement the built-in map with additional detail, including residential streets.

Each downloaded map is described by name, and may be deselected if you wish to retain the map in memory, but not display the data on the Map Page. When a MapSource file is selected, the boundary for any downloaded map is shown on the Map Page as a gray shaded outline.

To display the MapSource Info Page:

1. Highlight 'MapSource Info' and press **ENTER**.
2. Use the **ARROW** keypad to scroll through the list of downloaded maps.
3. To select/deselect a map, highlight the box to the immediate left of the desired map. Press **ENTER** to select/deselect the map. The map is selected and will be displayed on the Map Page when an "X" appears in the box adjacent to that map.

Measure Dist— allows you to measure the bearing and distance between any two points on the map display.

To measure bearing and distance between two points:

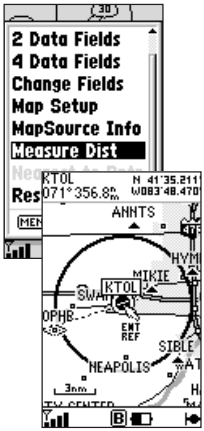
1. Highlight 'Measure Dist' and press **ENTER**. An on-screen pointer will appear on the map display at your present position.
2. Move the panning arrow to the desired reference point (the point you want to measure from) and press **ENTER**.
3. Move the panning arrow to the point you want to measure to. The bearing and distance from the reference point will be displayed at the top of the data window.

Nearest to Pntr— is used when the map pointer is active. The nearest waypoint list will be displayed with all the waypoints relative to the current map "Pointer" location.

The Nearest to Pointer selection is gray on the menu page as long as the map panning arrow is not used. Once you move the arrow with the arrow keys, this menu selection becomes active.

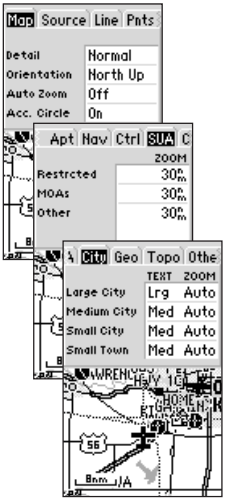
Map Setup— allows you to configure the map display to your preferences, including map orientation, land data enable/disable, Jeppesen data enable/disable, automatic zoom, airspace boundaries, and text size. The map setup option uses a 'file tab' feature, making it easier to organize the various settings. Large airports are those with a runway longer than 8000'. Medium airports are those with a runway longer than 5000' or with a control tower. Large cities are those with approximate populations greater than 100,000 and medium cities are those with approximate populations over 5,000.

The MapSource Info page lists any detailed maps that have been downloaded from the optional MapSource software package.



*When using the 'Measure' option, point to the location you wish to measure FROM and press **ENTER**. Then point to the location you wish to measure TO. The bearing and distance from the first reference location will appear at the top of the map display.*

GPS Receiver Reference



The map settings are organized by a series of 'file tabs'. Use the ***ARROW*** *keypad to select the desired tab, and to select the desired settings.*

The following table lists the file tabs and available settings:

Map	Detail, Orientation, AutoZoom, Accuracy Circle.
Source	Basemap, Aviation Data, Mapsource
Line	Track Log, Active Route Lines, Local Roads, Street Label Text
Points	All Waypoints, Waypoint Text, Active Route Wpts, Common Exits, Special Exits
Apt	Large/Medium/Small Airports and Text
Nav	VORs, NDBs, Intersections and Text
Ctrl	Controlled Airspace: Class B/C/D
SUA	Special-Use Airspace: Restricted, MOA, Other
City	Large/Medium/Small Cities and Text
Geo	Geographical Points, Rivers, Lakes, Park Areas
Topo	Topographical: Major/Medium/Minor Contours, Land Coverage
Other	Marine Navaids, Railroads, Metro Areas, Lat/Lon

To change a map setup feature:

1. Highlight 'Map Setup' and press **ENTER**.
2. To change map orientation, select the 'Map' tab (if not already selected) and press **ENTER**. Highlight the 'Orientation' field and press **ENTER**. Select 'North Up' to fix the top of the map display to a north heading. Select 'Track Up' to orient the top of the map display to your current track. Select 'DTK Up' to fix the top of the map display to your desired course. Press **ENTER** to accept the selected option.

3. To enable/disable automatic zoom, select the next 'Map' tab and press **ENTER**. Highlight the 'Auto Zoom' field and press **ENTER**. Select 'On' or 'Off to enable or disable automatic zoom. Press **ENTER** to accept the selected option. When 'On', the automatic zoom feature automatically adjusts the map scale from 30 nm through each lower scale, stopping at 0.2 nm as you approach your destination waypoint.
4. To enable/disable all land data or aviation data, select the 'Source' tab, highlight the appropriate field and press **ENTER**. The 'Aviat'n Data' (Jeppesen Data) is selectable as ON, OFF or Air On (default setting.) On means the data will be on all the time (subject to Map Setup filtering). Off means the data will be off all the time. Air On means that this data will be displayed only when the unit is placed in the aircraft cradle (i.e. Air On – Aircraft mode only.) The MapSource data is selectable as On, Off or Gnd On (default setting.) On means the data will be on all the time (subject to Map Setup filtering). Off means the data will be off all the time. 'Gnd On' means that this data will be displayed only when the unit is in the ground mode (i.e. 'Gnd On' – Ground mode only or not in the aircraft cradle.) These settings allow you to display map data according to your preference. If declutter is important then the settings of Air On/Gnd On will turn the Jeppesen Data and MapSource data On or Off automatically as the unit is used in or out of the aircraft cradle. If you like to see all the data all the time, then set all types of data to On.
5. For airports, navaids, active route waypoints, user waypoints, state/provincial boundaries, rivers/lakes and cities: select the appropriate tab and press **ENTER**. Highlight the zoom field for the desired feature and press **ENTER**. Select the maximum scale at which you want the feature to appear on screen (or 'Off' to never display) and press **ENTER**. Highlight the text field on appropriate tabs for the desired feature and press **ENTER**. Select the text size for small, medium, or large as desired or 'None' to disable text, and press **ENTER**.

Selecting the 'Track Up' option makes the map rotate so the direction you're heading is always at the top. 'North Up' will keep the top of the map display oriented north.

The automatic zoom setting steps the map scale down through each lower scale as you approach your destination waypoint.

6. For airspace boundaries, highways, roads, railroad lines, metro areas, track log data, active route lines and lat/lon grid: select the appropriate tab and press **ENTER**. Highlight the zoom field for the desired feature and press **ENTER**. Select the maximum scale at which the feature should appear on screen, or select 'Off' to never display the feature. Press **ENTER** to accept the settings.

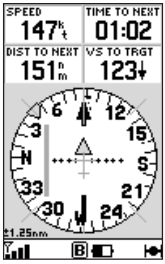
Restore Defaults— resets all data fields for the current tab to the factory default settings.

To restore the factory default settings, highlight 'Restore Defaults' and press ENTER.

HSI Page

The HSI Page provides graphic steering guidance to your destination. The graphic HSI depicts the desired course to the destination waypoint (or the next waypoint in a route), current track, off course error and a TO/FROM indication. The rotating compass card indicates your current track, at the top of the page. The course pointer and CDI indicate the desired course and whether or not you're on that course. See page 68.

The aircraft is heading parallel to the desired course and right of course more than 0.5 nm.



When off course beyond the limits of the CDI scale, the D-bar will appear in gray and stay at the edge of the scale until your off course error is less than the limits of the scale.

Course deviation is indicated by a CDI scale (across the center of the HSI) and a moving D-bar (course deviation bar). If you move off course, the D-bar will indicate how far off course you are, based upon its placement along the course deviation scale. To get back on course and center the D-bar, simply steer toward the D-bar. The CDI scale setting is adjustable for 0.25, 1.25 or 5.0 (nautical mile/ statute mile/kilometer). The default setting is 1.25, which represents the distance from the center of the CDI to full left or right limits.

To change the CDI scale, use the IN/OUT ZOOM keys.

As you reach your destination, a TO/FROM indicator at the center of the HSI will indicate waypoint passage. At the top of the page four user-selectable data fields display current speed, distance, time to next waypoint and vertical speed to target, a VNAV function.

The data fields may be configured to display different data. The various features of the unit are menu driven. Each of the main pages has an options menu, allowing you to custom tailor the corresponding page to your preferences and/or select special features that specifically relate to that page.

To display the HSI Page Options, press MENU with the HSI Page displayed.

The following options are available:

Set OBS and Hold— allows you to manually define the course to your destination waypoint. Once selected, the NavTalk Pilot will use the OBS course setting for steering guidance with the CDI and desired course pointer.

A practical application of this feature is for flying multiple practice approaches, making the unit respond like a panel mounted HSI. Another is for deviating around weather when flying a flight planned route.

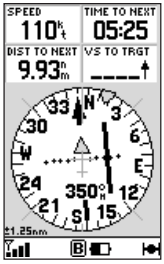
When using the NavTalk Pilot's route features, 'Set OBS and Hold' will prevent the unit from automatically sequencing to the next route waypoint. To maintain the OBS course and retain automatic sequencing, you must also select the 'Release Hold' option, described later.

To manually set a course to the destination waypoint:

1. Highlight 'Set OBS and Hold' and press **ENTER**. An OBS data field will appear on the HSI display.
2. Select the desired OBS course using the left/right arrow keys and press **ENTER**. The D-bar on the CDI and the desired course pointer will now provide steering guidance to the selected course.

To cancel the OBS course and reset a direct course to the waypoint, press GOTO and ENTER or reactivate the route.

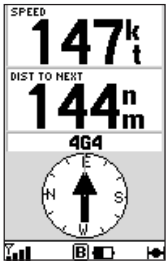
The 'Set OBS and Hold' option allows you to specify an inbound heading to a destination waypoint.



*Use the **ARROW** keypad to select the desired OBS heading. Note heading at the bottom center of the HSI display.*

GPS Receiver Reference

When using the vertical navigation feature, a VNAV indicator (moving horizontal bar) will guide your descent to the target altitude.



'Big Numbers' above a smaller compass-type display. The pointer indicates bearing to your destination.

The 'Change Fields' option allows you to select from a list of available data types.

Release Hold— cancels the 'hold' feature enabled when the 'Set OBS and Hold' option was selected. This option returns the unit to automatic sequencing of waypoints along the active route. However, if an OBS course has been selected, that course setting will be retained until cancelled or until waypoint passage.

To release a waypoint hold and return to automatic sequencing of route waypoints, highlight 'Release Hold' and press ENTER.

Capture VNAV Profile— is used to center/re-center the VNAV indicator on the HSI display. To utilize this feature, a GOTO or route must be in use and a valid vertical navigation profile must be entered on the vertical navigation setup page.

Cancel Capture— is used to return the VNAV indicator to the settings originally entered on the vertical navigation setup page.

Big Numbers— allows you to select a different page layout, with a smaller compass-type display and two user-selectable, large-character data fields. If 'Big Numbers' is selected, 'HSI' will appear as an option instead.

To toggle between HSI and Big Numbers page formats, highlight 'Big Numbers' (or 'HSI') and press ENTER.

Change fields— allows you to choose the data displayed on four user-selectable data fields. There are thirty-four available data types, including Average (AVG) Speed, Bearing, Distance, ETA to Destination (DEST), Speed, Time to Destination (DEST), Track, a Trip Odometer and more.

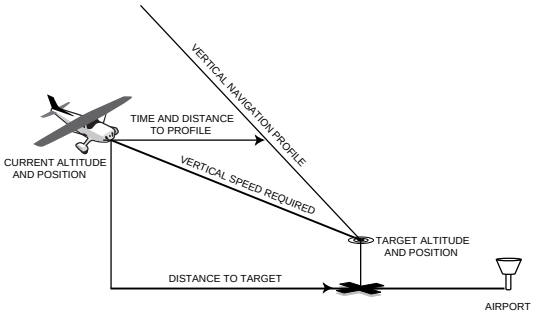
To change a data field:

1. Highlight 'Change Fields' and press **ENTER**.
2. Highlight the data field you wish to change and press **ENTER**.
3. Select the type of data you want to appear on this field and press **ENTER**.

Restore Defaults— resets all data fields to the factory default settings.

Vertical Navigation

The vertical navigation feature allows you to create a three-dimensional profile that guides you from your present position and altitude to a final (target) altitude at a specified location. Once the profile is defined, message alerts and additional data on the HSI Page will keep you informed of your progress.



To use the vertical navigation feature, your speed must be greater than 35 knots and you must be navigating to a GOTO destination or using a route.

To create a vertical navigation profile:

1. Select the Main Menu by pressing **MENU** twice.
2. Select 'Vertical Nav' using the **ARROW** keypad and press **ENTER**.
3. With the 'Target Altitude' field highlighted, press **ENTER**. Enter the desired target altitude and press **ENTER**.
4. With the altitude reference field (immediately to the right of 'Target Altitude') highlighted, press **ENTER**. Select 'Above Wpt' or 'MSL' (as desired) and press **ENTER**. 'Above Wpt' will use the altitude of a destination airport as stored in the internal Jeppesen database. 'MSL' lets you set a specific target altitude for any waypoint category: airport, VOR, NDB, intersection or user waypoint.

The Main Menu's 'Vertical Nav' option allows you to define the target altitude and where it should occur. The default settings are intended to guide you to pattern altitudes.

Your target altitude can be defined as height 'Above Wpt' or 'MSL'. 'Above Wpt' only applies to airports. Use 'MSL' for all other waypoint types.

GPS Receiver Reference

When using a route, vertical navigation can apply to any waypoint along the route by selecting it as the 'VNAV Waypoint'.

Within one minute of the initial descent point, an 'Approaching VNAV Profile' message will appear.

Once you are within 500 feet of the target altitude, the 'Approaching Target Altitude' message will appear and the VNAV indicator will be removed from the HSI display.

5. With the waypoint distance 'By' field highlighted, press **ENTER**. Enter an offset distance from the destination waypoint where the target altitude should be reached. If the target altitude occurs at the destination waypoint, enter a distance of zero. Press **ENTER** when finished.
6. With the offset direction field (immediately to the right of 'By') highlighted, press **ENTER**. Select 'Before' or 'After' and press **ENTER**. This setting designates whether the offset distance defines a point before you reach the destination waypoint or after you reach the destination waypoint.
7. When using a route, the 'VNAV Waypoint' field allows you to specify which route waypoint will be used for the vertical navigation profile. By default, the unit will select the last waypoint in the route. To select a different waypoint, highlight the 'VNAV Waypoint' field, press **ENTER**, select the desired waypoint and press **ENTER**.
8. The default profile utilizes a 400 foot-per-minute descent rate. To change the rate, highlight the 'Profile' field, press **ENTER**, enter a new rate and press **ENTER** again.
9. To enable/disable all vertical navigation messages, highlight the 'Message' field and press **ENTER**. Select 'On' or 'Off' (as desired) and press **ENTER**.

With the profile set, the HSI Page will guide you through the maneuver. Data fields on the HSI Page can be configured to indicate the time to beginning of maneuver, glide ratio and vertical speed to target. A VNAV indicator on the HSI display will guide you along the proper descent angle. Expect the following to occur when using the vertical navigation feature:

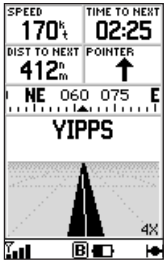
- As you approach the initial descent point, the time to vertical navigation 'Time to VNV' field indicates the time to reach the initial descent point.

- At one minute prior to the initial descent point, a message 'Approaching VNAV Profile' occurs. The time to vertical navigation ('Time to VNV') will sequence from indicating time to initial descent point to indicating time to reach target altitude. Finally, the descent angle will lock to prevent changes in speed from altering the profile.
- At 500 feet above the target altitude, an 'Approaching Target Altitude' message is provided. The time to vertical navigation ('Time to VNV') figure will go blank and the VNAV indicator will disappear from the HSI Page.

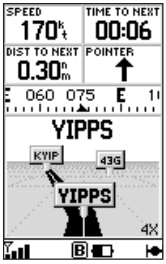
WARNING: *GPS accuracy may be degraded by the U.S. Department of Defense-imposed Selective Availability (SA) program. With SA on, GPS altitude may be in error by several hundred feet. Errors of this magnitude may result in fluctuations in the VNAV indicator on the HSI Page. The NavTalk Pilot is a VFR navigation tool and should not be used to perform instrument approaches.*

Restore Defaults— resets all data fields to the factory default settings.

To restore the factory default settings, highlight 'Restore Defaults' and press ENTER.



Your course is represented by the highway centerline. Keep the centerline in the middle of the display to stay on course.



When using a route, the Highway Page indicates each leg with waypoint sign posts along the route.

Highway Page

Whenever a destination waypoint(s) has been selected, the NavTalk Pilot's Highway Page will guide you to your destination with digital readouts and a highway display. Along the top of the page are four user-selectable data fields that display current speed, distance, time to next waypoint, and a bearing pointer (defaults). The bearing pointer always points to the destination waypoint (or the next waypoint when using a route) relative to the direction you are moving (track). If the bearing pointer points straight ahead, you are heading directly to your destination. If the bearing pointer points any direction other than up, turn toward the arrow until it points up—then continue in that direction.

The graphic heading compass at the top of the page indicates the direction you are moving (track). Directly below the heading compass, the highway display provides visual guidance to the destination waypoint and keeps you on your intended course line. Your course is represented by the centerline down the middle of the graphic highway. As you head toward your destination, the highway perspective will move to indicate your progress to the waypoint and which direction you should steer to stay on course.

If you are navigating a route, the highway display will show each route waypoint in sequence, with the active leg indicated by the white portion of the highway. Nearby airports not in the route will also be displayed by signposts. Five available scale settings allow you to zoom in or out on the highway display for a smaller or larger view.

To zoom in or out on the highway display:

1. Press the IN zoom key to decrease the scale and show a smaller view area.
2. Press the OUT zoom key to increase the scale and show a larger view area.

Many features of the NavTalk Pilot are menu driven. Each of the main pages has an options menu, allowing you to custom tailor the corresponding page to your preferences and/or select special features that specifically relate to that page.

To display the Highway Page Options, press MENU (with the Highway Page displayed).

The following options are available:

Change fields— allows you to choose the data displayed on four user-selectable data fields. There are thirty-two available data types, including Average (AVG) Speed, Bearing, Distance, ETA to Destination (DEST), Speed, Time to Destination (DEST), Track, a Trip Odometer and a Bearing Pointer. See section 7 for descriptions of navigation terms.

To change a data field:

1. Highlight 'Change Fields' and press **ENTER**.
2. Highlight the data field you wish to change and press **ENTER**.
3. Select the type of data you want to appear on this field and press **ENTER**.

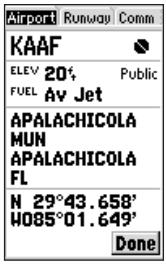
Restore Defaults— resets all data fields to the factory default settings.

To restore the factory default settings, highlight 'Restore Defaults' and press ENTER.

The Highway Page Options let you configure the Highway Page to your preferences

'Change Fields' allows you to choose the type of data to display on four user-selectable data fields. Select the desired type from the 'Change Fields' list.

The Main Menu's 'Waypoints' option allows you to view database information for airports, runways, comm frequencies, VORs, NDBs, etc.

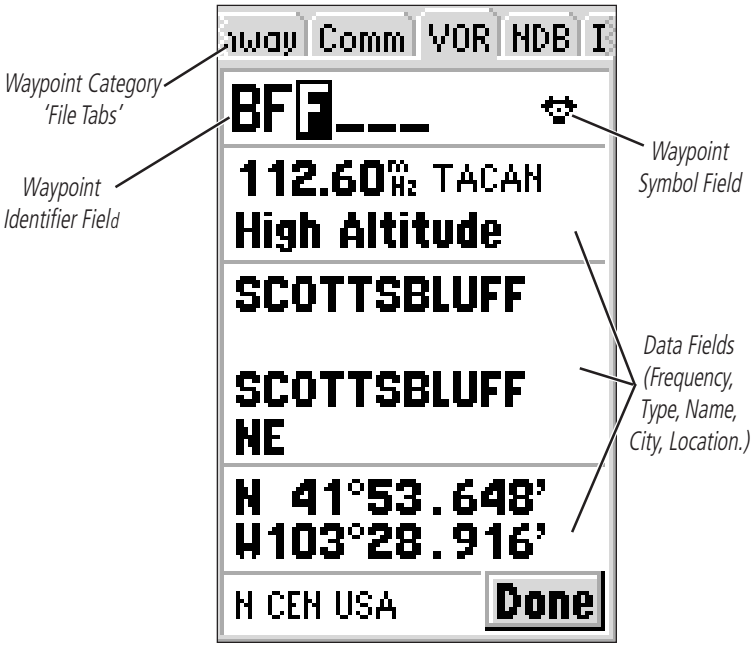


Select the desired waypoint category by selecting the corresponding 'file tab' at the top of the page.

Waypoint Information Pages

Your NavTalk Pilot uses a built-in Jeppesen database to provide position and facility information for thousands of airports, VORs, NDBs and intersections. Each facility in the database is stored as a waypoint, with its own latitude/longitude, identifier (up to six letters and/or numbers) and other pertinent information. Waypoint information is available from the 'Waypoints' selection under the Main Menu. Waypoint information is divided into categories (each represented by a 'file tab'), with different types of information available for each. The following table lists the file tabs and information available under each tab:

Airport	Identifier, City/State, Name, Position, Elevation, Fuel
Runway	Length, Width, Orientation, Surface, Lighting, Diagram
Comm	Frequencies for: ATIS, Pre-Taxi, Clearance, Ground, Tower, Unicom, Multicom, Approach, Departure, Arrival, Class B, Class C, TMA, CTA, TRSA
VOR	Identifier, City/State, Facility Name, Position, Freq., Indication of Co-Located DME or TACAN
NDB	Identifier, City/State, Facility Name, Position, Freq.
Int	Intersection Name, Region/Country, Nearest VOR
User Wpt	Name, Position, User Comments, Reference Waypoint
User List	Name, Symbol, Total Number of User Waypoints Created



To select the desired waypoint, by identifier:

1. Highlight the waypoint identifier field using the **ARROW** keypad and press **ENTER**.
2. Use the **ARROW** or phone keypad to enter the desired identifier.
3. As the identifier is entered, the unit will scroll through the database, displaying any waypoints with the same identifier letters you have entered to that point. When the desired waypoint is displayed, press **ENTER**.

*Waypoints are selected by identifier (or name). Enter the desired identifier in the waypoint identifier field, using the **ARROW** or phone keypad.*

GPS Receiver Reference

If more than one waypoint uses the same identifier, the Duplicate Waypoint Page allows you to choose the correct one.

Airports, VORs and NDBs can also be selected by the facility's name or the city where it is located.

The unit uses International Civil Aviation Organization (ICAO) identifiers to designate airports. In the United States, the prefix letter for airports is 'K'. This applies to airport identifiers using letters only. For example, 'LAX' becomes 'KLAX' and 'JFK' becomes 'KJFK'. Airport identifiers using numbers, such as 'H34' or '7M5', do not use the 'K' prefix.

Some waypoints in the database may have the same identifier. When you have entered a waypoint name that is not unique, a Duplicate Waypoint Page appears, prompting you to select the desired waypoint. A list showing each duplicate by waypoint category and region/country makes it easy to identify the correct one.

To select the desired waypoint from a list of duplicates, highlight the desired waypoint and press ENTER.

The 'Airport', 'VOR' and 'NDB' information pages also allow you to retrieve the desired waypoint by entering the facility name or the city name.

To select the desired waypoint, by facility or city name:

1. Use the **ARROW** keypad to highlight the facility name or city name field. Press **ENTER**.
2. Use the **ARROW** or phone keypad to enter the desired name.
3. As the name is entered, the unit will scroll through the database, displaying any waypoints with the same letters you have entered to that point. In some instances there may be more than one waypoint with the same name. This often occurs when searching by city name. To view all waypoints with the desired name, continue spelling the name with the **ARROW** keypad. Once the name appears on-screen, continue to press UP/DOWN on the **ARROW** keypad to view all entries for that name.
4. When the desired waypoint is displayed, press **ENTER**.

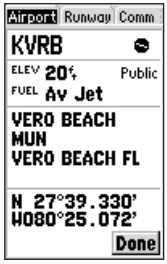
Airport Information Page

The Airport Information Page displays the identifier, facility name, city, position, elevation and available fuels for the selected airport. Position and elevation information will be in the format specified on the Setup pages (see page 123). Available fuel can be any of the following types:

AV — AVGAS: 80-87 octane, 100LL, 100-130 octane

JET — Jet A, Jet A-1, Jet A+

MO — MOGAS: 87 octane unleaded



The Airport Information Page includes airport position coordinates, field elevation and available fuels. This page also indicates if the facility is public use or military.

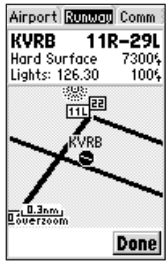
Runway Information Page

The Runway Information Page displays the identifier, designations, length, width, surface type and lighting information for the selected airport. This page also provides a graphic diagram of the runways and a map of the surrounding area. The surface type information can be any one of: hard, turf, sealed, gravel, dirt, soft, unknown, or water. The lighting information will indicate one of five lighting schemes: part time, full time, pilot controlled (with frequency), no lighting or unknown.

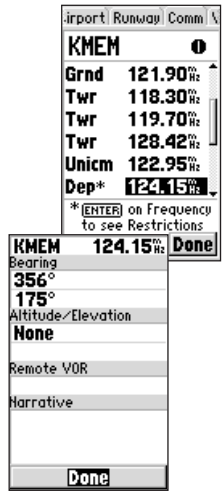
If the selected airport has more than one runway, additional runway data can be viewed by selecting another runway from the runway designation field.

To view additional runway data:

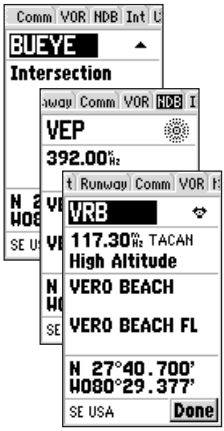
1. Highlight the runway designation field and press **ENTER**. A list of the available runways will appear.
2. Select the desired runway using the **ARROW** keypad and press **ENTER**.



The Runway Information Page allows you to view the runways and the surrounding area. Use the zoom IN/OUT keys to see more detail.



The Airport Communication Information Page shows the radio frequencies for the selected airport. Any frequencies with restrictions are denoted by an asterisk (*) after the frequency type.



Intersection, NDB and VOR Information Pages

Communication Information Page

The Communication Information Page displays the identifier and radio frequencies for the selected airport, along with any usage restrictions that may apply to a given frequency. When a frequency type is followed by an '*', that frequency will have usage restrictions, typically based upon sector and/or altitude.

To view usage restrictions for a communication frequency:

1. Highlight the desired frequency (one with a type that's followed by '*') and press **ENTER**. An information page will appear with additional data about the frequency.
2. Press **QUIT** to return to the Communication Information Page.

VOR Information Page

The VOR Information Page displays the identifier, facility name, city name, region/country, position and frequency for the selected VOR. The facility type (terminal, low altitude or high altitude) is also indicated. If DME or TACAN equipment is co-located at the site, it will be indicated next to the transmitting frequency. Likewise, if the facility broadcasts weather information, 'WX' will appear next to the transmitting frequency. Position information will be in the format specified on the Setup pages (see page 123).

NDB Information Page

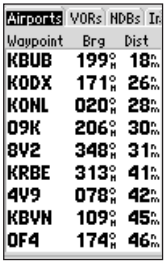
The NDB Information Page displays the identifier, facility name, city name, region/country, position and frequency for the selected NDB. If the facility broadcasts weather information, it will be indicated by a 'WX' appearing next to the transmitting frequency.

Intersection Information Page

The Intersection Information Page displays the identifier, position, region and country for the selected intersection.

Nearest Pages

In addition to being used to define a GOTO destination, the NavTalk Pilot's **#/GOTO** (NRST) key can also be used to view detailed information on the nine nearest airports, VORs, NDBs, intersections, user waypoints, cities, exits and geographical points within 200 miles of your present position. Information regarding the five nearest FSS (flight service station) and center (ARTCC) remote communications outlets, along with associated frequencies is available from the Nearest Page, as well. When an airspace alert is provided, the Nearest Page will even provide additional detail about the airspace. Nearest information is selected by choosing the appropriate 'file tab', based upon the desired information, then highlight the item of interest and press **ENTER**. The figure to the right lists the file tabs and information available under each tab.



The Nearest Page organizes the nearest airports, navaids, FSS, center and airspace information by 'file tab' headings. Select the appropriate tab for the desired information.

To view the Nearest Pages

1. Press and hold the **#/GOTO** key for two (2) seconds.
2. Select the desired information by highlighting the appropriate tab from the chart.

Additional information is stored in the unit's Jeppesen database. This information may be retrieved using the 'Waypoints' option on the Main Menu, but it is also available from the Nearest Page.

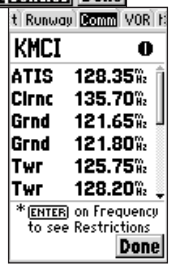
To view additional information for a nearest airport, VOR, NDB, intersection, user waypoint or airspace:

1. Highlight the desired item (from the Nearest Page) using the **ARROW** keypad.
2. Press **ENTER** to view the database information for the selected item.
3. Press **QUIT** to return to the Nearest Page.

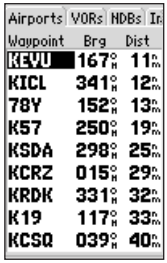
You can easily set a GOTO course directly to a nearest waypoint. In an emergency, a few simple keystrokes can guide you to the closest point to land. (See page 106 for more detail about the GOTO features.)

Nearest airspace information is available on the Nearest Page, once an airspace alert has been provided.

GPS Receiver Reference



View the database information for nearby airspace by highlighting it on the Nearest Page and pressing ***ENTER****. Highlight frequencies and press* ***ENTER*** *to view the list.*



To immediately set a GOTO course for a nearest airport, highlight the desired airport on the Nearest Page, press ***#/GOTO*** *and then* ***ENTER****.*

Airports	Nine Nearest with Identifier, Bearing and Distance
VORs	Nine Nearest with Identifier, Bearing and Distance
NDBs	Nine Nearest with Identifier, Bearing and Distance
Ints	Nine Nearest with Name, Bearing and Distance
User Wpts	Nine Nearest with Name, Bearing and Distance
ARTCC	Five Nearest with Bearing To, Distance and Frequency
FSS	Five Nearest with Bearing To, Distance, Freq(s) and VOR (for Duplex Opertion)
Airspace	Up to Three Depending on Number of Alerts Provided with Type, Controlling Agency, Freq(s) and Floor/Ceiling Altitude limits
Cities	50 Nearest Large, Medium, Small Cities and Small Towns with Bearing and Distance to Each
Exits	Distance to 50 Exits of Eight Different Types
Geo Points	50 Nearest with Bearing and Distance to Eight Different Types

To GOTO a nearest waypoint:

1 Highlight the desired waypoint from the Nearest Page.

2 Press **#/GOTO** and **ENTER**.

Airspace information also includes the frequency(s) of the controlling agency.

To view controlling agency frequency(s) for a nearby airspace:

1. With the information page displayed for the desired airspace, highlight the 'Frequencies' field and press **ENTER**.

The Nearest Page displays one FSS or ARTCC at a time. Information for up to five remote communication outlets is available.

To view additional nearest FSS or ARTCC remote communication outlets:

1. Highlight the 'Station' field and press **ENTER**.
2. Select the desired listing and press **ENTER**.

The nearest location pages also feature options for the 'Cities', 'Exits', and 'Geographical Points', allowing you to define the categories you want to appear or to restore the factory default settings after you've made any changes.

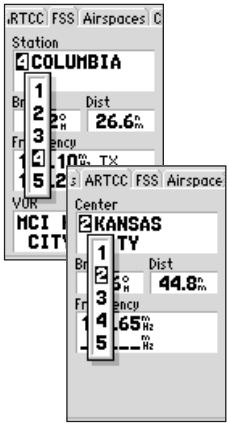
The following options are available:

- Large, Medium, and Small Cities and Small Towns.
- Exits with services, without services, rest areas, service areas, toll booths, welcome centers, weigh stations and other exit categories.
- Geographical Points lists airports, and depending on MapSource data, includes attractions, emergency facilities, food and drink, lodging, natural points, services and other.

To display the nearest location options for Cities, Exits, and Geographical Points:

1. From the Nearest Locations tab pages, highlight the 'Cities', 'Exits' or 'Geographical Points' tab and press **MENU**.
2. Select the setup menu of your choice and press **ENTER**.
3. Highlight the desired setting and press **ENTER**.

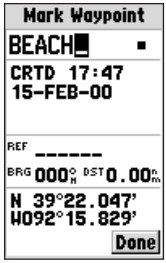
Restore Defaults— resets all cities, exit and geographical points settings to the factory defaults. In this instance, it enables all categories.



The Nearest FSS or ARTCC Page lists up to five communication frequency outlets.

Setup menu options

GPS Receiver Reference



*The ***/MARK** key allows you to mark your current position as a user waypoint. You can give this waypoint any name you choose.*

You can also choose from a list of symbols used to identify the user waypoint on the map display.

To restore the factory default settings, highlight 'Restore Defaults' and press ENTER.

The unit also stores up to 250 user-defined waypoints, with a selectable symbol and comment available for each waypoint. User-defined waypoints can be created using four methods:

Mark Present Position— your present position can be captured and saved as a user waypoint using the ***/MARK** key.

On Map— a new user waypoint position can be created directly on the map display using the cursor.

Text Entry— user waypoints can be created by entering position coordinates manually (from a chart, etc.) or by referencing bearing and distance from a previously stored waypoint (or present position).

Average Position— position samples can be averaged over time and the result saved as a user waypoint. Averaging reduces the effects of selective availability and improves the accuracy of the position reading. (See page 76-77 for more information.)

Marking Present Position

The unit's 'MARK' feature lets you quickly capture your present position in order to create a new user waypoint. You must be locked onto satellites, with a valid position fix, to mark your present position.

To mark your present position:

1. Press and hold the ***/MARK** key. The New Waypoint Page is automatically displayed.
2. A three-digit number is automatically assigned. To change the waypoint name, highlight the waypoint name field and press **ENTER**. Use the **ARROW** keypad to enter the new waypoint name and press **ENTER**.
3. Highlight the symbol field and press **ENTER**. Use the **ARROW** keypad to select a new waypoint symbol and press **ENTER**.

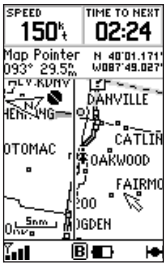
4. To save the waypoint in memory, highlight 'Done' and press **ENTER**.

Marking User Waypoints on the Map Page

User waypoints can also be quickly created from the Map Page, which allows you to "point and shoot" at any map position to create a new waypoint.

To create a new user waypoint on the map:

1. Press the **PAGE** key repeatedly to select the Map Page.
2. Use the **ARROW** keypad to move the pointer to the desired map position. You may also need to use the zoom IN and OUT keys, in conjunction with the keypad, to speed up this process and to locate the waypoint more accurately.
3. Press **ENTER** to capture the pointer position and display the New Map Waypoint Page.
4. To change the waypoint name, highlight the waypoint name field and press **ENTER**. Use the **ARROW** or phone keypad to enter the new waypoint name and symbol if desired and press **ENTER** when finished.
5. To save the waypoint in memory, highlight 'Done' and press **ENTER**.



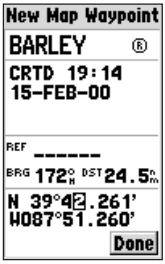
User waypoints can be created directly from the Map Page, by placing the panning arrow on the desired position and pressing ***ENTER****.*

Creating User Waypoints by Text Entry

User waypoints may be created by manually entering the position coordinates or by entering the bearing and distance from an existing waypoint or present position.

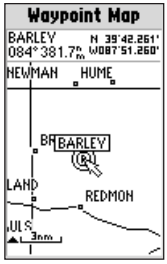
To create a new user waypoint by manually entering its coordinates, or by bearing/ distance from another position:

1. Press the **MENU** key twice to select the Main Menu.
2. Highlight 'Waypoints' and press **ENTER**.
3. Press **MENU** to display the Waypoint Options.
4. Highlight 'New Waypoint' and press **ENTER**. The Waypoint Definition Page appears.



User waypoints can be created by entering the position coordinates for the waypoint.

Select the 'Show Map' option to display the map area around a selected waypoint.



Once 'Show Map' is selected use the panning pointer and the IN/OUT zoom keys to view the desired area in detail.

5. To enter a name for the new waypoint, highlight the waypoint name field and press **ENTER**. Use the **ARROW** or phone keypad to enter the waypoint name and press **ENTER** when finished.
6. To enter position coordinates for the new waypoint, highlight the waypoint coordinates field and press **ENTER**. Use the **ARROW** or phone keypad to enter the position coordinates and press **ENTER** when finished. (For lat/lon coordinates, enter both the latitude and longitude information before pressing **ENTER**.) **Or,**
7. To create the new waypoint by referencing another position, highlight the reference waypoint name field and press **ENTER**. Use the **ARROW** or phone keypad to enter the name of the reference waypoint and press **ENTER**. (If the reference waypoint name field is left blank, your present position will be used as the reference position.) Use the same procedure to enter the bearing (BRG) and distance (DST) from the reference waypoint to the new waypoint. Press **ENTER** after each data item is selected with the **ARROW** keypad.
8. To save the new waypoint in memory, highlight 'Done' and press **ENTER**.

Waypoint List Options

The Waypoint Options were displayed using the first three steps above. In addition to 'New Waypoint', there are additional options which vary depending on whether you are viewing Jeppesen database waypoints or user-defined waypoints:

New Waypoint — allows you to name and define a waypoint by entering the bearing and distance from another reference waypoint or by entering the latitude/longitude.

Show Map — allows you to view the map area around the selected waypoint. While viewing the map display, you can use the IN and OUT zoom keys to see additional detail.

Delete Waypoint— allows you to delete the user waypoint which is highlighted on the waypoint list.

Delete by Symbol— allows you to select a user waypoint symbol and all waypoints with this corresponding symbol will be deleted from memory.

Delete All— deletes all user waypoints currently stored in memory.

To delete a user waypoint (or waypoints):

1. Select the desired delete option from the list above and press **ENTER**.
2. If 'Delete by Symbol' is selected, select the desired symbol and press **ENTER**.

User waypoints can be deleted individually, by common symbol or all at once. Select the desired 'Delete' option and press ***ENTER****.*

Editing User Waypoints

Once you have created and stored a user waypoint, it may be modified, renamed or deleted at any time through the Edit Waypoint Page. The Edit Waypoint Page for any stored user waypoint can be retrieved by selecting the desired waypoint on the map display, or from the waypoint information pages ('User Wpt' or 'User List' tabs.)

To access the Edit Waypoint Page for a user waypoint:

1. Use the **ARROW** keypad to select the desired user waypoint on the map display and press **ENTER**. Or...
2. Highlight 'Waypoints' from the Main Menu and press **ENTER**. Select the desired file tab. If 'User Wpt' is selected, press **MENU**, select 'Edit Waypoint' and press **ENTER**. If 'User List' is selected, highlight the desired waypoint and press **ENTER**.

From the Edit Waypoint Page, highlight the appropriate field to rename a waypoint, change its symbol, edit the comment or edit the position.

To rename the user waypoint:

1. Highlight the waypoint name field and press **ENTER**.
2. Use the **ARROW** or phone keypad to enter the new waypoint name and press **ENTER**.
3. When finished, highlight 'Done' and press **ENTER**.

To rename a user waypoint enter the new name directly over the old name and press ***ENTER****.*

The default waypoint comment is the time and date the waypoint was created. You can enter your own comment using the keypad.

Edit a user waypoint's position by entering new position coordinates directly over the old position.

To change the user waypoint's symbol:

1. Highlight the waypoint symbol field and press **ENTER**.
2. Use the **ARROW** keypad to select the desired symbol and press **ENTER**. The selected symbol will be used to denote the waypoint position on the map display.

When a waypoint is created, the time and date of creation is automatically added as a waypoint comment. You can edit this information or create an entirely new comment, as needed.

To edit the user waypoint comment:

1. Highlight the waypoint comment field and press **ENTER**.
2. Use the **ARROW** or phone keypad to enter the desired comment and press **ENTER**.

To edit the user waypoint position:

1. Highlight the waypoint coordinates field to change the position coordinates, or highlight the reference waypoint name, bearing or distance fields to change the reference waypoint information. Press **ENTER** to begin editing.
2. Use the **ARROW** or phone keypad to enter the new information. When finished, press **ENTER** to accept.

A user waypoint's position may be edited graphically, using the map display.

To move a waypoint's position on the map display.

1. From the Waypoint Edit Page, press **MENU** to display the Waypoint Edit Options.
2. Use the **ARROW** keypad to select 'Show Map' and press **ENTER**.
3. Press **MENU** to display an options window. Select 'Move Wpt' and press **ENTER**.
4. Use the **ARROW** keypad to select the new location for the waypoint and press **ENTER**.

The Waypoint Edit Page features additional options, besides the 'show map' option described in the previous steps. Waypoint Edit Options allow you to delete user waypoints, define how a user waypoint will appear on the map display or average the waypoint position to improve accuracy.

To display the Edit Waypoint Options, press MENU with the Edit Waypoint Options page displayed.

The following options are available:

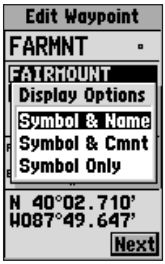
Show Map— allows you to view the area surrounding the selected waypoint's position. While viewing the map display, you can also use the zoom IN and OUT keys to see additional detail.

'Show Map' allows you to view the area around the user waypoint's position.

Display Options— lets you select how the highlighted user waypoint will appear on the map display. Options are provided to show symbol & name, symbol & comment, or symbol only.

To change the display options for a user waypoint:

1. Highlight 'Display Options' and press **ENTER**.
2. Highlight the desired option and press **ENTER**.



'Display Options' lets you determine what user waypoint information will appear on the map display.

Average Position— allows you to average position samples over time to improve the accuracy of the position reading and save the result as a user waypoint. (See page 76 for more information on averaging.)

Delete Waypoint— allows you to remove the selected user waypoint from memory.

To delete a waypoint:

1. Highlight 'Delete Waypoint' and press **ENTER**. A confirmation screen is displayed.
2. Press **ENTER** to delete or **QUIT** to cancel.

To GOTO a waypoint, press ***#/GOTO*** *and highlight the waypoint identifier field at the top of the page.*

Press ***ENTER*** *and use the* **ARROW** *or phone keypad to enter the identifier of the destination waypoint. Press* ***ENTER*** *to begin navigation.*

GOTO Navigation

The NavTalk Pilot can navigate to a destination using any of three different methods:

GOTO— lets you select a waypoint as your destination and quickly plot a direct course from present position to that waypoint.

TracBack— allows you to retrace your path using the track log automatically stored in the receiver's memory. This eliminates the need to store waypoints along the way. (See page 108 for more information about TracBack.)

Routes— allows you to manually create a sequence of intermediate waypoints which lead you to your final destination. The unit will store up to 20 reversible routes, with up to 30 waypoints in each route.

The easiest way to select your destination is by using the **#/GOTO** key. The **#/GOTO** key can be used by itself, after highlighting a waypoint name on a list, or after designating a position on the map display.

To GOTO a waypoint:

1. Press **#/GOTO**. The GOTO page shows a series of file tabs for 'Recent' waypoints, 'User' waypoints or 'Spell n Find'.
2. To GOTO a recently used waypoint, select the 'Recent' tab, highlight the desired waypoint and press **ENTER**.
3. To GOTO a user waypoint, select the 'User' tab, highlight the desired waypoint and press **ENTER**.
4. To enter the identifier of the destination waypoint, select the 'Spell n Find' tab and highlight the waypoint identifier (name) field. Press **ENTER** and use the **ARROW** or phone keypad to enter the identifier of the desired waypoint. Press **ENTER** to confirm the selection.

To designate a GOTO waypoint from a list of waypoints:

1. Highlight the desired waypoint on the list and press **#/GOTO**. A confirmation page shows the selected destination waypoint.
2. Press **ENTER** to confirm the selected waypoint and begin navigating.

To GOTO an existing waypoint on the map display:

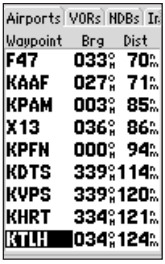
1. Use the **ARROW** keypad to place the pointer on the desired target waypoint.
2. Press **#/GOTO**, followed by **ENTER**, to begin navigating.

To GOTO any position on the map display:

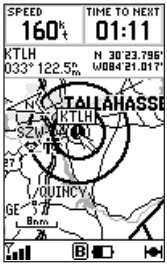
1. Use the **ARROW** keypad to place the pointer on any position you wish to navigate to.
2. Press **#/GOTO**, to create a waypoint, called 'MAP', at the pointer position. Each time you perform this step, it will overwrite any previously created 'MAP' waypoint.
3. Press **ENTER** to begin navigating.

To select a GOTO waypoint by facility name or city (applicable to airports, VORs and NDBs only):

1. Press **#/GOTO** and select the 'Spell n Find' tab, as described previously.
2. Highlight the facility name or city name field and press **ENTER**.
3. Use the **ARROW** or phone keypad to enter the facility name or city name. As you enter the first few characters, the unit's Spell n Find feature will scroll through the database, displaying any waypoints which match the letters you have entered. When searching by city name, there may be mulitiple waypoints for the same city. Continue scrolling with the UP/DOWN arrow keys to scroll through these entries.
4. When the desired waypoint appears, press **ENTER**.



*By highlighting a waypoint identifier on a list and pressing **#/GOTO**, you won't have to manually enter the identifier for the waypoint.*



A GOTO can be initiated from the map display by placing the panning pointer on the desired target waypoint.

'TracBack' allows you to retrace your path based upon an automatic track log recording.

To cancel a current GOTO destination, select 'Cancel GOTO' from the GOTO Options.

GOTO Options are also provided to initiate a TracBack route or to cancel the current GOTO destination.

To display the GOTO Options, press MENU immediately after pressing #/GOTO.

The following options are available:

TracBack— allows you to retrace your path using the track log automatically stored in the receiver's memory. This eliminates the need to store waypoints along the way.

Cancel GOTO— cancels the current GOTO destination and resumes navigation of any previously selected route. If no route is currently in use; bearing, distance, etc. will remain blank until a destination waypoint is defined.

To cancel the current GOTO destination, highlight 'Cancel GOTO' and press ENTER.

TracBack Navigation

The TracBack navigation feature allows you to retrace your path using the Track Log automatically stored in the receiver's memory. This eliminates the need to manually store waypoints along the way. A Track Log is an electronic breadcrumb trail showing the path you have traveled. Your unit can be set to automatically record track log points anytime the receiver is on and locked onto satellites (see page 119.)

TracBack routes are created by reducing your track log into a route of up to 30 waypoints and activating the new route in reverse order along those waypoints. Once activated, a TracBack route will lead you back to the oldest track log point stored in memory, so it's a good idea to clear the existing track log at the beginning of your current trip (e.g., at your home airport) before you get started.

To clear the track log and define the starting point for a TracBack route:

1. Press **MENU** twice to display the Main Menu.
2. Highlight 'Track Logs' and press **ENTER** to display the Track Logs Menu.
3. Press **MENU** again to see options. Highlight 'Clear Active Log' and press **ENTER** twice to clear the old Track Log data or press **QUIT** to cancel.

To create and activate a TracBack route:

1. Enable track log recording and leave the unit on to automatically record Track Log positions while enroute. Refer to page 119 for information on Track Log settings.
2. Press **MENU** twice to display the Main Menu.
3. Highlight 'Track Logs' and press **ENTER**.
4. Press **ENTER** to create and activate the TracBack route, Or...
5. Press **MENU** again to see the options.
6. Highlight 'TracBack' and press **ENTER** to create and activate the TracBack route.

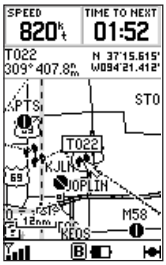
(Using either method, a message box will appear while the unit analyzes the data and creates the route.)

Once a TracBack has been activated, the unit will take the Track Log currently stored in memory and divide it into route segments, called 'legs'. Up to 30 Track Log waypoints (labeled 'T###', e.g. 'T001') will be created to mark the most significant features of the Track Log in order to duplicate your path as closely as possible. To gain the most benefit from the TracBack feature, keep the following tips in mind:

Clear the old track log before you depart. This defines the starting point for a TracBack route.

'TracBack' can also be initiated from the Main Menu's 'Track Log' option.

GPS Receiver Reference



A TracBack route contains a series of waypoints labeled 'T###' that approximate your previous route of travel.

'Wrap' will overwrite the old track log data in memory, once all memory has been used.

- Always clear the Track Log at the point you want to return to (your home, your home airport, etc.)
- The 'Record Mode' on the Track Log Setup Page must be set to 'Wrap' or 'Fill'.
- There must be at least two Track Log points stored in memory to create a TracBack route.
- If there is not enough available memory to add more waypoints and create a TracBack route, you will be alerted with a 'waypoint memory full' message. The receiver will use the available waypoints to create a route with an emphasis on the Track Log closest to the destination. Also, existing track log waypoints that are not contained in routes 1-20 will be erased to free more memory. The unit will create the new waypoints using the first available three-digit number.
- If the Track Log Setup Page's 'interval' field is set to 'Time', the route may not follow your exact path. (Keep the 'interval' field set to 'Resolution' for best results.)
- If the receiver is turned off or satellite coverage is lost during your trip, TracBack will draw a straight line between any point where coverage was lost and where it resumed.
- If there are frequent changes in direction and distance in your Track Log, 30 waypoints may not accurately depict your exact path. The receiver will then assign the 30 waypoints to the most significant points of your Track Log and simplify segments with fewer changes in direction.

Routes

Route navigation allows you to manually create a sequence of intermediate waypoints which lead you to your final destination. The unit will store up to 20 reversible routes, with up to 30 waypoints in each route. Routes can be created and modified by text entry—using the rocker keypad to enter waypoint names. All of the unit's route functions are accessed through the 'Routes' option on the Main Menu.

To create a new route:

1. Press **MENU** twice to display the Main Menu.
2. Highlight 'Routes' and press **ENTER**. The Route List is displayed, showing all routes stored in memory.
3. Press **MENU** to display the Route Options.
4. Highlight 'New Route' and press **ENTER**. The unit creates a route called 'Empty-XX'. The name changes as you add waypoints to the route, so make note of the route name for future reference.
5. Highlight the first waypoint name field and press **ENTER** to begin entering the name of an existing waypoint in memory.
6. Use the **ARROW** or phone keypad to enter the name of the route waypoint and press **ENTER**.
7. Highlight the next waypoint name field and repeat step 6 until all route waypoints have been added to the route.

Route List

The unit's Route List displays all the routes currently stored in memory, along with a descriptive name for each route. Once a route has been created, it can be activated and used for navigation from the Route List. A route may be followed in the same sequence as it was originally created, or you can invert the route and navigate from the end waypoint back to the beginning waypoint.

To display the Route List, showing all routes stored in memory, select 'Routes' from the Main Menu.

Select 'New Route' from the Route Options menu and enter the identifiers for the route waypoints in sequence.

Activate the route you wish to use for navigation.

Selecting a GOTO destination along the current route will take you directly to that waypoint, then continue with the remainder of the route.

To activate a route:

1. Press **MENU** twice to display the Main Menu.
2. Highlight 'Routes' and press **ENTER**. The Route List is displayed, showing all routes stored in memory.
3. Highlight the desired route and press **MENU** to display the Route Options.
4. Highlight 'Activate' to navigate the route in sequence and press **ENTER**.

The Route List also allows you to enter your own 13-character name for any listed route. By default the name includes the first and last waypoints in the route.

To enter a custom route name:

1. Follow steps 1 and 2 above to display the Route List.
2. Highlight the desired route and press **ENTER** to display the Route Edit Page.
3. Highlight the route name field (top line) and press **ENTER** to begin editing.
4. Use the **ARROW** or phone keypad to enter the desired name and press **ENTER** when finished.

When a route is highlighted on the Route List, additional functions are available from the Route Options.

To display the Route Options, press MENU (with the Route List displayed).

The following Route Options are available:

New Route— allows you to create a new route, as described previously.

Activate— allows you to navigate the route in the same sequence it was originally created, as described above.

Copy— allows you to copy the selected route to a new route. The copy function can be used to save a TracBack route for future use. The copy function is also useful for duplicating an existing route before making changes.

To copy a route:

1. Highlight 'Copy' and press **ENTER**.
2. The Route Plan Page will appear for the duplicate route and the name for the new route will be the first and last waypoints in the route. If this name is identical to the original route name or any other saved route, then a number will be added to the end of the name to create a unique name.

Delete Route— allows you to remove the selected route from memory. The waypoints contained in the route will still appear in memory, but not as part of the route.

To delete a route from memory:

1. Highlight 'Delete Route' and press **ENTER**. A confirmation page will appear.
2. Press **ENTER** to delete the route or **QUIT** to cancel.

Delete All— allows you to remove all routes from memory. The waypoints contained in all stored routes will remain in memory, but not as part of any route.

To delete all routes from memory:

1. Highlight 'Delete All' and press **ENTER**. A confirmation page will appear.
2. Press **ENTER** to delete all routes or **QUIT** to cancel.

Route Editing

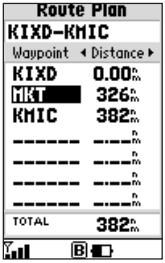
Once a route is added to memory, you can review and/or edit the route from the Route Plan Edit Page. The Route Plan Edit Page shows the sequence of waypoints for the selected route and provides additional options to insert waypoints, remove waypoints or perform trip/fuel planning functions.

'Copy' allows you to make a duplicate of a route before making editing changes.

'Delete' will remove the route from memory, but not the waypoints contained in the route.

GPS Receiver Reference

The Route Options allow for easy editing of an existing route.



To edit a route, highlight the route waypoint that is affected by the change. If inserting a waypoint, highlight the existing waypoint after the new waypoint.

To edit a route:

1. From the Route List, highlight the route you wish to edit and press **ENTER**. The Route Plan Edit Page appears for the selected route.
2. To change a route waypoint, highlight the waypoint you wish to change and press **ENTER**. Use the **ARROW** or phone keypad to enter the new waypoint and press **ENTER**.
3. To review the information for a route waypoint, highlight the desired waypoint and press **MENU**. A pop-up menu appears with additional options. Highlight 'Review Wpt' and press **ENTER** to display the Waypoint Definition Page for the selected waypoint.
4. To insert a waypoint in the route, highlight the waypoint that will immediately follow the new route waypoint and press **MENU**. A pop-up menu appears with additional options. Highlight 'Insert Wpt' and press **ENTER** to display a blank line for the new waypoint. Enter the name of the new waypoint and press **ENTER**.
5. To delete a waypoint from the route, highlight the waypoint you wish to delete and press **MENU**. Highlight 'Remove Wpt' on the pop-up menu and press **ENTER**.
6. To reverse the order of waypoints in the route highlight 'Invert' and press **ENTER**.
7. To begin navigating a route highlight 'Activate' and press **ENTER**.

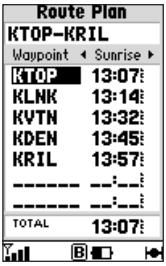
To edit a route from the map display:

1. Follow step 1 above to select the Route Plan Edit Page, press **MENU** and select 'Show Map'.
2. To insert a new waypoint move the pointer to the route leg in which the new waypoint will be placed press **ENTER**, move the pointer to the new waypoint location and press **ENTER** to insert the new waypoint.
3. To remove a waypoint, move the pointer to the waypoint, press **MENU** and select 'Remove Wpt'.

The Route Plan Edit page also displays trip planning information for each leg or the entire route. Available information includes desired course, time to waypoint, distance to waypoint, required fuel and sunrise/sunset times at the waypoint location.

To use the trip planning features:

1. To select the desired planning figure, highlight the desired route from the Route List and press **ENTER** to display the Route Plan Edit Page. One of ten available planning figures appears to the right of each route waypoint. Use the LEFT/RIGHT arrow keys on the keypad to select the desired item.
2. To enter planning information, Press **MENU** and select 'Setup Plan' from the options list. Enter the figures for speed, fuel flow and departure date. The sunrise and sunset times at your destination will also appear on this page.

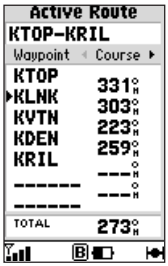


With a route displayed, use the LEFT/RIGHT keys on the keypad to select the trip planning features.

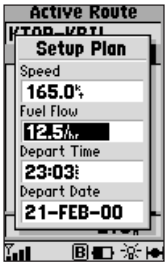
Active Route Page

The last page appearing in the main sequence (using the **PAGE** or **QUIT** keys) is the Active Route Page. Whenever you have activated a route, GOTO or TracBack, the Active Route Page will show each waypoint, by name, of the active route, along with the desired course, distance to waypoint, time to each waypoint, fuel requirements or sunrise/sunset times at each route waypoint. As you navigate the route, the information on the Active Route Page will automatically update to indicate the destination waypoint and any remaining interim waypoints.

From the Active Route Page, you can change the name of the active route (see page 112), review information on a route waypoint (see page 92) or bypass route waypoints and GOTO any waypoint in the route (see page 67). The user-selectable data field on the right side of the page also keeps you informed of current conditions. There are ten different data items available. See Section 7 for descriptions of navigation terms.



The Active Route Page shows the route currently being used for navigation guidance.



'Setup Plan' allows you to define planned speed, fuel flow and departure time in order to review trip planning figures.

'Re-evaluate' will reactivate the current route and select the closest leg. This feature is handy if you deviate around weather and later wish to return to the route.

To change the Active Route Page data, press the LEFT/RIGHT keys on the ARROW keypad.

Many features of the unit are menu driven. Each of the main pages has an options menu, allowing you to custom tailor the corresponding page to your preferences and/or select special features that specifically relate to that page.

To display the Active Route Page Options, press **MENU** with the Active Route Page displayed.

The following options are available:

Show Map— allows you to view the area surrounding the selected waypoint's position. While viewing the map display, you can also use the IN/OUT zoom keys to see additional details.

Setup Plan— displays a trip planning screen, allowing you to plan and review distance, fuel and time en route information for the selected route.

To use the trip planning features:

1. Highlight 'Setup Plan' and press **ENTER**. The trip planning screen is displayed, showing information for the entire route.
2. To review information for a single route leg, highlight the 'plan' field, press **ENTER** and select the desired route leg using the **ARROW** keypad. Press **ENTER** to confirm.
3. To enter a speed for your trip, highlight the speed field, press **ENTER** and use the **ARROW** keypad to select the desired speed. Press **ENTER** to confirm.
4. Enter an hourly fuel flow (if desired) in the fuel field, using the same steps as above.
5. Enter the date and time of departure (the current date/time will be offered automatically), using the same steps as above.

Re-evaluate— reactivates the current route and selects the route leg closest to your current position as the active leg. The active leg defines the current 'from' and 'to' waypoints.

Deactivate— cancels navigation of the route you are currently using.

Invert— reactivates the current route in reverse order and navigates from the end waypoint back to the beginning waypoint.

Insert Wpt— allows you to insert an additional waypoint into the route, directly in front of the currently highlighted waypoint in the route. If no route waypoint is highlighted, this option is not available. See page 114 for route editing information.

Remove Wpt— removes the currently highlighted waypoint from the route. If no waypoint is highlighted, this option is not available. See page 114 for route editing information.

Review Wpt— allows you to view the Waypoint Definition Page for the currently highlighted waypoint in the route. If no route waypoint is highlighted, this option is not available. See page 92 for waypoint review information.

Delete Route— allows you to remove the current route from memory. The waypoints contained in the route will still appear in memory, but not as part of the route. See page 113.

'Invert' option reverses the sequence of waypoints in the active route.

To delete the active route from memory, select the 'Delete Route' option.

Main Menu

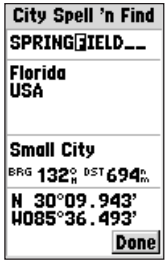
The Main Menu provides access to the waypoints, cities, routes, track logs, trip computer, vertical Nav, E6B, timers, emergency and setup features of the unit. The Main Menu can be accessed at any time using the **MENU** key.

To display the Main Menu from anywhere, press the MENU key twice.

The 10 menu options are divided into categories by function: waypoints/cities/routes/track log, trip computer/vertical navigation/E6B, timers, and emergency/system setup.

*Press **MENU** twice to display the Main Menu.*

GPS Receiver Reference



*Use the **ARROW** keypad to enter a name on the City Spell 'n Find Page*

*Highlight the Show Map menu selection and press **ENTER** to view the city location on the Point Map page*

To select an option from the Main Menu, highlight the desired item and press ENTER.

The following menu options are available:

Waypoints— allows you to review database information and create, edit or delete user waypoints. See pages 92 to 97.

Cities— provides a Spell 'n Find page that allows you to select cites in the database with state and country, bearing, distance and position information.

You can view the city location on the map, then save it as a waypoint or reference.

To use the Cities option:

1. Highlight 'Cities' and press **ENTER** to display the City Spell 'n Find page.
2. Use the **ARROW** keypad (phone keypad keys are not enabled in this application) to change the first character in the displayed city name to the first character of the name of the city you want to find. Move the cursor to the right, then scroll through the alphabet until you find the next letter of the city you want. Repeat until the name of the city appears. If the city you are looking for does not appear, it is not listed in the map database.
3. When using the Spell 'n Find feature many cities will appear that match the first few characters of the name field. When a city is found with a common name, use the **ARROW** keypad to scroll though the state and countries displayed in the field below the name.
4. When you have selected the city, press **ENTER** and the cursor will move to the Done field. Press **MENU** to select 'Show Map', 'Save As A Waypoint' or 'Show Reference'.

Routes— allows you to create, edit, activate or delete routes. See pages 111 to 117.

Track Log— lets you specify whether or not to record a track log (an electronic 'breadcrumb trail' recording of your path) and defines how it is recorded. This submenu page also provides an indicator of the percentage of track memory used and options to clear the track memory or start a TracBack route.

Track Log Settings:

Record Mode lets you select one of three track recording options:

'Off' – No track log will be recorded. Selecting 'Off' prevents use of the TracBack feature.

'Fill' – A track log will be recorded until the track memory is full.

'Wrap' (default) **–** A track log will be continuously recorded by wrapping through available memory and replacing the oldest track data with new data.

Interval defines the frequency with which the track plot is recorded. Three interval settings are available:

'Time' – Records track log based on a user-defined time interval.

'Resolution' (default) **–** Records track log based upon a user-defined variance from your course over ground. The resolution option is recommended for the most efficient use of memory and TracBack performance. The distance value (entered in the 'Interval Value' field) is the maximum left/right deviation allowed from the last defined ground track before recording a new point.

'Distance' – Records track log based on a user-defined distance between points.

Interval Value defines the distance or time interval used to record the track log.

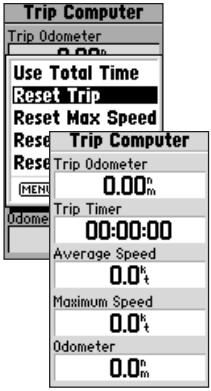
Clear Log allows you to clear the track log data currently stored in memory.

To delete the track log data, highlight 'Delete Track' and press ENTER.

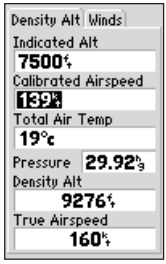
'Fill' will record track log data until memory is full, then provide a 'Track Memory Full' message.

'Time' records track log based on a user-defined time interval.

GPS Receiver Reference



The 'Reset Trip' option resets trip odometer, trip timer and average speed readouts.



Density altitude may be calculated by entering values for indicated altitude, calibrated airspeed, barometric pressure and total air temperature.

TracBack converts the track log data in memory into an inverted route and begins route navigation along the reversed route. See page 108 for TracBack information.

Trip Computer— provides readouts for average speed, maximum speed, odometer, trip odometer and trip timer. These readouts can be reset from the Trip Computer Options.

To reset trip computer readouts:

1. Press **MENU** with the Trip Computer Page displayed. An options list is displayed next.
2. To reset all trip computer readouts, highlight 'Reset All' and press **ENTER**.
3. To reset a single readout item, highlight the desired option and press **ENTER**.

Vertical Nav— allows you to define a vertical navigation profile used to descend (or climb) to a target altitude at a specified location. See page 87.

E6B— provides calculation features for density altitude, true airspeed and winds aloft. The winds aloft function will calculate wind direction, speed and the head/tail wind component.

To calculate density altitude and true airspeed:

1. Select the 'Density Altitude' file tab using the **ARROW** keypad.
2. Highlight the 'Indicated Altitude' field and press **ENTER**. Enter the altitude from your altimeter and press **ENTER**.
3. Highlight the 'Calibrated Airspeed' field and press **ENTER**. Enter the airspeed from your airspeed indicator and press **ENTER**.
4. Highlight the 'Pressure' field and press **ENTER**. Enter the current altimeter setting (barometric pressure) and press **ENTER**.

5. Highlight the 'Total Air Temperature' (TAT) field and press **ENTER**. Enter the TAT and press **ENTER**. TAT is the temperature of the air including the heating effect caused by speed, which is the temperature reading on the standard outside air temperature gauge used on most piston powered aircraft.
6. When done the 'Density Altitude' and 'True Airspeed' figures appear at the bottom of the page.

Timers — provides you with count up and count down timers to time events, the length of calls and the time the battery has been in use. Timers tabs are divided into call timers and system timers.

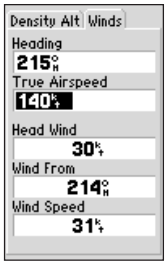
To use the Timers option Select 'Timers' on the main menu and press **ENTER**. Select call or system tabs by using the left/right arrow keys.

Calls — timers are used for recording the time of the last call, the elapsed time of all calls for a measured time period, and the total lifetime call usage. The unit can also be set to signal each time a minute of your current call has elapsed. See pages 33 and 51 for Call Timers information.

System — timers allow you to select either count up or count down for the User Timer. For a count down timer, you may specify the count down duration.

To select a user timer setting:

1. For a count down timer, highlight the 'User Timer' field in the left-hand column, press **ENTER** and enter the count duration using the **ARROW** keypad. Press **ENTER** to accept. Then with the right-hand column highlighted press **ENTER** to view the User Timer options. Select 'Down' and press **ENTER**.
2. For a count up timer, highlight the 'User Timer' field in the right-hand column, press **ENTER** and select 'Up'. Press **ENTER** to confirm.
3. To reset the timer or turn the timer off, highlight the 'User Timer' field in the right-hand column, press **ENTER** and select 'Reset' or 'Off' (as appropriate). Press **ENTER** to confirm.



The 'Winds' option allows you to calculate the current headwind or tailwind component.

The 'User Timer' option provides both count up and count down timers.

GPS Receiver Reference

'Battery Timer' provides a running count of how long the unit has been in operation with the current batteries. The timer automatically stops when using an external power source. The timer can be reset manually.

To select a battery timer setting:

1. Highlight the 'Battery Timer' field in the right-hand column and press **ENTER**.
2. Select 'Off', 'On' or 'Reset' and press **ENTER**.

Reset the battery timer when the battery is fully charged.

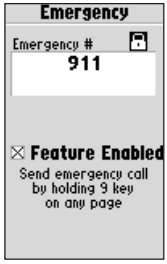
'Since Midnight' provides a running count of how long the unit has been in operation since midnight of the current day.

'Since Factory Reset' provides a running count of total operating time since the receiver was shipped from the factory.

Emergency— The NavTalk Pilot can be programmed to auto-dial an emergency number such as 911, a security agency, or other emergency assistance service. The unit will allow emergency auto-dialing even if the unit is "Locked". Press and hold the red "**9**" key for more than two seconds. If you want to cancel before the call is connected, press END.

To Program Emergency Calling:

1. Press the **MENU** key twice to access the Menu page.
2. Scroll down to Emergency and press **ENTER**. The Emergency programming page will appear.
3. Move the cursor to the Emergency number field and press **ENTER**. Use the phone keypad to enter the desired number. You may enter 911 or an emergency number of your choice, then press **ENTER** to record. If the padlock icon is closed you must enter the "Security Lock Code" to open before accessing the number field.
4. Cursor to the "Feature Enabled" box and press **ENTER** to enable Emergency Calling. If you want to secure the emergency number use your security code to lock the padlock icon before exiting the page.



Emergency Programming Page

5. To place an Emergency call, press and hold the red **9** key for two seconds. A "Pop-Up" window will announce "Emergency Activation in two Seconds" and place the call after two Seconds have elapsed. If you release the **9** key within two Seconds the call is canceled.

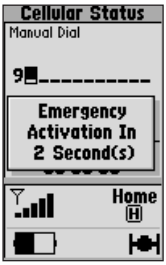
If you are programming a security assist number or number other than 911 you may want to test the Emergency Activation to insure that you have entered the correct number. You can activate this feature even when the phone is locked and you can also manually enter 911 while the unit is locked. The emergency number will not appear on the Last Dialed Number list to prevent inadvertent emergency calls.

Emergency calling will override scan options and use any available system. Therefore, the unit may roam for an emergency call, even though "HOME" is the only scan selected.

Setup— provides a group of pages to perform various system setup functions, including selection of position format, units of measure, setting various alarms, configuring the display and backlighting. Each available page is denoted by a 'file tab' that identifies the function of that page.

To select a Setup option, highlight the file tab for the desired function and press ENTER. The information is automatically displayed when the file tab is highlighted.

The following pages describe in more detail, the available settings for each Setup file tab item.



*Activation Countdown Message. Release the **9** key to cancel.*

The 'Setup' option uses file tabs for quick selection or review of unit settings.

GPS Receiver Reference

To display the desired information, highlight the appropriate file tab.

Once the desired information is selected, use the UP/ DOWN keys on the ***ARROW*** *keypad to select the desired item on the page.*

The file tab headings and Setup functions for the Setup menu pages are:

Setup Menu	
Airspace	Airspace Alarms for Class B, C, D, Restricted Areas, MOAs, Other, SUAs, Mode C Veils, Altitude Buffer
Nearest	Runway Surface Type and Minimum Runway Length for Nearest Airport
Phone	Answer Mode, Auto Redial, Calling Card PIN Number
Security	Phone Lock, Password, Call Blocking
NAM	Number Assignment Modules
Scan	Cellular Scanning
Sound	Ring, Mic Gain and Beeps
Time	Time and Date Format
System	Backlight Timeout, Ignition Power Off, Power Saver and Remote Command
Simulator	Mode, Speed, Track, Track Control and Altitude Deviation
Units	Position Format, Map Datum, Units of Measure for Distance and Speed, Heading, Altitude/Elevation
Alarms	Alarm Clock, Arrival Alarm, Off Course Alarm
I/O	Interface Format (NMEA, RCTM, GARMIN, Aviation)

Airspace— Settings are selectable as Off, On or Air On. When selecting Off, the airspace alerts are off all the time. When selecting On, the airspace alerts are on all the time. When selecting Air On, airspace alerts are only presented when the unit is in the aircraft cradle. Air On is set as the factory default setting or when choosing Restore Defaults after pressing the **MENU** key. This setting also affects whether the airspace warnings show up on the Nearest Airspace tab.

Class B is used to enable/disable alarms for Class B or CTA (ICAO control areas) airspace.

Class C is used to enable/disable alarms for Class C or TMA (ICAO terminal control areas) airspace.

Tower Zone provides an alarm within a 4.3 nm radius from airports with control towers that are not associated with Class B or Class C airspace. (Typically Class D.)

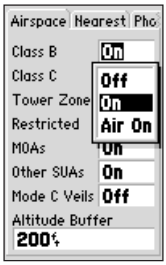
Restricted allows you to enable/disable alarms for restricted areas.

MOAs lets you enable/disable alarms for military operations areas.

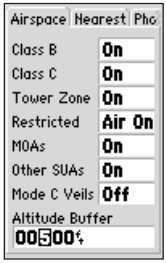
Other SUAs provides alarms for other special-use airspace categories including: training, caution, danger, warning and alert areas.

Mode C Veils provides an alarm within the outer 30 mile limit of an airspace as depicted on sectional and IFR enroute charts where Mode C altitude-reporting is required.

Altitude Buffer expands the vertical range of an airspace for a safety margin. For example, if the buffer is set at 500 feet, and you are more than 500 feet above or below an airspace, you will not be notified with an alert message. If you are less than 500 feet from the floor/ceiling limits of the airspace, you will be notified with an alert message. The default setting for the altitude buffer is 200 feet.



You may enable/disable the airspace alerts by the individual categories shown.



The altitude buffer provides an added margin of safety beyond the floor/ceiling limits of a given airspace.

Your projected course will take you inside special use airspace within the next ten minutes.

Due to the altitude buffer, if you fly above or below an airspace then descend or climb into the airspace, the 'Inside Airspace' message may be the only alert provided.

To turn an airspace alarm On or Off and enter an altitude buffer:

1. Highlight the desired airspace category or the 'Altitude Buffer' field and press **ENTER**.
2. For airspace alarms, select 'Off', 'On' or 'Air On' and press **ENTER**.
3. For the 'Altitude Buffer', enter the desired buffer distance and press **ENTER**.

Alarms for prohibited areas are always on. Disabling any of the above listed airspace categories only removes the alert. The boundaries will still appear on the map display.

The airspace alarms are designed to provide message alerts in several stages, depending on whether you are projected to enter the airspace or are just in close proximity. The alerts are:

- Airspace Ahead, Less Than 10 minutes — occurs if your projected course will take you inside an airspace within the next ten minutes.
- Airspace Near and Ahead — is displayed when you are within two nautical miles of an airspace and your current course will take you inside the airspace.
- Inside Airspace — occurs when you have entered the boundaries of the airspace.
- Near Airspace, Less Than 2 nm — appears when you are within two nautical miles of an airspace, but your current course will not take you inside the airspace.

Some airspace altitude limits may be charted in terms of altitude above ground level (AGL). If the actual lower limit of an airspace is charted in AGL, the NavTalk Pilot will alert you at any altitude below the upper limit. However, if the actual upper limit is also charted in AGL, the unit will provide the alert at all altitudes.

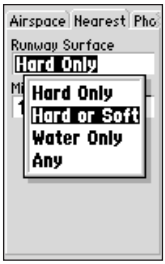
Nearest— Settings determine the types and runway length you want to see when displaying nearest airports on the Nearest Page.

Runway Surface determines which surface type or types will be included when displaying nearest airports. Available types include: 'Any', 'Hard Only' surface, 'Hard or Soft' surface and 'Water Only' facilities.

Min Runway Length determines the minimum allowable runway length when displaying nearest airports.

To select the nearest airport criteria:

1. Highlight the 'Runway Surface' or 'Min Runway Length' field and press **ENTER**.
2. For 'Runway Surface', select the desired type and press **ENTER**.
3. For 'Min Runway Length', enter the minimum allowable runway length and press **ENTER**.



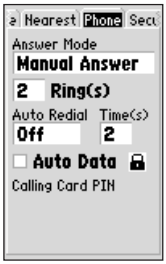
The Hard or Soft selection includes runways with and without pavement.

Phone— There are three Answer Mode options, Manual Answer, Auto Answer (Hands-Free, for headsets) and Auto Pager. Refer to Section 4 for the Phone tab menu selections.

Security— To prevent unauthorized use of your phone, you can set it to lock each time it is powered up and the lock password or security password must be entered before the phone can be used. Refer to Section 4 for the Security tab menu selections.

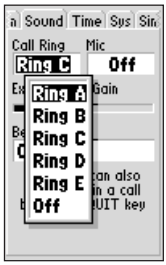
NAM— In addition to the preprogrammed AirCell NAM (Number Assignment Module) you can store two ground based cellular numbers in the NavTalk Pilot. Refer to Section 4 for the NAM tab menu selections.

Scan— The scanning feature allows you to access cellular service in the order and selection made on this page. Refer to Section 4 for the Scan tab menu selections.



Phone Tab Menu Page

GPS Receiver Reference



A distinctive ring sound helps distinguish your NavTalk Pilot from other phones.

The unit can be programmed to beep when messages appear, when keys are pressed or a combination of both or even none.

Sound— tab functions on your NavTalk Pilot allow you to set the following sound features:

Microphone may be set to Open or Mute during a call. Call Ring can be set to five different ring sounds, Ring A, Ring B, Ring C, Ring D, Ring E, or Off. Multiple ring sounds allow you to distinguish your unit ring from others. Ring A has a normal beat (1 second on, 2 seconds off, repeated) with only one tone. Ring B has a normal beat with two tones. Ring C has a chirping beat (1/4 second on, 1/4 second off, repeated) with two tones. Ring D and E have normal beats but use DTMF tones.

Beeps can be set for Message and Key, Message only, Key only, or Off for no Beeps.

When Call Ring is Off, a message with beeps indicates an incoming call. For total silence the 'Beeps' must also be set to Off.

The microphone setting cannot be changed unless there is a call in progress. The microphone can be muted during a call by holding the **QUIT** key. You can also press and hold the **QUIT** key while in a call to toggle between "Open" and "Mute".

The three volume settings can be set by pressing the ZOOM/VOLUME keys at the top of the display screen anytime (except on the map page where Zoom keys are a screen function).

If you are using the unit with the GARMIN Vehicular Adapter (Hands-Free) Kit, you can adjust the 'External Mic Gain' by higlighting that field and using the **ARROW** keypad Left/Right keys to raise or lower the gain as required. Refer to Section 4 for additional information on the sound tab menu selections.

Time— Format allows current time to be displayed using a 12- or 24- hour clock. This field is also used to select between local and UTC time readouts.

To select a time format:

1. Highlight the 'Time Format' field and press **ENTER** to display the available options.
2. Select 'Local 24hr' or 'Local 12hr' to display local time references. 'Local 12hr' will show current time using a traditional AM/PM format. Or,
3. Select 'UTC' to display universal time references (also referred to as 'Greenwich' or 'zulu' time).

Local Time Zone is used to define the current local time. UTC date and time are calculated directly from the satellites' signals and cannot be edited. If you prefer to use local time, you may designate an offset, either 'Behind UTC' or 'Ahead of UTC'. The offset is the difference, in hours and minutes, between local time and UTC time.

To enter the local time zone:

1. Highlight the 'Local Time Zone' field and press **ENTER**.
2. Select the desired offset amount (in hours and minutes) using the **ARROW** keypad and press **ENTER**.
3. Highlight the offset direction field (immediately to the right) and press **ENTER**.
4. Select 'Behind UTC' or 'Ahead of UTC' as appropriate and press **ENTER**.

Date and Time displays the current date and time based on the settings made above and information provided by the satellites received.

System Settings— Backlight lets you keep the screen/keypad backlighting on continuously ('always on') when selected, or enables the automatic shutoff to preserve battery life. Automatic shutoff times from 15 seconds to 4 minutes, since last key press, are available.

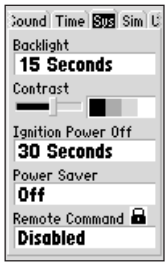
To set the backlight timeout:

1. Highlight the 'Backlight' field and press **ENTER**.

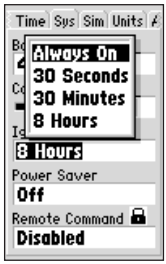
Enter an offset amount to adjust the time display to your local area. In the United States, all offset amounts will be 'Behind UTC'.

If you're unsure of the exact offset select a 'Local' time format, then enter offset values until you arrive at the correct local time.

GPS Receiver Reference



You can adjust the screen contrast from the Satellite Status Page or from the 'System' settings.



Ignition time determines how long the unit will operate on battery power

Remote Command is password protected to prevent unauthorized changing of the current setting

2. To keep backlighting on continuously, select 'Always On' and press **ENTER**, Or,
3. To set a timeout duration, select the desired time period and press **ENTER**.

Contrast— lets you adjust the screen for optimum viewing in all lighting conditions. Screen contrast is set using an on-screen bar scale and the LEFT/RIGHT keys on the **ARROW** keypad. Contrast can also be set from the Satellite Status Page, as described on pages 15 and 50.

Ignition— refers to external power while the unit is in a cradle operating off of vehicle or aircraft voltage. Automatic shutoff times range from 30 seconds to 8 hours, plus 'always on'. The user defined setting determines how long the unit will operate on the battery after power is removed. As the time is counting down, the unit will display a page announcing that the unit is going to turn itself off. This page will count down from 20 seconds.

To set the Ignition timeout:

1. Highlight the 'Ignition' field and press **ENTER.**
2. To keep the unit on continuously, select 'Always On' and press **ENTER,** Or...
3. To set a timeout duration, select the desired time period and press **ENTER**.

Power Saver— means that the GPS will operate on a reduced power cycle, thereby lessening internal processing activity. During periods of high dynamics, such as turning or acceleration, the GPS reverts to normal operation for those periods.

Remote Command— is a feature that allows your unit to be remotely queried by another NavTalk Pilot or another DTMF capable device (i.e a PC Modem) giving your current location. When switched to "Disabled" the unit will NOT respond to any command issued by another unit or modem according to the privacy that you desire. When "Enabled" the unit will respond as needed to any remote commands transferring your location to the request.

Regardless of the switch selection, the unit will openly communicate commands that are initiated by the user (i.e. location send or location query of another NavTalk Pilot). This can only take place during an "Active" cellular call.

Remote Command is password protected to prevent unauthorized changing of the current setting and therefore must be unlocked before a change is made. To unlock, move the cursor to the secure data icon and press **ENTER**. Use the keypad to enter the Security Password. Once the Remote Command is unlocked move the cursor over this field and press **ENTER**. Select either 'Disabled' or 'Enabled'.

Simulator— mode lets you turn the built-in simulator on or off. It is designed to provide detailed mapping information during a simulated trip. Refer to the simulator tour in Section 5.

To enable/disable the built-in simulator:

1. Highlight the 'Mode' field and press **ENTER**.
2. Select 'Simulator Off' or 'Simulator On' (as desired) and press **ENTER**.

Speed— lets you select a simulated speed when the simulator is enabled.

Track Control— allows the built-in simulator to automatically align track heading to the desired course (when using a GOTO or route), or it allows you to manually adjust the track heading, as desired.

Track— allows you to manually enter a track heading. This setting is only available when Track Control is set to 'User Track'.

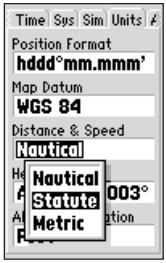
Altitude— allows you to specify a user-defined altitude for your simulated position.

To select a simulator setting:

1. For track control, highlight the 'Track Control' field and press **ENTER**. Select 'Auto Track' or 'User Track' and press **ENTER**.

'Simulator' allows you to configure the built-in simulator feature.

The 'Track Control' setting allows the simulator to automatically "line up" on the correct bearing to a destination waypoint.



Select nautical, statute or metric units of measure from the 'Units' settings.

The 'User Map' option allows you to define the magnetic variation for your area. 'Auto MV' is the preferred setting in most cases.

2. For simulated speed, user track, or altitude, highlight the desired field and press **ENTER**. Enter the desired value using the **ARROW** keypad and press **ENTER** when finished.

Units— settings allows you to define the magnetic variation for your area, select desired units of measure and select the heading reference.

Position Format— is used to change the coordinate system in which a given position reading is displayed. The default format is latitude and longitude in degrees and decimal minutes (hddd°mm.mmm'). The following additional formats are available:

hddd.ddddd — latitude/longitude in decimal degrees

hddd°mm.mmm' — latitude/longitude in degrees, and decimal minutes

hddd°mm'ss.s"— latitude/longitude in degrees, minutes, and decimal seconds

Maidenhead — APRS use, tracking systems

UTM/UPS — Universal Transverse Mercator / Universal Polar Stereographic grids

User UTM Grid — User defined Universal Transverse Mercator grid

WARNING: *If 'User MV' is selected, you must periodically update the magnetic variation as your position changes. Using this setting, the NavTalk Pilot will not automatically calculate and update the magnetic variation at your present position. Failure to update this setting may result in substantial differences between the information displayed on your unit and external references, such as a magnetic compass.*

Distance & Speed— lets you select the desired units of measure for distance and speed readouts in 'Nautical', 'Statute' or 'Metric' terms.

Heading— lets you select the reference used in calculating heading information. You can select from 'Auto MV', 'True', 'Grid' and 'User MV'. 'Auto MV' provides magnetic north heading references which are automatically determined from your current position. 'True' provides headings based upon a true north reference.

Grid— provides headings based on a grid north reference and is used in conjunction with the grid position formats.

User MV— allows you to specify the magnetic variation at your current position and provides magnetic north heading references based upon the variation you enter.

Altitude— lets you select altitude readouts in 'Feet' or 'Meters'.

Alarms— Clock Alarm uses the internal clock to provide an 'Alarm Clock' message at the time you set. The unit must be powered on when the alarm time is reached or the message will not occur.

To enable/disable the alarm clock:

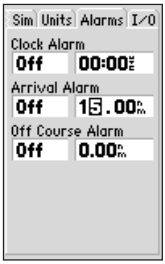
1. Highlight the 'Clock Alarm' field and press **ENTER**.
2. Select 'On' or 'Off' (as desired) and press **ENTER**.
3. If enabling the alarm, highlight the time field (to the immediate right) and press **ENTER**. Enter the alarm time using the **ARROW** keypad and press **ENTER**.

Arrival Alarm provides an alarm message once you've come within a set distance from your destination waypoint. As you approach the destination waypoint, an 'Arrival at ____' message occurs when you are within the alarm distance you entered.

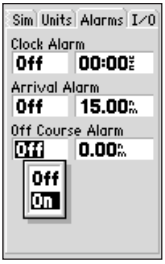
Off Course Alarm provides an alarm message ('Off Course Alarm') when you deviate off course beyond the specified limits.

To set the arrival and/or off course alarms:

1. Highlight the 'Arrival Alarm' or 'Off Course Alarm' field and press **ENTER**.



An 'Approaching' message automatically appears one minute before reaching the destination waypoint. The arrival alarm allows you to set a distance-defined message.



The 'Off Course Alarm' provides an alert if you drift off course beyond the limits you have set.

GPS Receiver Reference

The 'GARMIN' option allows the data exchange with a PC or another unit. Use this setting to perform database updates.

When transferring data to/from another unit, select the type of data and whether to 'request' it from or 'send' it to the other unit.

2. Select 'On' or 'Off' (as desired) and press **ENTER**.
3. If enabling the alarm, highlight the alarm distance field to the immediate right and press **ENTER**. Enter the alarm distance using the **ARROW** keypad and press **ENTER**.

I/O— Interface Settings lets you control the input/output format used when connecting your unit to external NMEA devices, a DGPS beacon receiver, or a personal computer, etc. Five format settings are available:

Aviation In — allows the NavTalk Pilot to communicate with a Garmin panel-mounted GPS. Flight plans (or GOTO destinations) selected on the panel-mounted GPS will also appear on the NavTalk Pilot.

GARMIN — the proprietary format used to exchange waypoint, route, track log data with a PC or with another NavTalk Pilot.

NMEA — supports the input/output of standard NMEA 0183 version 2.0 data.

None — provides no interfacing capabilities.

RTCM/NMEA — allows Differential GPS (DGPS) input using a standard RTCM format and also provides NMEA 0183 version 2.0 output.

RTCM In — allows DGPS input using a standard RTCM format, without any output capabilities.

RTCM Text — allows DGPS input using a standard RTCM format and also provides simple text (ASCII) output containing position, velocity, and time data in fixed width fields.

Text Out — supports simple text (ASCII) output containing position, velocity, and time data in fixed width fields (not delimited).

To select an input/output format:

1. Highlight the 'Format' field and press **ENTER**.
2. Select the desired setting and press **ENTER**.
3. If the 'GARMIN' format is selected, highlight the 'Transfer Mode' field and press **ENTER**. Select the desired setting and press **ENTER**. The 'Transfer Mode' field allows you to specify what information to request or send to a second unit. The 'Host' setting lets you control all data transfer functions from the second unit or from a PC.
4. If an 'RTCM' format is selected, additional fields are provided to control a GARMIN GBR 21 Beacon Receiver directly from your unit. You can enter the beacon frequency and bit rate and the information will be used to tune the beacon receiver.

This page intentionally left blank.

Appendices

Section 7 - Table of Contents

Accessories

Trickle Charger

Carry Lanyard

Battery Pack

Carry Holster

Charging Stand

Standard Accessories (Provided with the NavTalk Pilot)

AC Trickle Battery Charger....Part No. 010-10178-00
Recharges the Battery Pack and provides electrical power to the Navtalk Pilot. Refer to Page 10 for installation instructions.

Carry Lanyard.....Part No. 013-00005-00
Provides a convenient method for carrying the Navtalk Pilot. Attaches to slot in the top of the unit.

Nickel-Metal Hydride Battery Pack.....
..... Part No. 010-10169-00
Provides extended power suply life, faster recharging time and wider range of operating temperatures for the NavTalk Pilot.

Quick Guide.....Part No. 190-00189-01
Provides quick access to basic operation of the NavTalk Pilot. *(Not shown)*

Owner's Manual and Reference Guide.....
..... Part No. 190-00189-00
A comprehensive guide to unit operation and feature programming. *(This manual)*

Aircraft Provisions Kit.....Part No. 010-00220-00
Navtalk Pilot aircraft adaper kit includes installation hardware, cradle, adapter box, wiring harness, and installation instructions. *(Not shown)*

Optional Accessories (Not provided with the NavTalk Pilot)

Leather Carrying Case.....Part No. 010-10220-00
Protects the NavTalk Pilot while allowing full operation. Provided with waist band/ belt clip. *(Not shown)*

Nylon Carry Holster.....Part No. 010-10221-00
Rugged nylon holster with integral belt loop.

Desktop Rapid Charging Stand.....
.....Part No. 010-10147-00
Allows quick recharging of the NavTalk Pilot battery packs and for desktop operation of the unit. Front compartment charges the battery pack while in the NavTalk Pilot, the rear compartment charges a spare battery pack or the battery pack when removed from the unit.

Optional Accessories (continued)

Vehicle Mounting Cradle.....Part No. 010-10179-00
Provides secure mounting for in-vehicle use.

Cigarette Lighter Power Adapter.....Part No. 010-10198-00
Provides DC power for vehicular operation of the NavTalk Pilot.

Vehicular Adapter Kit.....Part No. 010-10148-00
Allows hands-free operation while in a vehicle. Includes remote microphone, speaker, mounting cradle, installation hardware, and adaper box.

PC Kit with Data Cable.....Part No. 010-10187-00
Allows down and up-loading of GPS data.

Remote GPS Antenna.....Part No. 010-10052-05
GA27C allows improved signal by way of externally mounted antenna. Can be used only with the vehicle adapter kit above.

Remote Cellular Antenna.....Part No. 010-10243-01
Glass mount cellular antenna for vehicle mounting. Can be used only with the vehicle adapter kit above. *(Not shown)*

Remote Cellular Antenna.....Part No. 010-10243-00
Magnetic mount cellular antenna for vehicle mounting. Can be used only with the vehicle adapter kit above. *(Not shown)*

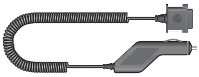
Replacement NavTalk Pilot Antenna.....Part No. 700-00007-00
Replacement for a lost or damaged cellular antenna that is supplied with the NavTalk Pilot. *(Not shown)*.

AirCell Antenna Kit.....Part No. 010-10278-00
Includes AirCell antenna and installation instructions

CAUTION: GARMIN Accessories have been designed and tested specifically for use with GARMIN products. Accessories offered for sale by other manufacturers have not necessarily been tested or approved by GARMIN for use with GARMIN Products. Use of such accessories might cause damage to your GARMIN Product and void the terms of the warranty. Using GARMIN Accessories with other manufacturer's products is not recommended for the same reasons.

Accessories

Vehicle Mounting Cradle



Cigarette Lighter Power Adapter

Vehicle Adapter "Hands-Free" Kit

PC Kit with Data Cable

Remote GA 27C GPS Antenna

AirCell Antenna

Specifications

Physical

Case:	Fully-gasketed, high-impact plastic alloy, waterproof to IPX7 standards
Size:	7.1"H x 2.25"W x 1.35"D (18 x 5.7 x 3.5 cm)
Weight:	Approx. 13.3 ounces (377g) w/battery pack
Display:	2.2 in. H x 1.5 in. W (5.6 x 3.9 cm) high contrast LED backlit FTN
Operating Temperature Range:	-22° to +140°F (-30° to +60°C) (operating)
Storage Temperature Range:	-40° to +185° F (-40° to +85° C)
Battery Pack Temp. Range:	-4° to +122° F (-20° to + 50° C)
Memory Back Up:	Internal Lithium Battery, Functional Life=10 years

Performance

Phone:	Customized AMPS Cellular RF Transceiver
Frequency Range:	824.04-848.97 MHz Transmit, 869.04-893.97 MHz Receiver
Channel Spacing:	30 kHz
Frequency Stability:	+/- 2.5 ppm
Mobile Station Power Class:	111
GPS Receiver:	Differential-ready 12 Parallel Channel
Acquisition time:	Approx. 15 seconds (warm start) Approx. 45 seconds (EZinit/cold start) Approx. 5 minutes (AutoLocate®)
Update Rate:	1/second, continuous
Position Accuracy:	1-5 meters (3-15 ft) with DGPS corrections[1] 15 meters (49 ft) RMS[2]
Velocity Accuracy:	0.1 knot RMS steady state
Dynamics:	Performs to specifications to 6 g's
Interfaces:	NMEA 0183, RTCM 104 (for DGPS corrections) and RS-232 for PC interface
Antenna:	Built-in. Remote external antenna optional

Power

Power Source:	Rechargeable NiMH Battery Pack
Battery Life:	Talk Time: 160 Minutes Standby (GPS and Cellular Mode): 12/14 Hours[3] Standby (Cellular Mode): 26 Hours

Specifications subject to change without notice.

[1] With optional GARMIN Differential Beacon Receiver Input (such as GARMIN GBR 21).

[2] Subject to accuracy degradation to 100m 2DRMS under the U.S. DOD-imposed Selective Availability program.

[3] With GPS Power Saver feature enabled.

Cellular Phone Dial-String Codes

C - Calling card PIN, insert where PIN should be used as a DTMF string, the user enters PIN from the Phone Setup page.

D - DTMF Tones, e.g. D728987 plays the DTMF tones for 728987 when in a call.

L - Link telephone number, stops and moves to the PhoneBook page, highlight a number and press **SEND**, the number will be sent as a DTMF string.

P - Pause in dial string 5 seconds per "P" character entered.

Q - Query Position, queries other phone for position, also queries another phone for position from the Dialing Page by selecting Query Location option. This feature is active only during a call.

S - Stop dialing until **SEND** key is pressed.

T - Transmit GPS Position via DTMF tones, also transmit position while in a call by holding **SEND** for two seconds, also transmits position from the Dialing Page by selecting the Send Location option. This feature is active only during a call.

 # - Provides a DTMF tone for automated phone services when entered at the appropriate point in a dial string.

*** -** Provides a DTMF tone for automated phone services when entered at the appropriate point in a dial string.

Messages

The NavTalk Pilot uses an on-screen message indicator to alert you to important information. Whenever a "Message" appears, press **ENTER** to acknowledge the message and return to the previous page you were viewing. Messages are for system status, waypoint/route editing, battery condition, incoming call, etc. For your safety, pay careful attention to all messages. Note: Certain messages indicate that you must return the NavTalk Pilot to your GARMIN dealer for service or repair. Charges for repairs are subject to terms stated in the GARMIN Limited Warranty on page 160.

Airspace Ahead, Less Than 10 minutes— Your projected course and current altitude will place you within an airspace in less than 10 minutes, based on your current track and speed.

Airspace Near and Ahead— Your present position is within 2 NM of an airspace, and you are projected to enter the airspace based on your current track, speed and altitude.

Alarm Clock— The alarm clock time that was set from the Alarms submenu has been reached.

Almanac data complete— The almanac data for all satellites have been collected.

Approaching— You are one minute away from reaching a destination waypoint.

Approaching Target Altitude— The current altitude is within 1000 feet of the final Vertical Nav target altitude.

Approaching VNav Profile— You are within one minute of reaching the initial Vertical Nav descent point.

Arrival At— You have reached your destination waypoint.

Battery Power Low— The battery pack requires recharging.

Call Answered— an incoming call has been acknowledged and answered.

Call Blocked— The Call Blocking feature is enabled.

Call - Press Send— To answer an incoming call, press the send key.

Can't Navigate Locked Route— You have attempted to navigate a route with a locked waypoint. A waypoint can be 'locked' when the database is updated if the waypoint does not exist in the new database.

Messages

Cellular Needs Alignment— Service to your unit is required. Contact GARMIN Product Support.

Data Transfer Complete— The unit has finished uploading or downloading information to the connected device.

Degraded Accuracy— The NavTalk Pilot's GPS accuracy has degraded beyond 500 meters due to poor satellite geometry or data quality. Check other navigational sources to verify the position indicated.

ESN Not Available— Your cellular electronic serial number is missing. Contact your authorized GARMIN dealer.

Ignition Power Off— Power to the Vehicular Adapter has been turned off when the ignition switch was turned off. The unit will switch to a charging mode and/or turn off automatically when timed out as set in the 'System" Page.

Inside Airspace— Your aircraft has entered the boundaries of special-use or controlled airspace.

Leg not Smoothed— The upcoming route leg is too short for smooth waypoint transitions.

Location Transfer Complete— Your GPS location DTMF signal has been received and recorded.

Location Transfer Failed— Your GPS location DTMF signal tone was not received. NavTalk Pilot sends 5 times before this message appears.

Maintenance Mode— The cellular system is conducting maintenance or running a test on your phone.

Memory Battery Power Low— The battery that sustains the user memory is low and should be replaced by an authorized service center as soon as possible. Failure to do so may result in loss of stored data, including all user waypoints and routes.

Name Already Exits— You have already entered the same name in the database.

Near Airspace, Less Than 2 nm— Your position is within 2 nautical miles of an airspace and your current course will not take you inside.

Need Altitude for 2D Nav— The NavTalk Pilot needs altitude input in order to start or continue 2D navigation.

Messages

Need to Select Init Method— You must select an initialization method so the unit can locate satellites and obtain a GPS position fix.

New Missed Call— An unanswered call was received and stored on the Missed Calls List.

No Differential GPS Position— Not enough data is available to compute a DGPS position.

No Service— You are out of your phone service cell or there is interference blocking the cell signal, phone mode turned off or unit is scanning.

Off Course Alarm— You are left or right of course, beyond the limits set on the Alarms submenu

Oscillator Needs Adjustment— The NavTalk Pilot has detected excessive drift in its internal crystal oscillator which may result in longer acquisition time. The unit should be taken to an authorized GARMIN dealer.

PhoneBook Memory Full— There is no more space to enter new names in the PhoneBook.

Poor GPS Coverage— The NavTalk Pilot cannot acquire the necessary number of satellites to compute a position. Try another location with a clearer view of the sky.

Power Down and Re-init— The NavTalk Pilot cannot calculate a position due to abnormal satellite conditions.Turn power off and use other means to verify the last position shown. Try the unit again later, possibly in a different location.

RAM Failed— The NavTalk Pilot has detected a failure in its internal memory. If the message persists, the unit is unusable and should be taken to an authorized GARMIN dealer.

Received Invalid Waypoint— A waypoint was received during upload transfer that has an invalid identifier.

GPS Receiver Failed— A failure in receiver hardware has been detected. If this message persists, do not use the unit. Take it to an authorized GARMIN dealer.

ROM Failed— The permanent memory has failed and the unit is not operable. Take it to an authorized GARMIN dealer.

Route Already Exists— You have attempted to name a route with the same name currently in use with an existing route. Enter a different name for the route.

Route Full— You have attempted to add more than 30 waypoints to a route.

Route Memory Full— Route memory is full and no additional routes can be added from another GPS receiver or uploaded from a PC.

Route Waypoint Deleted— The waypoint being deleted was part of a route. The deleted waypoint is removed from waypoint memory and the route.

Route Waypoint Locked— A route waypoint was locked when the database was updated, since the waypoint does not exist in the new database.

Route Waypoint Moved— The waypoint was moved when waypoint data was added during a database update, from another NavTalk Pilot or uploaded from a PC.

Searching the Sky— The NavTalk Pilot is searching the sky for almanac data or the GPS receiver is in Autolocate mode.

Service Unit Soon— The NavTalk Pilot may require service or repair. Contact GARMIN Product Support.

Steep Turn Ahead— This message appears approximately one minute prior to a turn that requires a bank angle in excess of 25 degrees in order to stay on course.

Stored Data Lost— All PhoneBook Entries, phone lists, waypoints, routes, time, and almanac data have been lost due to battery failure, or the receiver's memory has been cleared. If this condition persists contact your authorized GARMIN dealer.

Timer Expired— The countdown user timer has expired.

Track Log Already Exists— The name selected for the track log is identical to another track log already stored in memory.

Track Memory Full— You have used all track log points in the GPS receiver which holds approximately 1900 points in the active track log. Delete unwanted track points to make room for new entries.

Transferring Location...— The NavTalk Pilot is sending or receiving a GPS location to or from another unit.

Waypoint Already Exists— The name you are entering already exists in the GPS receiver memory.

Waypoint Memory Full— You cannot enter additional waypoint information until old waypoints are deleted.

Appendix E

Maintenance

The NavTalk Pilot is a state-of-the-art device and should receive proper care. To receive the most benefit from your unit and extended product life, please follow these recommended procedures for care and maintenance.

Do not store the NavTalk Pilot in hot areas, such as a closed automobile. High temperatures can shorten the life of electronic components, damage the battery pack and cause malfunction of the unit. If storing in your car for extended periods, place the unit under a seat and away from direct sunlight. In direct sunlight the unit may gain enough heat to be uncomfortable to hold against your head during use. Always allow the unit to cool down before use when exposed to temperatures in excess of 112 degrees F. The closed interior of your car or its trunk compartment can reach temperatures approaching 120 degrees F on hot, sunny days.

Clean only with a mild soap and water solution. Do not use harsh cleaners, solvents, or detergents as they may attack plastic surfaces, (in particular the lens of the LCD display).

Do not attempt to open the phone case. This will damage waterproofing seals. The NavTalk Pilot is designed for disassembly by trained technicians only.

Do not drop or otherwise impact the unit as rough handling may damage internal circuit boards and other electronic components.

Do not allow children to play with the unit or its accessories. Improper handling and function key sequencing may remove some of your stored data.

Do not use any other battery charger or external power supply than those provided for use with the NavTalk Pilot.

Troubleshooting Guide

Symptom	Probable Cause	Remedy
Unit does not turn On in Battery mode.	• Battery is exhausted	• Recharge battery
Unit will not operate in AirCell mode.	• Power is off to the adapter.	• Turn on power.
	• Adapter cord is not properly connected to the unit.	• Check cord connection.
"Poor GPS Coverage" message is constant.	• Location of the unit does not allow a clear view of the sky.	• Move the unit to a new location.
Ground Cellular signal is lost.	• You are located at the edge of a cell coverage area or you have left a cell coverage area.	• Check cell coverage area description.
	• Your signal is blocked by a structure on the ground (ground cellular).	• Move to another location.
AirCell signal is lost.	• You are located at the edge of or outside of a cell coverage area.*	• Check cell coverage description.
	• You cannot operate in the AirCell mode when your aircraft is on the ground and moving less than 20 mph.	• Do not attempt to operate in AirCell mode when on the ground.

NOTE: AirCell signals are broadcast up from the ground in a radiation pattern forming an inverted cone. At lower altitudes the amount of cell overlap is less than at higher altitudes, which in certain instances, may cause temporary loss of signal. Typical coverage begins at 5,000 ft. and extends past 20,000 ft.

Cellular Terminology

AC Adapter: An accessory that provides power for the NavTalk Pilot while charging the battery pack using a 120 VAC wall outlet.

Accessory Connector: A socket on the bottom of the NavTalk Pilot where you can attach accessories such as an AC adapter, trickle charger, DC adapter or a data cable.

Air time (Talk-Time): The amount of time you spend using a cellular system, between the time you place a call and the end of that call.

Antenna: The device on your NavTalk Pilot that sends and receives cellular signals.

Cellular Carrier: One of the two organizations in a geographic (cell) area that owns and operates a cellular system.

Cellular Service Provider: A company affiliated with a cellular carrier that provides cellular service to its customers.

Cellular Signal: The radio waves that carry information between your cellular phone and the cellular system.

Cellular System: The cellular equipment in a given geographic area that relays signals to and from individual cellular telephones and the landline telephone system.

Cigarette Lighter Adapter: An accessory device that allows you to power your phone and charge its batteries from a car's cigarette lighter. Often referred to as a DC Adapter.

DTMF Tones: See Dual Tone Multi-Frequency tones.

Default: A feature's original setting as pre-programmed at the factory. Defaulting to the original setting is the result of the product user's decision not to make any changes when options are offered.

Dual Tone Multi-Frequency tones: The (DTMF) tones that your phone transmits when a key on the keypad is pressed. They are used to access automated calling systems, such as voice mail, paging services, banking-by-phone, credit card access, etc.

Fringe Area: The outermost range of a cellular system where cellular signals are weak.

Function Keys: Keys on the keypad, that when pressed, initiate a specific function such as Speed Dial, Send. End, etc.

Cellular Terminology

Home System: The local cellular system where you obtained your cellular service.

Indicator: A symbol on your display screen that provides you with information about your cellular phone status.

Landline: The telephone system used for conventional office and home phones.

Lock: To prevent unauthorized access to the cellular phone.

Lock Password: A one to eight digit code used to unlock a locked phone.

Name Directory: An alphabetical list of the names and phone numbers you have stored in your phone's internal PhoneBook.

Nickel Metal Hydride Battery (NiMH): A battery technology used to power the unit.

PIN: See Personal Identification Number.

Personal Identification Number (PIN): A private numeric "password" that allows you to access some cellular systems or automated systems such as voice mail, while preventing unauthorized use.

Retry: The automated redialing of a phone number that did not answer or was busy when you first tried to place the call. The NavTalk Pilot can be programmed to attempt up to ten retries before stopping.

Roam: To use a cellular system outside of your home system, usually when you travel beyond the range of your home system.

SID: See System Identification.

Scratchpad: A memory feature that allows the user to enter phone numbers and other information for temporary storage and retrieval.

Scroll: To move forward or backward through a list or arrangement of fields on a display screen using the directional arrow keys on the arrow keypad.

Security Password: A one to eight digit number used to secure data setup features of the NavTalk Pilot.

Speed Dial: A rapid method for dialing a frequently used phone number by selecting the number from the speed dial list and pressing the **SEND** key.

Standby Time: The amount of time that your unit is left on to receive calls.

Cellular Terminology

Sub-menu: A secondary level of access for advanced feature programming and activation.

System Identification: A five-digit number that identifies your home cellular system.

System Mode: A setting that determines the system type that your cellular phone will access.

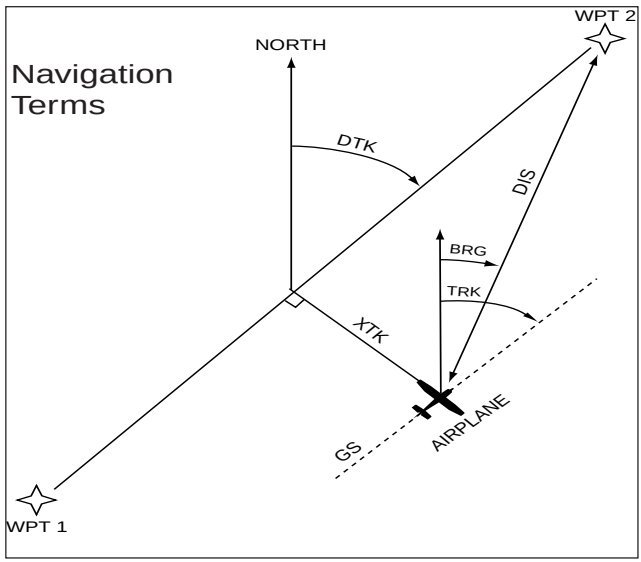
System Type: A designation that indicates one of two competing cellular carriers in a given geographical area. The non- wire carrier operates on the "A" block of cellular frequencies, and the wireline carrier operates on the "B" block of cellular frequencies.

Toggle: To switch from one of two options and back again.

Talk-time: The amount of time you spend talking on the phone.

Volume Keys: Also the GPS "Zoom" keys these two up/down arrow keys are located just above the LCD display and allows you to adjust the volume of the cellular phone, speaker, microphone and beeper.

Wireline: See System Type



Navigation Terminology

Altitude— Height above mean sea level (MSL).

Avg Speed— The average of all second-by-second speed readings since last reset.

Bearing (BRG)— The compass direction from your present position to a destination waypoint.

Course— The desired course between the active 'from' and 'to' waypoints.

Density Altitude— A measure of air density; standard altitude corrected for temperature and pressure.

Distance (Dist)— The 'great circle' distance from present position to a destination waypoint.

Dist to Dest— The 'great circle' distance from present position to a GOTO destination, or the final waypoint in a route.

Dist to Next— The 'great circle' distance from present position to a GOTO destination, or the next waypoint in a route.

ETA— Estimated Time of Arrival. The estimated time you will reach your destination waypoint, based on current speed and track.

ETA at Dest— The estimated time you will reach a GOTO destination, or the final waypoint in a route.

ETA at Next— The estimated time you will reach a GOTO destination, or the next waypoint in a route.

ETE— Estimated Time Enroute. The estimated time required to reach a destination or the next waypoint in a route.

Fuel— The fuel required to travel from present position to the indicated route waypoint.

Glide Ratio (GR)— The ratio of horizontal distance travelled to vertical distance travelled.

GR to Target— The glide ratio required to descend from present position and altitude to the target altitude at the location specified in the Vertical Nav settings.

Leg Dist— The distance between two route waypoints.

Navigation Terminology

Leg Fuel— The fuel required to travel from a route waypoint to the next waypoint (in sequence) in the route.

Leg Time— The time required to travel from a route waypoint to the next waypoint (in sequence) in the route.

Max Speed— The maximum second-by-second speed recorded since last reset.

Odometer— A running tally of distance traveled, based upon the distance between second-by-second position readings. Both the 'Odometer' and 'Trip Odometer' are resettable, however the 'Odometer' is typically used to keep track of total distance covered, where the 'Trip Odometer' is used to keep track of shorter point-to-point distances.

Off Course— The distance you are off a desired course in either direction, left or right. Also referred to as 'cross-track error' or 'course error'.

Ref— Reference Waypoint. Used to create a new waypoint, by specifying a bearing and distance from an existing (reference) waypoint.

Speed— The current velocity at which you are travelling, relative to a ground position. Also referred to as 'ground speed'.

Time To— The estimated time required to reach a GOTO destination or the next waypoint in a route. Also referred to as 'estimated time enroute'.

Time to Dest— The estimated time enroute required to reach a GOTO destination or the final waypoint in a route.

Time to Next— The estimated time enroute required to reach a GOTO destination or the next waypoint in a route.

Time to VNv— Prior to reaching the initial descent point, 'Time to VNv' indicates the time it will take to reach the initial Vertical Nav descent point. After passing the initial descent point, 'Time to VNv' indicates the time to reach the target altitude at the point specified in the Vertical Nav settings.

To Course— The recommended direction to steer in order to reduce course error or stay on course. Provides the most efficient heading to get back to the desired course and proceed along your route.

Track— The direction of movement relative to a ground position. Also referred to as 'ground track'.

Navigation Terminology

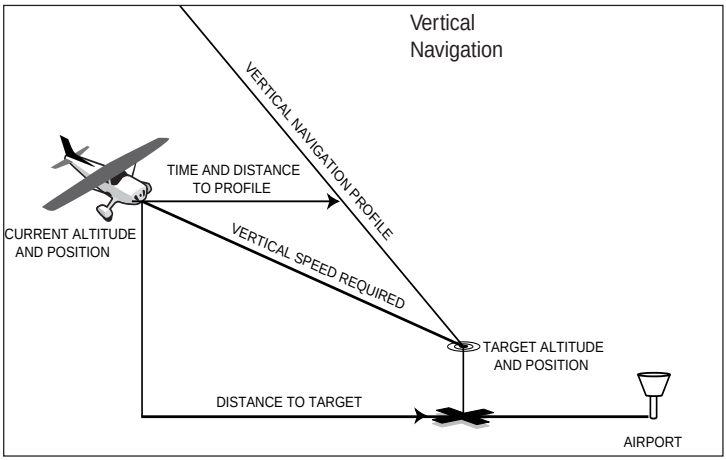
Trip Odometer— A running tally of distance traveled since last reset. Also see 'Odometer'.

True Airspeed— Indicated airspeed corrected for temperature and pressure.

Turn— The angle difference between the bearing to your destination and your current track. 'L' indicates you should turn left, 'R' indicates you should turn right. The degrees indicate the angle you are off course.

VMG— Velocity Made Good. The speed you are closing in on a destination along a desired course. Also referred to as the 'vector velocity' to your destination.

VS to Target— The vertical speed required to descend from current altitude and position to the target altitude at the point specified in the Vertical Nav settings.



Map Datums

The following map datums are available for the NavTalk Pilot. Menu Page abbreviations are listed first followed by the corresponding map datum name and area. The default map datum for the Navtalk Pilot is WGS 84.

Adindan	Adindan- Ethiopia, Mali, Senegal, Sudan
Afgooye	Afgooye- Somalia
AIN EL ABD '70	AIN EL ANBD 1970- Bahrain Island, Saudi Arabia
Anna 1 Ast '65	Anna 1 Astro '65- Cocos Isl.
ARC 1950	ARC 1950- Botswana, Lesotho, Malawi, Swaziland, Zaire, Zambia, Zimbabwe
ARC 1960	ARC 1960- Kenya, Tanzania
Ascnsn Isld '58	Ascension Island '58- Ascension Island
Astro B4 Sorol	Astro B4 Sorol Atoll- Tern Island
Astro Bcn "E"	Astro Beacon "E"- Iwo Jima
Astro Dos 71/4	Astro Dos 71/4- St. Helena
Astr Stn '52	Astronomic Stn '52- Marcus Island
Astrln Geod '66	Australian Geod '66- Australia, Tasmania Island
Astrln Geod '84	Australian Geod '84- Australia, Tasmania Island
Bellevue (IGN)	Efate and Erromango Islands
Bermuda 1957	Bermuda 1957- Bermuda Islands
Bogata Observ	Bogata Obsrvatry- Colombia
Campo Inchspe	Campo Inchauspe- Argentina
Canton Ast '66	Canton Astro 1966- Phoenix Islands
Cape	Cape- South Africa
Cape Canavrl	Cape Canaveral- Florida, Bahama Islands
Carthage	Carthage- Tunisia
CH-1903	CH 1903- Switzerland
Chatham 1971	Chatham 1971- Chatham Island (New Zealand)
Chua Astro	Chua Astro- Paraguay
Corrego Alegr	Corrego Algre-Brazil
Djakarta	Djakarta (Batavia)- Sumatra Island (Indonesia)
Dos 1968	Dos 1968- Gizo Island (New Georgia Islands)
Easter Isld 67	Easter Island 1967
European 1950	European 1950- Austria, Belgium, Denmark, Finland, France, Germany, Gibraltar, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland
European 1979	European 1979- Austria, Finland, Netherlands, Norway, Spain, Sweden, Switzerland
Finland Hayfrd	Finland Hayford- Finland
Gandajika Base	Gandajika Base- Republic of Maldives
Geod Datm '49	Geodetic Datum '49- New Zealand
Guam 1963	Guam 1963- Guam Island

Map Datums

Gux 1 Astro	Gux 1 Astro- Guadalcanal Island
Hjorsey 1955	Hjorsey 1955- Iceland
Hong Kong '63	Hong Kong '63- Hong Kong
Hu-Tzu-Shan	Hu-Tzu-Shan- Taiwan
Indian Bngldsh	Indian-Bangladesh, India, Nepal
Indian Thailand	Indian- Thailand, Vietnam
Indonesia '74	Indonesia 1974- Indonesia
Ireland 1965	Ireland 1965- Ireland
ISTS 073 Astro	ISTS 073 ASTRO '69- Diego Garcia
Johnston Island	Johnston Island Kandawala- Sri Lanka
Kerguelen Islnd	Kerguelen Island
Kertau 1948	Kertau 1948- West Malaysia, Singapore
L. C. 5 Astro	Cayman Brac Island
Liberia 1964	Liberia 1964- Liberia
Luzon Mindanao	Luzon- Mindanao Island
Luzon Philippine	Luzon- Philippines (excluding Mindanao Island)
Mahe 1971	Mahe 1971- Mahe Island
Marco Astro	Marco Astro- Salvage Island
Massawa	Massawa- Eritrea (Ethiopia)
Merchich	Merchich- Morocco
Midway Ast '61	Midway Astro '61- Midway
Minna	Minna- Nigeria
NAD27 Alaska	North American 1927- Alaska
NAD27 Bahamas	North American 1927- Bahamas (excluding San Salvador Island)
NAD27 Canada	North American 1927- Canada and Newfoundland
NAD27 Canal Zone	North Am. 1927- Canal Zone
NAD27 Caribbn	North American 1927- Caribbean (Barbados, Caicos Islands, Cuba, Dom. Rep., Grand Cayman, Jamaica, Leeward and Turks Islands)
NAD27 Central	North American 1927- Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)
NAD27 CONUS	North Am. 1927- Mean Value
NAD27 Cuba	North American 1927- Cuba
NAD27 Grnland	North American 1927- Greenland (Hayes Peninsula)
NAD27 Mexico	N. American 1927- Mexico
NAD27 San Sal	North American 1927- San Salvador Island
NAD83	North American 1983- Alaska, Canada, Central America, CONUS, Mexico
Nhrwn Masirah	Nahrwn- Masirah Island (Oman)
Nhrwn Saudi A	Nahrwn- Saudi Arabia
Nhrwn United A	Nahrwn- United Arab Emirates

Map Datums

Naparima BWI	Naparima BWI- Trinidad and Tobago
Obsrvtorio '66	Observatorio 1966- Corvo and Flores Islands (Azores)
Old Egyptian	Old Egyptian- Egypt
Old Hawaiian	Old Hawaiian- Mean Value
Oman	Oman- Oman
Ord Srvy GB	Old Survey Grt Britn- England, Isle of Man, Scotland, Shetland Isl., Wales
Pico De Las Nv	Canary Islands
Ptcairn Ast '67	Pitcairn Astro '67- Pitcairn Isl.
Prov S Am '56	Prov So Amricn '56- Bolivia, Chile,Colombia, Ecuador, Guyana, Peru, Venezuela
Prov S Chln '63	Prov So Chilean '63- S. Chile
Puerto Rico	Puerto Rico & Virgin Islands
Qatar National	Qatar National- Qatar
Qornoq	Qornoq- South Greenland
Reunion	Reunion- Mascarene Island
Rome 1940	Rome 1940- Sardinia Island
RT 90	Sweden
Santo (Dos)	Santo (Dos)- Espirito Santo Island
Sao Braz	Sao Braz- Sao Miguel, Santa Maria Islands (Azores)
Sapper Hill '43	Sapper Hill 1943- East Falkland Island
Schwarzeck	Schwarzeck- Namibia
Sth Amrcn '69	South American '69- Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Venezuela, Trinidad and Tobago
South Asia	South Asia- Singapore
SE Base	Southeast Base- Porto Santo and Madiera Islands
SW Base	Southwest Base- Faial, Graciosa, Pico, Sao Jorge and Terceira Islands (Azores)
Timbalai 1948	Timbalai 1948- Brunei and E. Malaysia (Sarawak and Sabah)
Tokyo	Tokyo- Japan, Korea, Okinawa
Tristan Ast '68	Tristan Astro 1968- Tristan da Cunha
Viti Levu 1916	Viti Levu 1916- Viti Levu/ Fiji Islands
Wake-Eniwetok	Wake-Eniwetok- Marshall Isl.
WGS 72	World Geodetic System 1972
WGS 84	World Geodetic System 1984
Zanderij	Zanderij-Surinam

Index

Index

Index

Limited Warranty

GARMIN Corporation warrants this product to be free from defects in materials and manufacture for one year from the date of purchase. GARMIN will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor. The customer is, however, responsible for any transportation costs. This warranty does not cover failures due to abuse, misuse, improper installation, accident or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL GARMIN BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

To obtain warranty service, call the GARMIN Product Support Department (1-800-800-1020) or (913-397-8200) for a returned merchandise tracking number. The unit should be securely packaged with the tracking number clearly marked on the outside of the package and sent freight prepaid and insured to a GARMIN warranty service station. A copy of the original sales receipt is required as the proof of purchase for warranty repairs. GARMIN retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

Help us to better support you by completing our on-line registration today!
Have the serial number of your NavTalk Pilot handy and connect to our website (*www.garmin.com*). Look for the Product Registration link on the Home Page.

Why should you register your NavTalk Pilot unit?

- Notification of Product Updates
- Notification of New Products
- Lost or Stolen unit tracking

NOTE: If you have previously registered your GARMIN product purchase using a mail-in registration card, we invite you to re-register using our NEW on-line system. Many services provided by our new product registration system are now being automated and re-registering your purchase ensures you the best possible support from GARMIN.

GARMIN International, Inc.
1200 E 151st Street, Olathe, KS 66062 U.S.A.

GARMIN (Europe) Ltd.
Unit 5, The Quadrangle, Abbey Park Industrial Estate, Romsey, SO51, 9AQ U.K.

GARMIN (Asia) Corp.
No. 68, Jangshu 2nd Road, Shijr, Taipei County, Taiwan

www.garmin.com

Part Number 190-00189-00 Rev. A