

# **GTN 650/750 SERIES SW V4.10**

## **UPGRADE SUPPLEMENT**

The Pilot's Guides have been revised for SW Version 4.10. This supplement provides information regarding new features of software version 4.10 for GTN 6XX/7XX Series units.

- GTN 625/635/650 Pilot's Guide  
(Garmin P/N 190-01004-03) Rev E
- GTN 725/750 Pilot's Guide  
(Garmin P/N 190-01007-03) Rev E



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***NOTE: The combination of the following documents is equivalent to the Pilot's Guide revisions listed above:***

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- GTN 650/750 Series SW Version 4.10 Upgrade Supplement

and either

- GTN 625/635/650 Pilot's Guide  
(Garmin P/N 190-01004-03) Rev D

or

- GTN 725/750 Pilot's Guide  
(Garmin P/N 190-01007-03) Rev D

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This manual reflects the operation of System Software version 4.10, or later. Some differences in operation may be observed when comparing the information in this manual to later software versions.

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The initial section numbers reflect the sections in the GTN 7XX Pilot's Guide.  
The section numbers in parentheses reflect the sections in the GTN 6XX  
Pilot's Guide.

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## 15.4 (14.4) Trip Planning

The GTN 7XX allows the pilot to view desired track (DTK), distance (DIS), estimated time en route (ETE), en route safe altitude (ESA) and estimated time of arrival (ETA) information for a direct-to, point-to-point between two specified waypoints or for any programmed flight plan. This item also displays the sunrise/sunset times for your destination waypoint (for the selected departure date). All times are based on the time set in System-Setup. For trip planning inputs: departure time and date are manually entered, while ground speed can be provided by sensor data, if selected.

The trip statistics are calculated based on the selected starting and ending waypoints and the trip planning inputs.

In Flight Plan mode with a stored flight plan selected, and the entire flight plan (CUM) selected, the waypoints are the starting and ending waypoints of the selected flight plan.

In Flight Plan mode with a stored flight plan selected, and a specific leg selected, the waypoints are the endpoints of the selected leg.

In Point-To-Point mode these are manually selected waypoints (if there is an active flight plan, these default to the endpoints of the active leg).

Some of the calculated trip statistics are dashed when the selected leg of the active flight plan has already been flown.

- Desired Track (DTK) - DTK is shown as nnn° and is the desired track between the selected waypoints. It is dashed unless only a single leg is selected.
- Distance (DIS) - The distance is shown in tenths of units up to 99.9, and in whole units up to 9999.
- Estimated time en route (ETE) - ETE is shown as hours:minutes until less than an hour, then it is shown as minutes:seconds.
- Estimated time of arrival (ETA) - ETA is shown as hours:minutes and is the local time at the destination.
  - If in Point-To-Point mode then the ETA is the ETE added to the departure time.
  - If a flight plan other than the active flight plan is selected it shows the ETA by adding to the departure time all of the ETEs of the legs up

to and including the selected leg. If the entire flight plan is selected, then the ETA is calculated as if the last leg of the flight plan was selected.

- If the active flight plan is selected the ETA reflects the current position of the aircraft and the current leg being flown. The ETA is calculated by adding to the current time the ETEs of the current leg up to and including the selected leg. If the entire flight plan is selected, then the ETA is calculated as if the last leg of the flight plan was selected.
- En Route safe altitude (ESA) - The ESA is shown as nnnnnFT.
- Destination sunrise and sunset times - These times are shown as hours:minutes and are the local time at the destination.



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***NOTE:*** *The capability of using Sensor Data is available in SW Versions 2.00, 4.10, and later.*

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## 15.4.1 (14.4.1) Point-To-Point Mode

The Trip Planning Point-to-Point mode shows trip calculations between two selected points: either two waypoints from the database or from your present position to a selected waypoint.

1. While viewing the Utilities page, touch the **Trip Planning** key.
2. Touch the **Mode** key to toggle to Point-to-Point.
3. Touch the **P.POS** key to toggle between using your present position as the From waypoint when selected or a waypoint selected from the database when **P.POS** is deselected. If **P.POS** is selected, the Lat/Lon of the present position will be shown in the From position.

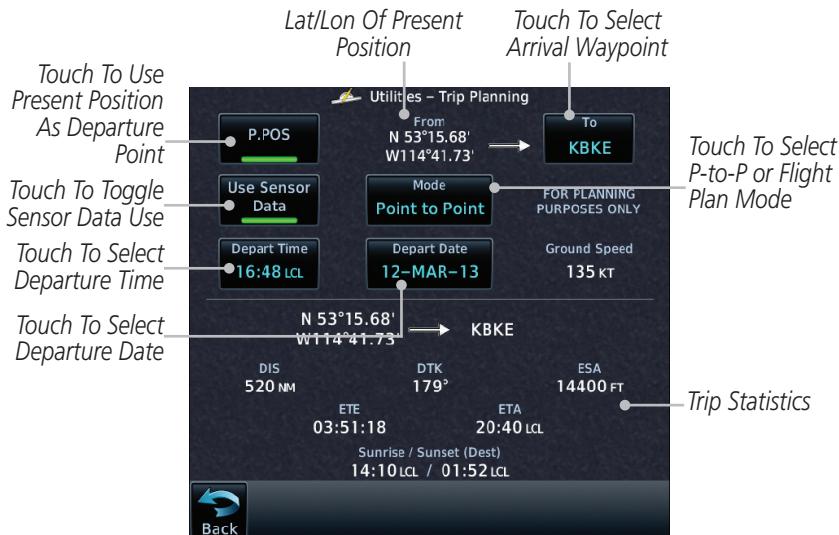


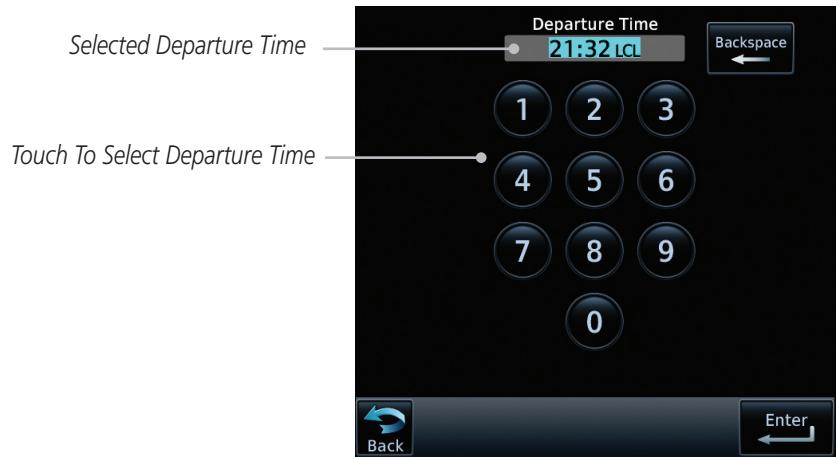
Figure 15-14 Utility Trip Planning Page (Point-To-Point Mode) - Sensor Data Used

4. If **P.POS** is not selected for the From point, touch the **From** key and then use the keypad to select a waypoint from the database and touch **Enter**.



**Figure 15-15 Selecting a From Waypoint**

5. Touch the **To** key and then use the keypad to select a waypoint from the database for the destination waypoint and touch **Enter**.
6. Touch the **Depart Time** key and then use the keypad to select the departure time (local time at From waypoint) and touch **Enter**.



**Figure 15-16 Selecting Departure Time**

7. Touch the **Depart Date** key and then the Departure Date page to select the departure year, month, and day and then touch **Enter**.

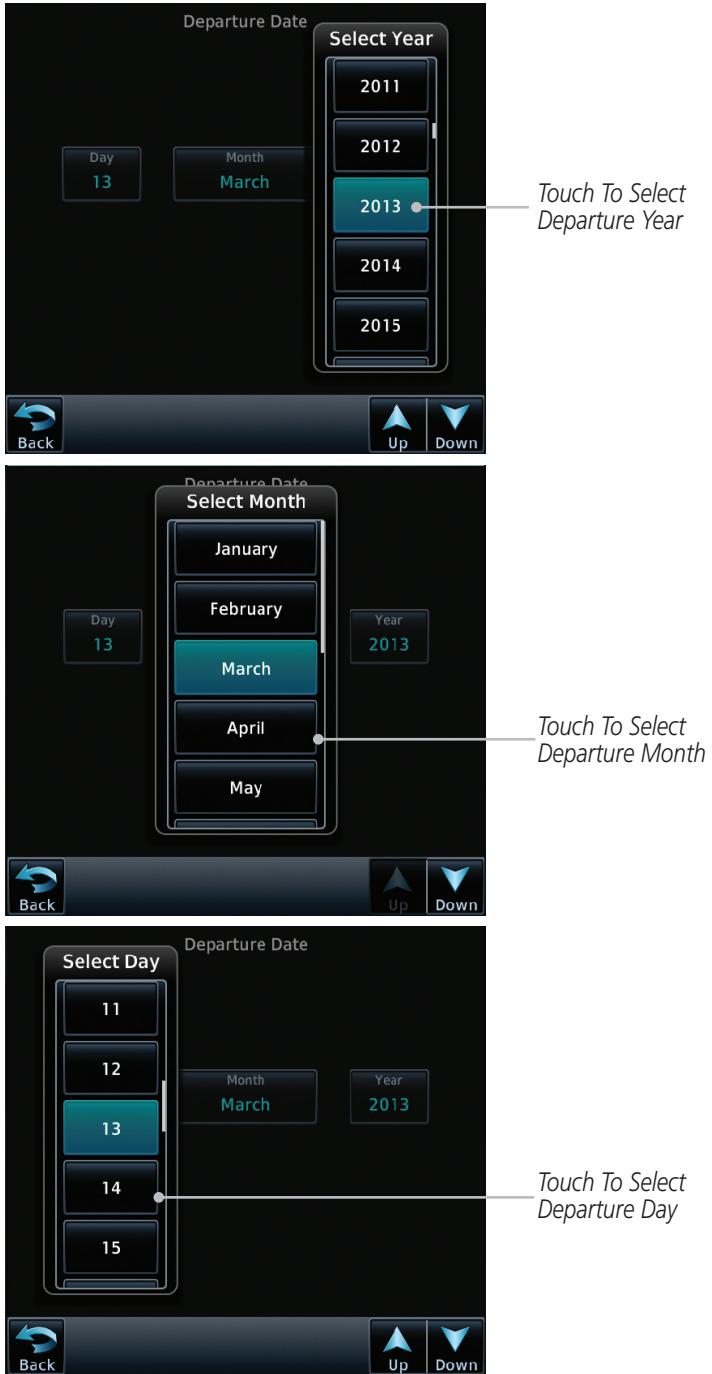


Figure 15-17 Selecting Departure Date

Ground Speed  
120 KT

8. Touch the **Ground Speed** key and then the keypad to select the average ground speed for the trip and touch **Enter**.

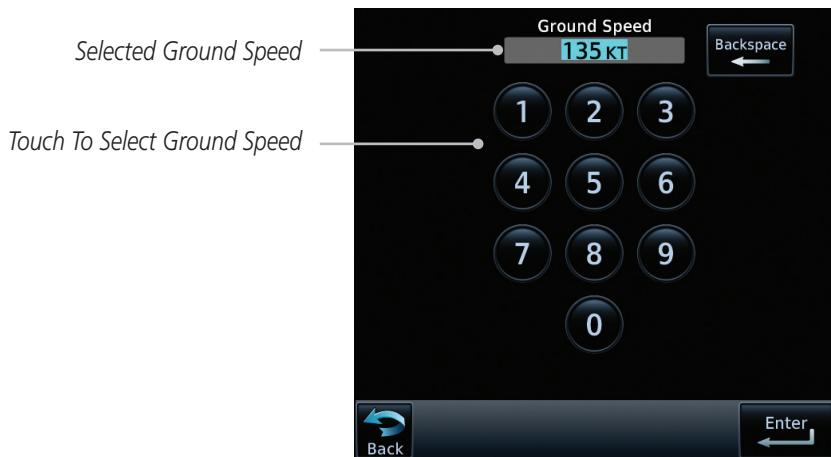


Figure 15-18 Selecting Expected Average Ground Speed

Compute Data

9. After completing the Trip Planning selections, the trip statistics will be shown in the lower half of the display. In the GTN 6XX, touch the **Compute Data** key to display the trip statistics.



Figure 15-19 Utility Trip Planning Page With Computed Data (Point-To-Point Mode)



Figure 15-20 Utility Trip Planning Page With Computed Data (Point-To-Point Mode) - Use Sensor Data Selected




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**NOTE:** When Local Time is selected in the Setup-Date/Time feature, Sunrise/Sunset calculations in the Trip Planning feature are based on the From waypoint time zone. For instance, a flight plan originating in the Pacific time zone and ending in the Central time zone would show Sunset/Sunrise times at the destination in Pacific time. This potential offset does not occur when UTC time is used.

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## 15.4.2 (14.4.2) Flight Plan Mode

The Trip Planning Flight Plan mode shows trip calculations between two legs of the flight plan or the cumulative flight plan.

1. Touch the **Mode** key to select Flight Plan mode, if required.

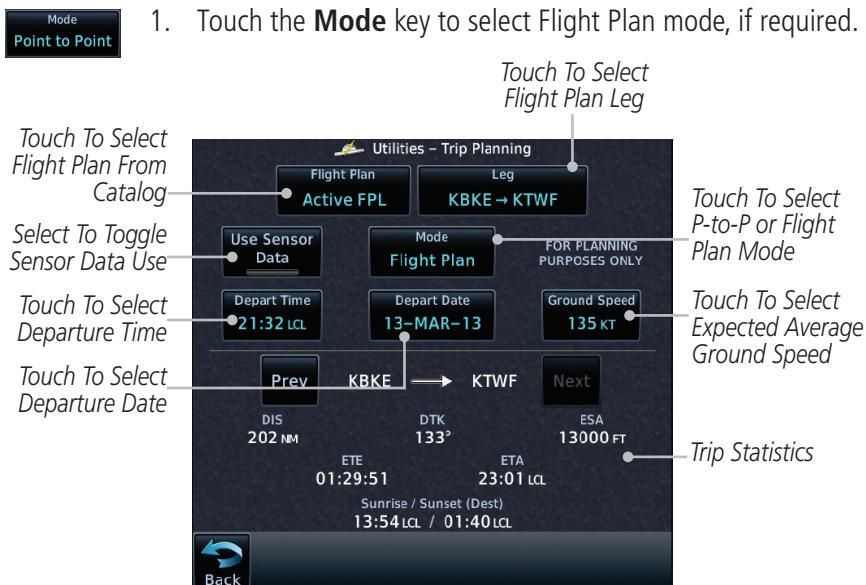


Figure 15-21 Utility Trip Planning Page (Flight Plan Mode)

2. Touch the **Flight Plan** key to select the flight plan.



Figure 15-22 Select Flight Plan

Leg  
KBKE → KTWF

3. Touch the **Leg** key to select the flight plan leg. If the "Cumulative" selection is chosen, statistics will relate to the entire flight plan.



Touch To Select Flight Plan Leg (Cumulative FPL Shown)

Figure 15-23 Select Flight Plan Leg

Depart Time  
21:36 LCL

Depart Date  
23-NOV-10

Ground Speed  
120 KT

4. Touch the **Depart Time** key and then use the keypad to select the departure time (local time at From waypoint) and touch **Enter**.
5. Touch the **Depart Date** key and then the Departure Date page to select the departure year, month, and day and then touch **Enter**.
6. Touch the **Ground Speed** key and then the keypad to select the average ground speed for the trip and touch **Enter**.

7. Statistics for the current flight plan leg are displayed in the lower half of the display. In the GTN 6XX, touch the **Compute Data** key to display the trip statistics.



Figure 15-24 Utility Trip Planning Page Computed Data View (Flight Plan Mode)



Figure 15-25 Utility Trip Planning Page Computed Data View (Flight Plan Mode) - Use Sensor Data Selected

8. Touch the **Next** key to view statistics for the next leg in the flight plan.

**Next**

## 15.5 (14.5) Fuel Planning

**Fuel Planning** — This item displays fuel conditions along the active direct-to or flight plan. You may manually enter fuel flow, ground speed (GS) and fuel on board figures for planning purposes. Fuel planning figures can be displayed not only for the currently active flight plan or direct-to, but also point-to-point between two specified waypoints and for any programmed flight plan.

Fuel on board and fuel flow may be manually entered in the unit start-up sequence and used to recalculate fuel on board as it is consumed. When fuel flow or fuel on board is manually entered, the figures are retained the next time you view the page (with fuel on board continuously recalculated).



**NOTE:** The capability of using Sensor Data is available in SW Versions 2.00, 4.10, and later.

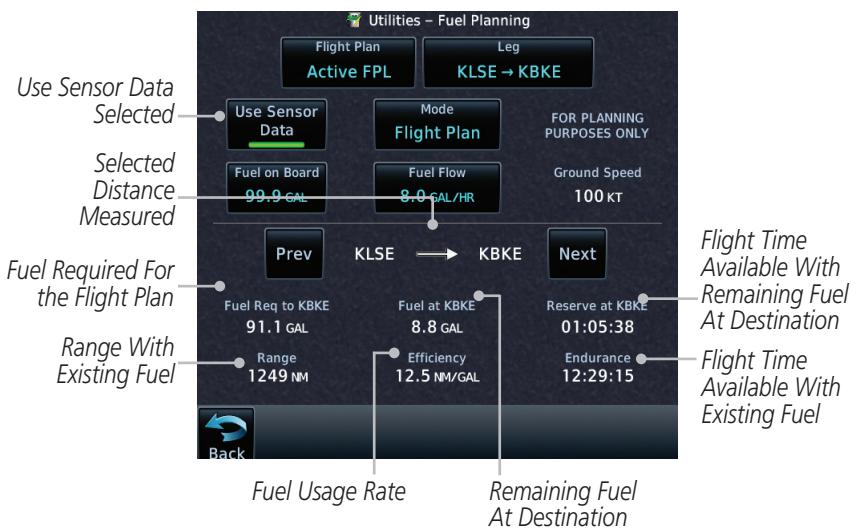


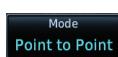
Figure 15-26 Utility Fuel Planning Page (Flight Plan Mode) - Use Sensor Data Selected

## 15.5.1 (14.5.1) Point-To-Point Mode

The Fuel Planning Point-to-Point mode shows fuel calculations between two selected points: either two waypoints from the database or from your present position to a selected waypoint.



1. While viewing the Utilities page, touch the **Fuel Planning** key.



2. Touch the **Mode** key to toggle to Point-to-Point.



3. Touch the **P.POS** key to toggle between using your present position as the From waypoint when selected or a waypoint selected from the database when **P.POS** is deselected. If **P.POS** is selected, the Lat/Lon of the present position will be shown in the From position.

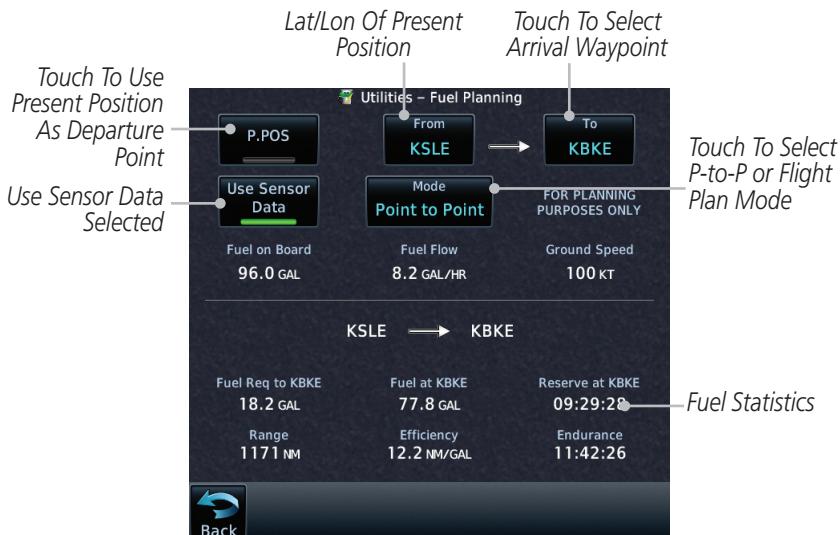


Figure 15-27 Utility Trip Planning Page (Point-To-Point Mode) - Use Sensor Data Selected

From  
-----

4. If **PPOS** is not selected for the From point, touch the **From** key and then use the keypad to select a waypoint from the database and touch **Enter**.



Figure 15-28 Selecting the From Waypoint

To  
-----

5. Touch the **To** key and then use the keypad to select a waypoint from the database for the destination waypoint and touch **Enter**.
6. Touch the **Fuel on Board** key and then use the keypad to select the current amount of fuel on board and touch **Enter**.

Fuel on Board  
2615.3 LB

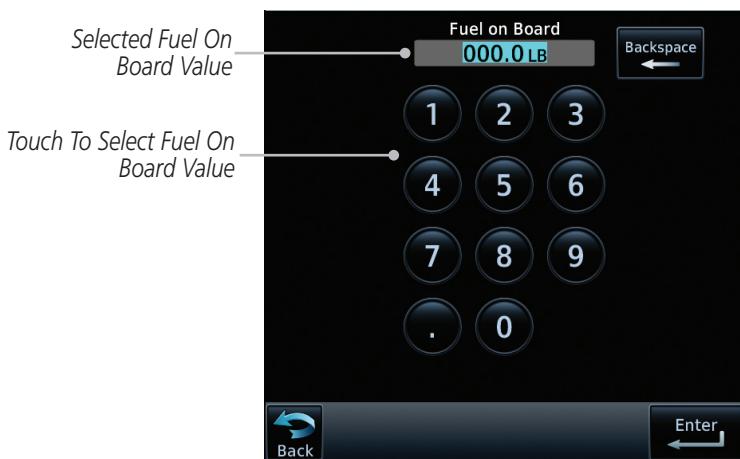


Figure 15-29 Selecting Current Fuel On Board

Fuel Flow  
500.0 LB/HR

7. Touch the **Fuel Flow** key and then use the keypad to select the average fuel flow and touch **Enter**.

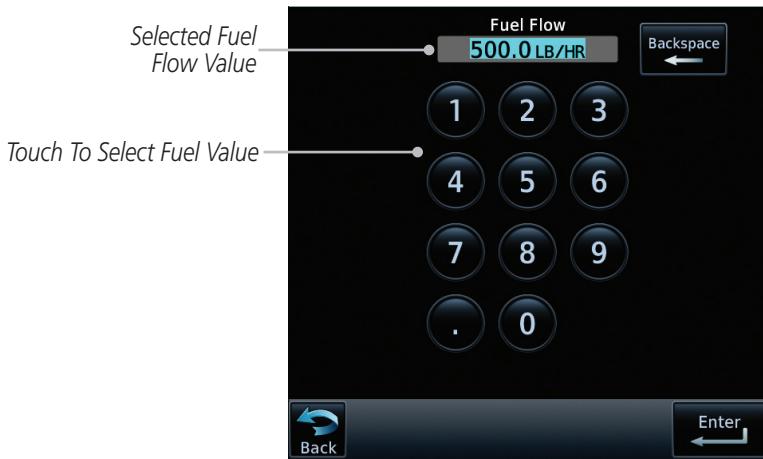


Figure 15-30 Selecting Fuel Flow

Ground Speed  
120 KT

8. Touch the **Ground Speed** key and then the keypad to select the average ground speed for the trip and touch **Enter**.

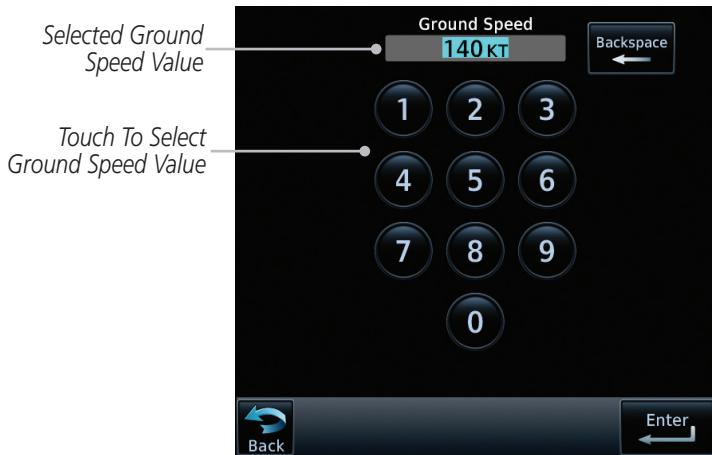


Figure 15-31 Selecting Ground Speed

## 15.5.2 (14.5.2) Flight Plan Mode

The Fuel Planning Flight Plan mode shows fuel calculations between two legs of the flight plan or the cumulative flight plan.

1. Touch the **Mode** key to select Flight Plan mode, if required.

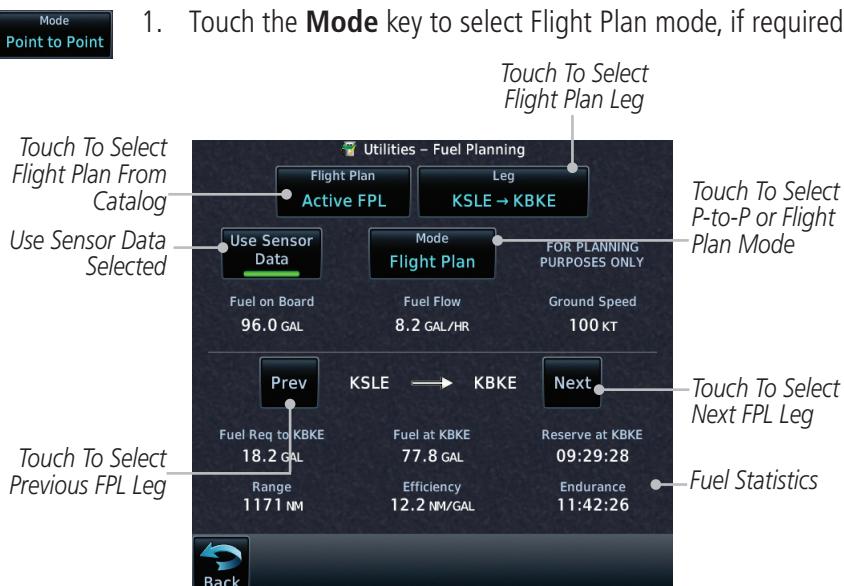


Figure 15-32 Utility Fuel Planning Page (Flight Plan Mode)

2. Touch the **Flight Plan** key to select the flight plan.



Figure 15-33 Select Flight Plan

- Leg**  
**KBKE → KTWF**
3. Touch the **Leg** key to select the flight plan leg. If the "Cumulative" selection is chosen, statistics will relate to the entire flight plan.



Figure 15-34 Select Flight Plan Leg

- Fuel on Board**  
**2615.3 LB**
- Fuel Flow**  
**500.0 LB/HR**
- Ground Speed**  
**120 KT**
- Prev**
- Next**
4. If desired, touch the **Fuel on Board** key and then use the keypad to select the Fuel on Board value and touch **Enter**.
  5. If desired, touch the **Fuel Flow** key and then use the keypad to select the Fuel Flow value and touch **Enter**.
  6. Touch the **Ground Speed** key and then the keypad to select the average ground speed for the trip and touch **Enter**.
  7. Statistics for the current flight plan leg are displayed in the lower half of the display. In the GTN 6XX, touch the **Compute Data** key to display the trip statistics.
  8. Touch the **Previous** and **Next** keys to view statistics for the previous and next legs in the flight plan.

## 15.6 (14.6) DALT/TAS/Winds

**Density Alt / TAS / Winds** — indicates the theoretical altitude at which your aircraft performs depending upon several variables, including indicated altitude (Indicated ALT), barometric pressure (BARO) and total air temperature (TAT; the temperature, including the heating effect of speed, read on a standard outside temperature gauge). This item computes true airspeed (TAS) and density altitude, based upon the factors above. Also, this feature determines winds aloft — the wind direction and speed — and a head wind/tail wind component, based on true airspeed, aircraft heading (HDG) and ground speed. When a FADC provides pressure altitude and the Use Sensor Data option is selected, the Baro key will not be present in the edit mode and the Baro indication will not be shown in computed results.



Figure 15-35 Utility DALT/TAS/Winds Page Using Indicated Altitude and Not Using Sensor Data



Figure 15-36 Utility DALT/TAS/Winds Page Using Sensor Data and Pressure Altitude



**NOTE:** The capability of using Sensor Data is available in SW Versions 2.00, 4.10, and later.

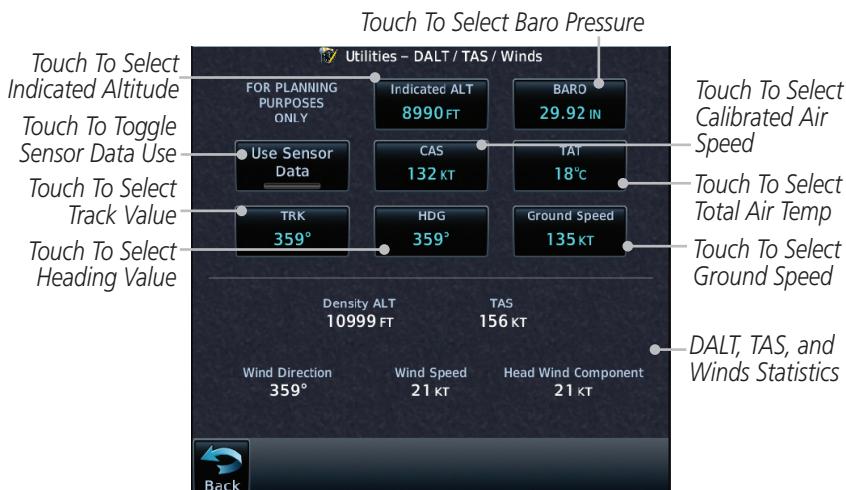


Figure 15-37 Utility DAL/TAS/Winds Page Using Manually Entered Data

1. Touch the **Indicated ALT** key and then the keypad to select the Indicated Altitude and then touch **Enter**.

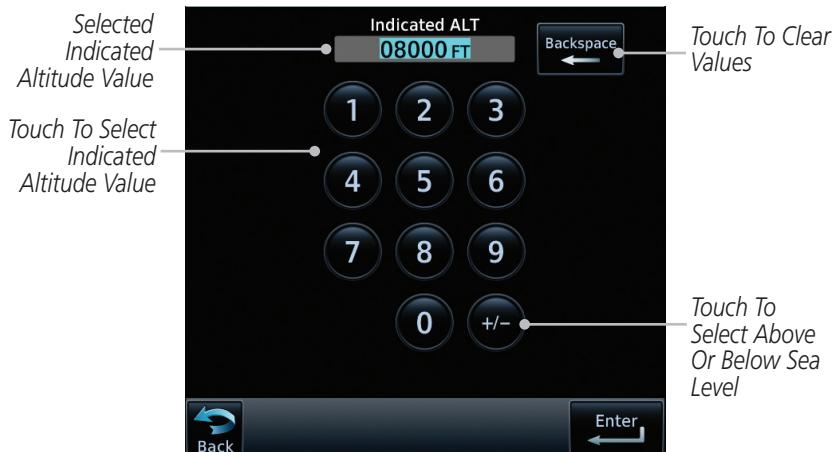


Figure 15-38 Select Indicated Altitude Value

2. Touch the **BARO** key and then the keypad to select the Barometric Pressure and then touch **Enter**.



Figure 15-39 Select Barometric Pressure Value

3. Touch the **CAS** key and then the keypad to select the Calibrated Air Speed and then touch **Enter**.



Figure 15-40 Select Calculated Air Speed Value

TAT  
15°C

4. Touch the **TAT** key and then the keypad to select the Total Air Temperature and touch **Enter**.



Figure 15-41 Select Total Air Temperature Value

TRK  
122°

5. Touch the **TRK** key and then the keypad to select the Track Angle and then touch **Enter**.



Figure 15-42 Select Track Angle Value

6. Touch the **HDG** key and then the keypad to select the Heading value and then touch **Enter**.



Figure 15-43 Select Heading Value

7. Touch the **Ground Speed** key and then the keypad to select the average ground speed for the trip and then touch **Enter**.

**16-2 System Function Summary**

## 16.6 (15.6) Units Settings

The Units Setup page allows you to select the conventions for the various units that are displayed.

Units Type	Units Values
Nav Angle	Magnetic (°), True (°T), User (°u)
Magnetic Variation	Enter numeric value, E or W
Temperature	Celsius (°C) or Fahrenheit (°F)
Fuel	Gallons (GAL), Kilograms (KG), Liters (LT), or Pounds (LB)
Position Format	LAT/LON, MGRS, UTM

Table 16-2 System Units Setup

### 16.6.1 (15.6.1) Setup Units

Use these settings to set the units for values displayed in the unit operation.

1. While viewing the System page, touch the **Units** key.

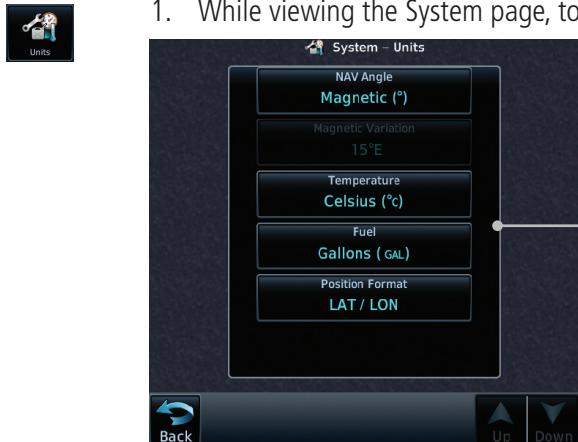


Figure 16-30 System Units Page

2. Touch the key for the desired units. A window with a list of unit values will appear. Touch the desired value on the list.

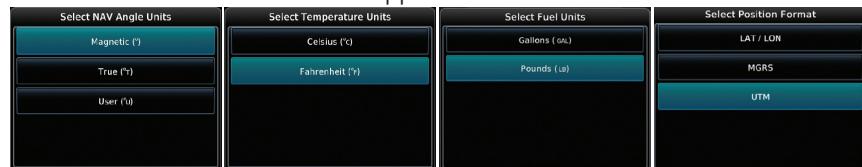


Figure 16-31 Setup Units Selection Windows

3. After making the desired selections, touch the **Back** key to return to the Setup page.

## 16.6.2 (15.6.2) Setting a User-Configured (Manual) Nav Angle

There are three variation (heading) options: Magnetic, True, and User. If “Magnetic” is selected, all track, course and heading information is corrected to the magnetic variation computed by the GPS receiver. The “True” setting references all information to true north. The “User” selection allows the pilot to enter values between 0° and 179° E or W.



**NOTE:** When changing the Nav angle, the DTK on the Flight Plan page for an approach does not change until that approach is reloaded.



1. While viewing the System page, touch **Units** key.
2. Touch the **Nav Angle** key and then the **User** key.

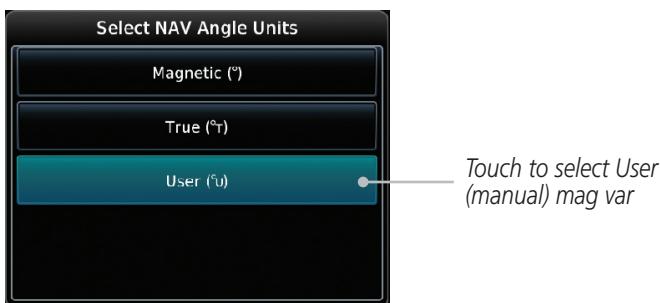


Figure 16-32 Nav Angle Selections

3. After User is selected, touch the **Magnetic Variation** key to set the value.

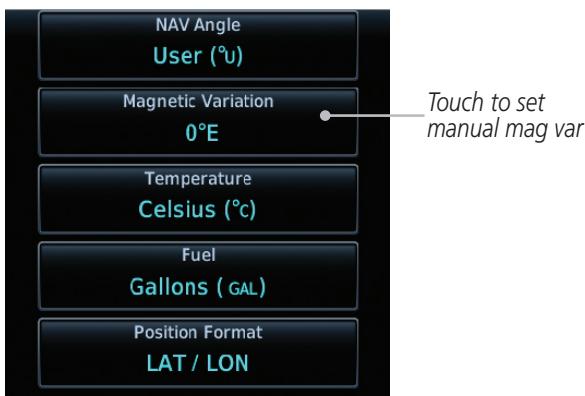


Figure 16-33 Magnetic Variation is Available for Editing



4. Touch the keys on the numeric keypad to set the Magnetic Variation and then touch **Enter**.



Figure 16-34 Numeric Keypad for Setting Manual Magnetic Variation

5. The User Nav Angle value will be used for all angular values. Remember to change the value when traveling to an area requiring another value.

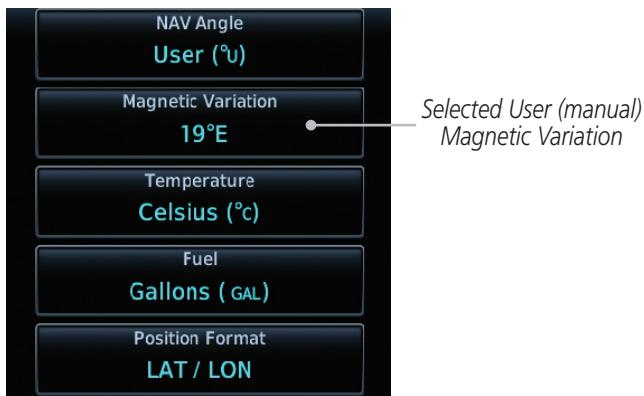


Figure 16-35 User (Manual) Magnetic Variation

## 16.6.3 (15.5.3) Position Format Selection

There are three Position Formats available: Lat/Lon, the Military Grid Reference System (MGRS), and the Universal Transverse Mercator (UTM) grid system. The format selected will be shown in all locations where position information is shown.



**NOTE:** The Position Format Selection function is available in SW Versions 4.10, and later.



Figure 16-36 MGRS Position Format Shown On Waypoint Info Page

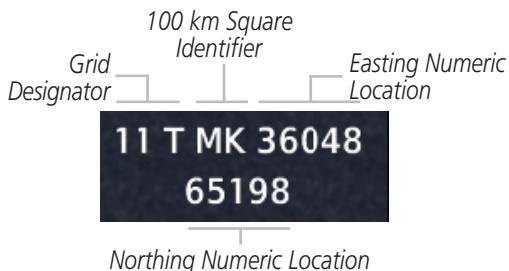


Figure 16-37 MGRS Position Format Detail

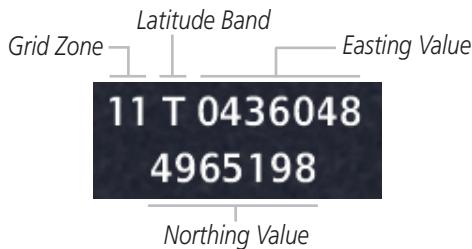


Figure 16-38 UTM Position Format Detail



1. While viewing the System page, touch **Units** key.
2. Touch the **Position Format** key.

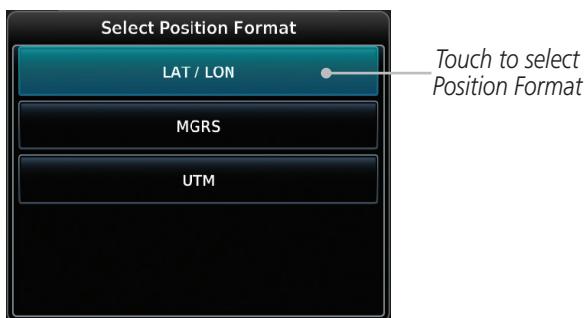


Figure 16-39 Position Format Selection

3. Touch the desired Position format.

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