

## Waypoints and POIs in Oruxmaps

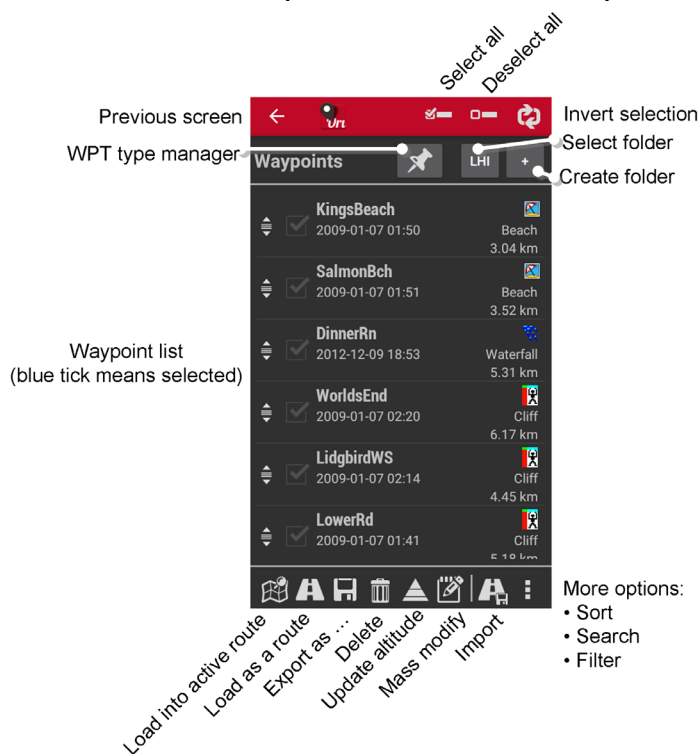
Oruxmaps is an amazing app that continues to improve in both features and documentation. (OM does confuse the terms POI and waypoint, which have distinct meanings in Garmin).

There are some possibilities for use of points of interest (POIs) and waypoints (WPTs) in Oruxmaps (v 7.0.12) (OM) that are not documented in the OM manual (v 7.0.0)

[http://www.oruxmaps.com/manual\\_en.html](http://www.oruxmaps.com/manual_en.html)

### Key menus and menu symbols

In OM, many menu items are only displayed as symbols {sym}. The manual does not match the screen in some important cases, such as Top Menu WPT {sym} > Manage Wpts.



The WPT type manager shows only your added (custom) WPT types. These along with the inbuilt types are shown if you use Manage Waypoints > select a Wpt> Edit properties > Type.

### Importing WPT symbols (icons)

You can fairly easily use your favoured icon editor to convert stock or custom Garmin WPT symbols (such as those from <https://www.javawa.nl/symbolen.html>) for use with OM custom types. Open the bmp file for the icon of interest, choose a desired size (24 or 32 pixels @ 256 colours without resampling works well), swap magenta for transparent pixels, save as png, and copy to your OM customwpts folder; along with a customwpts.txt file modified to include the same name given to your png image.

If you are going to import waypoints mainly from one source (eg Garmin basecamp) it may save work on wpt import if you use the same names as your usual source for the custom wpt symbols that you set up in OM - but (from Garmin at least) this restricts you to names like 'Custom 1' when you might prefer to use OM's potential for a more descriptive name such as 'track crossing'. There are so many other differences in the way that programs handle GPX files (let alone custom waypoint icons) that it rarely saves much work to match icon names.

## Importing WPT collections

With a bit of effort you can also import all your old WPTs (or POIs) into OM. But you may want to be fairly selective about this. Many of your points may already be shown on the maps you download for offline use from WMS servers or OpenAndroMaps. The OM model is that WPTs are really only for navigation of routes - OM offers as “waypoint navigation” as direct navigation but only between real waypoints, not just route points placed on a map location. OM can be convinced to display your WPTs on a map without an associated route, but this is sometimes problematic.

If you want to load waypoints saved elsewhere, there are several methods (all using a saved gpx file to import). First, you can import the file, then in OM click on a listed WPT > Edit properties > Type and >Folder to assign your preferred icon type and folder. Second (if you know the peculiarities of gpx file interpretation by OM), you can edit the gpx file as desired in Notepad ++, before import to OM. Third (using WGS84 = EPSG4326 throughout):

1. Export the WPTs from your source program (like Garmin Basecamp) in gpx format.
2. Use a format converter like Extra POI Editor convert the gpx data to csv format. (If you export directly to csv in step 1, the file will probably contain lots of unwanted data that interferes with subsequent steps).
3. Open the csv file in a spreadsheet program like Excel. You will probably see a header row identifying the gpx fields (symbol, longitude, latitude, elevation *etc.*) then rows with data for each WPT.
4. Sort the data by symbol.
5. Add a column after symbol, and use it to provide the desired OM type for each WPT.
6. Delete the entire original symbol column, and name the column with your OM types as symbol (keep the same columns for re-import by the same converter program).
7. Save the modified file in csv format, and exit the spreadsheet program.
8. Open the modified csv file in Extra POI Editor (or whatever converter you used in step 2).
9. Save the file in gpx format.
10. Open the gpx file in a text editor like Notepad++, notice the abbreviated field tags.
11. Replace every instance of sym> with type> (there will be an automated way to replace all).
12. Save the modified gpx file, and copy it to your OM tracklogs folder.
13. In OM, Top Menu WPT {sym} > Manage Wpts > Select folder for the imported WPTs {sym near top} > Import {sym near bottom} > select your gpx file (blue tick-box) > OK.

Now your imported WPTs should be showing along with their type symbol in the WPT list. All of this was necessary because most programs do not transfer the <type> field in conversion from csv to gpx, but OM uses the <type> field not the <sym> field on importing.

OM also imports <lat> <lon> <ele> <time> <name> and <desc> (and it imports from <cmt> into <extensions>). In WPT details, OM displays lat and lon rounded to 5 decimal degrees, but it retains 7 decimal degrees in the database as evidenced by gpx files exported from OM.

Folders can be used to manage collections of WPTs (and routes), in much the same way that ‘lists’ can be used to manage such collections in Basecamp. Categories, addresses and other <extensions> added by other developers to the core set of gpx fields are not imported to OM; which uses its own set of <extensions>. However, if Categories are important, you could easily substitute them into the Comment column while using a spreadsheet (steps 3-7 above). Garmin programs may have put the same information into Comment and Description fields.

Although not mentioned in the manual, the Update Altitude function {sym near centre bottom of the Manage Waypoints screen} can use your saved DEM files, which can be from an improved source like <http://viewfinderpanoramas.org/dem3.html>.

### **Viewing WPTs on maps (without navigation)**

To see your imported WPTs on the map (with their icons and names if you have selected those options under Top Menu : {sym} > Global settings > Waypoints) use Top Menu WPT {sym} > Manage Wpts > Select all {sym} > Load into active route {sym bottom left} > No navigation > Accept.

Unfortunately, custom types do not seem to ‘stick’ very well to imported WPTs. They are sometimes lost (replaced by the generic Waypoint type) during search for a POI as described below, or on export from OM to gpx. If you keep the original gpx files in your OM tracklogs folder, you can in Manage WPTs delete any WPT sets that get corrupted, then import them afresh.

OM does export a <sym> field, but assigns a default waypoint symbol there. OM-specific <extensions> denote the required icon. Because this is done by a number rather than a name (reflecting the design of the underlying database), if you change the order of custom waypoint icons (e.g. by interpolating in an alphabetical list in your customwpts.txt file) strange things will happen to your existing WPTs. To realign things, you can delete and re-import WPTs as above. When I tried to avoid this problem by using a chronological rather than alphabetical list of types in customwpts.txt, the new types were not imported. It may be necessary to restart OM to use an altered customwpts.txt file.

Another option to display WPTs on the map is to use Top Menu WPT {sym} > Manage Wpts > Select all {sym} > Export {sym disk at bottom} > KML. Move the resulting kml file from your OM tracklogs folder to your OM overlay folder. Then you can display your WPTs as an Overlay by any one of several methods (e.g. Top Menu Map {sym} > Overlay options > Load KML Overlay > select the file). The advantage is that overlays do not disappear when you use Top Menu Route {sym} > Clean Routes/Wpts to clear unwanted tracks/routes from the display. You can still select individual WPTs from the map screen for some other purposes in OM.

### **Holy Jumping Waypoints Batman**

An undocumented (for now) feature to be aware of is the OM “move WPT” function. If you long-press on any displayed waypoint, it will jump some arbitrary distance to the NW to get out from under your finger (with a vibration alert if that is on in settings). Then if you have kept pressing, you can drag the WPT to a desired new location on the map.

The OM model is that waypoints are really only for route navigation, so you will have few on the map and it is handy to be able to move them easily to adjust the route. But if you use WPTs for other purposes, and especially if you have many displayed on screen, it is easy to accidentally long-press a WPT, which will then jump. Even if you notice the jump, there is no "undo", other than dragging the WPT back if you remember where it belongs. If you are displaying the WPT via "Load into active route" (which seems to be the new way to "See on map" in OM) once the waypoint has jumped (even if you do not drag it) the changed coordinates are permanent in the waypoint record. Later versions give a warning choice.

If the WPT is in a KML layer it still jumps, but the changed location is not saved, so the WPT appears in its correct position after overlay remove and reload. For me, this is another good reason to display waypoints on the map via a kml overlayer. At least then accidental waypoint moves are not permanent.

## **POIs**

POI files are used with Mapsforge vector maps (including the MAP files from OpenAndroMaps). Provided the POI file exists in the same folder and matches the filename of the associated MAP file, the POIs are displayed on that map. They can be accessed in OM via Top Menu Waypoint {sym} > Search in map > Text or Category > Tick {sym}. Then click on the displayed POI of interest to get options including Direct To.

To remove the WPT and bearing line thus created on the map, use Top Menu Route {sym} > Clean Routes/Wpts. You will then need to repeat the steps given above to again see your imported waypoints.

A Mapsforge POI database can be edited, by those with the necessary skills and software <https://github.com/mapsforge/mapsforge/blob/master/docs/POI.md>.

POI files do not work with other maps such as the rasters you may download from WMS servers for offline use. But many of the same points may already be present in the raster map.

## **Points in Tracks & Routes**

The OM model is that a track is a path that is actively being recorded based on incoming GPS data (or your finger on screen), whereas a route is any collection of points that can be navigated as a path. But in the OM manual and interface, the terms are sometimes used interchangeably or confusingly. For example, if you press Top Menu Route {sym} > Manage Tracks/Routes, you will be presented with a list headed “Tracks” which actually contains both tracks and routes (in the old sense) which (in the OM sense) are all now potential routes.

For many GPS users ‘routes’ will mean sets of (generally few) points representing main (usually turning) places along a path to be navigated (including a current route being navigated); whereas ‘tracks’ will mean records of (generally many) points along paths previously taken (including a current track being extended while recording GPS data). This (old sense) is not identical to the OM model, but there is some overlap, as detailed below.

You can import all your old routes and tracks into OM. But you will probably decide first to save them individually as gpx (or kml) files. OM interprets a gpx file with multiple routes as one long route. OM can merge, but not split tracks/routes. Also, consider using names that distinguish tracks from routes, as they all appear together in the OM “Tracks” list (then they are all treated as routes, as detailed below).

To see an imported track or route on the map use Top Menu Route {sym} > Manage Tracks/Routes > select your track or route (get a blue tick-box) > Show {map symbol at bottom left} > No navigation > Accept. OM does not display trackpoints, just the track path.

Unfortunately, when you import a route based on WPTs that you have already imported, OM does not recognise the existing WPTs, but rather shows the route with new (generic symbol) WPTs overlaid on the map. You can select and delete these duplicated (generic symbol) WPTs, but then your database routes will have paths but no WPTs (so you will be able to “Follow Route” but not use “Wpt. Navigation” which is needed if you would like to see distance and bearing to the next WPT while navigating a route). There is a way in OM to attach waypoints to a database route, but it is cumbersome. It is better to keep the imported route GPX files and navigate from them (putting up with the duplicated/generic symbol

WPTs for this purpose). There is no comparable advantage to keeping the GPX files for Tracks imported to the database.

Other partial solutions or work-arounds to the imported route problems are:

1. Create each route afresh in OM from listed WPTs (don't import routes or try to make them on an OM map screen - which does not use wpts even if they are present); or
2. Edit the WPTs section of each route GPX file
  - a. before import (via a csv intermediate), to match the database WPT entries exactly (particularly for type> instead of sym>) or,
  - b. after import, using WPT > Edit properties > Type to match each generic waypoint icon to your custom icon for that waypoint (then they will superimpose perfectly). You can then "export" your modified route to save the changes.

and

3. Use separate subfolders for Tracks vs Routes; or
4. Use different Types (e.g. Backpacking vs Hiking vs Walking; then sort by type); or
5. Use prefixes on names: e.g. aa-routename or zt-trackname (then sort alphabetically).

Approaches 4-5 are not completely satisfactory, because the basis for sorting by default (or within each Type) is unclear. It is not alphabetical or chronological. The selected sorting method is not remembered by OM between "Manage Tracks" sessions.

### **Line Display in Tracks & Routes**

How OM displays track and route paths is determined under Top Menu : {sym} > Global settings > User Interface > Tracks and ... > Colors. But remember that OM treats anything other than the track being recorded as a route. So if you choose to display one imported track, it will use the colour you have chosen for primary (active) route.

If you have chosen "Route path effect" and "Coloured path effect", OM will display small black arrows that creep along the active (1°) route line during map zooms, and a line colour that depends on slope. I assume this uses the imported DEM files. If you choose to display two imported tracks, they will be in the colours you have chosen for primary (1°) and secondary (2°) routes. Further tracks/routes will display in pink (or sometimes in a series of other colours). The 2° and 3° routes (which you possibly thought of as tracks) will be dashed if you have chosen "Route path effect" to get the useful black arrows on the 1° route.

The order of entries in your "Tracks" list determines what is considered 1°, 2° or 3° by default. There seems to be no way to rearrange the entries manually, though they can be sorted or filtered various ways under "More options" {: sym bottom right}. You can make any track/route 1° by clicking on it in the "Tracks" window, then selecting "Follow/see as a Route" in the pop-up menu. In that case all other displayed tracks/routes become 3°. Alternatively, if you have clicked Top Menu : {sym} > Global settings > Tracks/Routes > First point Route, the map will display a Starting Point symbol at the start of each track/route which you can select (then scroll down if there is a lot of track/route information) then click ACTIVATE. This alternative is not so simple when multiple tracks/routes start from the same spot, but you can scroll down a list of multiple selected points to find the one you want.

Basically, OM routes can contain trackpoints, WPTs and POIs. An imported track is handled as a route consisting of trackpoints. So far I have not worked out how to display imported tracks as tracks (as distinct from routes based on trackpoints). I assume that the OM display settings for tracks apply only to the track being recorded based on incoming GPS data.

If you have clicked Top Menu : {sym} > Global settings > Tracks/Routes > First point Route; you can click on the Starting Point symbol at the start of any track/route (then scroll down if there is a lot of track/route information) and click DELETE to remove this track/route from the screen. Sometimes it is necessary to repeat this exercise to display the Starting Point symbol at the start of each track/route. Alternatively, you can use Top Menu Route {sym} > Clean Routes/Wpts. Unfortunately this alternative removes all of your displayed WPTs (as well as all displayed tracks and all displayed routes with their generic WPT symbols). As mentioned above, the OM model is that WPTs are really only for navigation of routes. If you have a different use for your imported WPTs, and you want them to be displayed again, you must again use Top Menu WPT {sym} > Manage Wpts > Select all {sym} > Load into active route {sym bottom left} > No navigation > Accept. Or you can use the overlay method for WPT display as described above (preferable for Wpts, though all overlays are removed together).

Tracks/routes can also be displayed using the overlay approach, but this is not so useful as each track/route goes to a separate KML file and uses the 1<sup>o</sup> route colour.

The OM manual describes many other things that you can do with WPTs, tracks and routes.