Knapp Center

Contents of the Garmin GPS Kit

1. GPSmap 62S		**4.** USB Cable	
2. 4 GB MicroSD Card (inside unit under the batteries) & MicroSD Card Adapter		**8.** 4 rechargeable AA batteries (2 in unit, 2 extra)	
3. Carabiner Clip		**5.** Documentation	

Please check for these items BEFORE returning to the Knapp Center.

If you intend to travel with this item, please test it before you leave campus.

Garmin 62S GPS Quick Start Guide

Buttons:

FIND	Press **FIND** to open the search menu.
MARK	Press **MARK** to save your current location as a waypoint.
QUIT	Press **QUIT** to cancel or return to the previous menu or page.
ENTER	Press **ENTER** to select options and acknowledge messages.

MENU	Press **MENU** to open the options menu for the page that is currently open. Press **MENU** twice to open the main menu (from any page).
PAGE	Press **PAGE** to scroll through the main pages

Rocker	Press up, down, right, and left to select menu options and to move the map cursor.
IN	Press **IN** to zoom in on the map.
OUT	Press **OUT** to zoom out on the map.

Getting Started:

1. Turn on the GPS unit by pressing down the power button on the right side of the unit. By default, the receiver will begin searching for satellites in order to determine (fix) its location. This process can take from 1 to 5 minutes. You must be outdoors with a clear view of the sky.
    a. If you wish to stop acquiring satellites temporarily after powering up, from the Satellite page press MENU, select Use with GPS Off, and press ENTER. You can now conserve battery power during configuration.
2. To see which satellites are in the area, hit the MENU button twice to get to the **Main Menu**. Scroll down to the bottom and select **Satellite** (press the ENTER button). You will see an array of satellites.
3. To speed up the process, press the MENU button from the Satellites page. Scroll to and select **Set Location on Map**.
    a. Press the ENTER. Use the ROCKER button to move the cursor over the display map, and the ZOOM IN and OUT buttons to find your approximate location, then press ENTER. The initialization process will now focus its search for satellites in your area.
4. As the GPS unit finds satellites, the Locating Satellites message will change to Acquiring Satellites. Once three or more are found (four are needed for 3D orientation), a location can be determined.
5. If you see “Trouble finding satellites. Continue searching?”, select Yes and try moving away from any buildings or trees so that the unit has a clear view of the sky.

- Cycle through the various pages by pushing the PAGE button. Each page has a variety of settings, which you can access by pressing the MENU button. You can access additional settings for each page and tool from the Main Menu page.
- To turn off the GPS unit, press and hold the power button until it turns off (if you quickly press the power button the backlight adjustment control will appear).

Setting the Coordinate System & Datum:

Before collecting data, make sure the GPS unit is set to the coordinate system and datum that matches your needs and data. For basic projects, GCS WGS 84 (the default) is fine. To change the type of coordinates used:

1. Select **Setup** from the **Main Menu** page.
2. Select **Position Format**. Select the Position Format field and press ENTER to set the format of the coordinates.
    - If you are using a geographic coordinate system (GCS), latitude and longitude should be expressed as decimal degrees (hddd.ddddd) rather than the default degrees-minutes-seconds (hddd°mm.mmm').
    - If you are using UTM (Universal Transverse Mercator) coordinates, select UTM UPS.
    - If you are working with State Plane data, select User UTM Grid. You will need to configure some settings - go to http://gpsinformation.net/state-plane.html for details, where you can download a table http://gpsinformation.net/mapinfow-e.xls listing the information you will need.
3. Select Map Datum. It is especially important that the datum be correct, since it represents fundamental assumptions about the size and shape of the earth. Most US users will find NAD83 or WGS 84 appropriate for use with recent data sets, though some older data sets are NAD27.
4. When you have set up the position format and datum, press QUIT to exit.

To change the units of distance, speed, elevation, pressure, etc., select **Units** in the **Setup** page.

Collecting Waypoints:

1. From any page, press MARK.
    a. (optional) To change the name of the waypoint (optional), highlight the waypoint name (the top field) and press ENTER to display the on-screen keypad. You can also add additional information about the point in the Note field.
    b. (optional) To assign an identifying symbol to a waypoint, highlight the symbol next to the waypoint name and press ENTER to display the Symbols Chart.
    c. (optional) If you want to manually enter a waypoint using predetermined coordinates, simply highlight the location field of a way point, press ENTER, and then adjust the numeric values. Once you have entered your new coordinates press ENTER. If you need to visit multiple locations in the field (e.g., a predetermined set of sample points), you can upload xy (lat,long) coordinates to the GPS unit from a database or ArcGIS shapefile using DNR Garmin. See the full instruction manual on the Knapp Media website for more information.
2. To save the waypoint, select **Done** and press ENTER. The **Waypoint Manager** page (accessed from the Main Menu) can be used to edit existing waypoints.

Navigating to a Waypoint or "How do I get there from here?"

First, you should calibrate the compass. From the compass page, press MENU. Select **Calibrate Compass | Start**, and follow the on-screen instructions. Be sure to calibrate the compass outdoors and away from cars, buildings, and overhead power lines.

1. From any page, press FIND. Select **Waypoints** and press ENTER.
2. Select a way point and press ENTER. When the map appears, select **Go** and press ENTER. Choose **No**. (If you choose simulate driving, the map will automatically move towards the point.

If you choose No, it map will move as you move. Selecting Move to Location will pan the map to the waypoint without providing navigation.)

3. The **Map Page** shows your position in relation to your destination. The **Compass** page points you the direction that you should walk, along with information about how far away your destination is from your current location and an estimate time of arrival based on your speed.
4. To stop navigating, press FIND and select **Stop Navigation**.

Collecting Tracks:

Tracks are automatically recorded while you are moving to show your path and distance/time of travel. You can save tracks and use them to navigate later, or you can use them to measure the area of any space that you encompass with a track.

- Tracks can be viewed on the **Map Page**. Press FIND to search for existing tracks.
- To save your track, go to the **Main Manu** and open the **Track Manager**.
- To configure track logging options (e.g., change time or distance intervals, turn off automatic tracking), go to **Main Menu | Setup | Tracks**.

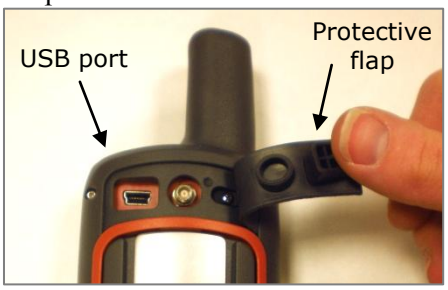
Setting up Routes for Navigation:

Routes are a sequence of waypoints which lead to a destination. Their primary purpose is as a navigational aid when used in conjunction with a GPS. The GPS will tell you the bearing and distance to the next point in sequence as you navigate along your route. The 62S can store 50 routes, with up to 250 waypoints each.

- To create a route, go to **Main Menu | Route Planner** and input your points. Press QUIT to save the route.
- To navigate a route, press FIND and select **Routes**. Choose your route and select **Go**. Note that at this time these GPS units are not preloaded with the maps required for turn-by-turn routing on roads, so the navigation will be for as the crow flies.

Downloading Waypoints and Tracks to a Computer:

1. Install DNR Garmin, which will save your data directly as a shapefile for import into GIS software like ArcGIS. DNR Garmin is available for free from http://www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/DNRGarmin/DNRGarmin.html.
2. Connect the GPS unit to the computer using the USB cable included with the unit. Open the flap on the back of the unit to find the port for the cable.



3. The GPS should automatically turn on in USB mode.
4. Go to Start | Programs and select **DNR Garmin**. Ignore any warnings that you get about the ports.
5. In DNR Garmin, go to **GPS | Set Port | USB**. The program should recognize the GPS unit. If not, go to **GPS | Open Port**.
6. Select **Download** from the appropriate menu (**Waypoint, Track, Route**). The data will be downloaded from your GPS into a data table (if you don't see it, click the Data Table button). Once the data are downloaded you may edit it prior to saving.
7. (optional) Go to **File | Set Projection** to choose the projection you wish the data to be exported (projected) to. You can browse for an ESRI projection file as a template if needed by clicking the Load PRJ button (look in C:\Program Files\ArcGIS\Coordinate Systems).
8. To save the data to your computer, go to **File | Save to | File**.

   a. Select a location and name for your output file. Do not begin the file name with numbers and make sure there are no spaces or special characters.
   b. From the **Save as type** dropdown menu, choose ArcView Shapefile (Projected) if you want to use the data in a GIS. If you just want a table of the data (to open in Excel, for example), choose Text File (comma delimited). If you want to open the data in Google Earth, choose Google Earth Format (.kml).
9. Close DNR Garmin and disconnect the GPS unit from the computer. The GPS should automatically turn off.

Erasing Waypoints and Tracks:

When you return the unit to the library, the unit will be reset to factory default settings in order to erase all of your data and settings. However, if you prefer to erase waypoints and tracks yourself, here's how:

1. From the **Main Menu** page, open **Setup**.
2. Select **Reset**.
3. Scroll down to **Reset All Settings** and press ENTER.
4. Select **Yes** when it asks if you want to restore to the factory default.

You can erase individual waypoints and tracks from the Waypoint Manager and Track Manager.

Changing Batteries

The GPS unit is circulated with 4 AA rechargeable batteries. If you need to replace the batteries with non-rechargeable batteries, you must change the battery type as follows:

1. From the **Main Menu** page, select **Setup** | **System**.
2. Change the battery type from **NiMH** to **Alkaline**.

Turn the metal ring on the back of the unit to unlock the battery compartment.

Troubleshooting

- For technical help over the phone, call the Knapp Equipment line at x2368.
- For help planning your project or thinking about next steps, contact Carolin Ferwerda (cferwerd, x2386).
- To read the full instruction manual, please visit: **http://www.wellesley.edu/Knapp/Projectplanning/index.html#equipment**