

## Using Waypoints with ProMark3

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Note: These instructions describe the latest versions of ProMark3 receiver firmware and the latest version of MobileMapper Office. You may download the latest versions at no charge from the following folders on [ftp.magellangps.com](ftp:magellangps.com):

- a. ProMark3 firmware: /Land Survey/PM3/Firmware
- b. MobileMapper Office: /Mobile Mapping/MM Office/Software

### How do I create waypoint files in MobileMapper Office for uploading to the ProMark3 receiver?

Click **Options>Select Coordinate System** and either select a previously used coordinate system or create a new one to match the coordinate system of the waypoints you wish to input into MobileMapper Office. Click **Tools > Place Waypoints** or click the **Place Waypoints** icon (a push pin) in the main tool bar. This launches the **Waypoints** window to the right of the map screen. You may select from a variety of map symbols to identify the waypoints. You may also use the box under the symbols to name the waypoint that you wish to place on the map. Then click on the location on the map screen where you wish to place the first waypoint. To see more precisely where the arrow cursor is located, you may refer to the coordinates' box to the lower right of the map screen. The level of precision here corresponds to the level of precision with which you can move the cursor. Once a waypoint is placed on the map screen, you can adjust its location with greater precision by editing its coordinates on the Waypoints window.

Note: use only alphanumeric characters, dashes and underscores when describing a waypoint in the Message field.

### The coordinates' box (to the lower right of the map screen) only displays the coordinates of the arrow cursor when I'm in latitude/longitude. How do I display coordinates when using a grid system?

You probably have not selected the correct zone for your grid system. Click **Options > Coordinate System** and reselect the zone. If you do not know the zone, select the Geodetic, WGS84 option instead of the grid, position the arrow cursor in the center of your positions (features or waypoints) and make a note of the longitude. Then go back to **Options > Coordinate System**, reselect the grid system you want and select the zone based on the longitude in degrees that you just wrote down. To determine which state plane coordinate system zone you are in, please refer to [http://www.ngs.noaa.gov/cgi-bin/spc\\_zones.prl](http://www.ngs.noaa.gov/cgi-bin/spc_zones.prl).

### I did not use the default name (WPT001) for the first waypoint, but when I add more waypoints each is automatically given the default name. Is there any way to automatically increment non-default waypoint names?

Because you are free to use all six characters to name your waypoints, the automatic incrementing of the waypoint names works only for the default waypoint name where the

first three characters are always “WPT” and the subsequent characters are numerals beginning with “001.”

Note: use only alphanumeric characters, dashes and underscores when naming a waypoint.

### **How do I edit waypoint files in MobileMapper Office?**

If you want to edit the parameters for your waypoints, we recommend that you first place the arrow cursor on the boundary between the map window and the waypoint window. Click and drag this boundary to the left so as to enlarge the waypoint window to reveal all the parameter fields that you may edit. To edit any parameter for any waypoint, double-click on the field and type in a new value. These parameters include:

- Display/hide waypoint
- Waypoint name
- Latitude (northing)
- Longitude (easting)
- Altitude
- Icon (map symbol)
- Message (Note: use only alphanumeric characters, dashes and underscores in the message field)

You will notice that there is increased level of precision when editing a waypoint’s position: one one-thousandths of a minute or one tenth of a meter/foot.

### **How do I build routes in MobileMapper Office?**

Once you have positioned some waypoints you may link them together to form routes. Click **Tools > Build Routes** or click the **Build Routes** icon next to the **Place Waypoints’** push pin icon. (The **Build Routes** icon represents three waypoints connected with straight lines.) Then use the arrow cursor to click on the waypoints in the desired order in which you want to build the route.

### **How do I save my waypoint files in MobileMapper Office?**

All waypoint and route files must be associated with a MobileMapper job file (\*.mmj). So, you first must save the waypoints to a job by clicking on **File > Save As**. When you select a job name, two files are actually created by MobileMapper Office: the job file (*filename.mmj*) and a separate waypoint file (*filename.mmw*). You do NOT have to import any features into the job file for the waypoint file to be generated.

### **How do I import waypoint files into MobileMapper Office for upload to the receiver?**

In order to import a waypoint file into MobileMapper Office it must be in the same format as MobileMapper waypoint files or specially formatted .txt or .xls file. There is no conversion module to automate the importing of files in other formats.

#### A. Importing a .xls file

It is also possible to import waypoints contained in Microsoft Excel files if the format is correct. The diagram on the following page is an example of what information must be in

each column. Note: the first row of column headers is mandatory. Also, all entries in the Message field must contain only alphanumeric characters, dashes and underscores.

#	Name	Icon	Message	Latitude	Longitude	Altitude (m)	Latitude (degrees)	Longitude (degrees)	Icon ID
1	WPT001	Crossed Square		N37°21.087'	W121°56.186'	0	37.35145517	-121.93643283	a
2	WPT002	Crossed Square		N37°21.128'	W121°56.153'	0	37.35213600	-121.93589100	a
3	WPT003	Crossed Square		N37°21.090'	W121°56.070'	0	37.35150367	-121.93450083	a
4	WPT004	Crossed Square		N37°21.039'	W121°56.093'	0	37.35065350	-121.93488717	a

An Excel spreadsheet (MM Office Waypoint Formatter.xls) can help you with the formatting of waypoint files in spreadsheet format. It is located in the /Mobile Mapping/MM Office/Application Notes/ folder of [ftp.magellangps.com](http://ftp.magellangps.com).

### B. Importing a .txt file

In order to import a txt waypoint file in .txt format, the file must contain the following information:

1. A command line: "\$PMGNWPL"
2. A numeric field is the latitude in DDMM.MMMMM (Degrees.Minutes.Decimal Minutes to 5 places)
3. An N (or S) for north (or south) latitude
4. A second numeric field for the longitude in DDDMM.MMMMM format (Degrees/Minutes/Decimal Minutes to 5 places)
5. An E (or W) for east (west) longitude
6. A third numeric field (in the example below, a zero) for the altitude
7. A field for the units (must be the letter "M")
8. A field containing the waypoint's name, e.g., WPT001
9. A field for a message. Note: all entries in the Message field must contain only alphanumeric characters, dashes and underscores.
10. A final field containing a code for selecting a waypoint symbol:

- a. Input "a" for 
- b. Input "b" for 
- c. Input "t" for 
- d. Input "v" for 
- e. Input "x" for 

### Example of a waypoint file in .txt format

```
$PMGNWPL,3721.08731,N,12156.18597,W,0,M,WPT001,near tree,a
$PMGNWPL,3721.12816,N,12156.15346,W,0,M,WPT002,,a
$PMGNWPL,3721.09022,N,12156.07005,W,0,M,WPT003,,a
$PMGNWPL,3721.03921,N,12156.09323,W,0,M,WPT004,,a
```

After you have created the .txt or .xls file, in MobileMapper Office, click **File > Import** to open up the (misabeled) **Import GIS Data** window. Select **Waypoint/Routes** in the

**Files of type** field. Browse to the folder containing the file you wish to import, highlight it and click **Open**. After importing a waypoint file into MobileMapper Office, you can edit waypoint names, icons and messages as desired.

## How do I upload waypoint and/or route files into the ProMark3 receiver?

### A. Create a job on your PC

With the waypoints/routes displayed on MobileMapper Office's map display area, click **File > Save As** to save the file to a folder on your PC. You may call the job whatever you want. This action saves both a job file (\*.MMJ) and the waypoint file (\*.MMW) to the same folder. When you upload the job to the receiver the waypoint files are automatically uploaded with the job. When you open the job file in the field, the receiver automatically displays the waypoints.

### B. Upload the job to the receiver

There are two ways to upload a job to the receiver:

1. Attach the ProMark3 I/O module to the PC with the USB cable. Then, turn on the receiver, launch the Mobile Mapping application and in MobileMapper Office, click **File > Upload to GPS > Job**.
2. Or put the receiver's SD card in a card reader and use Windows Explore to copy the job file (\*.MMJ) and waypoint file (\*.MMW) to the SD card. Then insert the card into the receiver.

## How do I display waypoints in the ProMark3 receiver?

1. Launch the Mobile Mapping application (you can later switch to the Surveying application, if you wish)
2. If you transferred the job to the receiver's SD card using a card reader, press **MENU > Setup > Storage**, highlight **SD Card** and press **ENTER**
3. Press **MENU > Setup > Map Setup > Display**, scroll down to **Waypoints** and press **ENTER** to add a check mark to the box. Then press **ESC** to return to the Setup menu and **ESC** again to exit the Setup menu.
4. Press **LOG** and open the job.
5. Press **Done** at the lower right to exit the job.
6. The waypoints will continue to be displayed. If you close the Mobile Mapping application and run the Surveying application, the waypoints will continue to be displayed.

## How do I display routes in the ProMark3 receiver?

To select a route, press the **MENU** button and select the **Routes** option. You then select the specific route you want to use, press enter and select the waypoint where you wish to begin using the route.

## How do I hide waypoint files in the ProMark3 receiver?

Press **MENU** and select the **Setup** option and then the **Map Setup** option. Tap the **Display** tab. Scroll down to **Clear All** or **Waypoints** and press **ENTER**. Then press **ESC** to accept the changes and move back to the **Setup** screen.

## Can I edit waypoint descriptions in the ProMark3 receiver?

Not at this time.

## How do I create waypoints in the ProMark3 receiver?

You can create waypoints when running both the Surveying and Mobile Mapping applications by pressing the **MENU** button and selecting the **Mark** option. However, if you wish to download the waypoints in a file to your PC, you open a job in the Mobile Mapping applications while the waypoints are displayed on the map screen and then save the job to memory. When you download the job file (with an .mmj file extension) using MobileMapper Office, the associated waypoint file will also be downloadable.

Note: you can use only alphanumeric characters, dashes and underscores in waypoint names and message fields.

## How do I delete waypoint files from the ProMark3 receiver?

You can do this in four ways:

1. When downloading files using the MobileMapper Transfer Utility, click any file you wish to delete and click the **Delete** button on your keyboard or on the Utility's tool bar. You can also right-click on any file and select the **Delete** option.
2. With the SD card in a card reader, use Windows Explore to delete any file.
3. Formatting an SD card will delete all the files on the card. Magellan recommends that you reformat your SD card before every project, or more often, if you wish. To do this, put the card in a card reader attached to your PC. Use Windows Explore to right-click to the card's drive and select the **Format** option.

## How do I download waypoint files from the ProMark3 receiver to MobileMapper Office?

1. Attach the I/O module to the receiver and connect the I/O module to the PC with the USB cable.
2. Turn the receiver on and run either the Surveying or Mobile Mapping application
3. In MobileMapper Office, click **File > Download Waypoints/Routes**

You may alternatively place the receiver's SD card in a card reader and, in MobileMapper Office, click **File > Download Waypoints/Routes** and navigate to the drive representing the card reader.

## When I downloaded the waypoint file, only some of the waypoints were downloaded. How can I download the others?

Some PCs handle downloads better when using a serial cable. Remove the USB cable and attach a serial cable with null modem adapter between the I/O module's COM1 port the PC's COM1 port. Re-establish communications between MobileMapper Office and the ProMark3 and try the download again.

## How do I use MobileMapper Office to edit waypoint files recorded in the field?

The process is the same as when you use MobileMapper Office to create waypoint files.

### **Can I export waypoints out of MobileMapper Office?**

Not with the present version. A workaround is to use the ProMark3's Mobile Mapping program to collect point features instead of waypoints. Point features can be much more conveniently described using feature libraries instead of the 30-character text field that is available for waypoints. Also, point features can be easily exported in GIS formats using MobileMapper Office.