# WAsP Utility Programs, version 3
Interfaces and how to use them

The WAsP Utility Programs 3 will run under Windows 2000 and XP. Two different user interfaces are employed: standard Windows GUI interfaces and the Windows Command Prompt text-based interface.

Windows Graphical User Interface

Programs like the LIB Interpolator and the Projection Transformer use standard Windows graphical user interfaces. The LIB Interpolator interface, for example, looks like this:
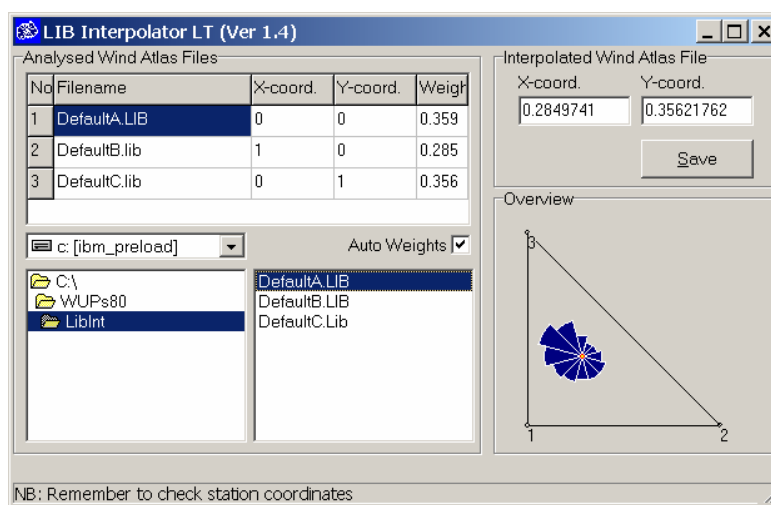
These programs can be invoked by double-clicking the program file name (exe file) from within Windows Explorer. Alternatively, you can establish shortcuts to the programs by right-clicking the file name and choose 'Create Shortcut'. If you want the shortcut to be placed on the desktop, you can also choose 'Send To | Desktop (create shortcut)'. Such shortcuts can reside almost anywhere on the PC.
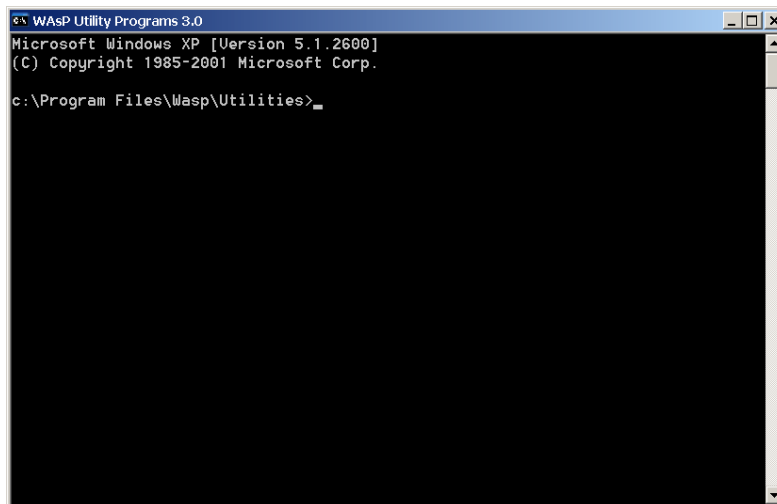
Command Prompt Interface

Many of the WAsP utility programs employ the simpler Command Prompt interface of Windows. In a Command Prompt window you can perform text-based (command line) functions. How this is done in a simple way is described below.

Command Prompt (CP) windows are opened from the Start menu of Windows, i.e. by navigating to "Start | Programs | Accessories | Command Prompt". Left-click to open a new CP window or – better yet – make a shortcut to a CP window by right-clicking and choose "Send To | Desktop (create shortcut)".

You can change the properties of this CP window by right-clicking the shortcut and choose 'Properties'. Here you can change the default start-in folder, e.g. to "C:\Program

Files\Wasp\Utilities", or whichever folder you have used for the WAsP utility programs. You can also rename the shortcut, e.g. to 'WAsP Utility Programs 3', or whatever name you prefer. Invoking the shortcut, a CP window opens like this:
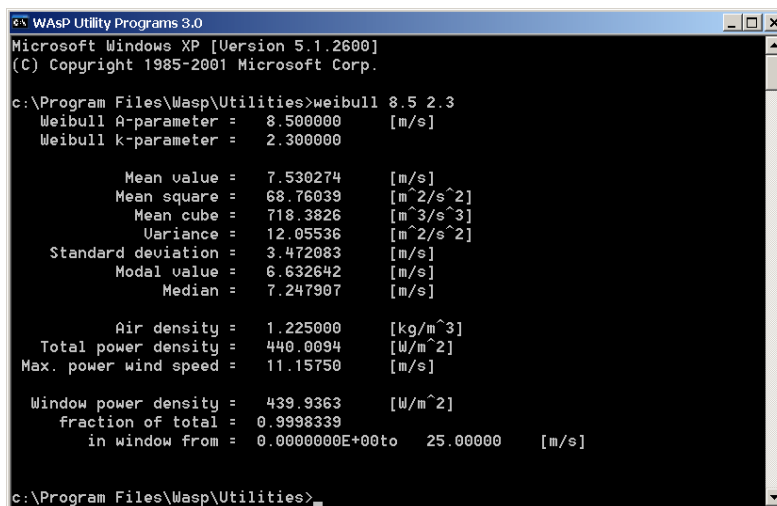
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WAsP Utility Programs 3.0                                    _ □ ×
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

c:\Program Files\Wasp\Utilities>_
```

The shortcut may be stored on the Windows desktop or moved to a folder or toolbar, just like any other Windows shortcut. Now you have established an easy way of accessing the CP-based utility programs. How to carry on is described in the following sections.

Working in the installation folder

The simplest way of working with the CP window is to simply work in the start-in folder. If, for example, you would like to calculate the statistics of a given Weibull distribution function, you simply type 'weibull 8.5 2.3' in the CP window and press the 'Enter'-key:

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WAsP Utility Programs 3.0                                    _ □ ×
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

c:\Program Files\Wasp\Utilities>weibull 8.5 2.3
    Weibull A-parameter =    8.500000      [m/s]
    Weibull k-parameter =    2.300000

           Mean value =     7.530274      [m/s]
          Mean square =    68.76039       [m^2/s^2]
            Mean cube =   718.3826        [m^3/s^3]
             Variance =    12.05536       [m^2/s^2]
   Standard deviation =     3.472083      [m/s]
           Modal value =    6.632642      [m/s]
                Median =    7.247907      [m/s]

           Air density =     1.225000     [kg/m^3]
    Total power density =   440.0094      [W/m^2]
Max. power wind speed =    11.15750       [m/s]

   Window power density =   439.9363      [W/m^2]
       fraction of total =  0.9998339
          in window from =  0.0000000E+00to    25.00000    [m/s]


c:\Program Files\Wasp\Utilities>_
```
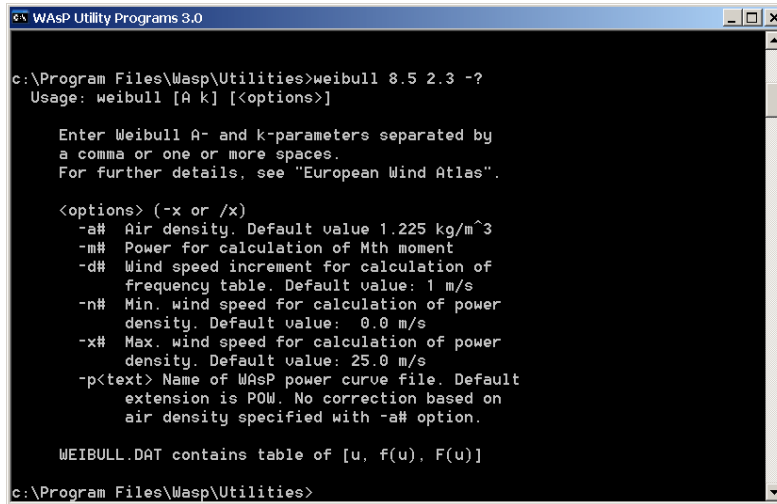
The Weibull program then displays the results of the calculations on the screen and further writes a data file called 'weibull.dat' which contains some additional results, e.g. for plotting a graph of the distribution function.

If a utility program finds a question mark anywhere the command line, it displays a brief help text – and does nothing else. For the Weibull program the help text looks like this:

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WAsP Utility Programs 3.0                                    _ □ ×

c:\Program Files\Wasp\Utilities>weibull 8.5 2.3 -?
  Usage: weibull [A k] [<options>]

    Enter Weibull A- and k-parameters separated by
    a comma or one or more spaces.
    For further details, see "European Wind Atlas".

    <options> (-x or /x)
     -a#  Air density. Default value 1.225 kg/m^3
     -m#  Power for calculation of Mth moment
     -d#  Wind speed increment for calculation of
          frequency table. Default value: 1 m/s
     -n#  Min. wind speed for calculation of power
          density. Default value:  0.0 m/s
     -x#  Max. wind speed for calculation of power
          density. Default value: 25.0 m/s
     -p<text> Name of WAsP power curve file. Default
          extension is POW. No correction based on
          air density specified with -a# option.

    WEIBULL.DAT contains table of [u, f(u), F(u)]

c:\Program Files\Wasp\Utilities>
```
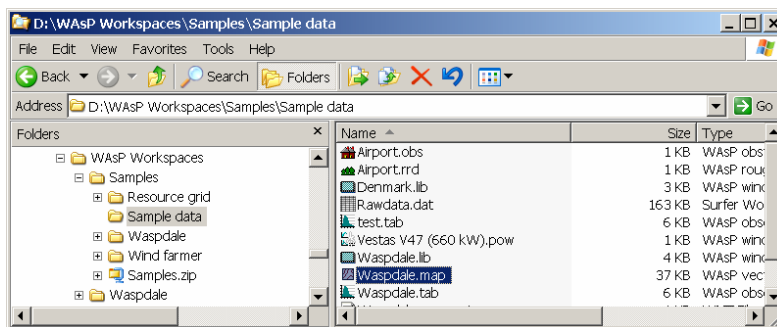
The help text explains how to use the program and further lists any optional arguments that can be used in the command line. It may also contain information about output files.

Using the drag-and-drop facility in Windows Explorer

When you work directly in the installation folder, the utility programs expect input and output files to reside in that same folder. This is of course not always practical, since you don't want to copy files to and from this folder all the time. In such cases you can use the Windows Explorer drag-and-drop facility.

Open Windows Explorer and navigate to the folder where your input file is located. If, for example, you want to make a Surfer grid file from the map file 'waspdale.map', navigate to the folder where the map file resides:

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D:\WAsP Workspaces\Samples\Sample data                       _ □ ×
File  Edit  View  Favorites  Tools  Help

← Back ▾  → ▾ ↑  |  🔍 Search  📁 Folders  |  ...  ✕ ↺  ⊞▾

Address 📁 D:\WAsP Workspaces\Samples\Sample data          ▾  → Go

Folders                    ×   Name ▲               Size   Type
                               🏢 Airport.obs        1 KB   WAsP obs
  ⊟ 📁 WAsP Workspaces          🏢 Airport.rrd        1 KB   WAsP roug
    ⊟ 📁 Samples                🗺 Denmark.lib        3 KB   WAsP wind
      ⊞ 📁 Resource grid        ▦ Rawdata.dat      163 KB   Surfer Wo
        📁 Sample data          🏔 test.tab           6 KB   WAsP obs
      ⊞ 📁 Waspdale             🗒 Vestas V47 (660 kW).pow  1 KB   WAsP wind
      ⊞ 📁 Wind farmer          🗺 Waspdale.lib       4 KB   WAsP wind
      ⊞ 🗐 Samples.zip          🗺 Waspdale.map      37 KB   WAsP vec
    ⊞ 📁 Waspdale               🏔 Waspdale.tab       6 KB   WAsP obs
```

The utility program that transforms a map file to a grid file is called map2grd, so this is the command you should write in the CP window:

    C:\Program Files\Wasp\Utilities> map2grd

Leave a space (blank character) after the name of the program. Now, left-click on the file 'waspdale.map' in Windows Explorer and drag the file (hold the left-hand mouse button down) to the CP window. Once the pointer is over the CP window, release the left-hand button and drop the file in this window. As you can see, the file is not physically moved from its original location, but a complete reference to the file is inserted after the text in the command line.

Finally, click somewhere in the CP window to make it the active window, and press the 'Enter'-key to execute the command. The window now looks like this:

The program has read your input map file and transformed the map to a grid file. Some characteristics of the input file and program options are shown on the screen. The output grid file is located in the same folder as the input map file:
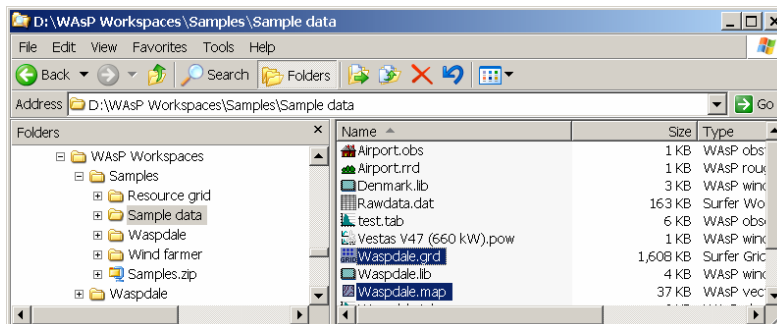
Using options in the CP window

Most of the WAsP utility programs can be invoked with one or more options in the command line. If you want to use options, simply write these following the program name and input file specification:

C:\Program Files\Wasp\Utilities> map2grd waspdale.map –d100.0

If the utility program finds a question mark anywhere the command line, it displays a brief help text – including an overview of which options can be used.