

## PRODUCING A BASEMAP FOR LOCAL ORIENTEERING FROM SIX MAPS DATA

**1. Establish georeferencing coordinates for the area.** Visit the [Six Maps](#) site and, from the top left search box, type in the suburb of interest and hit enter. Select the top right of screen “Basemaps” button and then select from the new panel “Looking for 1943 or other imagery?” Then select “Topo maps” and click on the topo icon to bring up the topo map of the area. Use your mouse to position and scroll to the area of interest.

From the centre top toolbar, select the “xy coordinate tool”. From the pop-up box, select the top blue active area and then “GDA94-MGA56”. This changes the map coordinates from latitude and longitude to topographic grid references in our part of the world.

Select one of the 1km grid intersections that is on or near to the proposed orienteering map and click on it. You won’t be able to accurately position the mouse to get an easting and northing reading that rounds to “0” (but, you’ll be able to work it out). Either record the easting/northing values (rounded down to “0”) or leave them on screen.

**2. Create a basemap with relevant coordinates.** Open Open Orienteering Mapper and from the left hand side select “Create a new map”. From the pop up box, select a relevant scale. For Mini and Urban maps it should be 1:4000. Then, select the symbol set “ISSprOM2019” and “Create”.

From the blank map and the top toolbar, select “Map” and then “Georeferencing”. This produces a “Map Georeferencing” panel for input. The “Coordinate reference system” should be changed from “Local” to “UTM”. This is the [Universal Transverse Mercator](#) system that assigns coordinates to different parts of the globe. The Newcastle/Lake Macquarie part of the world is 56 degrees south. In the “UTM Zone” box type 56S (see 1 above).

In the next section of this panel there’s a “UTM Coordinates” box for input of easting and northing coordinates. Transfer the easting and northing coordinates from 1 above to this panel.

Next we need to establish the magnetic deviation for this area. For some reason, clicking on the “lookup” box under “map north” provides a dead end (it worked on earlier versions of OOM). Instead, visit this [magnetic declination site](#) and navigate to your area of interest. Click on the area and it will give you a declination value that you can transfer to OOM box. This automatically produces a magnetic deviation value in the box below. Save your work.

**3. Ordering cadastral and topographic detail for your base map.** Go to the [Six Maps Clip & Ship](#) site to import such detail for your base map. Use the top left search box to navigate to the area and refine with the mouse. In RH panel, under “Active Selection”, choose “Search by MBR” and click and drag to identify the relevant area. Under “Projection” select “MGA56” (matches your base map input from 2 above).

Under “Format delivery” choose “Shapefile” (it’s a file format that OOM recognises). Leave the bullet point “topographic” selected. Then, input your own details and press order. You’ll get an on screen notification that the order’s been sent. Then (depending on demand), you can expect an email with the data.

Change the bullet point to “cadastral” and repeat the order process for a second data file. While you’re waiting to receive this data, move on to 4.

**4. Importing a topographic map background for checking your future work.** From the main Six Maps site (1 above), take a screen shot of the topo image, then crop it and save (OOM handles png and jpg format). In the OOM base map (see 2 above) from the top menu bar, select “View – Display coordinates as – UTM coordinates”. Now, your cursor position will show easting and northing coordinates. Next, from the top menu bar, select “Map – configure grid”. In the pop up box, select “show grid”, then “align with grid north” and change the horizontal and vertical spacing to 1000m (matches the spacing on topographic maps).

Select “templates” from the top menu, then “open templates” and choose the saved screen shot of the topo background. From the pop up box, select the “scanned with” option, then “300 dpi” and for “template scale” try 1:25000 scale and check the result. You’re looking for a 1 x 1km grid on the imported topo background that roughly matches the 1 x 1km grid on the base map. If it’s way out, delete the just imported topo background (“Template setup menu” – opens a right hand menu with option to delete the file). Then try again with a different scale.

When you have the 1 x 1km grid interval roughly the same distance across base map and background, identify the grid intersection on the background image (see 1 above) that matches the grid intersection on the base map (check cursor position and bottom right UTM meter reading).

On the bottom of the right hand “Templates” panel, select “adjust” and then “new” (in the newly created “template adjustment” panel. Click on the grid intersection of the background topo image that matches the identical grid intersection on the base map. Do this for one or two other intersections and then select “Apply & clear all”. You may need to zoom in and repeat this process to get an acceptable result.

**5. Importing cadastral and topographic data to your base map.** In your created map folder, create a sub-folder where you can import the zipped topo and cad files that you received via email from Six Maps Clip & Ship (see 3 above). Extract these files.

You’ll see that these extracted files are in a few formats, including files with a “shp” extension which can be read by OOM. While there are many shp files, there are a limited number that will be useful. In the topographic extraction – contour.shp. In the cadastral extraction – lot.shp and road.shp.

Open the base map in OOM (from 3 above). From the top menu bar, select “file” then “import”. Navigate to the unzipped file folders and successively import the relevant shp files. When you import each shp file, the pop up box will ask you to assign a “replacement” map symbol to the default. For contour, select the contour line and “OK”. For lot boundaries a purple line may work, and for road select one of the road symbols. You’ll probably find that the road symbol follows the boundaries of the roads but you can replace that later.

Check that this imported lot and road detail closely matches the topographic background imported at 4.

**6. Importing a photo background to your base map.**

Return to the main Six Maps site and from the top right basemaps button, select “NSW imagery” for the aerial photo. Take a screen shot, crop and save. Repeat the procedure in 4 above to import

and align the photographic background to the topo map and the imported topo and cadastral detail.

**NOTES:**

1. The process described here is OK for local urban and mini course maps. For NOY bush maps, it's best to start with lidar-generated contours and a recent aerial photo (currently accessed from Barry Hanlon or Hamish Mackie). Geoff Todkill can also generate lidar contours from his current version of OCAD.
2. In steep areas, the contour output from Six Maps sometimes gives contours that cross over each other that need to be resolved.

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