instruction manual

DATEL UTILITIES

DATEL ELECTRONICS

ACTION REPLAY MK III is a 16K rom cartridge, upgradable to 32K, which adds many very powerful abilities to your Commodore 64, 64C, or 128 computer (in 64 mode).

It will transfer virtually any program from tape to tape, tape to disk, disk to disk or even disk to tape. All backups can be loaded independently of the cartridge, and incorporate turbo load which speeds up loading to a fraction of the normal time.

The cartridge may be used to pause any program, enter pokes (for infinite lives in games, etc), disable sprite collisions, view sprite animations, save sprites and hires pictures to tape or disk.

Disk users have the benefit of a built in fast load system (which is independent of memory), fast format and directory.

Tape users have a dual speed turbo load system for backups, which loads programs up to 10 times the standard speed, plus a built in slide show for viewing pictures from tape loading screens, etc.

ACTION REPLAY MK III was designed and is manufactured by DATEL ELECTRONICS. Programming of the backup, tape and disk turbo system is by DOSOFT.

WARNING. If you use Action Replay to make backup copies of commercial programs which are protected by copyright, you are warned that it is illegal to distribute such programs to other users, for gain or otherwise.

The cartridge fits into the expansion port of your computer. Looking from the front, this is at the right hand side at the rear of the machine.

IMPORTANT. Before inserting or removing the cartridge, ensure that the computer is switched off, otherwise both cartridge and computer will be damaged.

Looking from the front, with the computer switched OFF, insert the cartridge into the expansion port with the label side uppermost and the two buttons to the right. If the slot has not been used before, firm pressure may be necessary, but excessive force should not be used.

Once the cartridge is installed, switch on. The computer will power up as normal. No special message will appear because in its powerup state the cartridge is "invisible" - it will never interfere with normal operation of the computer, and we recommend that you leave it permanently in place.

There are two push buttons on the cartridge, each of which has a distinct function:

The rightmost button is the RESET button. Its function is to restore the computer to its powerup state, just as if you had switched the computer off and on (except that any program in memory is still there, though a basic program will be "newed"). This button will reset programs which are normally "unstoppable".

The other button is the FREEZE button. Its function is to interrupt the program currently running and transfer control to the Action Replay Function menu.

Press the freeze button - the screen will go black and the function menu will appear in the centre of the screen. Now press and release the F3 function key. The screen will reappear as if nothing had happened.
Now - hold the CBM key and press the Freeze button. This installs FASTLOAD (or DISKMATE if you have the 32K version of Action Replay). See later for a description of the Fastload functions.

NOTE: The CBM key is at the bottom left of the keyboard, next to the "shift" key.
NOTE: The FREEZE button does not work when the computer has "crashed" or "locked up". To restore control use the RESET button.

Now - press the RESET button to reinitialise the computer, then press the FREEZE switch. Press the F5 function key. Another menu appears which gives you access to Action Replays facilities. This is a "Duckshoot" menu - use the CURSOR keys to highlight the required facility and press the RETURN key to select.

NOTE: if you find that you have selected the wrong facility, press the RUN/STOP key. This will return you to the startup menu.

The remainder of this manual describes Action Replay's various facilities.

MAKING BACKUPS

Action Replay makes backups by taking a "snapshot" of the whole memory of the computer, which is then saved to disk or tape. Efficient compaction techniques are employed to avoid saving unused areas of memory.

Before making a backup, you should prepare the disk or tape onto which the backup is to be made. If the disk is new it must be formatted (see UTILITIES for how to format a disk). If the disk already contains programs then it should have sufficient free space on it. Long programs take up 200-230 disk blocks, short programs much less. Your tape should be wound to the appropriate point. Then follow this procedure:

1. Switch on the computer and press the FREEZE button.

2. Press the F1 function key and select (A) CONFIGURE MEMORY. This fills the memory with a single value and makes the compaction system much more efficient. The computer will then reset.

3. Load the program to be backed up. This can be any game or other program from any source, disk or tape. NOTE: if you find that the program will not load, switch the computer off and on and MISS OUT STEPS 1 and 2. (certain programs can detect if the memory has been configured).

4. Once the program has loaded and is running, press the FREEZE button at any time (on the title screen or part way through the game if you wish - its up to you)

5. Press the F5 function key and select BACKUP from the duckshoot (press the return key).

6. Select your output device (TAPE, or DISK device 8 or 9).

7. Select the required speed. A high speed disk save is availabe, or you may use standard save speed if you find that this is not compatible with your particular drive. Select standard speed if you have a fast DOS fitted to your drive and wish to use it. If you are saving to tape, then two speeds are available: TURBO (approx. 5 times CBM standard speed) or SUPERTURBO (approx. 10 times). See "HOW TO LOAD YOUR BACKUPS" for advice on which to use.

8. Prepare your output device. Disk users - make sure the correct disk is inserted. It is also advisable (but rarely essential) to switch your drive off and on to make sure that it is properly initialised). Tape users - make sure the tape is wound to the correct position.

9. Press F1. The border will flash while the compactor is operating, and the program will be saved.

The backup is now complete. If the save was to tape, you may restart the program or exit by selecting from the displayed menu. If the save was to disk, the disk error status will be displayed. If an error occurred, you can still make another copy after inserting a fresh disk, by selecting COPY AGAIN from the menu.

HOW TO LOAD YOUR BACKUPS

All backups, from disk or tape, will independently load at turbo speed. The cartridge need not be fitted.

LOADING FROM TAPE
Position the tape and press SHIFT/RUN in the normal way. The program will load and run automatically.

A few points need to be observed to ensure that your programs load reliably. Your tape heads should be cleaned regularly and the tape deck should be kept away from the computer, monitor and other sources of electrical interference. TURBO speed is inherently reliable and you should never experience problems in loading these. SUPERTURBO speed compresses the data much more and requires a tape deck in good condition, and good quality, short length tape for reliable loading. Experience will show you which speed is most appropriate for your particular system.

If you save several programs onto the same tape, it is important that you leave a good gap between programs and make a note of the tape counter reading at the start of each. The computer sometimes crashes if it has to search over high speed data.

LOADING FROM DISK
Each program saved to disk is a single file. A second file, called "LOADER" is added to each disk, which contains the Action Replay turboloader. Load "LOADER",8 and RUN. Select the program to load. The turboloader may be switched out, if you find that it is not compatible with your particular drive, or if you have a fast DOS fitted. Also, you may insert another disk and display its directory by pressing the F1 key.

Alternatively, any Action Replayed program may be loaded via FASTLOAD (or DISKMATE if you have the 32K version) Hold the CBM key and press the FREEZE button to install Fastload. The disk directory may be displayed by typing "$" and return. Then load the program you require in the normal way. LOAD "PROGNAME",8 and RUN.

In the unlikely event that a backup fails to load and run correctly, there are several steps which you can take:

1. Try copying the program at a different point.
2. Try switching your disk drive off after the program has loaded.
3. Try loading the program without configuring memory as described earlier.

SPRITES

Sprites are special shapes which can be defined by the programmer and moved about on the screen in a special way by hardware built into the computer. These are often used by game designers to display the moving shapes used in their programs. We have built in two useful and interesting features into Action Replay Mk III which allow you to manipulate sprites.

SPRITE KILLER

To operate the sprite killer freeze the game and select SPRITE KILLER from the menu. You may then disable collisions between two sprites, or collisions between sprites and background data, or both. The program will then restart and, if successful, you will find that when two sprites collide, nothing happens. You can then sail through the whole game without losing a life!

Results will vary from game to game. Ways of detecting sprite collisions are many and varied and often the sprite killer will have no effect. However, game players will find it very useful when it does succeed. Try it on "Manic Miner" for instance.

VIEWING SPRITES

If you select VIEW SPRITES after freezing a program, any sprites used in the program may be displayed on screen. You can scan through the whole memory and the sprites will move across the display. Key functions are:

    <   Move down memory.
    >   Move up memory.
    B   Change video bank. The computer has 4 video banks each of which can be accessed in turn
    M   Change mode. Sprites have two display modes, Standard and Multicolour. Displayed colours will be different from the actual ones, but these will be restored when you restart the program.
    S   Save. Any sprite can be saved to disk or tape.
    L   Load. Any sprite previously saved càn be loaded back in to the current sprite position.
    W   Wipe. This in effect removes the sprite by making it invisible.

Using these functions you can customise your programs by altering the sprite shapes. Press the RUN/STOP key to return to the main menu. You can then restart or backup the program, together with any alterations you have made.

NOTES: Most sprite positions are not used and will be displayed as random patterns. When loading a sprite from tape, you must enter the exact filename, or you can press return to specify no name, and the next sprite on the tape will load. Press the RUN/STOP key to abort a load.

If you have Dosoft's PRO-SPRITE utility, you can load sprites for editing by freezing the program and moving the sprite display to $3800. This is the library area of Pro-sprite.

As with the Sprite Killer, there are many variations in the way sprites are handled in programs, so unexpected results may sometimes occur.

SAVING PICTURES

Action Replay Mk III has the facility to save multicolour hiresolution pictures to tape or disk. These may be from game loading screens, graphic packages etc.

To save a picture, freeze the program when the required picture is displayed, select PICTURE SAVE from the menu and follow the onscreen prompts. If the current display mode is not Multicolour Hires, you will recieve an error message. Press RUN/STOP to return to the main menu.

Pictures can be saved in either of two formats to disk:

1. BLAZING PADDLES. Pictures saved in this format can be loaded into Datel's graphic package of the same name, and also for use with the Graphic slideshow program available separately.

2. KOALA. For use with Koala Pad software and other graphic packages which use the same format.

Pictures may be saved to tape in Blazing Paddles format only. These may be loaded into the tape version of Blazing Paddles, and also by using the tape slideshow which is built iinto Action Replay (see UTILITIES).

After a picture has been saved the computer will reset. Pictures saved to disk will have a prefix (PI. for Blazing Paddles and a graphic character for Koala) in accordance with the conventions used by those programs.

POKES

Computer magazines often publish "pokes" which can be entered into programs to add features such as infinite lives to game programs. These often require the machine to be reset. The RESET button on Action replay will reset the proram as required, allowing you to enter these published pokes. In addition, Action Replay allows you to freeze the program, enter the required pokes, and restart the program. Select POKES from the menu. Enter the poke. Press RUN/STOP to exit. If you make a mistake you will recieve an error message.

We regret that we cannot answer queries about pokes for specific games.

Sometimes, published pokes require to be entered via a monitor. Action Replay Mk III has monitor functions which can perform this task:

MONITOR FUNCTIONS

Freeze the program and select MONITOR from the menu. The following commands are available: (all values in Hexadecimal)

A Display restart address. This is the next instruction which will be executed when you restart the program. This can be altered. eg A FCE2 will cause the program to reset when restarted.

M Display memory. eg M C000 will display memory from $C000. To alter any memory location, type in the new value and press return. The cursor keys will scroll the display up and down memory.

F Fill memory. eg F 4000 5000 AA will fill that memory range with the byte $AA

Some important memory locations which may be altered are listed below:

```
$0068   Location $01
$0069   location $00
$006C   stack pointer
$0082   X register
$0083   Y register
```

The Accumulator and status register are on the stack, followed by the restart address.

Press RUN/STOP to return to the main menu.

UTILITIES

Select UTILIIES from the menu and press return. The utilities menu will then be displayed.

DISK DIRECTORY
This will display the directory of your disk. press a key to return to the menu.

FORMAT
When a disk is new it cannot be used until it has been formatted. This places magnetic marks on the disk which enable the disk drive to find its way around. You will be asked to enter a name for the disk, which can be any name you choose up to 16 characters, and an ID number, which can be any two letters or numbers. After you have entered the name and ID the disk will be formatted. WARNING: any program which is on the disk will be wiped out.

TAPE SLIDE SHOW
Tape users have the benefit of a slideshow program built into the cartridge for display of hires pictures which have been saved using Action Replay. Simply insert the tape which contains the picture or pictures and press space or fire. To display the next picture, press space or fire. Press RUN/RESTORE to exit from the slideshow.
The disk slideshow was more complex and lengthy to program and could not be fitted into the cartridge. This is available as a separate item or as part of the Action Replay Enhancement disk.

NOVA TRANSFER
This is for transfer of Nova and slowload files to disk. See the section on MULTISTAGE PROGRAMS.

MULTISTAGE PROGRAMS

Multistage games are those which load extra parts as the program progresses. Because backup cartridges work on the program in the computers memory, they will not normally work with this type of program. Action replay has a built in feature to transfer subsequent parts of most Novaload multistage programs from tape to disk. Examples of Nova multistagers are Summer Games II, Winter Games, Hardball, Golf and Racing contruction sets, Karateka, Law of the West, Infiltrator, Silent Service, Beach Head II, Koronis Rift, The Eidolon.

This is the procedure to follow in order to transfer multistage programs:

1. Load the main program up to the title screen. Leave the tape in that position.
2. Freeze the program and select PARAMETERS from the menu.
3. Enter NOVA when asked for the parameter code.
4. Press RUN/STOP to return to the main menu and save the program to disk.
5. Switch off and on, press the freeze button and select UTILITIES from the menu. Select NOVA TRANSFER from the Utilities menu.
6. The extra parts may now be transferred to disk. If no transfer occurs then the extra parts do not use the Nova system. Most newer titles use individually programmed loaders and special Parameters and file transfer programs are available for these on the ACTION REPLAY ENHANCEMENT DISK.

POINTS TO NOTE.
Exta parts are often repeated on tape to avoid excessive tape winding. These files need only be transferred once, and the drive will ignore the repeated files. Some multistagers are very long and require two or more disk sides, so have at least one extra formatted disk ready.
NOTE: Transfer of the main section should be made from the original tape version of the program, otherwise the Nova parameter routine may not work correctly.

LOADING MULTISTAGERS.
Install FASTLOAD (hold the CBM key and press the FREEZE button), if you want the extra stages to load at turbo speed. When extra parts spread over more than one disk side, if a file is not found the drive light will flash. Insert the other disk and press SPACE. The drive will then load the required file. Sometimes you may need to press play on your tape deck before a file will load from disk. Multistagers will also load independently of the cartridge (at standard speed).

NOTE: Nova transfer also allows you to copy normal (very slow) load tape program files to disk. Use this option for Kennedy Approach. SOLO FLIGHT II. After transfer one file should be renamed: OPEN 15,8,15,"R0:MASSACHUSETTS.M=0:MASSACHUSETTS":CLOSE15

FASTLOAD

In addition to its powerful backup facilities, ACTION REPLAY MK III also provides a powerful disk fastloader for general use. To enable fastload, hold the CBM key and press the FREEZE button. Alternatively press the F8 function key (hold SHIFT and press F7) when on the main freezer menu.
The disk fastloader is independent of computer memory and will load virtually all programs at about five times the normal rate. Programs which already have built in turboload, or load by sequential methods, will usually override Action Replay's loader.
Fastload also allows you to display the disk directory without corrupting the program in memory. type $ (dollar sign) and return to display the directory.
Owners of the ACTION REPLAY/DISKMATE combination cartridge will enter Diskmate when fastload is enabled.

IMPORTANT.
When Fastload is installed, the freeze button does not operate. To re-enable the freeze button, press the RESET button to sign off the cartridge. Programs backed up by Action Replay, however, can be loaded with Fastload, and the Freeze button will be re-enabled automatically when the program runs, except when a multistage parameter has been entered, in which case fastload will remain operative.

UPGRADE DETAILS

ACTION REPLAY MK III is a 16K ROM cartridge which can be upgraded to the 32K ACTION REPLAY/DISKMATE COMBINATION CARTRIDGE. Diskmate offers many extra facilities:

1. 6 times turbo save as well as 5 times turboload from disk.
2. Single stroke commands for load,save,load/run,directory,error channel etc.
3. Direct load from directory, easy access to second drive.
4. Defined function keys, toolkit commands suh as OLD, DELETE, LINESAVE, MERGE, COPY, etc.
5. Full feature "floating" machine language monitor with extra features such as two way scrolling and bank switching.
6. Very fast and efficient File Copy and Disk Backup - so convenient when built into ROM.

See the attached sheet for details of how to upgrade your cartridge, or contact us directly.

1. FASTLOAD

The best way to load a program from disk is via fastload. Enable fastload and type $ (dollar) and press return. The directory of your disk will be displayed. Then move the cursor up to the line containing the name of the program to be loaded and press F1. The program will load and run automatically. Or press F3 to load the program without running it. (If you have Diskmate, press F2 (shift and F1) to load and run, or F1 to load only).

2. THE MAIN FREEZER MENU

You can move directly to most of the main functions with a single keypress, without having to access them from the duckshoot menu:

D   Go directly to disk backup (device 8)

9   Disk backup (device 9)

T   Tape backup

P   Parameters

V   View sprites

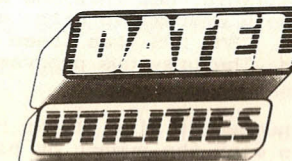K   sprite killer

M   monitor functions

U   utilities menu

Press RUN/STOP to return to the main freezer menu.

DATEL ELECTRONICS

Disk Mate II ™
DISK UTILITY CARTRIDGE

instruction manual

DATEL UTILITIES
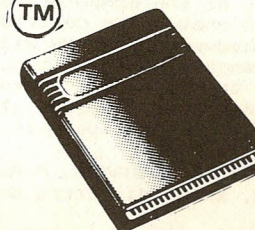
DISKMATE - INSTRUCTIONS FOR USE

Diskmate is a cartridge based disk turbo system which greatly enhances the performance of your 1541, 1570 or 1571 disk drive. It uses no computer memory, and rarely, if ever, will it interfere with the normal operation of your computer. Diskmate also provides some useful toolkit commands, and a powerful machine language monitor.

INSTALLATION. The cartridge fits into the memory expansion port of your CBM64, 64C or 128. NEVER insert or remove the cartridge when the computer is switched on, or you will damage both computer and cartridge. The two switches should be to the right as you insert the cartridge, looking from the front of the computer. The cartridge is 'invisible' in its powerup state. To enable the cartridge functions, press the inner button. The diskmate powerup message will then be displayed. To switch the cartridge off, press the outer button. This is a reset switch and will return the computer to its default condition. The cartridge will never interfere with normal operation of the computer until you switch it in. We recommend that you leave it permanently installed.

SINGLE STROKE COMMANDS. A number of easy to use single stroke commands for load, save, directory and error channel are provided:

/PROGNAME is equivalent to LOAD"PROGNAME",8
↑PROGNAME is equivalent to LOAD"PROGNAME",8 followed by RUN
%PROGNAME is equivalent to LOAD"PROGNAME",8,1
£PROGNAME is equivalent to SAVE"PROGNAME",8
$, $8, or $9 will display the directory without corrupting memory.
@, @8 or @9 will read and display the disk error channel.
@ COMMAND STRING is the equivalent of OPEN15,8,15:PRINT#15,"COMMAND STRING".

Example command strings @I, @S:NAME, @V, @R:NEWNAME = OLDNAME. See you disk drive manual for details of disk commands.
If you are using a two drive system, then device 9 can be accessed with the single stroke commands if you first read the error channel with @9. Subsequent commands will be to that drive.

FAST FORMAT. Diskmate will format a disk at very high speed.
Example format command: @N:DISKNAME,01
Upon entering this command, the message "ARE YOU SURE?" will be displayed. Press "Y" to continue or any other key to abort. If you are using a two drive system, remove the disk from the other drive before formatting the required disk, otherwise you may accidentally format the wrong disk (!), depending on which drive was previously accessed. Once in a while, the format will not "take" and the directory may appear odd. If this occurs repeat the process and everything will be okay.

DISK SAVE ENHANCEMENTS. The turbo save used in Diskmate is a little slower than some routines available, but this one will report any error which occurs, and is more widely compatible with different drives. The reported "@0:" bug in the CBM DOS has been bypassed, therefore SAVE"@0:PROGNAME" may be used. The previous program is scratched prior to saving the new program.

DISKMATE will calculate the number of disk blocks required by a program to be saved, and compare this with the number of blocks free on the disk. If there will not be enough room, you will be informed of this (if in direct mode). You will then have the option to abort, or continue saving after inserting another disk.

FUNCTION KEYS. The function keys have been defined as follows:

F1 is equivalent to LOAD"0:*",8,1 (ie load the first program on the disk)
F2 is equivalent to LOAD"0:*",8,1 followed by RUN
F3 display directory.
F4 change background colour.
F5 RUN
F6 change border colour.
F7 LIST
F8 enter machine language monitor (see later).

NOTE: the even numbered function keys (F2,F4,F6,F8) are accessed by holding the SHIFT key before pressing the appropriate function key.

LOADING FROM THE DIRECTORY. If you display the directory and then move the cursor onto a line containing a directory entry, you can load that program simply by pressing F1 (or F2 to run). This is a very convenient way of loading a program.

TOOLKIT COMMANDS

A number of extra basic commands are provided. To ensure compatibility with existing software, these commands only operate in direct mode. They will not work when a program is running. (the same applies to the function keys). Any of the commands may be abbreviated by typing just the first three characters of the command eg: MON will be interpreted the same as MONITOR.

OLD will recover a basic program which has been NEWed, or after pressing the reset button.

DELETE will delete a block of program lines. Syntax is the same as LIST except that the first line to be deleted must be specified.

example DEL 1000-2000 will delete lines 1000 to 2000 inclusive.
        DEL 1000- will delete from line 1000 to the end of the program.

LINESAVE will save to disk a section of a basic program.

example LIN"PROGNAME",8,1000-2000 will save program lines from 1000 to 2000 inclusive. Lines saved in this way may be loaded back as separate basic programs, or MERGED into other programs.

MERGE will load a basic program from disk and combine it with a program in memory. If two lines have the same number, the new line will replace the existing line. A program may also be merged with new line numbers.

eg: MERGE"PROGNAME",8 merges the program on disk with the prog in memory.
    MERGE"PROGNAME",8,1000,10 will renumber the lines before they are merged, starting with line 1000 and incrementing in steps of 10. GOTO and GOSUB statements will not be renumbered.
    Merging into a long program is a lengthy process, so be patient.

APPEND differs from MERGE in that the new program is tagged onto the end of the previous one. It also occurs at turbo speed. eg APP"PROGNAME",8 loads the program, starting at the end of the previous one. For append to be useful the program to be appended should have line numbers greater

than the existing program.

AUTO provides automatic line numbering as you type in a program.

eg AUTO 1000,10 starts automatic line numbering at line 1000 and increments in steps of 10

To turn AUTO off, press return against a blank line. If you subsequently want to continue automatic numbering, type AUTO on its own, and numbering will continue from the last line number which was automatically displayed.

BOOT will load a machine code file and jump to the first address loaded. Eg if you have a program (say a basic extension) which you would normally load with LOAD"PROGNAME",8,1 followed by a SYS number, BOOT will perform the same function. Note that BOOT will only work when the program is started by SYSing to the first address loaded. Syntax BOOT"PROGNAME", or BOOT"PROGNAME",(device number).

BLOAD, BSAVE, BVERIFY are BLOCK commands. These are for machine code files, which may be loaded or saved to any location in memory.

examples:

BLOAD"PROGNAME" load from current device to the address from which the program was saved.
BLOAD"PROGNAME",8,C000 load starting at $C000 (hexadecimal notation).
BSAVE"PROGNAME",8,C000,D000 save memory from $C000 to $D000
BSAVE"PROGNAME",8,C000,D000,E000 save memory from $C000 to $D000 to load back at $E000

The BLOAD and save commands always save and load Ram locations.

DISKMATE may be disabled by typing OFF (return). Loads and saves will then be at standard rate. A SYS number will be displayed which will re-enable Diskmate. Very rarely, a program will not work with diskmate enabled. Often, typing SYS 64738 will allow the program to work without having to unplug the cartridge.

Many commercial programs will work with Diskmate. However you should note that some disks are loaded by special methods which will bypass the diskmate fastloader.
The new Diskmate Mk III cartridge now has file copy and disk backup facilities. See later for a description of these.

MACHINE LANGUAGE MONITOR.

DISKMATE has a powerful extended machine code monitor, designed for fast bidirectional examination and modification of any area of the computer's memory. To enter the monitor type MON (return) or press the F8 key.

BANK SWITCHING. On entry the monitor is in RAM mode. All the computer's Roms will be switched out when memory is accessed. To change modes enter "*". This will toggle and display the current mode, RAM or ROM.

EXAMINING MEMORY. Memory may be examined in Hex/Ascii, Disassembly, or Interpreted Ascii forms. Examples:

.D C000 D000 disassemble from $C000 to $D000
.M C000 D000 display memory from $C000 to $D000

.I C000 D000 interpret memory from $C000 to $D000
.D C000 disassemble one instruction at $C000
.M C000- display memory from $C000 onwards
.D disassemble from the current address onwards.

CONTROLLING THE DISPLAY. While memory is being displayed, ANY KEY will halt the display, from where any key will continue. F5 and F7 will reverse the direction of the display, therefore in either disassemby, memory or interpret modes you may scroll either up or down in memory. Press STOP to exit. Memory may be modified by typing over the byte to be altered, or by typing over the instruction if in disassembly.

OTHER MONITOR COMMANDS:

.A C000 LDA #$01

Assemble an instruction in standard 6502 mnemonics at $C000. The next memory address will be displayed ready for the next instruction.

.R

Register display. The program counter, A, X, and Y registers, and the stack pointer are displayed in Hex. The Status register is displayed in Binary. Registers may be altered by typing over the relevant Byte or flag.

.F C000 D000 AA

Fill memory from $C000 to $D000 with the byte $AA

.H C000 D000 01 02 03
.H C000 D000 "STRING"

Hunt through memory for a sequence of bytes or an Ascii string. If any occurrence is detected, the address will be displayed.

.C C000 D000 E000

Compare the area of memory from $C000 to $D000 with memory starting at $E000. If there is any discrepancy, the memory locations will be displayed together with the bytes at those locations.

.T C000 D000 E000

Move memory starting at $C000 and ending at $D000 and move it to memory starting at $E000. This is an intelligent transfer - memory areas may overlap and may be moved either up or down in memory.

.G C000

Load registers as per the register display and start executing the machine code program starting at $C000. The program may end with either a BRK or an RTS instruction.

.N $C000
.N 49152

.N %10101010

Number conversion. Displays a number in HEX, DECIMAL, and BINARY. If the number is a single byte value, the ascii character of that number will also be displayed.

.P

Direct output to a CBM printer. P is used as a prefix to another command
eg:

.PM C000 D000
.PD C000 D000
.PH C000 D000 "STRING"

In each case, memory display will be directed to the printer (device 4).
Hold STOP to quit. You will find this a very useful command.

.B

Can be very useful. Execute a Basic instruction from the monitor eg:

.BPRINT8*256
.BPRINT"TEST"
.PBLIST   (LIST to the printer)

.L"PROGNAME"
.L"PROGNAME",8,C000
.L"",1,C000   (relocated load from tape)
.S"PROGNAME",8,C000,D000
.S"PROGNAME",8,C000,D000,E000
.V"PROGNAME"

Load, Save, Verify. These commands are the same as the BLOAD, BVERIFY and
BSAVE commands described earlier.

.X   Exit to basic.

The monitor uses a small area of memory from $0110 to $0140, and $0250 to
$0258, which should not be overwritten.

FILE COPY.

  Enter COPY or @C to enter the file copier. This is very useful for
transferring files from one disk to another. The file copier will handle
up to 44 program, sequential or user files up to 247 blocks in length,
but not relative, random or specially formatted files. Output may be to a
second drive if required. If you select MULTI OUTPUT from the menu,
several copies may be taken from each pass, if required. Your output disk
or disks should be formatted prior to entering the file copier.

  Diskmate's save routine uses a more efficient disk sector interleave, so
you will often find that programs load faster after being file copied.

DISK BACKUP

Enter BACKUP or @B if you want to copy a whole disk. This is a very fast
single drive whole disk copier. The process requires three passes and you
will be prompted to insert your source and destination disk in turn.   The
destination disk need not be formatted in advance, but note that any data
already on this disk will be lost. We recommend that you put a write
protect tab on the source disk before starting to copy, to avoid losing
data if you get the disks mixed up. This copier is not for commercial
protected disks.