# MAP FRAMING & GEO-REFERNCING GUIDELINES

## By Mathieu Cain

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Maps after being scanned, would be opened in Photoshop. There the map would first be blown up to its 100% size so as to be able to see whether the map needed modifying in any way.

Using the Rectangular Marquee Tool, I selected the top left hand corner of the drawn map and scrolled across to the top right hand side of the map. The scanning process was often done very sloppily and the map page would come out on an angle. Using the doted line created by the Rectangular Marquee Tool as a perfect horizontal line, I could then go up to Image in the task bar, down to Rotate Canvas, across to Arbitrary, and then select the amount I wanted to rotate the canvas. The process could be repeated until the top of the map was at a horizontal.

As the maps usually came with extra information surrounding the actual map that would not be used, I had to cut all of this out to be left with the core map. Using the Rectangular Marquee Tool, I scrolled in the smallest area around the map I could without cutting out any of the map. Selecting the Crop function under Image in the upper tool bar, the map would be cut down to size.

As the world is round and the maps would simply be projections of slightly curved areas onto a flat grid surface, the maps would often not be square. A square shape is easier to work with though when piecing together various maps. Right clicking anywhere on the screen, I chose Select All. I then went up to Edit, down to Transform and across to Distort in the menu bar. Selecting a corner of the map, I dragged it over to line up with the corners of the screen. To save the changes done to the map, I selected the Rectangular Marquee Tool once again and accepted the changes when prompted. To verify that all changes had been done successfully, I right clicked anywhere on the screen and chose the Deselect option and then scrolled around the borders.

When saving the map, I chose Save As, and then as a JPEG format level 5. This was so as to reduce the amount of space that the map took up on the computer.

Now that the maps were in a usable format, the next step was to geo-reference the maps using MapInfo. Using a paper copy of a general map of the area, with a grid pattern along it dividing it into smaller map segments, I determined the co-ordinates for every axis or grid line. These could be calculated from data supplied on the actual map sheet after first scanning and before cropping.

The map could be found in MapInfo when one chose the Open Table option in the task bar. The Maps had usually been previously saved on the C drive in the Mapas folder and then there under the appropriate scale that they were in. To find it in the selected folder I had to choose to open it as a File of Type: Raster Image. When prompted whether I wanted to Display or Register, I chose Register. The Display option would simply have shown me the map, whilst the Register option would then allow me to give geographical co-ordinates to the map.

When the Image Registration box appeared I chose Projection. Depending on what projection I wanted all my maps to be in, I chose a different Category. For instance, when working on geo-referencing the Luanda maps, I chose to use the Non-Earth category and the Non-Earth (meters) category member. This meant that my map would be assigned coordinates with meter units on a Non-Earth plane. Longitude/Latitude and Universal Transverse Mercator (WGS 84) were two other projections I occasionally used.

On the Image Registration map screen, I clicked in the upper left hand corner thus displaying an Add Control Point Menu. I entered in the appropriate co-ordinates. I repeated the process with the three other corners, scrolling across or down to them and then entering in the number previously established. Once all four corners had been geo-referenced I chose the OK option and the geo-referenced map appeared on screen.

When wishing to geo-reference a following map and automatically piece it together with any previously open map, I chose in the Open Table box, under Preferred View, the Current Mapper option.

Once all the maps were geo-referenced and were pieced together on screen, I could save the whole layout under File, Save Workspace. This meant that the next time I wanted to open all of the maps together, I simply had to open that workspace.

Occasionally, when zooming in or out of the maps, after geo-referencing them, the maps on screen would disappear. This would be because one had surpassed one of the zoom parameters or limits. To remedy this problem, one had to go to Layer Control in the task bar and individually go through each map containing a pink tick mark, choosing the Display option and then deactivating the "Display within Zoom Range" option. In the case of many maps this could be very tedious but no better solution had yet been found.