

LXasBrowser

PC program for airspace management

1 General

LxasBrowser is a free program for compiling airspace data for use with LX instruments and See You analysis software. The program is provided on the CD supplied with LX instruments, or can be downloaded from the LX website, www.lxnavigation.si. This manual is divided into two parts, the first part outlines the procedure in compiling local airspace for a specific area, while the second part describes how to add, delete or modify airspace in existing airspace files.

The two file types used are **.LXW** (LX Workspace) and **.CUB** (See You Binary) files. A third file type, **.VER** is used with some of the older LX instruments. Airspace source files for use with the browser must either be LX/Filser supplied (.LXW or .CUB), or text files formatted using one of the following universal airspace text formats; "Open Air Format" (OAF), "Tim Newport Peace format" (TNP), or "Digital Aeronautical Flight Information File"(DAFIF) - a product of the US National Imagery and Mapping Agency (NIMA). LX/Filser sourced files are not free and after modification using the browser, a 4 digit code is required when they are loaded into LX instruments. This code has to be obtained from Filser if it was not supplied with the original instrument. However, airspace files that are compiled entirely from the universal text formats listed above can be loaded into LX instruments free of charge. To start the procedure, execute the program LxasBrowser. The program is supplied, together with Lxe, on the CD supplied with LX instruments.

2 Creating individual Airspace Regions

2.1 Loading .LXW files

Start the LxasBrowser and open an existing **.LXW file** for the area of interest (use browse commands to find it). An **.LXW** is the original LX file denoting airspace data. All types of airspace areas and zones will be shown and by clicking on a specific zone, it will be displayed graphically on the right side of the screen (see Figure 1)

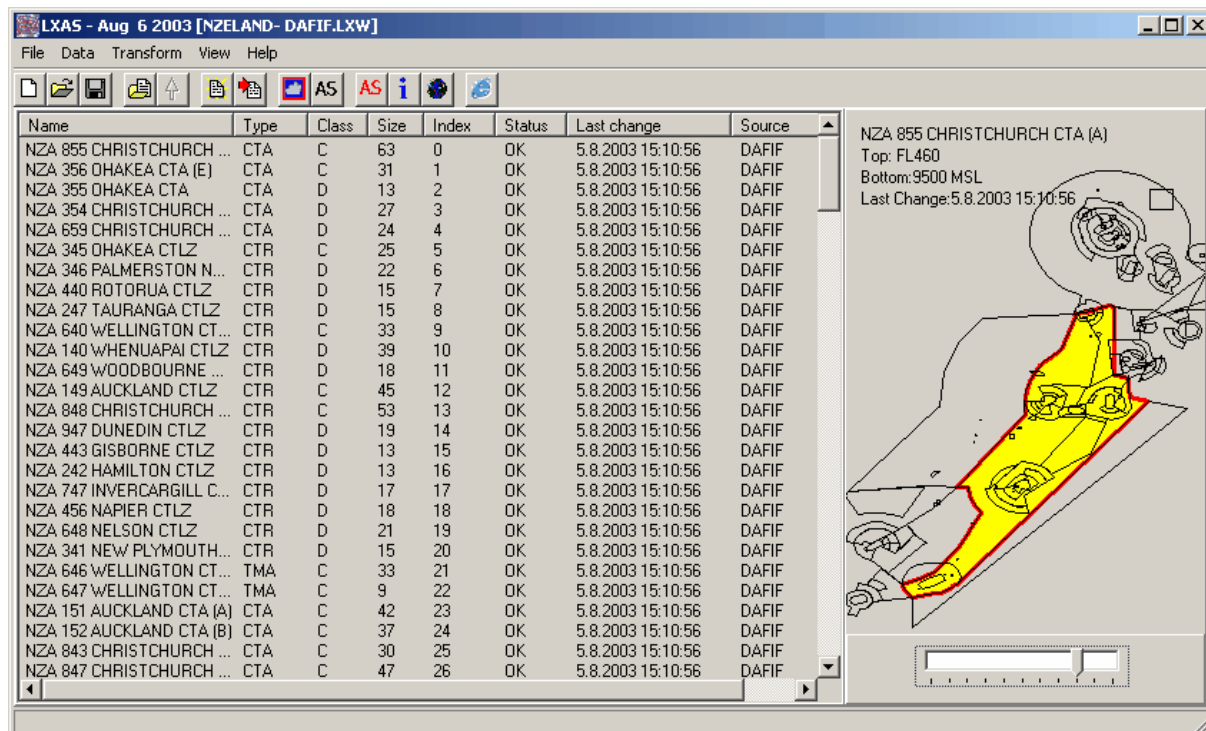



Figure 1

To view the complete airspace area covered by the particular file, click on the red marked  icon and after a few seconds delay, the complete airspace area will be shown (see Figure 2).

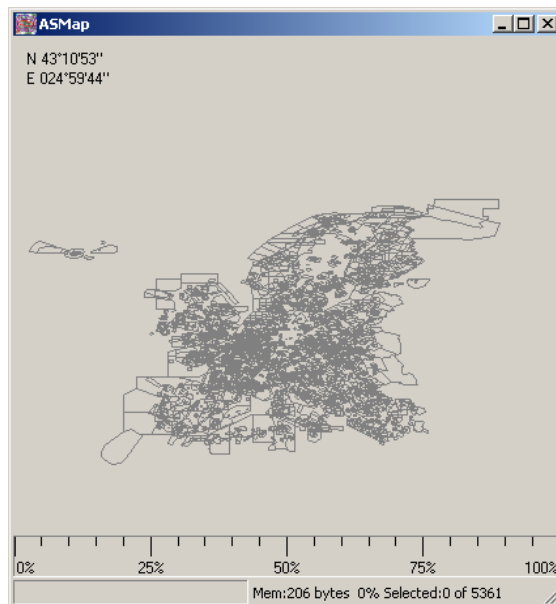
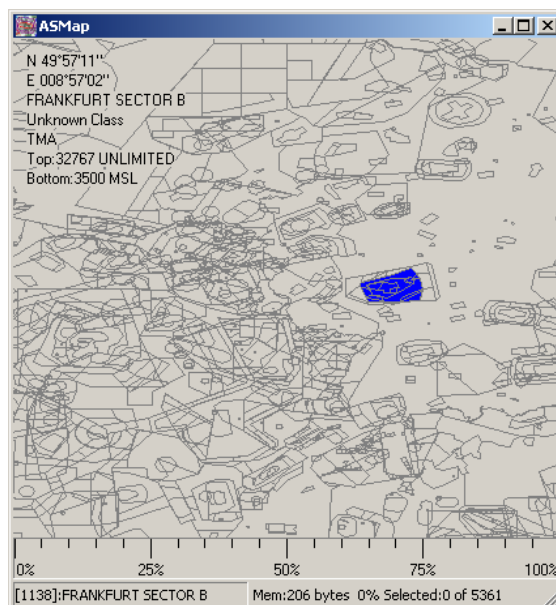
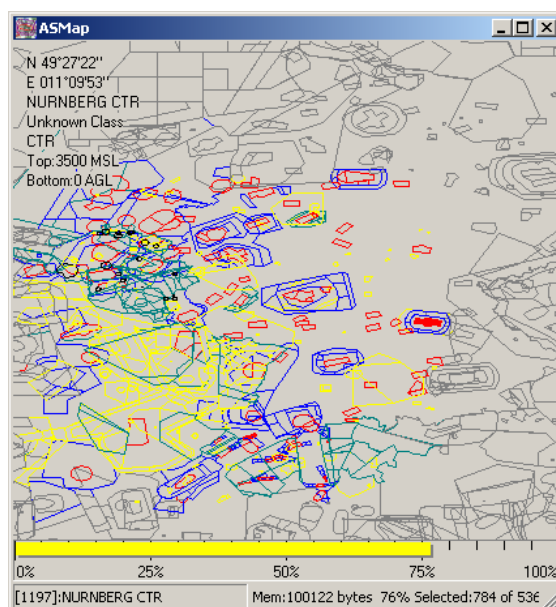


Figure 2 The complete airspace covered by one .LXW file

Using the left mouse button, the area of interest can be selected (click and move the mouse). The scroll button can be used to zoom in and out. Placing the cursor on an individual zone will show detailed information about that zone (see Frankfurt sector B selected in Figure 3).

*Figure 3*

The next step is to mark all the airspace areas that are required in the final file by using the **CTRL and left mouse** button to highlight each area. Do not select airspace that is inappropriate for gliding; the more airspace that is selected, the slower the eventual display becomes in the LX7000. The bar at the bottom of the screen shows the total amount of airspace selected in relation to the maximum capacity of the LX 7000 memory. It is not possible to select more than 100%. As areas are selected, they are highlighted in colour and can be identified by using the mouse and cursor. See Figure 4

*Figure 4*

2.2 Creating .CUB files (The LX 7000 pro IGC 1.1 and later will accept only this format)

Once all the airspace required in the new airspace file has been highlighted, then it is compiled into a new **.CUB** file using the "**Transform**" function. A file name will be requested for the new airspace file. As this name will be that used to identify the airspace file loaded in the instrument, it has a maximum of 8 characters. Comments can be added as required, see Figure 5.

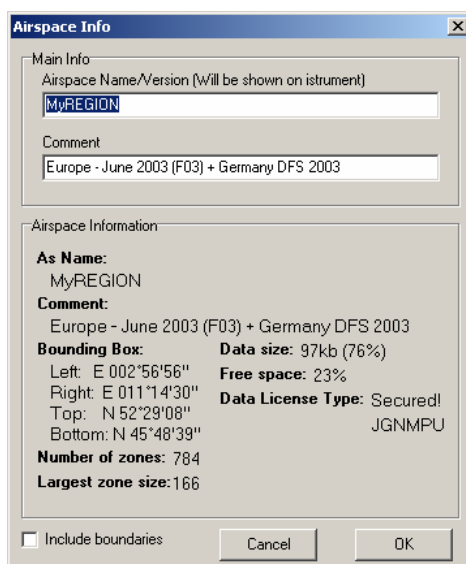



Figure 4

Finally, clicking on **OK** will save the new **.CUB** file ready to be loaded into the LX 7000 pro IGC. Ensure that the path and directory that the file is saved in is correct.

2.2.1 Loading of .CUB files into LX 7000 with Lxe




Run Lxe and establish "**CONNECT**" with the LX7000. Select "**Write CUB Airspace**" under Transfer, or

click on . Alternatively, use the browse function to find the required **.CUB** file to transfer. Lxe will recognize the version of the instrument and offer automatically loading of the **.CUB** file. If the **.CUB** file has been compiled from a **.LXW** file issued by LX Navigation, then the program will ask for a code. This code is based on the **data base version** of the original **.LXW** file (eg. F03), and **serial number** of the unit. The code is normally written on the CD supplied with each instrument. If it is not available, then a new code will have to be obtained from Filser Electronic (zeno@filser.de).

When ordering a new code, the following details are required:

Unit	Serial Number	Data base version of .LXW file

2.2.2 Viewing the .CUB file before loading

It is possible to check the contents of the airspace file before it is loaded into the instrument. In LXAsBrowser use the  command, select the .CUB file that it is intended to load and then press OPEN  followed by . The airspace contained in the .CUB file will be shown on the screen.

2.3 Creating .VER files (Used in older LX Instruments)

The LXAsBrowser is able to convert .LXW files into the old data format used by LX 20, LX 5000 up to v10.03, LX 500, and DX 50 units. The procedure is identical to the creation of .CUB files except when using the **Transform** command, the binary .VER format command is selected. So that these .VER files can be loaded into LX units, it is essential that the product of the transformation is saved in **c:\Program files\LX Navigation\LXe\AsApt***.ver** (eg. F03.ver). Once again, if the original .LXW file is a proprietary Filser database, then a code will be requested before the file can be loaded.

3 Modification of existing Airspace Data

This section covers the procedure for deleting, editing or importing new airspace areas and zones. When importing new airspace, the only formats that are accepted are OAF, TNP, DAFIF and CUB See You binary files.

Note:

Optimization of the airspace in the task area by using this feature to delete all unnecessary airspace data will speed up the computation of the graphical display, particularly in units that have slow processors such as the DX50, LX20 and early versions of the LX5000. Time spent in optimizing airspace data for these units will show particularly beneficial results when flying.

3.1 Deleting and Editing of Specified Zones

To **delete** a zone simply mark the zone (click on its name) and press delete. To **edit** a zone use a double click. Alternatively, place the cursor on the zone, press the right mouse button and the following menu (Figure 5) will pop up.

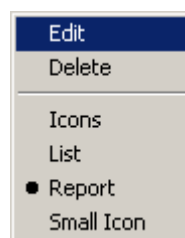


Figure 5

If edit is selected, then the following display (Figure 6) will be shown allowing the parameters of the zone to be edited.

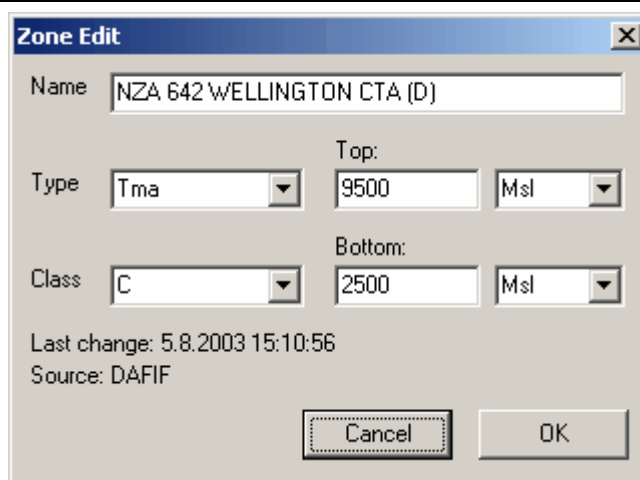


Figure 6

3.2 Deleting of areas

To delete an area, select the area (control and right mouse click), click with the right mouse button on the area, and then goto '**Delete Selected**' from the following menu. The '**Invert Selection**' option will retain the selected area and delete everything else.

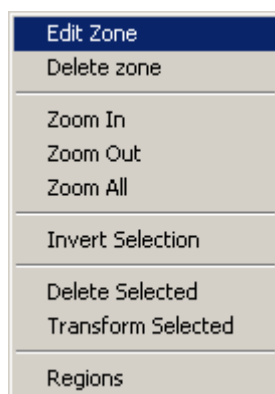




Figure 7

3.3 Import of Airspace Data

3.3.1 Adding new zones to existing .LXW data

New zones can be added to an airspace database by opening a valid .LXW  file, using the open file command.  Then open the new airspace file in the format outlined in Figure 8 that contains the new data.

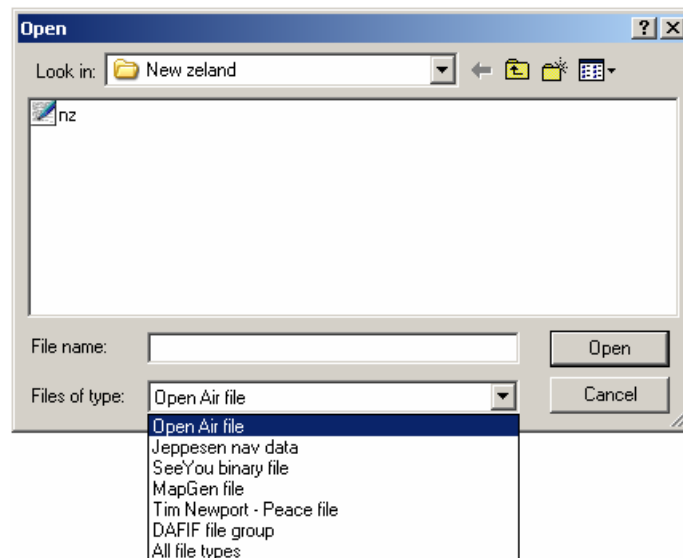









Figure 8

After importing the new data by using the 'add to data' command , the new .LXW  file can either be saved, or transformed into a .CUB file .

3.3.2 Creating of completely New Airspace Database

Using the 'Open file' command , select the file to be imported (OAF, TNP, DAFIF, or CUB). Click on the 'New data' button , and save the new file either as a .LXW file , or transform it to a .CUB file  and then save it.

3.3.3 DAFIF (Digital Aeronautical Flight Information File) Free Database







The DAFIF database is available free on web. Click on  to visit DAFIF web site.



Figure 9

- The DAFIF database is extensive. First select the **continent**
- Then choose the region
- Download the DAFIFT.ZIP file and unzip it
- Copy the following files into a new folder: BDRY.TXT, BDRY_PAR.TXT, MTR.TXT, MTR_PAR.TXT, SUAS.TXT, SUAS_PAR.TXT.
- Click on  and open the file BDRY.TXT (DAFIF file format).

- Click on new data , and it will generate a DAFIF data base (wait a few seconds)
- Save as new as a .LXW  file, or
- Transform the file to a .CUB  file or old binary file  as required.