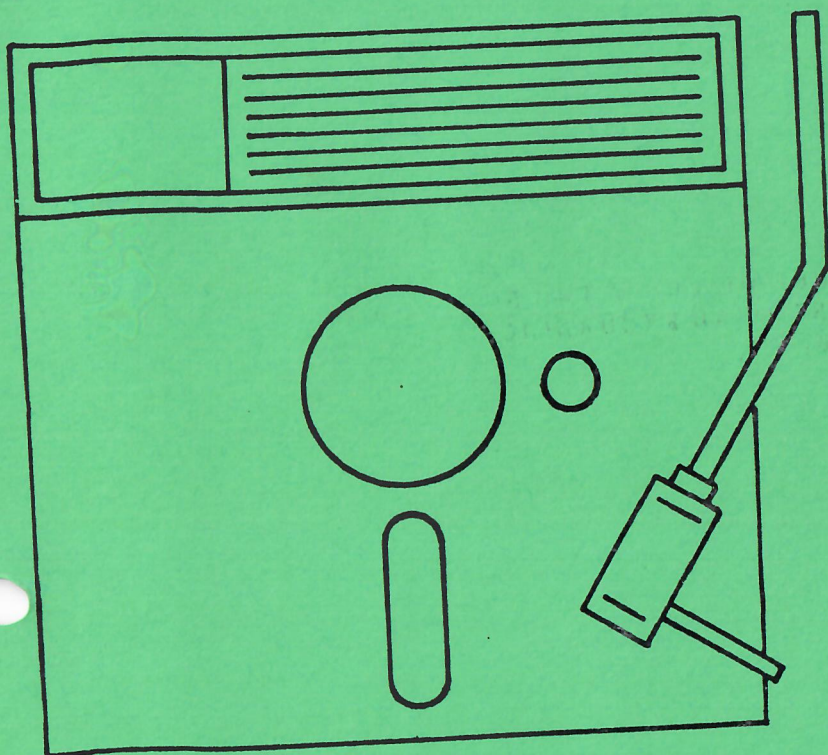


GREENGATE
p r o d u c t i o n s

DS:3



USER'S GUIDE

**BEFORE YOU DO
ANYTHING ELSE!
COMPLETE AND
RETURN THE
REGISTRATION CARD
IN THE DS:3 MANUAL**

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GREENGATE

DS:3

DIGITAL SOUND SAMPLING SEQUENCER

USER'S GUIDE

APPLE II PLUS, APPLE IIe

PROGRAMS BY:

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1st EDITION

JULY 1984

GREENGATE PRODUCTIONS
24 MISSDEN DRIVE
HEMEL HEMPSTEAD
HERTFORDSHIRE
ENGLAND

THE CAST:

DAVID GREEN : HARDWARE AND SOFTWARE DESIGN
COLIN HOLGATE : MECHANICS
JOHN MOLLOY : MANUAL
MURRAY MUNRO : ILLUSTRATIONS AND SOUNDS
ROD MUNRO : BUSINESS

This program uses a high-speed operating system called Diversi-DOS(tm), which is licensed for use with this program only. To legally use Diversi-DOS with other programs, you may send \$30 directly to: DSR, Inc., 5848 Crampton Ct., Rockford, IL 61111. You will receive a Diversi-DOS utility disk with documentation.

APPLE and the APPLE logo are registered trade marks of APPLE COMPUTER INC.

The DS3 is another product from:

GREENGATE

p r o d u c t i o n s

This is just the start there is more to follow.

CORRECTIONS

DS3 USER GUIDE

PLEASE NOTE:

The following files are now on data disk 2:

DEM01

DRUM KIT

KIT.TUNE

This means that you have to insert DATA DISK 2 when loading up any of these files rather than the stated DATA DISK 1. If this is done the system will work fine. Please don't panic, if you get an error on loading one of the setup files or KIT.TUNE just insert DATA DISK 2 instead.

Also note that when you have loaded the file: DRUM KIT then you must insert DATA DISK 1 back into the drive so that the computer can load up the relevant sounds from the disk.

PAGE 4-14 In the section "BUILDING MORE COMPLEX PATTERNS", you should read the following after the words: ".....suitable key.":

When you are in RECORD MERGE mode and wish to merge one sequence into others, you are no longer playing the sequences manually. Therefore to stop the merged sequence you must press the key marked <ESC>. If at this point you wish to loop the merged sequences then you must press the <SPACE> bar simultaneously with the <ESC> key (We say simultaneously, but the normal human is no match for a computer in

matters of precise timing. You should therefore try to cultivate the art of pressing the <ESC> key just a fraction of a second before the <SPACE> bar. This will ensure that the computer will receive your instructions correctly) The computer now has the data defining the start, the stop and the looping point of your desired sequence.

The page continues at the word "NOTE:....."
etc.

DS3 USERS GUIDE

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GETTING TO KNOW YOUR DS3

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WHAT YOU GET IN THE BOX

Not a lot, you may think, not a lot! But you would be very wrong, Dear Customer. That small printed circuit board with its load of 'chips' is a jewel, a masterpiece of modern electronic engineering which could not have existed a few short years ago. It is the advent of LSI (This is a Trade buzz-word for Large Scale Integrated circuitry) which makes this device possible; the incorporation of many hundreds of thousands of individual transistors, amplifiers and 'gates' on one tiny piece of silicon which is the heart of the 'chip' - the same chip which is supposed to be taking over our lives....!

In reality it does no such thing. Modern digital electronics makes possible whole new worlds of endeavour; opens frontiers for musical creativity which never before existed and can give you not only a great deal of fun but serious and profitable extensions to your music-making in a manner only limited by your imagination.

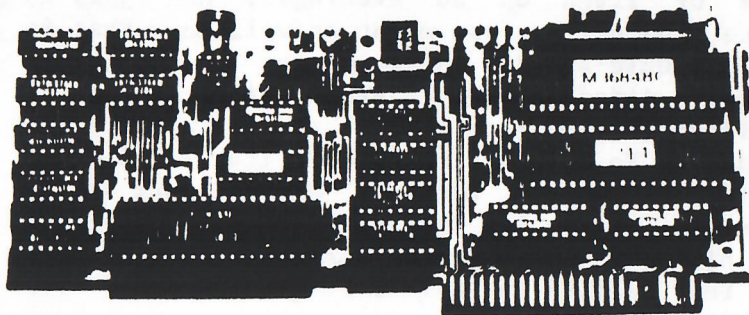
So, you have the board, with its cable. You have an audio box. You have three floppy disks. (Don't bend them to see if they are really floppy:- they are! And they will not thank you for getting creases in them!) You have the AUDIO box and five jack to phono converter. You have a manual (Which we are glad to see you are now reading) But you have something more. An intangible. You have the back-up, the expertise, the reputation, the interest and dedication of 'MAINFRAME' - the most computer-literate band of today. It is their initiative and that of their small team of engineers which ensures that you will get your

money's worth and more from the DS3. The board was designed for and in conjunction with, a working 'Pop' band and gives a performance close to that of the expensive, custom-made computer sampling devices accessible only to the rich and famous.

If you don't have the board, three floppies, cables and manual then phone us at once: (0442) 3496 from the UK, UK code + 442 3496 from any overseas country (take into account time differences).

WHAT YOU DO FOR STARTERS

So lets take a look at the board. (Don't be afraid of handling it - it is not too delicate, but on the other hand, don't leave it on Grandma's rocking chair or a heater or other hazardous places)
It looks like this:



You will note that there is a connector strip at the base of the board. This is gold plated and thus ensures that the vital connection with your APPLE's Motherboard remains corrosion free and hence crackle and noise free. Bad connections in computer terms means lost programs, 'hung' systems,

inexplicable happenings and worse.

You will also see that there are a fair number of large chips on the board. Unless you are a computer addict you will not wish to know what they all are or what they do. If you are a computer addict then you probably know already.....

There is a small trimmer resistor. Resist trimming it! It is set in the factory and we will tell you later in the manual if and when it might require attention.

There is a Male 9 pin D connector. This connects to the Audio box. But all will be explained.

Otherwise it is a fairly standard PCB (Learn the jargon - its useful in pubs or bars to impress the natives or liven up an evening..) And just to complete the picture you might as well know that it is a double-sided, fully plated through, CAD (Computer Aided Design), glass fibre board of near-military specification in its reliability and ruggedness. To match the APPLE itself. Also a reliable and rugged machine. Which is one of the reasons we chose it. Gigging bands soon learn the value of reliable equipment! (MAINFRAME have gigged their four APPLES for well over two years now with no problems at all)

The Audio Box. This is a small box with five jack sockets in it and a switch. Four of the sockets are labelled CHN 1-4 these are the outputs of the system. It has four separate outputs. The switch is labelled 4 CHN on one side and MONO on the other. This is to switch between four separate outputs and four ganged outputs. When playing with blocks of

sound you might want all the channels to play at the same level. This is the quickest way round. The other socket is marked LINE INPUT. This is how the sounds get into your computer. You will need a small preamp, but all this will explained when the time comes.

The five jack to phono converter are required if you are using a phono based system. Just insert them into your AUDIO BOX and insert phonos to your HI-FI and you will be away...

Three Floppy Disks. In little sleeves - keeps the grime out, hopefully. But if you spill coffee on them they may object very strongly and not give up their information any more. So treat them with a lot of respect and they will last a long time. We'll tell you later about back up and the procedures for salvage if all crashes and you get into awful problems!

These disks contain THE SOFTWARE. Software without which the device is dead, dead, dead. Computer people can skip the next page or so.... This bit is for the musician who knows very little about computers but probably knows a lot more about music.....so there!

Software is the blanket term for programs of instructions which are necessary to make the computer do your bidding. (We use the American spelling of the word 'program' to describe these sets of instructions. The computer industry world-wide has adopted this spelling and this is convenient for all English speakers as it gives a new word, but confusing for the American speakers since they use the same word for all kinds of

programme!)

You get on your disks: Operating software
 Data software.

The operating software is a set of programs which instructs the computer to carry out certain tasks which you give the commands for. You operate it - although sometimes it may seem that it is operating you! Data software is that set of programs which you create with the help of the computer to define and describe the sounds and sequences which you wish to use with your music. These programs will consist of sampled sounds which you have created (And the starter set we give you) and the sets of sequences you have created for the music you are working on.

The operating software comes on the disk marked DS3 SYSTEM MASTER DISK and the data software comes, surprise surprise on the disks marked DS3 DATA DISK 1 and DS3 DATA DISK 2.

Not really very hard, is it? New buzz words for the pub: 6502 machine-code is used very heavily... And some BASIC of course.

SETTING UP YOUR APPLE COMPUTER

If you don't have as yet a fully set up APPLE sitting in front of you at this very instant then stop here for a short while. Go to the collection of manuals that come with your APPLE computer and follow the instructions so that you have a complete one or two drive APPLE computer to work through as the easiest way of learning is by following instructions which relate to something that you can

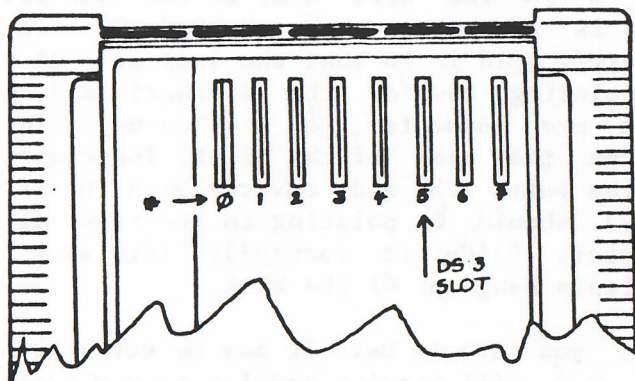
do.....ready?

O.K. so now you have your APPLE system in front of you. Good!

INSERTING THE PCB AND CONNECTING UP

If the machine is now up and running then turn it off. And the monitor! And if you have piled every thing up on to the APPLE then take them all off again! If you have already put the disk drive in the next bit is going to be easy.

Open up the top of your APPLE by pulling the lid off at the back. You should now see something like this:



* SLOT 0 IS ONLY FOUND ON THE II+ AND EUROPLUS, NOT ON THE II E. IT IS THERE FOR THE LANGUAGE CARD WHICH IS BUILT INTO THE II E

The slots at the back are what makes the APPLE really exciting and why it has lasted so long as a popular computer. The slots allow you to expand your system! So the humble APPLE can be constantly upgraded!

There are eight slots at the back numbered 0-7.

Slot 0 is for the extra memory (A language card) slot 1 is for a Printer card, slot 7 is set aside for a colour card and slot 6 should have a disk drive in. (Loading all this software up by cassette would take ages!!!!)

NOTE: The advantage of having the extra memory (the language card) is that the computer has slightly more room for things like sequences and you can have longer sounds as (for the really technical) The disk operating system we use will move itself up onto the card leaving a bigger gap to fit more into.

Slot 5 is the slot next to the disk drive card. This is the slot where the DS3 PCB sits. Pick up the PCB. Hold it so that the long part of the board is pointing towards the keyboard and the leads, which are connected to a nine-way D connector, towards the back of the APPLE. The component side of the board (The side covered with the large black bits.) should be pointing to the right side of the computer. Slide it carefully into slot 5 and let the leads hang out of the back.

While you are in here it may be worth pointing out that you will require paddles to run various parts of this program, and so rush out to your local APPLE dealer and get them and wire them up!

If you have a keyboard as well then go to the keyboard manual to see what is to be done next otherwise you have done the hard work. Close up your APPLE and pile it all up neatly. Go and have a cup of coffee.

SETTING UP YOUR AUDIO SYSTEM

To set up the DS3 to work with your audio system you will have to attach the cables to the box which comes out of the back of the computer. This is a very straight forward operation, but first you have to attach the box to the audio cable.

The audio cable is the nine-way D connector which is now hanging out of the back of your APPLE computer. If you connect the female connector (from the board) to the male connector (to the AUDIO box).

There! It's just like they said it would be at school.

Now they are all connected up the words on the AUDIO box come into operation. If you are connecting into a quarter inch jack based system (Instrument amplifier etc.) then plug straight into the box. If it is a phono based system (hi-fi amp or similar) you will need the adapters, of which you have five. Just plug them into the box and then plug your phono connectors into them.

If you are going into a mixing desk on separate channels then set the switch to 4 CHN if you are going into a hi-fi then switch to MONO. In four channel mode all the channels come out separately when switched to MONO then all four channels have the same information coming out of them.

INSTALLING THE BOARD IN THE IIE

If you have a Iie then the assembly of the DS3 audio cable is a little different, so here is a step by step guide which you should find easy to follow:

- 1: Remove the cover from the boards 9-way D connector. To do this undo the two small bolts from either side of the cover. Keep hold of the two bolts as they are very important.
- 2: Take off the cable clamp from around the cable.
- 3: Insert one of the two bolts into the top hole in the D connector. Start the nut loosely onto the bolt. This will make it easier when the connector is inserted into the computer.
- 4: Remove the cover from the small hole on the back of the computer which is labelled "5".
- 5: Insert the D connector into the hole. Make sure that the first bolt which you have already fitted to it is at the top.
- 6: Tighten the nut and bolt so that the connector is now firmly fitted to the computer.
- 7: Now, insert the second bolt and tighten the nut.
- 8: Put the board into slot 5.
- 9: Put the lid back on the APPLE. Connect up the AUDIO BOX to the D connector.

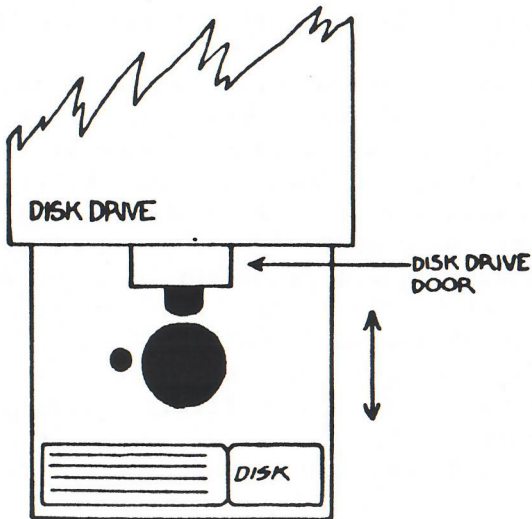
You have now fitted the DS3 into your APPLE Iie.

LOADING A FLOPPY DISK INTO THE DRIVE

This is an illustration of a disk being inserted into a disk drive.

Notice:

- a) The disk drive door is open while insertion takes place.
- b) The precise angular momentum of the disk.
- c) The gap in the disk through which you can see the magnetic media itself is the bit which is going in first.



That is known as loading a disk.

GETTING TO KNOW THE MENUS

By placing the disk marked: DS3 SYSTEM MASTER DISK into your disk drive as in the above picture, closing the disk drive door and turning on the computer the screen will clear and the following

should appear on the monitor.

GREENGATE DS3 MASTER DISK 0.0

RAMCARD DOS LOADED

1. SOUND SAMPLE
2. WAVEFORM EDIT
3. SOUND PLAY/SEQUENCE
4. SEQUENCE DEVELOP
5. KEYBOARD SETUP
6. CREATE SONG FILE
7. CREATE PERFORMANCE FILE
8. EXIT TO APPLESOFT

YOUR CHOICE?

This is known as a MENU. This one is the MAIN MENU. From here you can get to all of the functions of the DS3. If the words RAMCARD DOS LOADED do not appear don't worry, there is nothing wrong its just that you don't have as much memory available, as an APPLE fitted with a language card.

You will notice a small flashing square just after the words, YOUR CHOICE? This is known as a CURSOR. It is a little difficult to display a flashing cursor on normal paper so it is up to you to

imagine it.

To get to one of the functions of the DS3 you have to type the number of the function you require. But, before doing that, if you press the button marked CTRL together with the button C, the menu will change to a shorter one:

CTRL-C

1 - SELECT DRIVE 1

2 - SELECT DRIVE 2

C - CATALOG

RETURN - RESUME

By pressing C the computer will print up all of the files available on the system master disk. This is known as a CATALOG, of a disk. If you have a two disk drive set up then if you put a data disk in drive two and then press button 2 followed by C then it will show the CATALOG of the data disk in drive two. This is relevant to all programs in the DS3 package, so if you want to know where you are then REMEMBER:

PRESS "CTRL" ALONG WITH "C"

This will allow you to examine what is on any disk available. If you are on one of the other programs apart from the MAIN MENU then a further option:

M - MAIN MENU

will return you to the MAIN MENU.

Press the return key, which is the second key down on the right hand side of the keyboard and on the APPLE II and II+ is marked RETURN. On the APPLE IIE

it is the large key with the arrow pointing down and to the left. This will get you back to where you were before you pressed CTRL-C. As you were on the MAIN MENU the program will resume running and you should see:

GREENGATE DS3 MASTER DISK 0.0

RAMCARD DOS LOADED

1. SOUND SAMPLE
2. WAVEFORM EDIT
3. SOUND PLAY/SEQUENCE
4. SEQUENCE DEVELOP
5. KEYBOARD SETUP
6. CREATE SONG FILE
7. CREATE PERFORMANCE FILE
8. EXIT TO APPLESOFT

YOUR CHOICE?

MUSIC WHILE YOU WORK....

We will talk about what all the options do further into this manual but for now we are going to want to start producing music, after all thats why you bought your DS3 after all, you could have bought a SPECTRUM if you just wanted to learn about computers!

Press button 3. The word WAIT should appear on the

bottom left hand corner of the screen. It will be enclosed in brackets:

(WAIT)

Then the screen will clear and this will appear:

GREENGATE DS3 SAMPLE/PLAY/SEQUENCE 0.0

OLD SETUP? (N):

Type in a star (On APPLE II's and II+'s this is the symbol SHIFT ":". On APPLE IIE's it is SHIFT "8". The character itself looks like this: *. The screen should now look like this:

GREENGATE DS3 SAMPLE/PLAY/SEQUENCE 0.0

OLD SETUP? (N):*

Press return. And the following Question will be presented:

SAVE SETUP? (N):

Type in the letter N (For No), followed by return, and a third question will be asked:

LOAD SETUP? (Y):

Type in the letter Y (For Yes), followed by return, and the whole screen should look like this:

GREENGATE DS3 SAMPLE/PLAY/SEQUENCE 0.0

OLD SETUP? (N):*

SAVE SETUP? (N):N

LOAD SETUP? (Y):Y

FILENAME (???):

The program is asking for the name of the setup file you wish to load. If you have a single disk drive then remove your master disk and insert the disk marked: DS3 DATA DISK 1 and close the drive door. If you have two drives then insert the DS3 DATA DISK 1 into drive 2 (That's the drive which has not got the DS3 SYSTEM MASTER DISK in.)

Type in the word DEMO1, and then press return. If you pressed return after the letter D, the light on the disk drive will come on and after a short break the following message will appear on the screen.

SETUP.D NOT FOUND

<ESC>:RESTART, <RETURN> RETRY..

Press the key marked ESC which on all APPLES is the key in the top left corner. And the OLD SETUP? (*): will appear again. If you press RETURN three times then you will be back to FILENAME? (D):. Make sure that you type in the whole word DEMO1 before pressing RETURN this time.

If the following appears.

SETUP.DEMO1 NOT FOUND

<ESC>:RESTART, <RETURN> RETRY..

Open up the disk drive doors check that one of them contains the DS3 DATA DISK 1 disk. If it is not present then insert it and close all disk drive doors and then press RETURN.

NOTE

THE COMPUTER IS STUPID. IT CANNOT TELL THE DIFFERENCE BETWEEN DEMO1 AND DEMO 1. WHAT THIS MEANS IN ENGLISH IS THAT SPACES MAKE A BIG DIFFERENCE TO THE COMPUTER. MAKE SURE THAT YOU DONT ADD OR LEAVE OUT ANY SPACES WHICH ARE PRESENT AS THESE ARE IMPORTANT. SO TYPE THE ANSWERS AS YOU SEE THEM IN THE MANUAL.

Thats covered everything that can go wrong. So what happens if it all goes right. The screen will clear and this should appear:

GREENGATE DS3 SAMPLE/PLAY/SEQUENCE 0.0

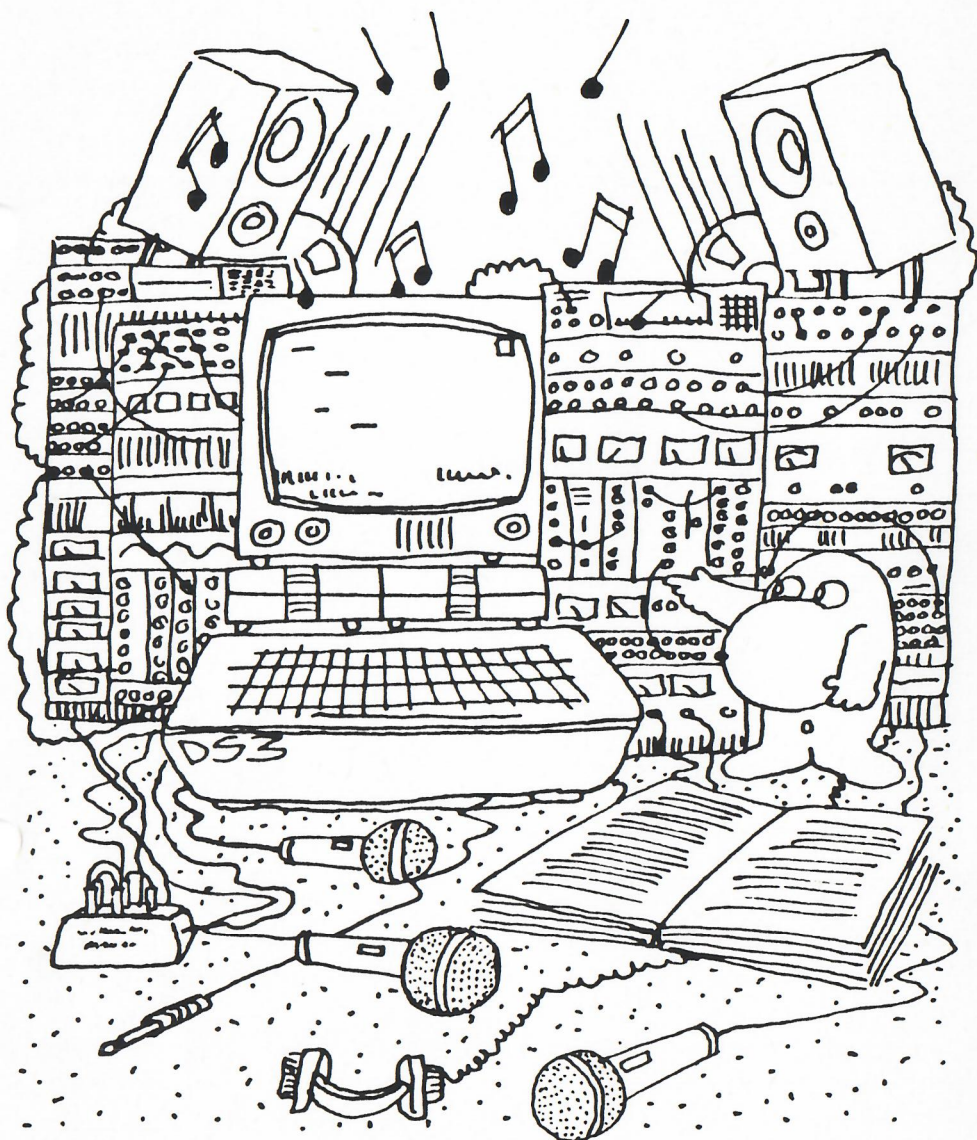
OLD SETUP? (Y):

Press return and after some information appears on the screen the disk drive should operate, and after a short while the following will appear at the bottom of the list:

READY: <CTRL-C>:ABORT, <RETURN>:START

If you press return the screen will clear. Hold down the shift button and press the button marked 1 (It is the same as trying to type an exclamation mark !) and music will emerge from your hi-fi/ studio monitors/ PA system!

Rest and listen!



CHAPTER 2

THE SECRETS OF SOUND SAMPLING

- 2-1 How to get there
- 2-3 What to do now your there
- 2-6 Play mode
- 2-7 Getting in trim
- 2-8 Saving the sample
- 2-10 Setting the threshold
- 2-10 Meanwhile back at the ranch.....

HOW TO GET THERE

The DS3, we must state, is not a synthesizer, it does not create sounds. To get the board to produce sounds a sound has to come in from the outside world. This is known in the trade as SOUND SAMPLING. The package contains a suite of programs to do the various jobs involved as not everything can sit in the computers memory at one time. To access any of the parts of the suite all you have to do is press the right button at the main menu. If you are working through this book you should still be in the part of the program headed: SOUND PLAY/SEQUENCE. To get back to the main menu, as we said in the last chapter, press CTRL and C together. At the bottom of the screen should appear the CTRL-C MENU:

CTRL-C

1 - SELECT DRIVE 1

2 - SELECT DRIVE 2

C - CATALOG

M - MAIN MENU

RETURN - RESUME

Press M for main menu. If after listening to the demo you went to bed. Turn the machine back on with the master disk in drive one, and close the disk drive door. You will be presented with the main menu. This, as you now know, looks like this:

GREENGATE DS3 MASTER DISK 0.0

RAMCARD DOS LOADED

1. SOUND SAMPLE
2. WAVEFORM EDIT
3. SOUND PLAY/SEQUENCE
4. SEQUENCE DEVELOP
5. KEYBOARD SETUP
6. CREATE SONG FILE
7. CREATE PERFORMANCE FILE
8. EXIT TO APPLESOFT

YOUR CHOICE?

You have been here before. It's not that difficult is it. As you get to know the system in more detail you will be zapping round the menus at a fast rate. Press button one and this will get you to the sound sampling menu.

GREENGATE DS3 SAMPLE 0.0

1. SAMPLE
2. TRIM
3. PLAY
4. SAVE

WHAT YOU DO NOW YOUR THERE

To record a sound you must have a line input going into the line input channel on the AUDIO box, be it from the back of a cassette recorder, the line out from a hi-fi amp (NOT THE LOUDSPEAKER OUTPUT AS THIS WILL MOST CERTAINLY DESTROY YOUR DS3), or a premixed line from a multi-channel mixing desk. So if you have not already done so, connect up the relevant lead to the input socket. By using a cassette player as a pre amp for a microphone (or the channel on the mixing desk if in a studio), the wiring should be complete.

To check that this has been done correctly select option 1. from the sample menu.

The screen will go blank and the following will appear about two-thirds down the screen:

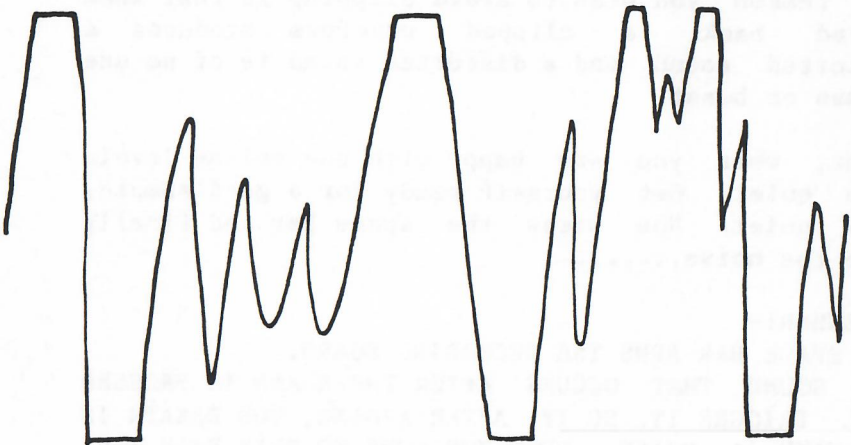
THRESHOLD? (4):

Press return and the display switches to a horizontal line halfway down the screen and the

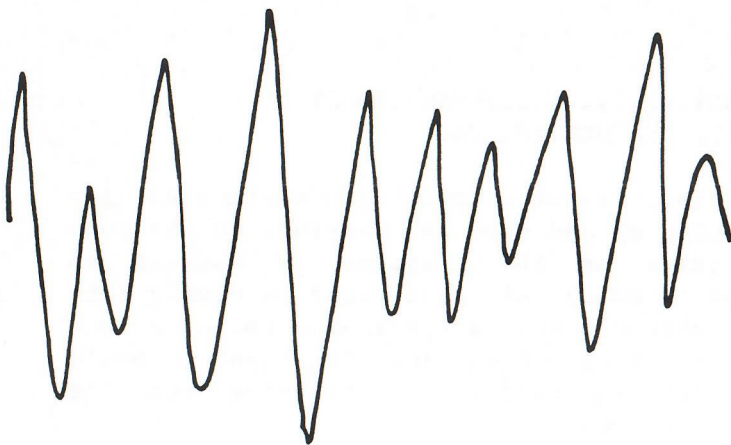
text reads:

SAMPLER READY.....<ESC>:ABORT
<SPACE>:AUTO, <RETURN>:MANUAL

If the screen is not displaying a horizontal line and is jumping up and down ask everyone in the room to keep quiet as the computer is showing an oscilloscope display of what sound is coming into its input channel. Make a continuous noise of some kind (hum or sing) then adjust the input to avoid clipping. For an example of clipping see the illustrations below.



1.) A clipped waveform.



2.) A clean waveform

The reason you wish to avoid clipping is that when played back, a clipped waveform produces a distorted sound and a distorted sound is of no use to man or beast.

Right, when you are happy with the volume levels keep quiet. Get yourself ready for a good sample, stay quiet. Now press the space bar and finally make the noise.....

REMEMBER:-

THE SPACE BAR ARMS THE RECORDING BOARD.

ANY SOUND THAT OCCURS AFTER THE BOARD IS PRESSED WILL TRIGGER IT. SO IF, AFTER ARMING, YOU BREATHE IN TO MAKE A NOISE, WHEN YOU COME TO PLAY BACK YOUR NOISE, INSTEAD OF A RECORDING OF A HUM, YOU WILL HAVE A RECORDING OF YOU BREATHING IN AND THEN A SOUND. DON'T WORRY IF YOU HAVE SOME SOUND THERE YOU CAN TRIM IT UP LATER. IF YOU HAVE NO SOUND JUST

SELECT SAMPLE FROM THE SAMPLE MENU AND FOLLOW THE PREVIOUS INSTRUCTIONS YET AGAIN.

The board can also be manually triggered. To invoke this press the <RETURN> key and the computer will then start recording immediately from that point. This is very useful if you a recording from an event which you know is going to occur. ie from a tape recording etc.

PLAY MODE

The screen will clear and the sample menu will appear again. This time, press option 3, which is play the sampled sound, and by pressing button one, q, a, or z, the sound will trigger at the pitch it was recorded and you will able to see if you have made a successful sound sample.

If you have any problems with sound, go back to the beginning of this section and try again, with a little time and effort you will find that sound sampling is not as difficult as it is made out. This gets really exciting if you have a DS3 b, as you can now play the sound up and down a five octave keyboard, but for that option see the keyboard manual which comes with the complete system.

If you have finished experimenting with the sampled sound you have recorded, then press CTRL-C and then RETURN, this will get you back to the sample menu.

GETTING IN TRIM

If the sound quality is fine, but there seems to be too much sampled or there is a short gap after you press a key and before the note sounds then you require trimming the sound. Now you are back at the sample menu select option select option 2 which is trim the sound. A new menu will appear:

1. ADJUST START POINT
2. ADJUST END POINT
3. EXIT

:

This is the trim menu. The colon is the point at which you chose your option. If it is a little late the select option 1, if there is some rubbish on the end then select option 2. Under the colon when you select one of the options will appear this text:

START POINT < > <- -> <ESC>

SIZE = 32512 BYTES

If you selected option 2. then the screen will have END POINT at the front rather than START POINT. The next symbols represent jumps in editing. The greater than symbol > moves the front of the sample to the right in memory, so that it takes away the front end. It does this in large jumps. If you

wanted to adjust the sound in small jumps then look for the key with the right hand arrow on it and this does the same only using much smaller jumps.

The less than symbol < moves the sample back, but if you are at the front of the sample then you cannot go any further back, in either large or small jumps.

If you are editing the end of the sample then the less than symbol < takes large jumps off of the end of the sample, with the greater than symbol putting the edits back. And the two arrows do the same but use much smaller jumps.

When you are happy with the length of your sample. The escape key <ESC> jumps you back to the trim menu. By pressing option 3. you will be returned back to the sample menu.

SAVING THE SAMPLE

GREENGATE DS3 SAMPLE 0.0

1. SAMPLE
2. TRIM
3. PLAY
4. SAVE

Option 4. on the sample disk is save sample. Press option 4. and the computer will ask for a name

under which you will save the sound. Get out the disk marked DS3 DATA DISK 2 and insert it into drive 2 if you have a two disk drive system or remove the master disk and insert the disk into drive one if you only have a one drive system then type in the name you chose. As this is after all only a test the perhaps you could save it away under the name demol. Type in the word DEMO1 and then press the button marked RETURN. The lights will come up on the disk drives and there will be a whirring noise and the sound you have just created will be digitally recorded onto the disks. To prove that it is in fact there press CTRL-C and then RETURN and the CTRL menu will appear.

CTRL-C

- 1 - SELECT DRIVE 1
- 2 - SELECT DRIVE 2
- C - CATALOG
- M - MAIN MENU
- RETURN - RESUME

Press C and the disk drive will whir again and it will list what is on that disk. At the bottom of the list should appear something like this.

B 095 SOUND.DEMO1

If you called it something else then the computer will know it as SOUND.SOMETHING ELSE. So you now know that the computer saves sounds away on disk with the word sound on the front. This means that at a moments glance at the listing of a disk (the jargon of the computer this is known as a CATALOG, yet another for the pub), you should be able to tell what sounds are available at any one time.

SETTING THE THRESHOLD

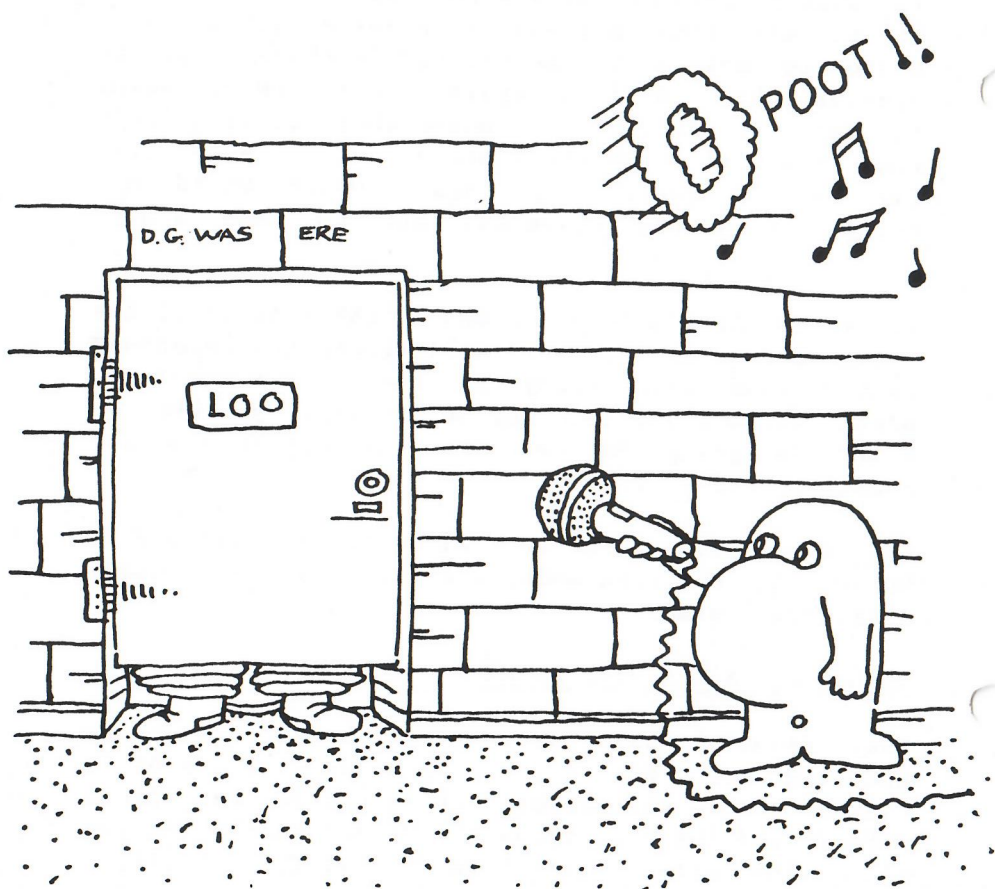
If you are in noisy surroundings and still want to do an automatically triggered sample, then the threshold can be set to a higher value than 4 which is what it automatically sets itself to. If you set it to 127 (the maximum) it requires quite a loud sound to trigger the recording. To those of you in studios this could be regarded as a form of gating in that if you have a sound that starts quietly then you will lose the front end of it (words like fun have a quiet efff sound, which would not trigger with the threshold set to such a high level.)

If in sampling mode you press RETURN instead of the space bar. The computer will ignore the threshold setting and record everything that occurs after you press the button. This can be useful if you know an event is going to occur. For instance if you want something off of tape.

The sound can then be edited in the same way as before in the trim mode, and then saved away under a different name.

MEANWHILE BACK AT THE RANCH

That seems to have covered everything in the sound sampling menu and so, if you have a one drive system return the master disk into drive one, press CTRL-C and the ubiquitous RETURN and then M and you will find after a short while that it will return you to the main menu. If any error occurs then make sure that the master disk is in main drive and everything will be alright.



CHAPTER 3

WAVEFORM EDITING

- 3-1 Running the program**
- 3-2 Loading a sampled sound**
- 3-2 The help screen**
- 3-3 Different from the trim**
- 3-4 Listen to the sound**
- 3-5 The point of waveform editing**
- 3-8 Methods of editing waveforms**
- 3-10 And so to end.....**

RUNNING THE PROGRAM

GREENGATE DS3 MASTER DISK 0.0

RAMCARD DOS LOADED

1. SOUND SAMPLE
2. WAVEFORM EDIT
3. SOUND PLAY/SEQUENCE
4. SEQUENCE DEVELOP
5. KEYBOARD SETUP
6. CREATE SONG FILE
7. CREATE PERFORMANCE FILE
8. EXIT TO APPLESOFT

YOUR CHOICE?

Here we are back at the MAIN MENU. As you have now saved away your very own sound, it's time for you to take a look at the waveform and have a go at fine editing the sound. To get to the waveform edit program type in the number 2 from the main menu. As if by magic the screen will clear and the following will appear on the screen.

.....: WAVEFORM EDIT V1 05.83 :.....
SOUND NAME:

LOADING A SAMPLED SOUND

The computer program is asking for the name of the sound that you wish to edit. Use the name which you saved your sound sample in the last chapter, which, if you followed our instructions is called DEMO1. After making sure that the right disk is available (Remember to put in your data disk if you have only one drive, or that your data disk is in the second drive if you have two) type in the word DEMO1 and then hit the RETURN key.

The screen will switch to a graphics display with text underneath. The graphics portion is the waveform of the sound stored in memory. The text looks like this:

POSITION:0	VALUE:128
START:0	
END:24575	'H' FOR HELP

THE HELP SCREEN

If you now press the H button the screen will switch to all text and the computer will display all the available options in the wave form edit program. It looks like this:-

S SET NEW START POSITION
E SET NEW END POSITION
X EXIT AND SAVE SOUND
<- GO TO START OF SOUND
-> GO TO END OF SOUND

BUTTON 0: PLAY SOUND
PADDLE 0: SCROLL DIRECTION CONTROL
PADDLE 1: SCROLL SPEED CONTROL
PADDLE 1: (WITH BUTTON PRESSED):
 WAVEFORM ENTRY CONTROL

PRESS A KEY TO CONTINUE...

DIFFERENT FROM THE TRIM

The way that this program is different from the trim control on the sampling board is that instead of editing in large jumps or small jumps you can actually step through the waveform and edit visually the sound which is held inside the computers memory. The way this is done is to use the paddle controls which come with the APPLE. Turn both of the paddles to the hard left. Take the paddle 0 in the left hand and paddle 1 in the right. Press a key on the keyboard. The screen should now return to its original graphics and text mixed display. Make sure that the POSITION reading gives out the figure 0. This means that the two arrows on the screen are pointing to the start of the sound in the computers memory. If the POSITION reading is not on 0 then press the left pointing arrow on the keyboard and the computer returns to display to the zero position. If the display is moving rapidly to the right then turn both of the paddles to the hard left and press the left pointing arrow again. If the display is charging to

the left then you must have pressed the right pointing arrow and you are at the end of the sound working your way backwards through it. Press the left pointing arrow and all will be well.

Now as the Help screen said paddle 0 controls the direction you are going to step through memory in the computer. So turn it to the right slowly. The position reading will start to increment and the screen will start to scroll to the left. By turning paddle 0 back a little it will start to move back again. There is a point where the setting of paddle 0 will halt the display. This is between the two directions. Practice moving slowly through the wave form and stopping.

WARNING: DON'T PRESS THE BUTTONS ON ANY OF THE PADDLES YET AS THIS COULD ALTER YOUR WAVEFORM AND DAMAGE IT. YOU WILL GET TIME TO EXPERIMENT IN A MINUTE.

When you have the hang of it, set paddle 0 so that you are moving forward through the waveform (the POSITION reading is incrementing.) Now slowly turn paddle 1 to the right as you do so the speed at which the display moves through the waveform increases. By turning Paddle 0 back to the left you can move just as fast through the waveform but in the opposite direction. You may like to press the right hand arrow key on the keyboard to go to the end of the sample and work your way backwards through it. When you have the hang of this you will then know how to get around a waveform using the paddles and the keyboard.

LISTEN TO THE SOUND

By pressing the button on paddle 0 you can hear the sound of the very waveform itself. This can be used to check that the sound you have been editing in the computers memory has been edited correctly. Use this at any time you wish.

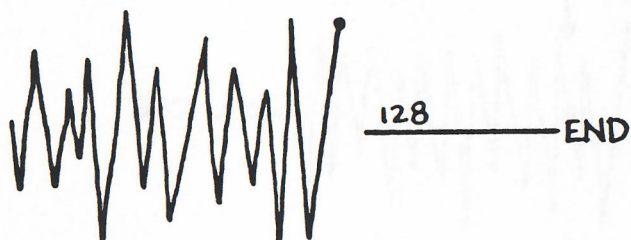
THE POINT OF WAVEFORM EDITING

The waveform editor has its uses. It is not just a pretty display to show your friends how their vocal patterns look when they say their names into the computer. Sometimes a waveform in the computer is not right for playing on the keyboard. every time you press the key it goes click. The reason for this is that the end or even the beginning of the waveform is at a different point to where the computer sees as its centre point, this is a value of 128. So the beginning and end of a sample have to be at 128 and there has to be a slow rise to and from it otherwise you still get the click but this time it is one thirty-thousandth of a second later, which still doesn't help if your recording using it. This is not to say that every sound will need to be edited in this way but its just that this is the most accurate way of doing things.

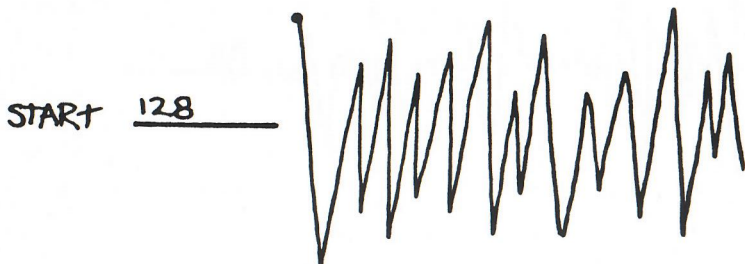
Here are some illustrations to prove the point. They have been much compressed to fit onto a page.



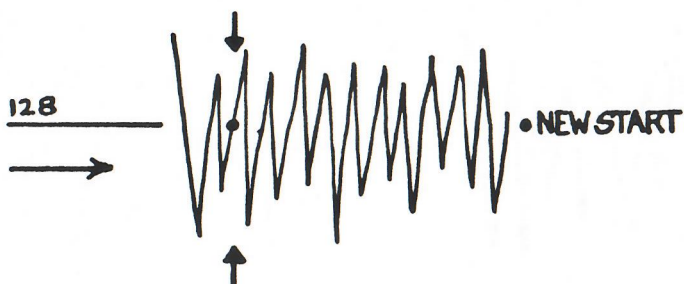
1) a good waveform



2) the cause of click at the end of a note

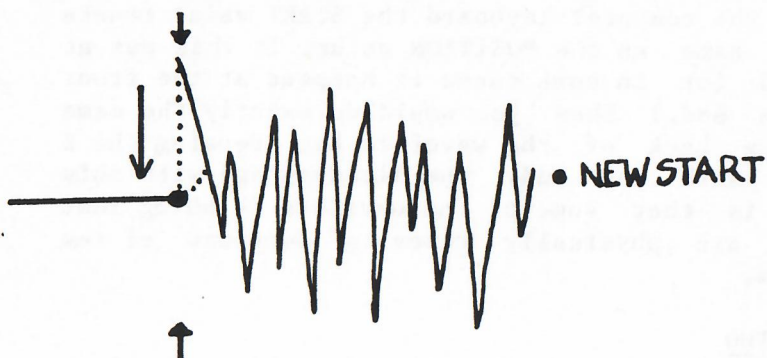


3) the cause of a click at the front of a note



4) curing the click

a) by finding the centre value and restarting the waveform there.



- 4) curing the click
- b) by editing the waveform to the central point

Lets talk through these illustrations. 1) demonstrates a good waveform in that the whole of the wave starts at 128 and ends on 128 so that when the computer plays through the note it ends ready to start at the right value again. 2) shows a waveform where the end of the note leaves the computer hanging in the air when it finishes playing through the waveform. This is what causes a click. 3) Shows a waveform with the same fault at the front end of the note. Both of these can be cured in two ways the same work is applied to both so you should be able to use either of these methods for cleaning up your waveforms.

METHODS OF EDITING WAVEFORMS

METHOD ONE

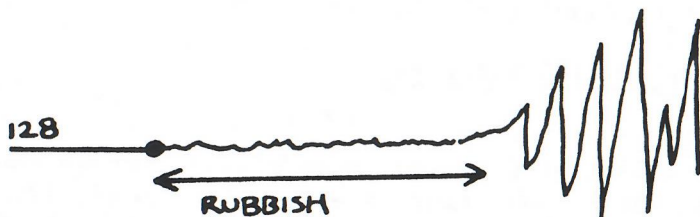
This is illustrated in 4a). Move slowly through the waveform until you find a value which reads 128. Then when you are on top of it by pressing the S

key on the computer keyboard the START value resets to the same as the POSITION value. If this was at the end (or in some cases it happens at the front and the end.) Then you would do exactly the same from the back of the waveform but pressing the E key to mark the end. The disadvantage with this method is that some of the waveform is being lost as you are physically removing sections of the waveform.

METHOD TWO

This is illustrated in 4b). In this example a single point at the front of the waveform is in fact wrong in that it has a massive jump from 0 where it is and 129 where the next point is. By lining the computer over the first point and then pressing the button on paddle 1 remembering TO HOLD THE BUTTON IN WHILE EDITING THE VALUE. By turning paddle 1 the value of that point changes and it can easily be set to 128 and this eliminates the jump. This is the best method of editing the sound but its disadvantage is that it can take a long time to alter the waveform to produce a corrected wave.

In fact when editing real sounds it is a combination of these methods which are used. For example:



This sound has a lot of silence at the front end and could lead to a delay effect when you press the key. To get round this use the first method of waveform editing. This more often occurs at the end of a sound, so to save the computer memory use this technique to free the end. To get the best out of method two you may have to draw a point at a time the waveform on the screen. Bear in mind that every point is only one thirty thousandth of a second. So it involves only a very short time.

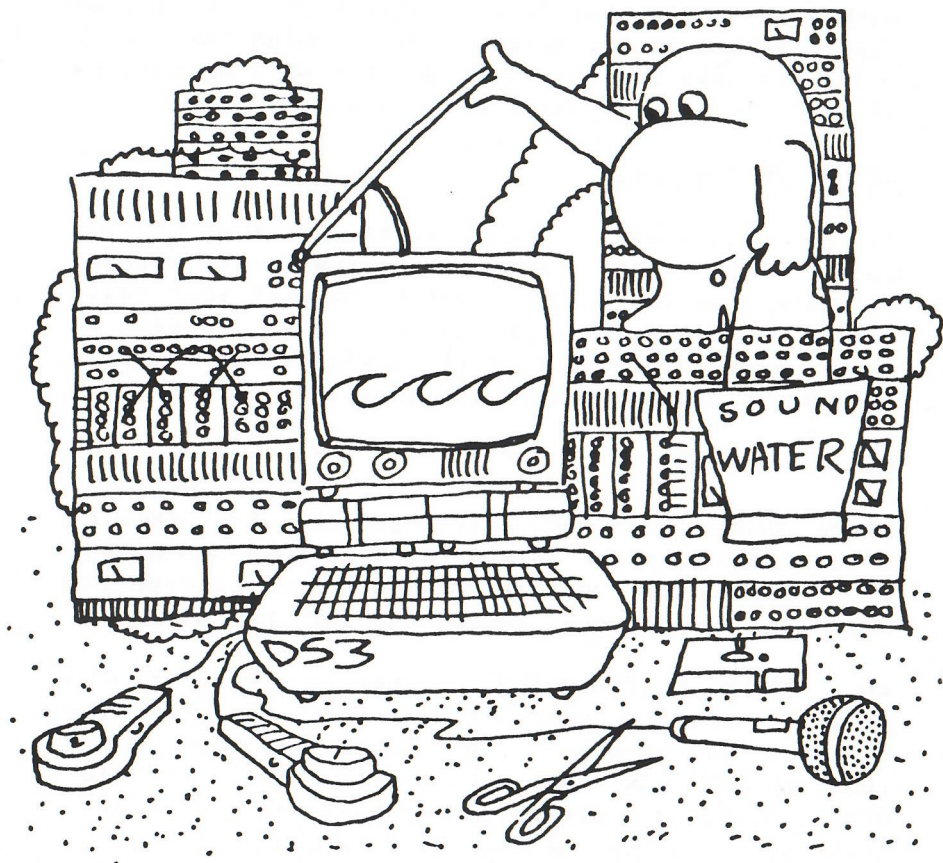
AND SO TO END.....

If you notice any of these faults occurring in your waveform then edit them out using the techniques described above. When you are happy with your newly edited waveform then comes the time to save it away. Press the X key on the keyboard and then the machine will come up with the question:

NEW SOUND NAME:

Enter DEMO2 and then RETURN and then the computer will save away the edited sound as SOUND.DEMO2 but as you use the programs you don't have to type the SOUND. as the computer is looking for them anyway.

When it has finished the computer is asking for the name of another waveform to edit. If you have finished waveform editing, then type CTRL-C and then RETURN and the screen will display the CTRL MENU. Press M, after making sure that the master disk is in drive one and the Main menu will return and we can get down to the nitty gritty of playing and sequencing.



CHAPTER 4

THE SEQUENCER

- 4-1 How to get there
- 4-2 Loading the sounds
- 4-4 An overview of the sequencer
- 4-8 Simple sequencing
- 4-10 Using the DS3 as a drum machine
- 4-14 Building more complex patterns
- 4-16 Saving setup files
- 4-18 Kit files
- 4-20 Sound effects etc....

HOW TO GET THERE

Here we are again back at the main menu. The next option we are going to discuss is the SOUND PLAY/SEQUENCE option on the menu. This is possibly the most important function of the DS3 and is the area of the program where you will probably spend the most time.

GREENGATE DS3 MASTER DISK 0.0

RAMCARD DOS LOADED

1. SOUND SAMPLE
2. WAVEFORM EDIT
3. SOUND PLAY/SEQUENCE
4. SEQUENCE DEVELOP
5. KEYBOARD SETUP
6. CREATE SONG FILE
7. CREATE PERFORMANCE FILE
8. EXIT TO APPLESOFT

YOUR CHOICE?

From here press KEY#3. You will then be asked to WAIT followed shortly by a new heading:

GREENGATE DS3 PLAY/SEQUENCE 0.0

OLD SETUP? (N):

You may feel you have been here before. It was from this mode that the computer played the demonstration to you in the first chapter. If you now press return to the question it should respond with another question:

KIT FILE? (-):

This will be explained later in the chapter but for now press return.

LOADING THE SOUNDS

The computer will then display:

SOUND FILENAMES:

SOUND#1? ():

In response to this type in DEMO1 (then RETURN.)
NOTE: If you type .R after the filename then the program will load the file up backwards. If, when you have finished this section, you would like to try this, go back to the heading LOADING THE SOUNDS but this time type in DEMO 1.R followed by <RETURN> and the sound will then be loaded backwards.

The computer will then display:

SOUND#2? ():

Enter a minus sign -. The computer takes this to mean, no more sounds thank you. It will then display:

'SEQ.' FILENAMES:

SEQUENCE#1? ():

Enter a minus sign again as of yet you have not recorded a single sequence. The computer will then display:

RECORD SEQUENCE? (N):

Enter a Y, followed by a RETURN. And the computer will respond:

TEMPO, 4..1800 EVENTS/MIN? (240):

If you reply to this by just entering a RETURN the computer will accept its entry in brackets ie. 240 events per minute. The disk drive will whirl away and while it is doing so you should make sure that the disk with SOUND.DEMO1 is available to it. If it is not available or ON-LINE as you will probably be saying down the pub. The computer will say that it is not available and that the ESC key will restart you and the RETURN key will try again at finding the file. This error message can only be due to one of two things. The first being that you have misspelled the filename. Go and check it now. The second is that the file doesn't exist. This means go and check that you have the right disk in the drive.

Assuming that everything is correct the following

will appear at the bottom of the screen:

READY: <CTRL-C>:ABORT, <RETURN>:START

Press RETURN and the screen will clear. The sequencer is now in operation.

AN OVERVIEW OF THE SEQUENCER

This is a rough overview of what functions are available from the sequencer.

NOTE: There are two different layouts depending on what version of the apple computer you are using: the II+ or the more recent IIE.

The computers keyboard now works like this:

CH.1: 1 2 3 4 5 6 7 8 9 0

CH.2: Q W E R T Y U I O P

CH.3: A S D F G H J K L ;

CH.4: Z X C V B N M , . /

SOUND# 1 2 3 4 5 6 7 8 9 0

It forms a grid with the first sound being loaded into the button #1 and the three keys to beneath and right of it. ie Q, A and Z. As you see from the diagram the other sounds load into the keyboard to the right of the first etc. This is the same with both machines.

It is possible to change the keyboard layout with the aid of the KEYBOARD SETUP program which is

explained in detail later in this manual.

The other commands for the sequencer are as follows:

COMMAND	FUNCTION
II+ <SHIFT> P (@)	This starts the metronome running. Note that the cursor in the top right of the screen is flashing at the same time. This is the visual equivalent of the metronome. To turn it off you press <SHIFT> P (II+) or <SHIFT> [(IIE) once again. NOTE: You must play on one of the clicks. So play slowly or speed up the metronome.
IIE <SHIFT> [({})	
->	This is the right pointing arrow. This speeds up the metronome by one step.
<-	This is the left arrow. It slows the metronome down by one step at a time.
>	This is the greater than symbol. This speeds up the metronome in steps of ten.
<	This is the less than symbol. Guess what this does.

<RETURN>

Arms the sequencer. The next key you press in the main keyboard area will start to record as a sequence (regardless of whether or not that key holds a sound.) It also changes record mode.

There are three record modes. SEQ, MERGE, and CHAIN mode. SEQ is the simplest mode and this is how to record basic sequences. MERGE lets you combine sequences so they can be triggered from one button. And CHAIN mode just remembers the way you trigger the sequences that have been recorded in the computer.

<SPACE BAR>

This stops a sequence from being recorded. It also gives the computer the point at which your sequence will repeat if you so desire.

<SHIFT> 9

This is the temporary store for the last recorded sequence. You can manipulate it by using any of the shift functions below.

Note that if a sequence is in <SHIFT> 9 it must be moved to <SHIFT> 1...8 before pressing <RETURN> otherwise the sequence is wiped from the computers memory.

II+

<SHIFT> : This followed by <SHIFT> 1...9 will
 (*) start the sequence in that key
 IIE repeating. It is most often used in
 <SHIFT> ' conjunction with <SHIFT> 9.
 (")

<SHIFT> - This is the = sign. This moves the
 sequence which is in <SHIFT> 9 into
 any of the other shifted number keys
 on the top row. <SHIFT> 1.....8
 Note that if you put a new sequence
 into the same location as an old one
 it will write over the old one.

<SHIFT> 1...9 This starts the sequence which is
 held in that key playing.

<ESC> This stops all sequences which are
 currently playing.

<CTRL-C> This does something quite different
 when in this state. Instead of
 calling up the CTRL-C Menu it jumps
 out into the play...seq menu.
 If you have recorded a sequence in
 the meantime it will ask you for
 a name to save the sequence under.
 NOTE that it will save the
 sequences with the name plus the
 number of the channel that it was
 in, for instance if you have three
 short sequences in channels 1, 2
 and 3, and you entered FRED as the
 name you wished to save them under.
 The sequences will be saved onto
 the disk as:

SEQ.FRED.1
SEQ.FRED.2
SEQ.FRED.3

respectively.

<SHIFT> / This changes sequence trigger mode.
(?) This is the number of sequences you
 can have running at the same time.
 In SINGLE seq mode only the
 sequence you trigger is heard. In
 MULTI seq mode you can trigger up
 to four sequences simultaneously.

SIMPLE SEQUENCING

The best way to demonstrate simple sequencing is to get the computer to record a short rhythm track using the sound that you have on the system. Turn on the metronome by pressing <SHIFT> P. Using the left and right arrows, or the less than and greater than symbols adjust the tempo so that you can play along. When you are happy with the tempo press the <RETURN> key. It is good practice to press the <ESC> key then the space bar, before pressing the <RETURN> key as this turns off any sequences that may be running (That is the <ESC> key), and stops it recording a sequence (the <SPACE BAR> key), before putting the board into record mode.

The screen should now have printed on it the sequence record mode and the sequence trigger mode. It will look something like this:

MULTI SEQ MODE

RECORD SEQ

EXIT: CTRL-C

Now that it is ready to record its time that you got down to recording your first sequence. As you only have one sound loaded you can only play sound#1. This inhabits the keys 1, Q, A and Z. If you were to hit these buttons the sound, if the AUDIO box is switched to 4CH would come out of channel 1, 2, 3, and 4 respectively.

Hit any of the buttons on one of the clicks which the metronome gives out and when you have finished press the space bar. It is important to hit the space bar on the first beat of the next bar as when you repeat the sequence that will be the point where the sequence loops.

At this point do not press <RETURN> as this will wipe the sequence from the memory. Instead push the <SHIFT> key and hold down button 9 the computer will now play back what you entered into it corrected to the nearest beat.

To get the sequence to repeat, press <SHIFT> colon, which is a star and then follow it with <SHIFT> 9 and the sequence will play through again. This time when it reaches the end it will automatically start back at the beginning. To stop the sequence press <ESC>. If you are not happy then press <RETURN> and you will be ready to start recording another sequence. If you are happy then while it is repeating press <SHIFT> - which is the = sign and then press <SHIFT> 1. The sequence now inhabits <SHIFT> 1. So press <ESC> to stop the sequence and

then by entering <SHIFT> 1. your repeating sequence is playing away for your enjoyment. Mind you it is a little boring all on one note. We'll show you how to get around that in the chapter headed KEYBOARD SETUP but that is a while off yet.

However, there is something you can do with sounds sampled at the same pitch. That is to emulate the sound of a drum kit, and use the DS3 as a drum machine.

Before we can get to that stage we first have to get back to the PLAY/SEQUENCE menu.

Press CTRL-C. Instead of the CTRL-C menu appearing, if you have recorded a sequence the screen will clear and the words SONG NAME? (???): will appear. Make sure you have DATA DISK 2 in the machine and then enter a short title out of interest. It will then save away your sequences as your filename + a number. The number is dependent on which channel the sequence was in.

USING THE DS3 AS A DRUM MACHINE

Right now you have overcome your first experiments with the DS3 Sequencer and you should be back at the PLAY/SEQUENCE menu.

GREENGATE DS3 PLAY/SEQUENCE 0.0

OLD SETUP? (N):

Enter <SHIFT> - which is the * symbol say no to the SAVE SETUP? (Y): question and then Y to the next question which is LOAD SETUP? (Y): . The computer will then ask you for a filename to load. Enter the

name DRUM KIT and before pressing <RETURN> make sure that you put DATA DISK1 into one of your APPLE's disk drives.

The PLAY/SEQUENCE menu will once again return and so this time enter Y in response to the first question: OLD SETUP (Y): The screen will scroll by at a fast speed and the disk drive will then load up the relevant sounds. It is up to you what you do with sequencing them but this is how you use it initially.

When the program responds with this:

READY: <CTRL-C>:ABORT, <RETURN>:START

Press <RETURN> and the screen will clear and the computer will once again be in sequence record mode. Press <SPACE BAR> just in case you pressed <RETURN> too many times and then you are ready.

The sounds you should have in memory should be:

SOUND#1	BASS DRUM
SOUND#2	SNARE
SOUND#3	CLOSED HI-HAT
SOUND#4	OPEN HI-HAT
SOUND#5	HAND CLAPS

These can be played on the keyboard in the following manner:

CHANNEL NUMBER	SOUND NAME				
	BASS DRUM	SNARE	CLOSED HI-HAT	OPEN HI-HAT	H/CLAPS
1	1	2	3	4	5
2	Q	W	E	R	T
3	A	S	D	F	G
4	Z	X	C	V	B

We have found that if you are running the channels out separately to a mixing desk it is probably best to play on the following keys:

	BASS DRUM	SNARE	CLOSED HI-HAT	OPEN HI-HAT	H/CLAPS
1	1	-	-	-	-
2	-	W	-	-	-
3	-	-	D	F	-
4	-	-	-	-	B

The reason for this is so that you don't get any sound clashing with each other when you record a drum pattern.

You have used the sequencer before so now try building up your own basic drum tracks. Don't try and put everything down at once. For example put down the bass and snare together using the keys 1 and W. Short sequences at a time. Repeat the pattern so that it starts to sound like the basics of a drum kit. Save the sequence away onto channel one. Stop the pattern by pressing <ESC> as you will probably have triggered it twice when it was stored away. Then start it up on its own and then once it

is running press <RETURN> which starts the sequencer recording. Now you can lay down the HI-HAT part. Use the keys D and F. D is the closed hi-hat, and F is the open hi-hat. If you make a mistake then just press the <SPACE BAR> and start again by pressing <RETURN>, and joining in with the rest of the drums. when you are happy repeat the sequence and then store it away into channel 2. Press <ESC> to stop everything. Now by pressing the <SHIFT> key and then pressing channels one and two together you will get the sound of the bass drum, snare and hi-hat running together. Start the sequencer recording again and put down the hand claps by pressing button B. Repeat and save and there you have the basics of a drum pattern. Stop everything using the <ESC> key and then restart all three at the same time.

Press <ESC> when you have had enough.

By pressing CTRL-C the program will ask you for a file name. Call them DRUMS and save them away onto DATA DISK 2 as this will be of use to you later on in this manual.

It should have saved away the following:

DRUMS.1
DRUMS.2
DRUMS.3

If you have called them something else remember to insert that name instead of DRUMS when you see that file mentioned again in the manual.

This is a very simple example but from here on in it can get quite interesting.

BUILDING MORE COMPLEX PATTERNS

You can have up to 9 sequences on the machine at any one time. These can be accessed by using the permanent stores <SHIFT>1 to 8 and the temporary store <SHIFT> 9. These patterns can then be saved on disk and then, by using the sequence develop program you can merge, join and edit sequences together. This is explained in the chapter dealing with the SEQUENCE DEVELOPER.

The sequencer can also perform many of these functions itself by using combinations of the different record modes. You have used record SEQ mode. By pressing the record key again the screen display will switch to:

MULTI SEQ MODE

RECORD MERGE

EXIT: CTRL-C

This is now in record MERGE mode. This means that the sequencer will now allow you to record a sequence by triggering up to four sequences. The finished pattern will be stored in the computer as if you played it. This sequence can then be stored in any suitable key.

NOTE: if you want a permanent record of your sequences you must EXIT (by pressing CTRL-C) and save away the patterns under a filename (When you save the next bunch of sequences remember to change the name as otherwise the program will overwrite them on the disk with the new sequences you have recorded.

The purpose behind this method of work is that you can then have a completed sequence sitting in channel one and then it takes only one press of the button to trigger a completed sequence. Alternatively you could have the various sections of a song on different buttons and trigger them when you reached that point. ie you could have a setup like this:

<SHIFT> 1	INTRO
<SHIFT> 2	VERSE PATTERN
<SHIFT> 3	FILL
<SHIFT> 4	CHORUS PATTERN
<SHIFT> 5	BREAK 1
<SHIFT> 6	MIDDLE 8 PATTERN
<SHIFT> 7	BREAK 2
<SHIFT> 8	PLAYOUT

And it then becomes obvious when in the sequencer how to play through a song.

NOTE. YOU HAVE TO REMEMBER WHERE EVERYTHING IS ON THE KEYBOARD IN TERMS OF YOUR PATTERNS AS YOU ARE THE DEFINER OF WHERE THE PATTERNS SIT. YOUR OWN LAYOUT MAY BE COMPLETELY DIFFERENT.

By pressing <SHIFT> / (which is the question mark (?)) the computer switches into single sequence mode. By pressing the <RETURN> key THREE times the computer will display:

SINGLE SEQ MODE

RECORD CHAIN

EXIT: CTRL-C

Now when you trigger the sequence buttons the computer is remembering which sequences you triggered and in which order. This is a CHAIN seq and when this is saved away (in this case in <SHIFT> 9 which is the only key free to let you save it away. By triggering this again it will play through your song.

NOTE: A CHAIN FILE LOOKS LIKE A SEQUENCE FILE HOWEVER IT DOES NOT CONTAIN THE SEQUENCES THEMSELVES ONLY THE ORDER IN WHICH THE SEQUENCES WERE TRIGGERED. THIS MEANS THAT YOU MUST HAVE ALL THE SEQUENCES IN THE SEQUENCER AT THE SAME TIME IN ORDER TO ALLOW THE CHAIN FILE TO TRIGGER THEM.

SAVING SETUP FILES

When you loaded the DRUM KIT file which set the computer up to imitate the sound of a small drum kit you were using a file type which is known as a SETUP file. The purpose of a SETUP file is to speed up the loading of regularly used files.

For example you have a setup which looks like this:

OLD SETUP? (Y):N

KIT FILE? (-):

SOUND FILENAMES:

SOUND#1? (): SNARE

SOUND#2? (): TOM TOM

SOUND#3? (): BASS GUITAR

'SEQ.' FILENAMES:

SEQUENCE#1? (): SONG VERSE

SEQUENCE#2? (): SONG CHORUS

SEQUENCE#3? (): SONG MIDDLE 8

TEMPO, 4..1800 EVENTS/MIN (240):375

READY: <CTRL-C>:ABORT, <RETURN>:START

Instead of having to retype the whole of this setup every time. Go back to the top of the menu by typing CTRL-C then <RETURN>. The program will respond with the text:

GREENGATE DS3 PLAY/SEQUENCE

OLD SETUP? (N):

At this point you have to enter the star symbol again. It can be obtained by pressing <SHIFT> followed by the minus sign. The computer responds with:

SAVE SETUP? (Y):

Enter Y and then press <RETURN>. The computer will then respond with:

FILENAME (???):

Enter the name of the file that you wish to save and then all the information about the files will be saved onto the disk under the name which you saved it.

So when you want to load that SETUP file again all you have to type is the name of the SETUP file and the computer will then reload the names of the rest of files you wish to load, instead of having to type it all in yourself.

NOTE:

This does not load the files themselves. You must have all the files with the right sounds and sequences ready for the computer to load off disks. This, if you have been following closely, dear reader you should already know as you have done it twice already. Once when you loaded the first demo file and the second time earlier in this chapter when you loaded the DRUM KIT file.

KIT FILES

The keyboard overlay allows you to set up the playing area of the keyboard. Go back to the main heading.

GREENGATE DS3 PLAY/SEQUENCE

OLD SETUP? (N):

Press <RETURN> and the computer should respond with:

KIT FILE? (-):

Enter TUNE, make sure that the master disk is in drive one and then press <RETURN> and enter DEMO1 (your recorded sound) in response to the sound filename. Don't load any sequences but turn on the sequence record mode. Set the Tempo to your desired speed (you have to be getting used to it by now) and let the computer load up the files.

The keyboard layout has now changed. Here is a map of all the relevant keys on the new keyboard.

CH.1: 2 3 5 6 7

ONLY: Q W E R T Y U I

SOUND# 1 ONLY

This resembles the following keyboard:

CH.1: C# D# F# G# A#

ONLY: C D E F G A B C

SOUND# 1 ONLY

You can now play and record one channel tunes using the APPLE keyboard. As you know how to use the sequencer, stop reading the manual for a while and try it out. If you are bored with the sound you have, try one of the other sounds from DATA DISK 1. If you wish to try out some of your own keyboard setups it is covered in the section of this manual

titled: KEYBOARD SETUPS.

SOUND EFFECTS ETC....

You have now seen the potential of what the sequencer can do. If you want to find out how you can drive the sequencer from an external source then see the APPLICATIONS GUIDE which is a supplement to this manual. This can be especially useful when doing things such as triggering sound effects or replacing a certain drum sound with a sound stored in the DS3.

CHAPTER 5

THE SEQUENCE DEVELOPER

- 5-1 How to get there**
- 5-1 The main options**
- 5-3 Loading sequences**
- 5-4 Listing sequences**
- 5-8 Merge sequences**
- 5-9 Join sequences**
- 5-10 Further information**

HOW TO GET THERE

From the main menu select option 4. This will take you into the SEQUENCE DEVELOP menu. The sequence developer is a program which allows you to list, join and merge sequences and it gives a visual listing of which sound is being played by which channel at any one time. It is useful to produce this listing to be able to merge and join sequences in any part of a given sequence.

THE MAIN OPTIONS

The main options of the sequence develop menu are as follows:

```
*****  
                SEQUENCE DEVELOPER V2.0  
*****
```

```
G   GET A SEQUENCE  
  
S   SAVE A SEQUENCE  
  
L   LIST A SEQUENCE  
  
J   JOIN SEQUENCES  
  
M   MERGE SEQUENCES  
  
E   EDIT SEQUENCE TIMING  
  
Q   QUIT
```

Lets give an overview of the functions available:

OPTION	FUNCTION
G	<p>This gets a sequence from the disk drive.</p> <p>Note. If you are using files with incremental file numbers (ie FRED.1, FRED.2 etc.), you need only enter the first file name and number as entering the percentage sign (%) will force the program to get the next file in the series from the disk.</p>
S	<p>This saves a file from the program and stores it onto a disk. This is used after you have treated the sequences.</p>
L	<p>This lists the sequence out onto the screen.</p>
J	<p>Join sequences together. This enables you to join sequences together or to join the same sequence to itself, into the basis of a song.</p>
M	<p>The merge function allows you to merge sequences on top of each other to produce more complex patterns from simpler ones.</p> <p>NOTE. If one of the sequences is of a different length. The longest sequence will take preference, with silences occurring in the channels without information in.</p> <p>NOTE2. The computer takes the first</p>

piece of information laid into a channel. So you can merge two events on top of each other on the same beat on the same channel but it will be the first pattern which takes preference.

E Edit sequence timing allows you to insert and delete spaces between events in a sequence and to truncate sequences.
NOTE. At the moment it is not possible to build up your own sequences from within the sequence developer.

LOADING SEQUENCES

The sequence developer does not generate sequences by itself. It needs sequence that you have created before. In the sequencer program you created a pattern called DRUMS. It is now time for you to get those sequences back. Enter a G and the screen will clear and it presents you with:

GET

SEQUENCE NAME:

Type in DRUMS.1. Remember that if you saved the file under something other than DRUMS that you have to enter otherwise the program will spend all day looking for a file which you have not got.

When it has found the file the screen should look like this:

GET

SEQUENCE NAME: DRUMS.1
SEQUENCE NAME:

Now, instead of typing DRUMS.2 you can enter the percentage sign instead like so:

GET

SEQUENCE NAME: DRUMS.1
SEQUENCE NAME: %

Then press <RETURN> and the computer will look for the next file in the series beginning DRUMS. When it asks for the third sequence name you should enter the % sign again and the computer will go and look for the third in the sequence beginning DRUMS. That is, DRUMS.3. The program will then be displaying:

GET

SEQUENCE NAME: DRUMS.1
SEQUENCE NAME: %
SEQUENCE NAME: %
SEQUENCE NAME:

Enter <RETURN> and the screen will display the SEQUENCE DEVELOP menu.

LISTING SEQUENCES

The sequences that you have loaded can now be listed. To list a sequence you have to enter the letter L. The screen will clear and the program will then display:

SEQUENCES LOADED:-

1. SEQ.DRUMS.1
2. SEQ.DRUMS.2
3. SEQ.DRUMS.3

LIST SEQUENCE NUMBER:

If you have been following this manual closely by entering the figure 1 you should have a listing of your bass drum and snare pattern. It should look something like this:

1:	P	34	-	-	-
		1			
2:		-	-	-	-
3:	P	-	34	-	-
		2			
4:		-	-	-	-
5:	P	34	-	-	-
		1			
6:		-	-	-	-
7:	P	34	34	-	-
		1	2		
8:	P	-	34	-	-
		2			
9:					

SEQUENCE REPEATS

If you press any other key after this the program switches straight back to the sequence develop menu. If you wish to have a look at any of your other sequences then press L again, for Listing the sequence and then enter the number of the sequence you wish to list.

You may be a little confused by this listing. Hang on for a short while and all will be made as clear as mud. Lets look a more basic sequence first.

1:	P	34	-	-	-
		1	-	-	-
2:		-	-	-	-
3:					

SEQUENCE REPEATS

O.K, what does all this mean. Well, the number on the left is the event number. So;

1:

is the first event in a given sequence. The P stands for pitch. This is the pitch at which you want the sound to play at. When using the standard keyboard setup the keyboard is set to play the sample back at the pitch at which the sound was recorded. This is set to work with the DS3:B which is the keyboard add on. When working with samples it is best to make sure that if you record on the DS3:A that they will work with the B. To do this the standard pitch, 34 coincides with the A above middle C on the keyboard. There are four columns and the Pitch is only assigned to that particular column. The four columns:

1:	-	-	-	-
----	---	---	---	---

are the separate channels out reading from left to right, channels one to four. Your bass drum should have been recorded onto channel one and so that is why the pitch has been assigned to that channel:

1: P 34 - - -

The number underneath the pitch value is the number of the sound which you have triggered. So as the bass drum was sound# 1 in the program the listing looks like this:

1: P 34 - - -
1

The number 2: is the second event. Nothing happens on that channel so the computer inserts dashes to show that nothing is happening:

2: - - - -

Number 3: has nothing following it. This beat does not exist it shows the position where the next sequence will start. As the sequence repeats it sends the pattern back to position number 1 which will trigger on the third event after the first.

The computer tell you what the sequence does when it reaches the end of the sequence. on these examples the sequence repeats but on others it will produce the phrase:

END OF SEQUENCE

If we go back to the slightly more complex sequence:

1:	P	34	-	-	-
		1			
2:		-	-	-	-
3:	P	-	34	-	-
			2		
4:		-	-	-	-
5:	P	34	-	-	-
		1			
6:		-	-	-	-
7:	P	34	34	-	-
		1	2		
8:	P	-	34	-	-
			2		
9:					

SEQUENCE REPEATS

It does begin to make more sense. For example the line:

7:	P	34	34	-	-
		1	2		

Means that on the 7th event the pitch 34 was assigned to channels one and two and channel one plays sound number 1 while at the same time channel two plays sound number 2. This, in the case of a drum kit will produce say a bass drum and a snare at the same time. But it is easy to load a different set of sounds into the same sound numbers.

MERGE SEQUENCES

Merge sequences allow you to combine mre than one sequence on top of one another this can be useful with you drum patterns. Enter M as the option from

the SEQUENCE DEVELOP menu and the computer displays which of your sequences have been loaded and where they sit.

The computer is asking which sequences you want to merge. ENTER 1 <RETURN> and then 2 <RETURN> and then just <RETURN> and then enter DRUMS+HH as the sequence name. Select Merge again as the function you wish to carry out and you will see that there are now four sequences in memory. This time merge sequence 4 (DRUMS+HH) with sequence 3 (DRUMS.3) and then save it as D+HH+CLAPS. You now have five sequences. If you wish to save the sequences press S and then the number of the sequence that you wish to save.

JOIN SEQUENCES

Join sequence mode is very like merge mode. The screen will clear and you will be told what sequences you have available. The main difference is that in join mode it asks how many times you wish to repeat a sequence.

Join lays sequences end to end rather than merging them together. If you were to list a merged sequence everything is combined on top of each other where as with join you end up with a very long sequence.

Join together sequence 4 (DRUMS+HH) and repeat it four times and then join sequence 5 (D+HH+CLAPS), Repeating sequence four times. Save it as your own filename.

NOTE: as soon as you start to adjust things in the sequence developer the program strips things like

SEQUENCE REPEATS from the sequences and assumes that all sequences end.

Before finishing get into EDIT SEQUENCE TIMING. This allows you to adjust the gaps between EVENTS and change the end commands of things. Get to the end of the sequence by pressing / and then enter R this makes your short sequence repeat indefinitely. Quit from the editor and save away sequence 6 under a filename of your choice.

CTRL-C out of the sequence developer and enter the sequencer once more. LOAD DRUM KIT setup once again and say N to the OLD SETUP? (Y): question. Step through all the options and then load up the seq file that you saved away into SEQ#1? ():filename. Let the computer load up the various files then press <SHIFT> I. The computer should then play through your pattern withh hand claps joining in on the fourth time round.

FURTHER INFORMATION

A lot of the sequence developers functions have been superceeded by the new sequencer which has a lot of the sequence developers functions now built in. But it is still very useful to be able to examine the sequences and the editing of the systems timing is also useful.

CHAPTER 6

HOW TO SET SOMEONE UP AND HAVE MORE FUN

6-1 The setup....

6-2 The overview

6-3 Setting up for yourself

THE SETUP

By pressing option five on the main menu the computer switches to KEYBOARD SETUP. The purpose of this program, as outlined in the sequencer chapter, is to allow you to set up the keyboard to your own specifications. You will have noticed that one of the options in the sound play/sequence program is:

KIT FILE?(-):

By pressing return you can get the standard setup of channels and sounds as described in the earlier chapters. Using this program allows you to assign sounds and pitches to any key on the computer keyboard.

The screen clears and the computer prints up the following:

KEYBOARD LAYOUT

CH.1: 1 2 3 4 5 6 7 8 9 0

CH.2: Q W E R T Y U I O P

CH.3: A S D F G H J K L ;

CH.4: Z X C V B N M , . /

ONE MOMENT...

There will be a short pause which will then add the following to the screen:

L LOAD

S SAVE

K SET UP KEYS

THE OVERVIEW

Here is the overview of these commands:

COMMAND	FUNCTION
L	This loads a keyboard file from the disk and allows you to edit it. This can be useful if you have a setup which needs only a small adjustment.
S	This Saves an edited keyboard file and allows you to use it in the sound sequencer.
K	This is the main part of the program. The computer will allow you to customize the layout of the keyboard to suit your own personal needs. If you require a musical scale for a composition. This is the way to produce it without having to use the DS3:B NOTE: The APPLE keyboard will not let you produce a shortened version of the sound. Triggering the sound from the APPLE keyboard will only play through the full sound. This is only the start of why you will want to invest in the DS3:B available at your local stockists NOW!

SETTING UP FOR YOURSELF

Press K and this will then allow you to assign a sound and a pitch to one of the keys.

<ESC> FOR MENU

PRESS KEY TO BE SET UP:

Press the 1 key and the program starts to flash the 1 key on the screen. The program also prints up the current setting of key#1:

SOUND#:1 PITCH#:34

SOUND NUMBER: BETWEEN 1 AND 16:

Notice that the figure one after the words SOUND# is also flashing. This is the computers way of showing you what it is you are currently working on. The program is asking for the number of the sound you wish to trigger. Enter 1, as that is the sound you wish to play with. Notice that the flashing cursor moves over to the pitch area.

NOTE: In complex pitched setup files it is often better to use just one sound number setups at one time. Except that in a drum layout you may want to have the same tom sound over three, or more pitches.

You can now assign a pitch to that channel. The standard setting is 34 this is the value which plays the sample back at the pitch it was recorded at.

NOTE: The number 34 coincides with the pitch of A

on the DS3:B keyboard. The pitches vary in semitone away from this note for example:

A =34 A#=35 B =36 C =37 C#=38 D =39 D#=40
E =41 F =42 F#=43 G =44 G#=45 A2=46

This contains all of the notes from concert A to the A one octave higher

So, perhaps you would like to leave the first key at 34. Press <RETURN> to enter the information.

SOUND#:1 PITCH#:34

PITCH NUMBER: BETWEEN 12 AND 60
49 SEMITONES, 12=LOW, 60=HIGH:

You will note that the display of the keyboard has changed once more. Now the area relating to key#1 has now turned into a reverse display. This is the computers way of letting you know that that key has been edited.

You can now do the same thing with any or all of the keys and when you are happy you can, using the save command, save away the file to setup a keyboard. KEYBOARD SETUP files are stored with the PREFIX (good word that meaning the bit that comes before) KIT. So if you saved the file away as TEST, you can see exactly where it is on the disk by looking at any file with the prefix: KIT. (for example the file TEST would appear as KIT.TEST in the CATALOG).

When you have saved it away go back to the main menu. Get into the PLAY/SEQUENCE mode by pressing option 3 and then load up the kit you have just

saved, along with your favourite sound and then
experiment seeing just what sort of things you can
do.....

CHAPTER 7

THE FINAL PROGRAMS

- 7-1 Back at the main menu**
- 7-1 Song create**
- 7-2 Performance create**
- 7-3 The performance**
- 7-4 Where do you go from here?**

BACK AT THE MAIN MENU

CTRL-C followed by M will get you back to the main menu. You will notice that there are two programs which we have not talked about so far. One is CREATE SONG FILE and the other is CREATE PERFORMANCE FILE. These are fairly passive programs and are not, as such, worthy of a complete chapter to themselves. But they can be very useful programs and are therefore very important to explain.

CREATE SONG FILE

This program takes a setup file and converts it into a song file. There is only a very subtle difference between the file type, but part of the reason for converting the file is that you can think of a setup file as a file which is being worked on, where as a song file should be regarded as a permanent, finished file. The other reason is that the performance file can only be made from finished song file.

When entered the screen will clear and the display will show:

SONG CREATE V1.0 10.83

ENTER THE NAME OF THE SETUP FILE TO BE USED

:

The computer is asking for the name of the setup file you wish to convert into a song file. If you have a valid setup file which you are completely happy with then by entering that files name and making sure the relevent disk is available to the

computer, the program will convert the setup file into a performance file.

When you have enough song files you may want to use a number of them in a specific order (for instance using the DS3 as a drum machine at a gig). To do this you will need to select option 7 from the main menu.

PERFORMANCE CREATE

The performance create program is the program which allows you to chain together different song files to create a performance. This is useful for gigs or even for demonstrations of your own compositions. The screen will clear and will print up:

PERFORMANCE COMILER V1.0 10.83

ENTER A LIST OF 'SONG NAMES',
ONE PER LINE, ENDING WITH A BLANK
LINE OR A DASH (-) :

#1 SONG.

The computer is asking for the name of the first song file you wish to go into the performance file. If you enter it carefully, not making mistakes, and then press <RETURN> the program will ask you for the next song file you wish to add to the performance.

When you have finished adding song files to the performance file enter a dash (-) instead of a song file name and the computer will then ask you:

PERFORMANCE FILENAME? :

Call the performance file whatever you want to and the computer will then save it away.

THE PERFORMANCE

To play a performance file call up the sequencer again. From the first question:

OLD SETUP (N):

Enter the * symbol. Enter N for the answer to SAVE SETUP? (N):, and then the screen should look something like this:

GREENGATE DS3 PLAY/SEQUENCE 0.0

OLD SETUP? (N):*

SAVE SETUP? (N):N

LOAD SETUP? (Y):

This time enter the star symbol again, and the computer will respond with:

PERFORMANCE LOAD? (Y):

Enter Y and then press <RETURN>. The program will then ask for the file name. Enter the file name and the computer will then load up your performance file. The computer will load up the first song and after you press <RETURN> it will play it.

When it reaches the end of a song the computer will stop. If you then enter CTRL-C the computer will

load up the next song in the performance and then wait for the <RETURN> key.

The reason for this strange method of double stopping a performance at the beginning and end of songs is that you could use the performance file to just load up sounds and this allows you to have an entire gigs worth of sounds (providing you can fit them onto the disk) all prepared to load up. Pressing CTRL-C when you come to the end of a number.

WHERE DO YOU GO FROM HERE?

We want you to get the most from your DS3 so it is really up to you. However this is the manual for the basic board so there could be a possibility that you have not yet bought the DS3B synth keyboard. This is a big step forward in the control of the machine. Contact the place where you bought your DS3 and ask immediately for a demo.

You may have strange questions about linking the DS3 to various devices such as drum machines or tape recorders. Dont Panic! Help is at hand in the shape of the DS3's APPLICATIONS GUIDE. A short compendium of hints and tips all of which work to give your DS3 a wider and more useful future in todays recording studio.

CHAPTER 8

HOUSEKEEPING

- 8-1 How to take care of your APPLE**
- 8-1 Initializing disks**
- 8-3 How to make backup copies**
- 8-4 And so to bed.....**

HOW TO TAKE CARE OF YOUR APPLE

If you take care of your APPLE. Your apple will take care of you. So treat it with some respect. It is a computer after all. Here are some do's and don't's about using APPLES.

- 1) BEWARE OF STRANGE MAGNETIC FIELDS. The disks the APPLE uses are stored, like music masters on magnetic media. So be as careful with the disks as you are with tape masters.
- 2) BE ESPECIALLY CAREFUL WITH YOUR DS3 MASTER DISK. The APPLE without a DS3 master disk is just an APPLE with a special card inside it which will not make any noise.

In the manuals which you get with your APPLE you there is extensive information on how to keep your APPLE in the safest conditions. Go to the manuals now and read up these sections CAREFULLY.

INITIALIZING DISKS

When you buy disks from the shops they will be blank. Not only will they be blank but also they will be unformatted. This means not only do they not have any information on them, they are also not ready to receive any information. To initialize a disk follow these instructions carefully:

- 1) Get back to the main menu.
- 2) Select option 8 from the main menu.

- 3) The screen will clear and a message about running a program called HELLO will appear at the top. Do not obey this yet.
- 4) REMOVE DS3 MASTER DISK.
- 5) Insert blank disk into drive 1
- 6) Type the following:

INIT BLANK,D1
- 7) Double check that it is a blank disk in drive.
- 8) PRESS <RETURN>
- 9) When the light goes out on the disk drive remove your new disk from the drive.
- 10) Label your new disk as a DATA DISK with any information you can add to differentiate between it and the hundreds of other data disks you will have (the easiest way of doing this is to write onto the label exactly what it is that has been saved onto the disk)
- 11) Insert the master disk back into drive one
- 12) Type the following:

RUN HELLO

If the master disk is back in the drive then you will be back in the main menu.

HOW TO MAKE BACK UP COPIES

One way to keep hold of your software is to make back up copies of all your important work. For this you will require:

- 1) A disk to copy from
- 2) A disk to copy to
- 3) A system master disk which has the disk copy program on.

Here is how to copy the DS3 system master disk. This should be done so that you always have a working backup copy.

- 1) Start with the computer switched off.
- 2) Put the DOS 3.3 system master disk into drive one. Do not close the drive door.
- 3) Turn on the computer. Close the disk drive door.
- 4) When the computer has finished loading the disk enter:

RUN COPYA

- 5) If you have a two-drive system then set up the program so that it copies from drive one to drive two.
- 6) If you have a one-drive system then set up the program so that it copies from and to drive one only. FOLLOW THE INSTRUCTIONS

WHICH APPEAR ON THE SCREEN VERY
CAREFULLY

- 7) Read what it says on the screen and obey all the instructions.
- 8) If you want to make another copy then answer yes to the question it asks when it finishes copying.
- 9) When you have finished copying the program will leave you back in basic. To get back to the DS3 main menu type:

PR#6.

Put your DS3 System master disk in drive
then press <RETURN>

- 10) You are back at the top again.

AND SO TO BED.....

Right, now that you have been guided through all the main programs which come with the DS3 its almost time for you to start work and get going with the DS3. HOWEVER, if you have just read all of this in one sitting. STOP. Go to sleep and wake up tomorrow refreshed. Running a computer system is like driving a car or recording in a studio. The later it is and the longer you have been at it the more chances you have of making mistakes. Anyroad, if all this has been read in one sitting your HUSBAND/ WIFE/ GIRLFRIEND/ BOYFRIEND/ PARENTS/ CHILDREN (DELETE WHERE APPLICABLE) will be wondering where you are and what you have been up to. Hopefully it will not be the start of a

lifelong romance between you and your computer.
Because thats how you end up producing something
like this.