USCG Auxiliary Navigation Class Spreadsheet Conversion to OpenCPN Input

The procedure is used to convert the standard ‘Plotted Course Tracking Sheet’ Excel spreadsheet to a standard GPX file for input to OpenCPN.

Step 1

The student should fill out the student spreadsheet with one line per waypoint. The longitude and latitude should be entered in degrees/minutes/seconds/direction format (ex. 43° 12’ 32” W). There is some latitude (no pun intended) in the format, but exactly following the prescribed format will minimize the effort required for the conversion. The degrees/minutes/seconds/direction format may or may not include spaces.

The starting position should be entered in the first row with no course and no nautical miles. It will also be entered in the heading text box labeled Starting Coordinates.

Note: The complete spreadsheet has macros used to convert to the format required by the translation program. The instructor will get a warning and they should click ‘OK’.

The student spreadsheet does not include macros.

Step 2

In the instructor spreadsheet, the macro inserts the converted value from the ‘Course’ sheet in the workbook into a cell in the ‘Conversion’ sheet. If the student inserts a waypoint name in the first column of the ‘Course’ sheet, it will be part of the data sent to OpenCPN and the waypoints created will be labelled with the supplied name.

The instructor will open the instructor version of the Excel spreadsheet. Open the student submitted spreadsheet and copy the values of the rows containing waypoint information. Go back to the instructor spreadsheet and paste the student’s waypoint information into the rows on the ‘Course’ sheet. Click the ‘Conversion’ tab on the bottom to open the converted data. The conversion data is in the format of Latitude, Longitude, and Waypoint Name. The longitude and latitude will be displayed in degree decimal format. Latitude values in the southern hemisphere will be displayed as a negative value. The same for longitude values with a west direction. For example, if the student enters 43° 43' 10" N, the conversion value will be 43.7194444,

At this point the ‘Conversion’ sheet contains the data required by the translation program. If less than 30 rows of waypoint data, the corresponding rows in the Conversion sheet will show 0 for the latitude and 0 for the longitude. The ITN program ignores those rows, so let them be.The instructor needs to save the converted data to a file. Ensure the ‘Conversion’ sheet is the active sheet. Click ‘File > Save As in the menu. The program will prompt for a filetype to use to save the file. Select .csv which stands for Comma Separated Values. There will be a warning saying Excel will only save the active sheet to the .csv file. This is exactly what we want. After the save, we will have a file of the same name in the same location as the spreadsheet, except it will have a .csv file extension.

Note: If an entered value does not conform to the specified latitude/longitude format, the value ‘#Value’ will be displayed on the ‘Conversion’ sheet. Correcting the format of the supplied value in the ‘Course’ sheet will correct the value in the ‘Conversion’ sheet.

Step 3

The conversion program is ‘ITN Converter’. The current version is 1.94. Start the program. Select the ‘Open’ button. The ‘Settings CSV’ form will open allowing the instructor to input the information about the .csv file. In the Template dropdown, select ‘Manual’. In the Latitude dropdown, select column 1. In the Longitude dropdown, select column 2. In the Name dropdown, select column 3. All other options are fine as supplied, so click ‘OK’ to convert the file. Select the .csv file into the conversion program. Select the .gpx filetype to create. Select ‘Garmin Zumo, GPX BaseCamp (.gpx). Save it back into the directory where the Excel file exists with the same file name except it will have a .gpx file extension.

The instructor can also use the ‘Edit’ button to view the results of the import of the generated .csv file.

Step 4

Open OpenCPN and import the generated .gpx file. OpenCPN should display the route input to the Excel sheet by the student.

Notes:

* The conversion macro does not handle lines where the longitude and latitude are not entered.
* A tilde may be used instead of the degree sign: 43~ 11’ 10” N is the same as 43° 11’ 10” N.
* Spaces may be entered or not: 43° 11’ 10” N is the same as 43°11’10”N.
* There are 30 lines of longitude and latitude converted.