



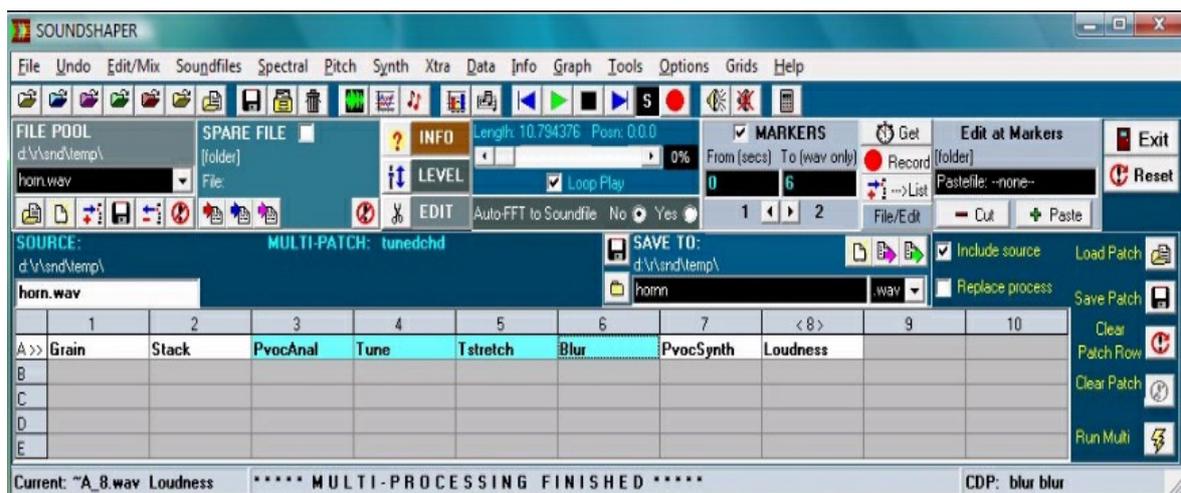
## About the *Soundshaper Pro* GUI

*A practical, menu-driven GUI by Robert Fraser*

The *Soundshaper Pro* GUI, like *Sound Loom*, is a 'front-end' for the CDP software functions. This document explains how it operates, and in doing so provides a concise insight into how the CDP System approaches various tasks.

### The Main Window

I would single out as its key feature, *Soundshaper's* practical and concise layout. The fundamental sequence of operations in a sound design package such as CDP is HEAR - ALTER - HEAR AGAIN. *Soundshaper* focuses on this basic tripartite sequence by including in its main window a PLAY mechanism, with the full functionality of the CDP system available above it in the form of drop down menus.



In *Soundshaper Pro*, the lower half of the page is devoted to the new multi-process **Patchgrid**, which currently displays a sequence of up to 10 processes (in Row A). When a process is completed, its name appears in a cell in the Patchgrid. Its output file can be played (where appropriate), saved, or the process can be re-edited or replaced by another compatible function. The whole sequence, including its source sound, can be saved as a Patch, recalled and run either with the same source or a different sound.

In the freeware *Soundshaper Standard*, the same sequence of processes is also present, but only the current cell's process is displayed and it cannot be re-edited, nor can the sequence be saved as a patch. Both versions include a multiple UNDO function.

Thus you can HEAR the source sound, go to one of the CDP functions to ALTER it, and then HEAR the result, all from the main window of the GUI. Although there is no built-in soundfile editor, a soundfile in the current cell can be sent to your favourite editor via a single mouse click and any edit points can be returned to *Soundshaper*.

The **Patchgrid** makes it possible to work very quickly through a sequence of operations. An experienced composer will gradually create his or her own set of operations central to their own composing style. Soundfiles generated within the patch sequence are automatically given temporary filenames and can be saved permanently as and when required.

# Easy Access to Functions

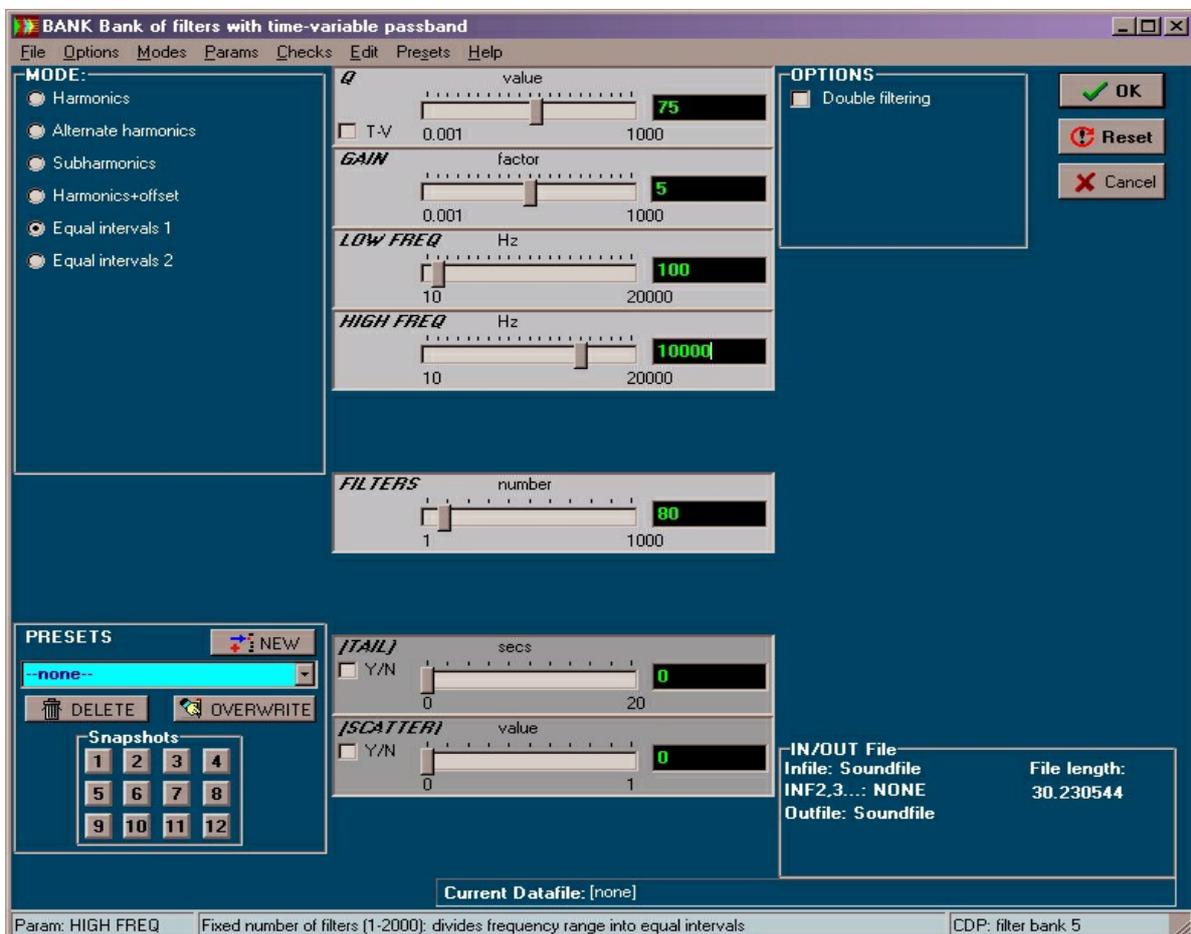
Drop-down menu for the CDP Pitch functions:



- The drop down menus of functions are clearly laid out, so that it is easy to find any processing or utility function in the System.
- The naming of the functions is close to that of the underlying command line programs. The standard CDP name is also displayed and, if clicked, leads to the fuller HTML documentation.
- There is also a grid of function names for ultra-fast access, when sufficiently familiar with the system.
- There is space in the menu structure for you to add your own favourite additional applications, such as the standalone CDP graphic program, *GrainMill*.

## Parameter Pages

Parameters for CDP processes are set on dedicated parameter pages, which show the function's various modes, grouped in a dialog box with radio-button switches. When a particular mode is selected, the correct parameter faders are reconfigured accordingly. The image shows a parameter page configured for FILTER BANK, Mode 5 (Equal Intervals by number of filters).



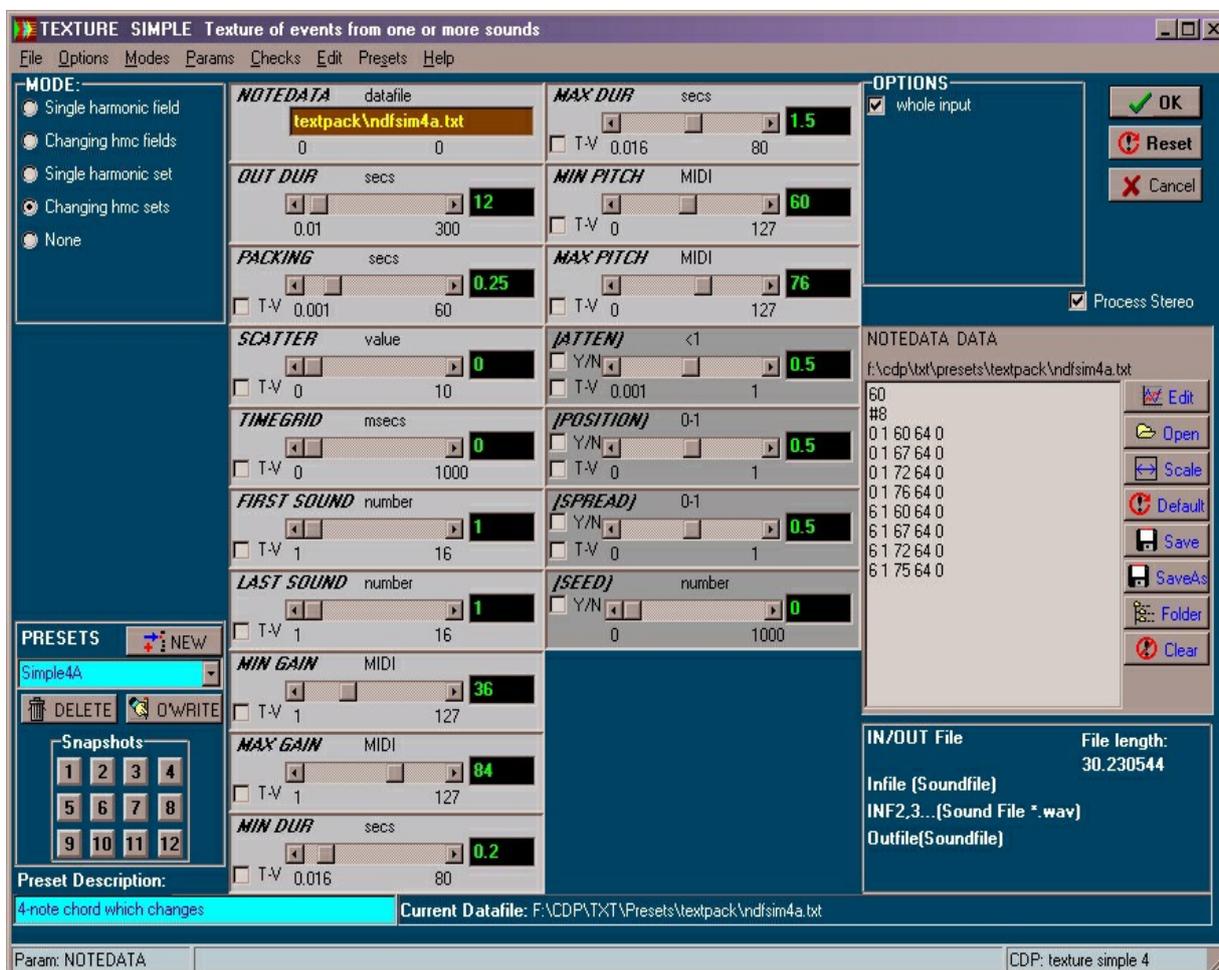
Parameter ranges are set according to the function's specifications and are automatically adjusted to take account of relevant factors such as the file-length or the spectral sample rate. An automatic Process-Stereo facility takes care of CDP functions which are natively mono-only.

If the parameter is a datafile (usually a user-selected option), an existing default file is automatically displayed, or another file can be selected, which can be edited on the page or in the Breakpoint Editor (see below). Time-values can also be rescaled to fit the length of the current file. Datafiles have been named throughout *Soundshaper Pro* so that each type has a unique default name; likewise, identical types share the same default name so that the data can be re-used in other functions.

The Status Bar is used to explain parameters and their value range limits. This makes it possible to use the System with minimal need to refer to the more comprehensive (HTML) documentation.

## Presets

You can save your parameter configurations as **Presets** and build up a **Collection** of up to 100 presets per CDP function, with no limit to the number of 'collections' of presets. It is also possible to save an individual set of parameters or to load these from any stored patch.



Presets saved temporarily while working are called 'snapshots'. The **Snapshot Pad** looks like a numerical keypad with 12 snapshot storage locations. Settings are stored and recalled simply by clicking on a numbered button.

There are Soundshaper Presets for all the music examples in the TEXTURE HTML Reference Manual, supplied as standard with CDP Systems. Presets are especially useful with the Texture Set because there are so many parameters.

Richard Dobson's *Reverb* program set and *Multi-channel Toolkit* are also implemented in *Soundshaper* and have a preset facility.

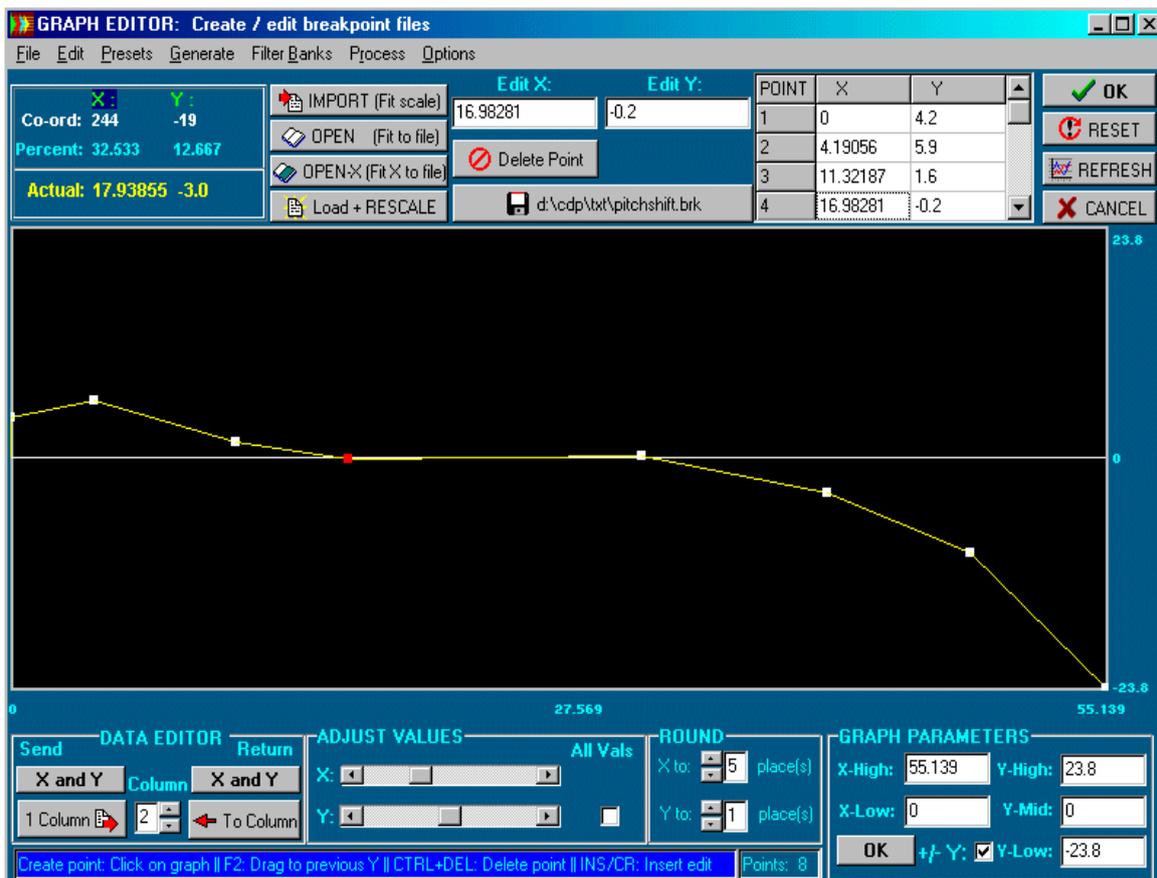
# Graphic Breakpoint Editor

*Soundshaper* contains its own straightforward **Graph Editor**. Creating *time-varying* contours is an essential requirement for achieving 'plastic' musical results, and it is a distinguishing feature of the CDP System that most parameters support this feature.

Easy access to this facility is available from the drop down menu of the main window or from individual parameter pages. The graphic 'breakpoint' editor also displays the breakpoints (time + value) as an *editable table* at the top right portion of the screen and includes some preset values for functions such as filter banks.

The graphic facilities complement the option to create breakpoint files directly with a text editor. These files can be loaded into *Soundshaper* in the appropriate parameter dialogue. They can also be opened in the *Soundshaper Data Editor* (see below) to effect a wide variety of data transformations.

## Soundshaper Graphic Breakpoint Editor:



The above screen illustrates a curve on which the white squares are the breakpoint positions (combining *time* and *value* - horizontal and vertical planes respectively). These can be inserted, moved or deleted. Coordinate positions are shown in the top left, can be precisely edited in the Edit X and Edit Y boxes, and the whole resultant breakpoint file is shown on the right hand side in a box which is also editable. Breakpoint files can be Saved and Opened, the overall scale of the drawing adjusted (bottom right), and the data values adjusted in various ways.

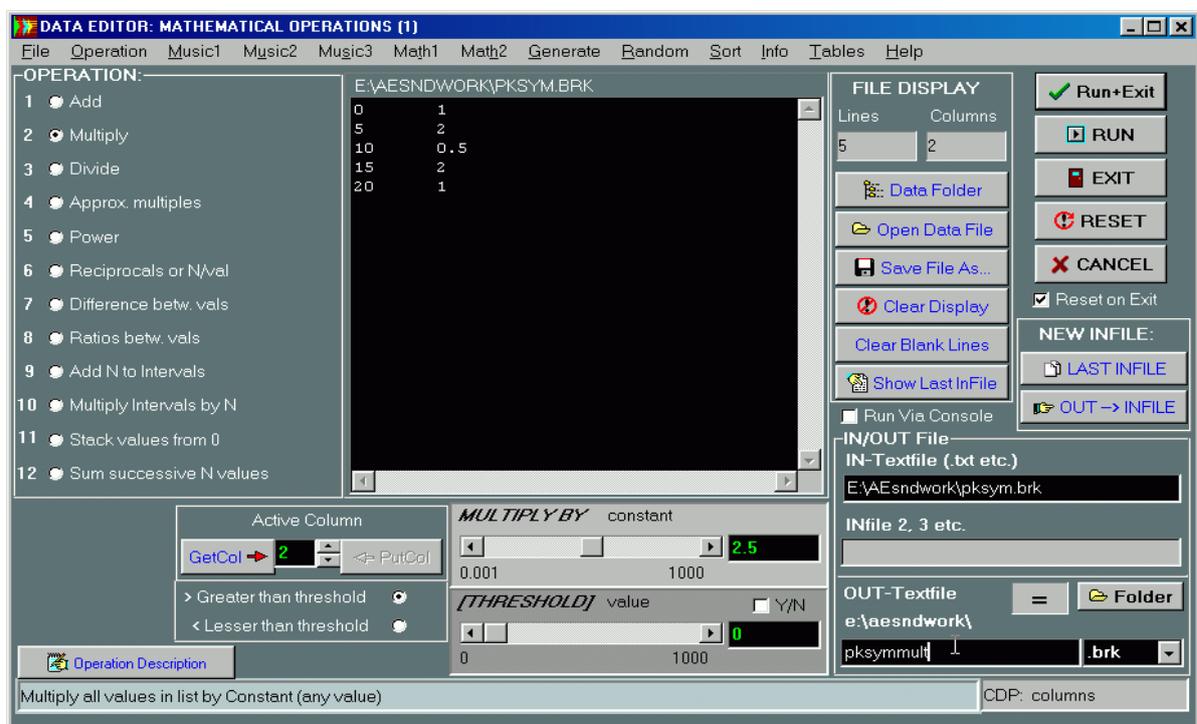
The **Graph Editor** is thus a well-featured environment in which to prepare and adjust the time-varying parameter data that is so important in achieving musically effective results. It complements the Data Editor described on the next page, with which the data can be further transformed in many different ways.

# Data Editing

The CDP System emphasises flexibility and precision, and for this reason supports a wide variety of files of various types. Besides breakpoint files and mix files, there are data files for functions such as splicing multiple files, filtering, cut & retain multiple segments, freeze operations, applying vowels to sounds, sequence and analysis window patterning, and shuffling segments of a soundfile. There is also a special file type - a note data file - for creating complex textures, with or without harmonic mapping.

The **Data Editor** is designed for use with the breakpoint files for CDP programs, some of which have more than one column. There are therefore special facilities for manipulating columns of data, whether in the same file or in different files. 20 different mathematical functions can be applied to the columns, as shown (the first 12) on the left side of the screenshot below.

## Soundshaper Data Editor:



*Soundshaper's Data Editor* page corresponds to the **Table Editor** in *Sound Loom*. It is a graphic front end for the command line program, Columns.exe, written by Trevor Wishart. Breakpoint data values can be massaged in many different ways and even saved or returned to the **Graph Editor**.

In the example shown above the 2nd column - the one on the right - is being multiplied by the value 2.5. This is what it looks like after clicking on RUN:

0	2.500000
5	5.000000
10	1.250000
15	5.000000
20	2.500000

The many different types of operation are shown on the menu bar at the top - 108 data in all for information, musical data conversions, mathematical transformations etc., as well as 8 Table Operations such as Separate, Join or Interleave Columns, Concatenate files, and make the 2nd column like the 1st. Altogether, this is a very powerful tool for a composer using the CDP software, and one that *Soundshaper* provides in a clear and accessible way.

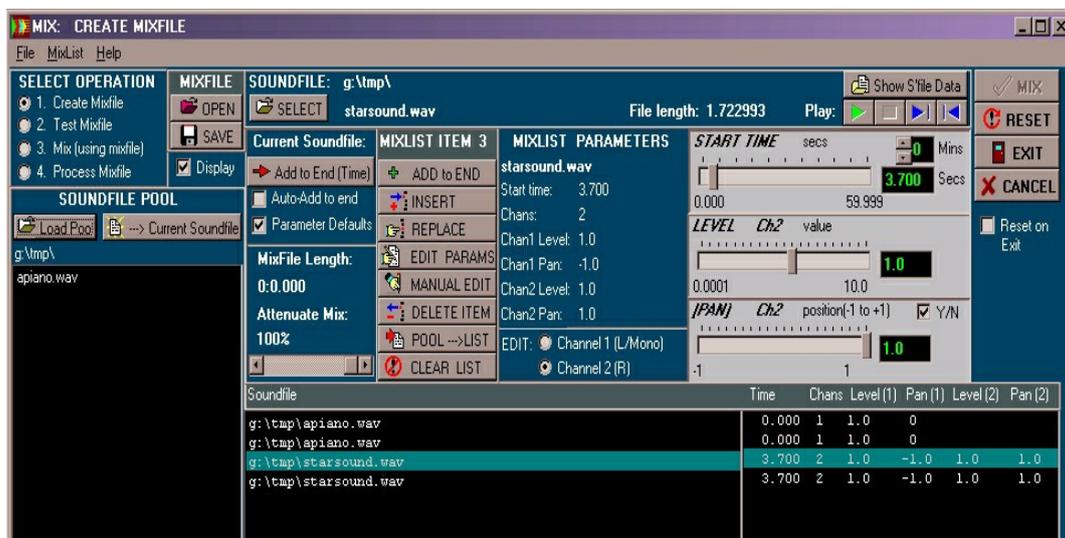
## Mix Facilities

*Soundshaper's* MIX facilities are easy to use. CDP mixing is not track-based as in audio sequencers. In a track-based mixer, it is easy to repeat sounds, but overlap is possible only by placing sounds on separate tracks.

**CDP focuses on designing sonic entities and is all about overlap.** Therefore all sounds are listed vertically, each with its own start time, and these times can overlap. Repetition is possible by repeating a sound at a different time, with or without overlap – the same source sound can be used, so it is the same as having virtual copies.

The screen below shows the *Soundshaper Pro* **Mix Page**, where soundfiles are selected, auditioned and added to the mix, and start time, level and pan are also set (moving pan has to be done previously). This *mixfile* information is fully editable on the Mix Page, which also incorporates CDP's functions for altering *mixfiles* in various ways. The *mixfile* data is stored as a textfile, which can be edited with a text editor. It can also be prepared with a text editor and loaded into *Soundshaper*.

### Soundshaper Mix Page:



## History Function

One does not always want to go through the entire graphic point and click process, especially as certain favourite sequences of operations are developed. In addition to saving and recalling such sequences as patches, both *Soundshaper Pro* and *Standard* have a **History Function** that can be useful in building up libraries of complex functions which can be run at a stroke. If activated, *Soundshaper* records all the processes you run by writing a text file of the command lines created.

This text file can then be edited and used in the command-line interface as a batch file with different soundfile input(s). Because the interface runs with the standard CDP programs, moving between *Soundshaper* and the command-line interface is completely transparent. Batch files can also be run from within *Soundshaper* and in a future release it will be possible to save patches as batch files and incorporate a batch operation as a process within a patch.

Last updated: 5 October 2009