PLOTTING PROGRAMS

The plotting programs supplied are executable programs, which use the HGRAPH plotting library, which is no longer available. Some if the calls are system specific and so they will not run on all systems but it is hoped that they will run on most 64 bit LINUX or WINDOWS systems. **The author is not able to help with any problems with running these plotting programs.**

To run the plotting programs under LINUX the file **xhgraph** , which is supplied, must be present either in the same directory or in the path from the directory**.**

To run them under WINDOWS the files **ihg_lib.dll** and **ihg_plot.exe,** which are supplied, must be present either in the same directory or in the path from the directory**.**

After requesting a plot in any of the programs you will be presented with a menu to choose the type of plot. Choosing "C" will produce a postcript file of the plot which will be called **plotfile.***,** where *** is the plot number starting with 000. The postcript file can be plotted by most viewing systems. The system **xview** on most computers will view it and convert it to almost any other plotting format. Choosing "G" produces a "generic file", which is of no known use. Choosing "R" produces a plot on the screen in an xwindow for immediate viewing. Choosing "T" produces a plot in a tectronic window if that is available.

Stagen is an executable version of the program STAGEN used in the design system. To run it simply type in the name of the executable code, e.g. **stagen.x** . You will be asked for the name of the input file, which defaults to **stagen.dat**. Then just answer the questions on the screen.

histage is a program to plot out the convergence history of a MULTALL calculation. It reads in the formatted file **stage.log**, which is always written by MULTALL, and plots out the log of the average residual, the mass flow rate and the continuity error, all on one graph. To run the program simply type out the name of the executable code, e.g. **histage.x** .

globplot is a program for plotting out one-dimensional mass averages of the flow quantities against meridional distance. It reads in the unformatted file **global.plt** , which is always written out by MULTALL. The properties which can be plotted are: mass flow rate, stagnation pressure, stagnation temperature, angular momentum, entropy and lost efficiency. The latter is especially useful. To run the program simply type out the name of the executable code, e.g. **globplot.x** .

plotall-17.1 is the main plotting program for the output from MULTALL. It is based an the program CONTOR7, originally written by Prof Howard Hodson. It can plot almost any flow quantity, either as a line plot or a contour plot. It reads in the unformatted files **flow_out** and **grid_out c**ontaining the flow quantities and the grid respectively. The **flow_out** file is also used for a restart file if one is requested by MULTALL.

On starting the program by typing the name of the exectutable, e.g. **plotall-17.1.x**, you will first be asked the name of the input file which defaults to **flow_out** . Then you are presented with a series of menus which allow you to choose the flow property to be plotted, whether a contour or line plot is required, on what surface, whether to mass average, etc. The menus should be self-explanatory. If output to a file is requested then each plot will be numbered **plotfile.***** starting with **plotfile.000** and the program will continue after each plot until the menu choice 99 is input to end the run.