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# **A.M.A.S Operation Manual**

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Software by F.Rawasi & V.Azodi

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## INTRODUCTION

Thankyou for purchasing A.M.A.S. We feel sure that you have just bought the most advanced sampling/MIDI hardware and software package available for your AMIGA at such a low price. This hardware and software enables the user to digitise voices, instruments or music and incorporate them into other IFF compatible programs. The MIDI software, on the other hand, enables the user to assign samples in a very flexible manner to synthesizer keys (or the AMIGA keyboard) turning your computer into a very powerful musical instrument in its own right. Of course, it doesn't end here. The inclusion of the MIDI interface within the sampling hardware means that a whole new world of music making has been opened up to the A.M.A.S. owner. Software requiring additional MIDI interfaces to be plugged in to make them work should work with A.M.A.S. thus requiring **NO EXTRA HARDWARE** (this can only apply to packages which expect to use the RS232 interface as the MIDI data output port, which should be most of them). This means that MIDI sequencers, drum-machines, synthesisers, voice editors and much, much more can now be run from your AMIGA.

Good luck and have fun !

2-Bit systems Ltd and Future vision wish to offer their thanks to their friends David Jones for ideas and help and Robert Washburn of MICHTRON for his trans-atlantic technical help. Without the valuable support of the above, our lives would have been even more frustrating.

## Specifications

### The Hardware

#### Inputs

Twin phono inputs for stereo left & right.  
3.5 MM Microphone jack socket.

#### Filters

Twin Butterworth.

#### MIDI

Standard MIDI IN, out and through.

#### Sampling

Maximum frequency 40 kHz stereo, 90 kHz mono (approx.)

#### Sensitivity

Phono: 0.8 volts  
Mic: 25 milli volts

## The Software

#### Sampling

Mono left/right or stereo input.  
Record, Record with auto trigger, playback & listen

#### Memory

Upto 8 BANKS of 200k RAM (depending on machine) with up to 10 STEREO samples per bank

#### Analysis

Twin digital storage scopes with magnify and Real Time Spectrum analyser.

#### Frequency

Mono sampling up to 28 Khz  
Stereo sampling up to 25 Khz  
Stereo playback up to 28 KHz

#### Editing

Cut, paste, mix, fadein, fadeout, filter, shrink volume up, volume down, stereo FX.

#### File

Load sample, Save sample, Load BANK, Save BANK.  
Option to save 'RAW' data or samples in IFF format.

**MIDI**

- Plays samples from currently selected BANK (up to 8 BANKS)
- Up to 10 stereo samples per bank.
- Up to 4 mono voice or 2 stereo voice polyphonic.
- Frequency shifting (-1 to +2 octaves).
- Selectable channel response.
- Split and assign MIDI keyboard (upto 10 splits).
- Keyboard Octave shift (+ or - 1 octave).

## Connecting your A.M.A.S system.

### Machine/A.M.A.S. versions

A.M.A.S. requires an AMIGA range computer with a minimum of 520 Kbytes (half meg) of RAM running kickstart version 1.2. Two versions of A.M.A.S. exist for the different hardware configurations of the AMIGA. Please check that you have the correct version for your style of computer. The version of your hardware is located on the packaging and on the label on the front panel of A.M.A.S. The early A1000 machines require that the hardware be marked 'A1000' only. The later machines, A500 and A2000, require that the markings should say "A500/2000" only. This version SHOULD also work with any more recently released machines. The reason for this dilemma is because of the fact that the earlier A1000 machines had non-standard printer and serial port 'genders'. These connectors were reversed on the later machines. It is important that A.M.A.S is not plugged into the wrong type of machine since the unit takes its power from these and damage to A.M.A.S, your AMIGA or both might occur. If you are unlucky enough to find that your A.M.A.S. is of an incompatible format with your machine, please return it to your dealer for exchange/refund. Some manufacturers supply an item called a 'Gender Bender' or 'Gender changer'. This would normally work with a standard RS-232 socket, but without making two special conversion leads (one for each A.M.A.S connector) this is unlikely to work. This is because the A1000 and A500/2000 sockets are NOT identical reflections of one another.



## Connecting up.

Firstly, remove the power to your computer, NEVER connect or remove A.M.A.S from your system with the power switched on. Place A.M.A.S. on some convenient spot to the left of your computer. The leads should be located on the right hand side of A.M.A.S. with the slope of the box pointing toward the front of your computer. Now locate the row of sockets on the rear of your computer and insert the A.M.A.S plug and socket into the mating serial and parallel ports. If you have the correct version of A.M.A.S. for your machine, then it should be impossible to incorrectly install A.M.A.S. onto your computer.

Next, an input is required to the sampler. The two phono sockets on the back of A.M.A.S will accept input from a variety of low power signal sources such as the headphone output of portable tape or Compact Disc players. Optionally, a microphone may be connected to the sampler via the 3.5 MM jack socket located between and above the phono sockets. It is advised that, whilst no damage should arise from the connection of both sources simultaneously, users should be aware that one may interfere with the other and be the cause of feedback loops (high pitch whining sounds). A suitable microphone for connection to A.M.A.S. would be any high impedance mic fitted with a 3.5 MM jack plug. Such a device is available from your local Radio shack (or TANDY) store, such as catalogue number 33-2001 (the remote control lead can be chopped off or ignored). If in doubt, please consult a local electronics or HI-FI dealer for more information.

If required, the MIDI sockets may be connected from the back of A.M.A.S. to the MIDI equipment required. The system configuration depends entirely on the equipment to be installed, however the basic facilities of the A.M.A.S. system software only require that the MIDI in socket of the interface is connected to the out socket of the MIDI device to be used. The A.M.A.S. software does not send any data out of the MIDI out or Thru sockets itself. These have been included solely for the purposes of compatibility with other AMIGA MIDI software.

Finally, of course, you will need to connect the output of your AMIGA to some suitable form of amplification. This may be a properly equipped monitor or T.V., however, to get the most out of your new stereo sound sampler, we strongly recommend that you connect the stereo outputs of the AMIGA to a high fidelity audio amplifier. This not only gives you the benefit of hearing samples and effects in glorious stereo, but also to give the user the best sound quality possible from the system.

When removing A.M.A.S. from your computer, NEVER pull at the leads which plug into the back. This can lead to faulty operation due to stress on the plug and socket. If the plug and socket are tight, then use a small blunt instrument, such as a screwdriver, to gently prize the connectors apart.

## Running the A.M.A.S. software.

The user is now referred to the relevant sections of the AMIGA manual to describe the correct use of the mouse, clicking, double clicking ETC.

Now apply power to your AMIGA and wait for the screen to prompt you to insert the workbench disc. Insert your A.M.A.S system disc into the main computer disc drive (called DF0:) and wait for the computer to complete its power up procedure. Eventually a title screen will appear. Simply press a key on the keyboard, the screen will now change to display the A.M.A.S. sample editor software. A.M.A.S. is now ready for you.

## Setting the correct input volume.

To obtain the optimum sample quality, it is most important that the input level of the signal to be sampled is neither too low or too high. The oscilloscopes, visible on the centre left and right of the

screen, are provided for just this purpose. Please examine the following diagram carefully and ensure that your signal is set at an appropriate level.



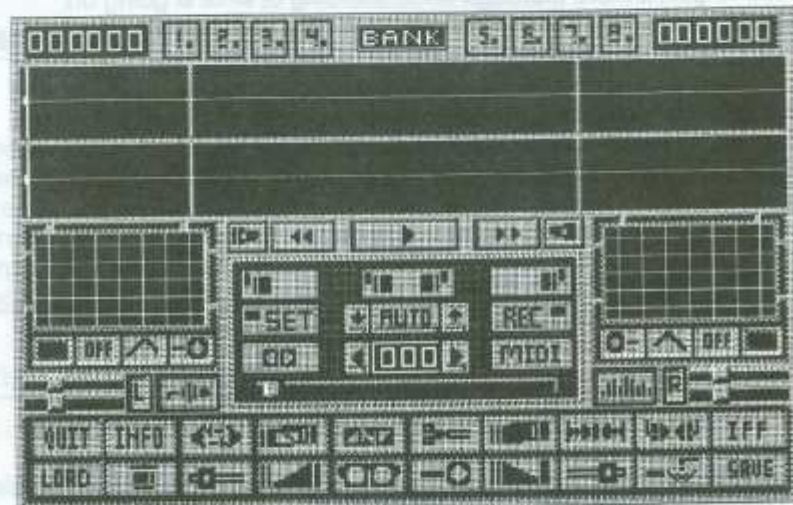
Too low

Correct level

Too high

Please note that if the level is set too low, then an element of background noise is likely to be present due to an effect known as aliasing. Setting the correct volume will ensure that the noise remains a significantly lower proportion of the audible tone. Setting the input too high will cause un-desirable distortion and clipping and will be heard as a variety of clicks and crackles which are not actually part of the incoming audio signal. The sampler built into A.M.A.S can produce some very high quality samples when set up correctly. A little care on this aspect of the set-up procedure will reward you with the sort of quality that you have doubtless already come to expect from your computer.

## A tour of the screen.



The main editor screen may basically be viewed as 5 elements :-

- 1) The cursor position displays and banked memory selectors (TOP).
- 2) The twin sample edit windows (beneath).
- 3) Dual (left/right channel) oscilloscopes (left & right of screen).
- 4) The display, sampling and volume controls (between & below scopes).

### 5) The editing controls (BOTTOM of screen).

Because of the sophisticated and flexible manner in which A.M.A.S. works, some of the buttons and facilities have multiple functions. These usually depend on the mode in which the software is presently operating (see under SET). Please read the following section of the manual carefully. Please experiment with the software as you read to gain a more thorough understanding of what is going on. Experimentation is fun and can not harm you or your computer!

One final note. When a function is in operation, its button legend will turn red for the duration of effect, after which it will return to black. Some functions require extra input from the user. Such functions will appear to glow so as to indicate that they are waiting for some additional form of input.

## Cursor position and BANKS.

### Information line

The top line contains boxes on the left and right which indicate the cursor positions within the sample display windows (see section 4.2). In the centre is a small box which will contain the words BANK, MARK (markers) or POIN (pointers). This box shows the present sample buffer record and edit mode. For further information on this box refer to the advanced description of the SET button.

### Memory BANKS

On either side of the mode box, 8 BANK select buttons will be seen. These are split into 2 sets of 4 buttons. Each button contains a number and a full stop. The sample editor of A.M.A.S. will automatically attempt to take advantage of all memory resident within the machine (up to the maximum of 2 megabytes). Each BANK requires 200K of memory. For each BANK that can be used, the

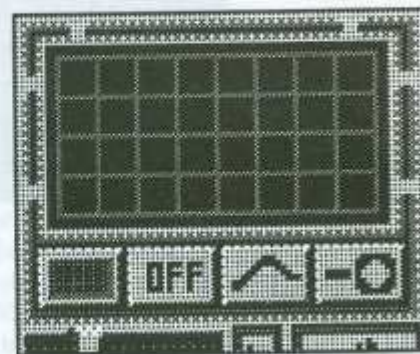
decimal point will be lit. For a computer with only half megabyte of memory, only BANK 1 will be available. This is because the editor requires almost 200K for its own and the operating systems use and allocates the remaining memory to the sample edit and record buffer (the area shown in the edit windows). It follows, therefore, that a machine fitted with 1 megabyte of RAM would have 3 BANKs available.

## Sample edit windows.

The sample edit windows are the two long windows with the green pointers in. The upper window represents the left channel, the lower represents the right. At the left hand edge of both windows may be seen a light blue marker. The data displayed in these two windows is in fact the data stored in the currently selected BANK, but for the purposes of discussion will be referred to as the sample/edit buffer, since, for the moment, it is used as a sampling and editing area.

## The oscilloscopes.

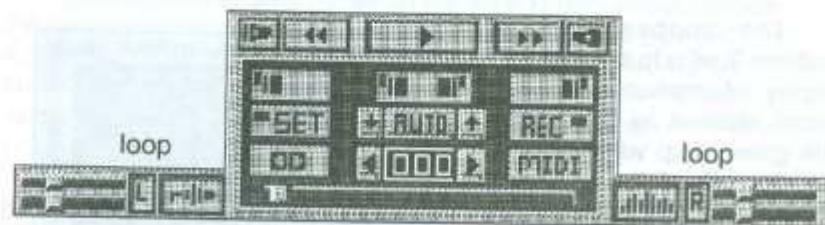
The scopes work in realtime. That is to say that they display information about that sound channel as it changes. The green lamp will glow with the strength of the incoming signal. The darker, the lower the signal. If the signal is too strong (loud) then the lamp will glow a bright yellow. The scope may be disabled at any time by switching it off. The display in the scope window may be frozen at any time by pressing the centre button. To release the waveform, press the button again. The scope will display the smallest possible



information about the sample when the magnify button is pressed. When the AUTO record facility is in operation, a graticule will appear in the centre of the scope window. The level selected will cause sampling to start when the wave exceeds the moveable AUTO graticule markers.

## The main control panel.

At the top of the main control panel sit five buttons. The two at the extreme left and right of the area, when clicked upon, will cause the edit windows to locate at the extremes of the edit/sample buffer. The next two in, cause the screen to scroll in the selected direction toward the upper or lower end of the buffer to enable the user to examine a particular area of interest within a sample. Finally, the centre button is the PLAY button. When selected, the sample will be played. The play button conforms to the mode setting of A.M.A.S. Either the pointers, markers or the whole buffer will be played. The looping markers are considered, as are the setting of the channel select and upper channel volume sliders.



Volumes Listen Frequency/Period Spectrum Volumes

### Left / Stereo / Right

The three upper most buttons of the main control panel will select the mode of sampling and editing. Please note that for mono operations, the non-selected channel has its edit markers removed

from the screen to help prevent confusion. Most editing features will be performed in the mode selected here. That is to say that if a stereo sample is made, and then the left mono mode is selected, then editing will NOT affect the right channel. For users who are making only mono samples, this means that the entire contents of one channel can be copied into the other as a temporary store for experimentation or retrieval purposes. The editing features which ignore the editing/sample mode are BOUNCE and MIX.

### The SET function.

Pressing the SET button will cause a panel to appear in the centre of the screen asking you to select the mode of operation. The options are : POIN (POINTER - the Green lines on the screen), MARK (MARKER - the blue lines on the screen) and BANK. The mode of operation determines how A.M.A.S. responds to requests for the sampling and editing of samples. If pointer mode is selected, then only the area between the green cursors will be used for recording and playback. If BANK is selected, then the ENTIRE bank of memory is used over-writing anything that existed before. Functions such as bounce, fade, volume and mix are un-affected by the SET mode, these ALWAYS work between the green pointers.

### The AUTO record trigger.

When AUTO is selected, the button will glow to indicate that it is operation. Also, a graticule will appear in the centre of each of the operational oscilloscopes. Pressing the arrows on either side of the AUTO box will cause the graticule markers to move in and out from the centre of the screen. The effect of AUTO is only noticed when sampling. When REC is pressed, A.M.A.S. will sit and wait for the incoming signal (normally displayed on the oscilloscope) to exceed that set on the AUTO graticule. When this is done, then sampling will start. The main use of the AUTO trigger facility is to enable the user to cue up a sample using the LISTEN mode and then pause it. Selecting AUTO and then REC will cause A.M.A.S to wait for the pause to be

removed and for the signal to start before it too starts. This means that any unnecessary gaps at the start of the sample are avoided, hence maximising sample space.

#### The RECOrd function.

RECOrd is the button which causes the system to start sampling. The screen will go blank for the duration of sampling. Sampling will start immediately unless the AUTO function is operational. Sampling will stop when A.M.A.S. reaches the end of the sample space (see SET mode) or when the user stops sampling by pressing the mouse button again. Once sampling has been terminated, there will be a short pause while A.M.A.S. re-adjusts the edit windows to display the new samples. Recording will occur only in the selected channels. It is therefore possible to record something into the LEFT channel only, select the RIGHT and then make a new sample without disturbing the sample in the opposite channel. A slight restriction exists with the record frequency. Mono sampling may occur up to the maximum frequency of just over 28 KHz. Stereo sampling can not be achieved above 25 KHz. Quite frankly, this is unlikely to be a major restriction, however, the PLAYBACK of stereo samples is possible at ANY frequency. It would therefore be possible to make two mono recordings of the required audio input (one left and one right), match up the start of the samples, and then to playback the samples in stereo at the maximum frequency.

#### Internal filter switch.

Some AMIGAs have the facility of switching off their internal filters. When selecting FILTER, the power lamp on the front of the AMIGA will extinguish and the filter symbol will be lit. This will now mean that samples will sound a little less muffled since they will now have a wider bandwidth. This facility should only really be used with samples made at frequencies higher than 10KHz since the level of aliasing will be notably higher and they will sound more distorted. If your machine does not support this built in hardware facility, then you

will simply not be able to hear any difference in your sample quality DESPITE the fact that filter has been selected, as far as we know there is no other way of telling that your machine is of a late enough release (since those without the facility also switch off the power lamp !!! [good one Commodore!]).

#### Sample frequency/periodic select.

The sample frequency or sample period (they are exactly the same thing, just different methods of expressing it) can be altered in 2 ways. Firstly, pressing the 2 buttons on either side of the frequency/period display will cause the value to increase or decrease. Secondly, the slider beneath the display can be picked up and dropped at any point, the value in the window will change as it goes.

#### Sample frequency/periodic display.

The display may be switched between frequency & period mode by clicking on the window. Frequency is displayed as 25.6 ([KHz] for example). The periodic value for the same is displayed as 128. The periodic value is the same as that programmed into the AMIGAs audio DMA timer. For a more thorough description of these values, please refer to some form of programmer documentation such as the Commodore AMIGA hardware reference manual (July 1986, second edition). Calculation of this volume is covered quite thoroughly on pages 140 to 143.

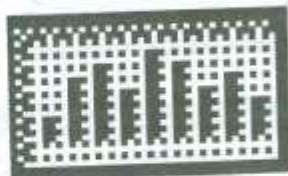
#### Listen to sample.

The little 'Earpiece' symbol causes the screen to be blanked. The mono or stereo input should now be audible via the Hi-fi or monitor in the usual fashion. This mode is useful for cueing up a tape recorder for instance or simply for



checking the level of input for distortion or aliasing, facilitating input level adjustment. Simply press the Left mouse button to exit the Listen mode.

### Spectrum Analyser.



The spectrum analyser facility causes a realtime moving display to replace the sample edit windows. The base line of the display is roughly calibrated in KHz and shows the frequency content of the incoming sample. The sample can not be heard simultaneously. To exit the Spectrum mode, press the Left mouse button.

### Looping control (L & R).

Selecting the little boxes simply marked L & R (next to the Listen & Spectrum analyser windows), will cause the respective samples to loop continuously when played back.

### Sample volume control.

These four sliders control the playback volume of the four output channels. Normally, in normal edit mode, only the two upper sliders will have any effect. However, the two lower sliders affect the overall volume of the third and fourth MIDI samples. Moving the sliders fully to the left makes the samples in-audible on playback. Fully to the right gives maximum volume. Please note that these will not boost the sound of a sample, a quiet sample will always be one unless amplified by the VOLUME up facility from the edit panel.

### Sample edit panel.

When selecting any edit function, an alert box is placed in the centre of the screen asking for some form of user intervention.

Amongst other things, the option of going ahead or cancelling is given. Where relevant, this box will also contain a small green or glowing red box. The green box indicates that function will only operate upon the area of the sample/edit buffer contained between the green pointers on the screen. The glowing red box indicates **\*\* BEWARE \*\***. This is because of the fact that the operation is about to be performed on an area of memory defined by the status of the SET function. This could be either that the area inside the pointers is about to be altered or that an area MUCH larger is about to be operated upon, like, for example, the entire area between the blue markers! The comment in brackets indicates which SET modes, if any, the function uses.

### QUIT



this option.

Return to workbench. Before leaving, the user will be given the opportunity to change their mind. Please ensure all work has been saved before using

### INFO



Display software/hardware copyright notice and credits.

### SWAP (SET)



mode is observed.

This option swaps the portion of sample contained in the left channel with that of the corresponding area of the right channel. The SET

**MIX (POINTERS)**

On selecting MIX, the alert will box appear, requesting the user for a direction in which to transfer of data. DATA may be mixed or overlaid upon another part of the same sample or with that of part of the opposite channel. Once the direction has been chosen, MIX will cause the markers to become boxes. The screen may now be scrolled left or right in the usual fashion or the markers may be picked up and moved together. Finally, to overlay the defined area of sample on top of the new pointer positions, click once again on the MIX button. The computer will perform the MIX operation and then fold in the new edit windows.

**REVERSE (SET)**

This simply reverses the sample. The usual SET mode is observed. Some fantastic effects can be produced from playing samples in reverse. Also popular records that have sections of music or speech played backwards can be re-reversed to see what the group are saying!

**CUT (POINTERS)**

Removes the sample contained within the MARKers and shuffles the rest of the sample above, down.

**BEWARE!!**

This function will destroy any defined memories in the upper part of the edit buffer.

**COPY (POINTERS)**

On selecting copy, the positions of the two pointers are stored. A box will appear in the centre of the screen asking for a direction of copy. Data may be copied up or down between the two channels or from one part of the channel to another part of the same. Select which direction you require. Now the screen can be scrolled left or right to locate an area of the sample buffer to which the sample is to be transferred or both pointers may be picked up and moved together and placed at the destination location. Finally, clicking once again on the copy button will cause the sample to be copied from source to destination.

**SHRINK (POINTERS)**

A box is displayed requesting the amount of sample compression required. For a sample recorded at 10Khz, squeezed by 50%, the playback frequency must also be reduced by 50% to 5KHz. Squeezed samples often sound better because they are made at a higher frequency and are therefore subject to less sample aliasing than that of a straight 5KHZ sample. The shrink options are 25%, 50% & 75%. Also the options DRAG or WIPE may be selected. With the DRAG option selected the following will happen. When a sample is shrunk, it will occupy only a fraction of the space that it used to. DRAG will copy the entire contents of the edit/sample buffer, starting from the end of the old sample and place it at the end of the new. WIPE simply shrinks the sample and then erases the now redundant part of the sample area.

**BOUNCE (POINTERS)**

Stereo effects can be made or enhanced by using this facility. This facility is also useful for giving a stereo sound to a sample which was originally mono. Interesting crossfading effects can be produced with samples fading out on one channel, meeting in the middle and re-appearing on the

other. The amount of balance between both ends of the bounce operation are fully definable.

### IFF



When lit, IFF file format is enabled. Instead of saving samples as raw binary data, it is saved in IFF format. This means that samples produced with

A.M.A.S. can be used on a variety of other software packages which accept this common format. IFF samples save the sample frequency along with the compressed sample data.

### LOAD (SET)



Samples may be loaded into the editor with this command. The file format is checked before loading. If the file is of a raw form it is simply loaded into memory

between the markers. If the file is of the IFF type, then the sample is loaded in the same fashion, but the correct replay frequency is restored. Any sample which is too long to fit into the defined area of memory will be truncated.

### WIPE (SET)



An area of the sample buffer, the whole of the sample buffer or an entire BANK can be cleared using this rather innocent looking button. The exact

operation depends on the SET mode (section 4.4.2). Confirmation is requested before the buffer or BANK is erased.

### VOLUME UP/DOWN (POINTER)



The volume of a sample may be decreased or increased with these two functions. A central option box will

appear to request the level of attenuation or amplification required.

Once selected the sample will be operated upon, after which the resultant new sample(s) will scroll into the display. A word of warning. The effects of these buttons are not reversible. Drastic or repeated attenuation of a sample will cause it to become inaudible. In a similar fashion, high amplification will cause a sample to saturate and distort. It is recommended that a copy of the sample should be held elsewhere in memory in case of an error.

### FADE IN/OUT (POINTER)



A sample can be caused to fade in or out gradually. When selected, a box will appear in each active edit

window. A box will also be visible in the centre of the screen. The level of fade can be selected by adjustment of the arrows in the box. Selecting the fade button will cause the fade to be performed. When complete, the modified samples will scroll into the appropriate edit windows.

### MAGNIFY



Magnify enlarges the centre half of the edit window up to the full width of the edit window.

Magnification can be performed down to the lowest level where each pixel on the screen represents one byte of the sample.

### UN-MAGNIFY



This undoes the effects of magnification. It successively doubles the screen up (the exact opposite of magnify) until the maximum window size

is reached.



**FILTER (SET)**

When selecting FILTER, a box will appear in the centre of the screen. The samples frequencies may be filtered off by factors of roughly 75%, 50% & 25% If

filtering is not required, cancel may selected.

**SAVE (SET)**

A sample can be saved to floppy or hard disc. Selecting SAVE will cause a file selector box to appear on the screen. The sample will be saved in

either BYTE (RAW) or IFF format, depending on the status of the IFF button.

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## Advanced usage.

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**BANKS****BANK selection**

The active BANK can be selected in two ways. Firstly, clicking the mouse on any of the BANK boxes at the top of the screen which have a red dot in them will select that BANK. The second method is by pressing a numeric key from 1 to 8 at the top of the AMIGA keyboard (the number corresponding to the required BANK). The number displayed in the selected BANK box will illuminate and the old one will extinguish, the edit windows will also change to display the contents of the new BANK.

**Copying BANKS**

One BANK may be copied to another by clicking on the desired BANK, dragging it onto another and releasing the mouse button. Providing that the destination is a valid BANK, then the contents will be transferred and an indication will be seen on the screen.

**Moving the markers.**

The markers (the light blue lines) may be moved to the positions of the pointers. This is useful for taking temporary note of the pointer locations, especially when you want to magnify part of a sample and

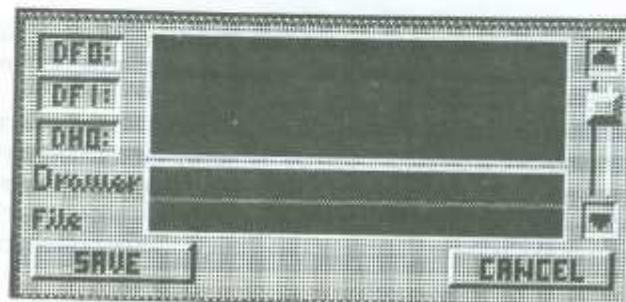
return back to them afterward. Both markers can be moved individually. To place a marker at a pointer location simply point the mouse on the required pointer and press the RIGHT mouse button, NOT the left. The MARKER will immediately appear beneath the pointer. Please note that only two markers can exist, one for each pointer, hence, if the marker had been placed elsewhere before pressing the mouse button, its old position will be lost.

## Scanning the sample buffer.

The arrow keys located on either side of the PLAY button will cause the sample edit buffer windows to scroll their contents left or right. The markers will always remain static as the sample moves beneath them, but markers, however, will traverse back and forth across the screen as necessary. It is possible to move instantly from one end of the sample/edit buffers by clicking on the buttons on either side of the scroll buttons.

## Using the A.M.A.S. file requester.

When a command to load or save to disc is made, the A.M.A.S. file requester will appear in the centre of the screen.



### Drive selection

The default drive is always the drive last selected (initially DF0:). The currently selected drive will appear on the left of the DRAWER window. The drive selection may be changed by selecting the appropriate box. Alternatively, click the mouse button in the drawer window. A cursor will appear. You may now use the standard AMIGA editing keys to change the drive name. This method must be used when trying to access a drive which is not one of the three pre-defined drive types. Pressing the return key will cause the AMIGA to display a new directory of the selected device.

### Drawer

A drawer may be selected by either clicking on its name in the directory window (at which point it is copied down into the drawer window), or by clicking inside the drawer window and entering its name manually.

**File**

The file name may be selected in the same fashion as the drawer.

**Scanning the directory**

The directory window will show the files and drawers available on the currently selected drive. The names of files are displayed in the directory window in RED text. Drawers (sub-directories) are distinguished from normal files by the glowing text within the directory window. Scanning of the directory can be achieved by clicking on the up & down arrows next to the windows. This will cause the directory to scan up or down by one file at a time. Alternatively, the slider may be moved and dropped, allowing faster access to the top or bottom of the directory.

**Leaving the requester**

The requester may be cancelled at any time by selecting cancel. A file may be loaded or saved by selecting the appropriate action box, after which the requester will disappear.

**Restrictions of the requester.**

The size of the path name for the selected drive is restricted to 8 characters (excluding the drive I.D). This is because of the size of the drawer window which is twelve characters in length. For the same reasons, the file name length is also restricted to twelve characters. A.M.A.S always attempts to claim as much sample space as possible. For this reason RAM discs can not be used. Entering the letters RAM: into the DRAWER window should be avoided, since this device does not exist in the computer.

**Screen Brightness control.**

The two keyboard cursor keys (left & right) control the screen brightness. Adjust these for comfortable viewing.

## MIDI facilities.

### The MIDI control panel.

To invoke the MIDI facilities of A.M.A.S. click on the screen button marked MIDI. A new control panel will appear to replace the sample edit panel at the bottom of the screen.



The panel shows the programmable function keys and program buttons on the left, the MIDI channel is located above the OMNI/MONO Selectors. The buttons and display to their right, show the OCTAVE offset selector. Finally, there is a cluster of 4 buttons which show what the currently selected MIDI mode of operation is. The mode options are:-

- 1) Stereo output, MIDI response.
- 2) Stereo output, AMIGA keyboard response.
- 3) Polyphonic MONO output, MIDI response.
- 4) Function key play, AMIGA keyboard response.

Any sample may be defined to be stereo or mono. All samples will be played frequency shifted. However, if the keyboard splits are set

one note apart from one another, they will effectively only be triggered or 'one shot'. The maximum permissible frequency shift is -1 to +2 octaves.

### IMPORTANT NOTICE

Samples will be frequency shifted. That is to say that a SINGLE sample may be played back over a range of notes. However, for the sample frequency to be correct and to conform to an equal tempered musical scale, the basic sample MUST be that of the note C, the software will automatically shift its frequency to sound correct for the note played.

### The Function keys.

The function boxes contain a number and two spots. When a sample is saved to a function, the number is lit. The spots beneath indicate the sample type (E.G. stereo, left or right channel). Simply clicking on a function box will make it the current active sample and pressing a key on the keyboard will cause the sample to be heard.

### The PROG button.

Samples may be assigned to the function keys by pressing the PROG button. PROG will now glow, and is waiting for a function button to be selected. When done, PROG will go out. The samples pointers, markers, stereo mode, loop flags, window magnification and frequency have all been saved. To Display a sample assigned to a function, simply press D, followed by the desired function. The sample will be re-displayed complete with all of its pre-defined data. To clear a sample definition, press C, followed by the function that is no longer required. The number of the function and the indicators beneath will go out.

## MIDI SPLITS.

Keyboard splits enable more than one sample to be played over the range of the keyboard instead of just one. When the SPLIT button is lit, the keyboard splits will be operational. When in a mode of operation which requires MIDI note input, the currently selected sample will always be played unless the note played is set up in an area covered by a keyboard split. To create a keyboard split, select the 'P' (for program) above the SPLIT button. The P should glow. Now select the function key which is required to occupy the keyboard area. Once done, the little box located in the P button will glow. This indicates that the system is now waiting for a key to be pressed on the MIDI keyboard. Keyboard SPLITS should always be defined from left to right. The sample selected will be played on all keys from the left up to and including the key defined as the end of the split range.

## OMNI/MONO selection.

This selects whether the current sample will be played when a message is received only on the selected MIDI channel (MONO) or on all MIDI channels (OMNI).

## MIDI channel selection.

The MIDI channel from which the samples are to be played is set using the arrows on either side of this window. The permissible range is 1 to 16.

## OCTAVE transpose.

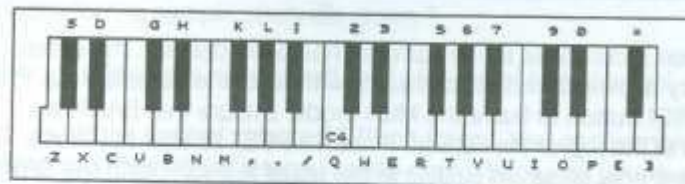
When OCTAVE is selected, the incoming note value from either the AMIGA keyboard or the MIDI keyboard is transposed up or down by one octave, depending on the setting in the OCTAVE window.

## ST MIDI mode.

This mode of operation will allow up to two stereo samples to be played from the MIDI input.

## ST KEY mode.

Stereo samples may be played from the computers keyboard under this mode of operation. A MIDI keyboard is not required and is ignored if installed. The frequency range and facilities are more restricted however. The keyboard is split into two layers thus:-



## PO MIDI mode.

Up to four MONO samples may be played simultaneously. If a sample is played whose definition is stereo, then only the LEFT channel is played. Generally speaking, the samples are played from the left channel first. If a second sample is played simultaneously, then this will be played from the right and so forth.

## **F PLAY mode.**

This mode of operation enables the samples to be played instantly by pressing the relevant Function key on the AMIGAS keyboard. No MIDI response is made. One use for this mode is simply to test the samples as set up with the markers, another would be to define sets of percussive samples to the function keys and use the AMIGA as a drum synth.

## **Sample volume controls.**

The two upper volume control sliders control the volumes of the left and right channels of the first stereo sample or the first two mono samples to be played. The lower two sliders control the volume of the second stereo sample or the third and fourth mono samples to be played.

## **Bank LOAD/SAVE.**

When a complete set of samples has been defined, the entire bank may be saved to disc, complete with all of the sample data. Press on the MIDI button to leave the MIDI mode. Ensure that BANK is selected at the top of the screen. If not, use SET to alter the mode. The BANK may now be saved to disc in the usual fashion using the SAVE facility. Please note that a BANK can only be saved in RAW form and for this reason the setting of the IFF button will be ignored. Complete BANKS may be loaded in a similar fashion.

## **HELP!**

As you may now be aware, A.M.A.S is a very sophisticated product. Much time and effort has been spent trying to ensure that it is as easy to use as possible. In an attempt to make the software user friendly, the number of keys have been kept to a reasonable minimum. It is inevitable however that, from time to time, things may go wrong or not work in the manner expected. Here are some common problems that may be encountered when using A.M.A.S.

... *The samples won't play from MIDI.*

Please check that you have selected the correct MIDI channel for the MIDI device that you are using. A.M.A.S. might simply not be receiving any commands on that channel. Finally, have you turned the volume for the sample channels down?

... *My stereo sample will only play out of one channel.*

Is stereo control selected? Don't forget, You can sample in stereo and then select a mono mode of playback, did you re-select stereo? Check the volume controls too.

... *Stereo MIDI samples only play from the LEFT channel.*

This is probably because you are in polyphonic mode. There are only four sound output channels on the AMIGA. To have four stereo samples playing would require eight. A restriction on the number of stereo samples playing simultaneously must therefore be placed at two. An attempt to play more, results in A.M.A.S. knocking out the right

channel. Please re-arrange the samples by making them MONO or restrict the level of polyphony on the MIDI input.

... *I have a sample on the screen but I can't hear it on playback.*

Again, check your AMIGA/output connections, are they correct? Do you have a wave form on either of the scopes if they are on? If so, then the signal should be audible from Listen. If you still can not hear the signal or sample then check the volume control sliders, have you turned them down?

... *Background noise on samples.*

A very low level of background noise is almost inevitable. However, its effects can be reduced to a minimum by ensuring that the input signal is as high as possible. Use of a poor signal source such as a low quality tape player is a classic cause of 'HISSY' samples, try always to keep the tape player well serviced. Clean the tape head and capstan roller regularly. Finally, the environment in which A.M.A.S itself is placed can be a cause of low level noise. The microphone amplifier is very sensitive and will amplify stray electrical signals that obviously can not be seen. Try and keep A.M.A.S as far away from the VDU or the computers power supply as possible. Any device which contains a power transformer or an electric motor is a potential source of noise, including some disc drives! The AMIGA should not pose a problem as it is well shielded.

## Hints and tips.

Digital sampling can be exciting. The possibilities offered by it open a whole new world of digital recording and mixing. However, some special techniques are required to get the most out of this relatively new medium. Here are some that we use ourselves :-

### Sample Quality.

It cannot be stressed enough about the importance of setting up the input of the sampler correctly. The two factors which affect the sample quality most are the volume of the input and the speed at which it is sampled. It is fairly important that the AMIGA's internal filters are used when making low frequency samples since these help to reduce the effects to a minimum. Higher quality samples can be achieved when sampling at higher frequencies by switching off the internal filters. Please see above for more details.

### Effects of looping.

Looping can sound strange if care is not taken to match up two important aspects of the sample volume. The first is that both ends of the sample start & end are roughly the same. Ideally, the sample should start and end with zero volume. This ensures that there is not a large, sudden change of volume which would be audible as a click or pop. Judicious use of the magnify facility at its highest level is

invaluable here since it is possible to locate the pointers exactly on the desired volume.

The second aspect to be cautious of is that the general 'ENVELOPE' of the sample should also start and end at roughly the same level. If not, then the sample will appear to modulate with the loop frequency. Clever use of a mixture of the volume up and the powerful fade commands can be made to closely match the sample envelope at both ends.

A little patience and lot of practice with positioning the looping pointers helps a great deal in obtaining the most professional results.

### Clicks on spliced samples.

Appending one sample to the end of another can often produce clicks similar to those obtained with looping. The same precautions regarding sample volume changes should be observed. However, unlike looping, there is one last trick that can be employed to ease the end of one sample into the start of another. The trick is to place the second sample close to the end of the first. Next, locate the meeting point of the samples by placing it somewhere in the centre of the display. Now we can use the magnify function to zoom into the area of the joint of the samples. Locate the markers at one part of each sample that have approximately the same level on the display (preferably close to the centre line) and use the CUT function to bring the two sections of sample together. By returning to the original display mode we should now see the two spliced samples, which, when played, should have a more natural transition from one to the other (and hopefully doesn't click).

## IMPORTANT

IF THIS FAILS TO LOAD PLEASE RETURN  
JUST THE DISK TO

**MICRODEAL LTD./MICHTRON U.K.**

(DISK REPLACEMENT DEPT)  
FREEPOST, ST.AUSTELL PL25 4BR ENGLAND  
(NO STAMP NECESSARY IF POSTED IN UK)

If you have problems with this computer program or would like a copy of our price catalogue please contact:

**MICRODEAL LTD**  
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