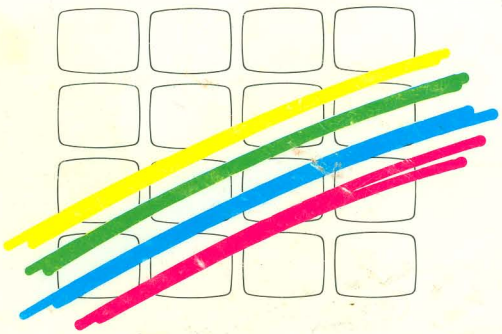


MULTI EFFECT VIDEO WALL

USER MANUAL

MULTI EFFECT VIDEO WALL

HELP LINE 041-633 0077, INTERNAT. 0044 41 633 0077

Preface

The objective of this handbook is to familiarise the user with the programming techniques relating to the Video Wall System. The procedures are applicable to both System 100 and System 200 Video Wall Systems with differences between the two systems being stated at the appropriate points in the manual.

User instructions are applicable to a 4 x 4 Video Wall System, i.e., a 16 monitor array. The programming instructions apply to Software Version 5.4A contained in the master disc and user disc supplied with the Video Wall equipment for a 4 x 4 monitor system.

Software Version 5.4A is also supplied with a 3 x 3 monitor Video Wall System. Variations between the user instructions for a 4 x 4 system and a 3 x 3 system are explained at the appropriate points within the user manual.

Version 5 software is also supplied with larger Video Wall Systems, i.e., version 5.5, 5.6 and 5.7. For 5 x 5, 6 x 6 and 7 x 7 monitor arrays respectively. The general programming instructions in this handbook are applicable to the above systems, however, the graphic display differs from a 4 x 4 system.

Contents

System components

1

The 4 x 4 Video Wall System comprises the following components:

(a) 16 Monitors
(b) 2 Video Wall Controllers
(c) 1 Memotech Computer
(d) 1 Disc Drive Unit*
(e) 2 Power Supply Units
(f) 1 PAL Decoder/ Distribution Amplifier
(g) Cable Harness
(h) 1 Ribbon Cable
(i) 2 3.5" Floppy Discs
(j) 2 Power Leads
(k) 4 15-way/15-way D Leads

NOTE: The number of monitors will vary in accordance with the system size.

*Optional.

Installation 2

To instal your Video Wall System proceed as follows:

(a) Connect the disc drive unit to the computer by inserting it into the edge connector at the left-hand side of the computer, ensuring that the key on the disc drive unit matches up with the slot on the edge connector. (Fig. 1)

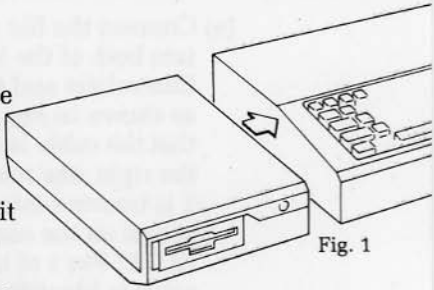


Fig. 1

(b) Fix the metal base plate provided on to the base of the two units and secure it with the four fixing screws. (Fig. 2)

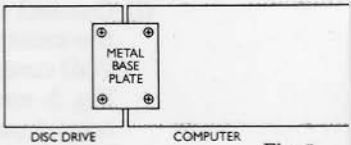


Fig. 2

(c) Connect the two power supply units. One to the computer and the other to the disc drive unit. (Fig. 3)

(d) Connect a BNC to BNC video lead from the 'Monitor O/P' of the computer to the 'Video Input' of the prompt monitor.

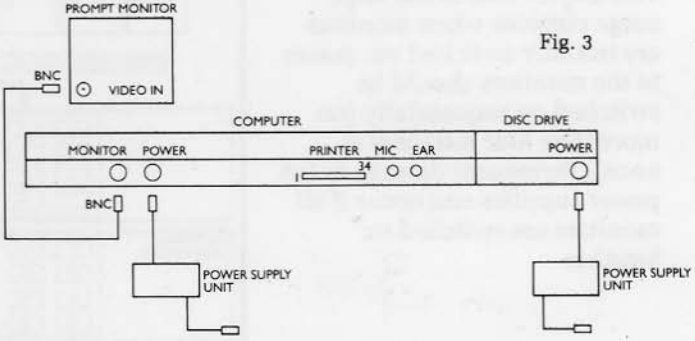


Fig. 3

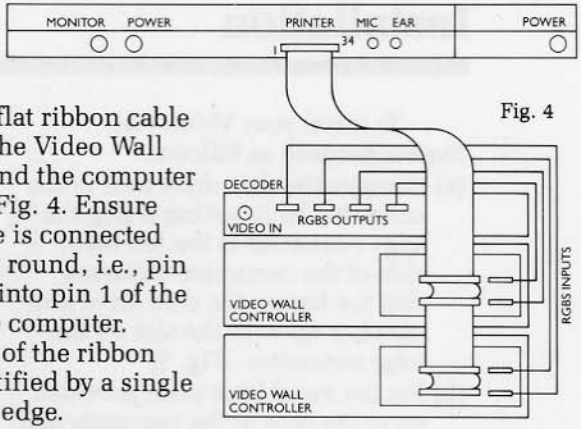


Fig. 4

(e) Connect the flat ribbon cable into both of the Video Wall Controllers and the computer as shown in Fig. 4. Ensure that the cable is connected the right way round, i.e., pin 1 is inserted into pin 1 of the socket on the computer. NOTE: Pin 1 of the ribbon cable is identified by a single colour at the edge.

(f) Connect the cable harness to the monitors and to the Video Wall controllers as shown in Fig. 5, ensuring that the correct output of the Video Wall Controller is connected to the correct monitor.

(g) Connect the four 15 way-15 way D cables between the decoder and the Video Wall Controller as shown in Fig. 4.

WARNING: Due to the large surge currents when monitors are initially switched on, power to the monitors should be switched on sequentially (no more than four monitors at once). Permanent damage to the power supplies can occur if all monitors are switched on together.

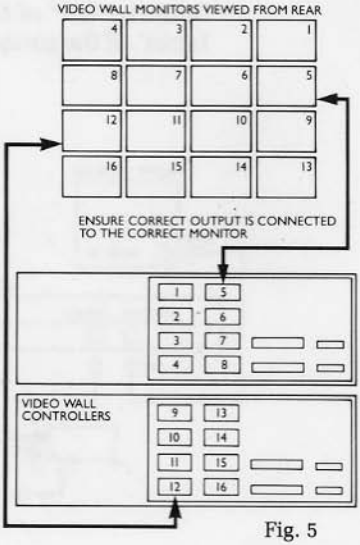


Fig. 5

The computer keyboard 3

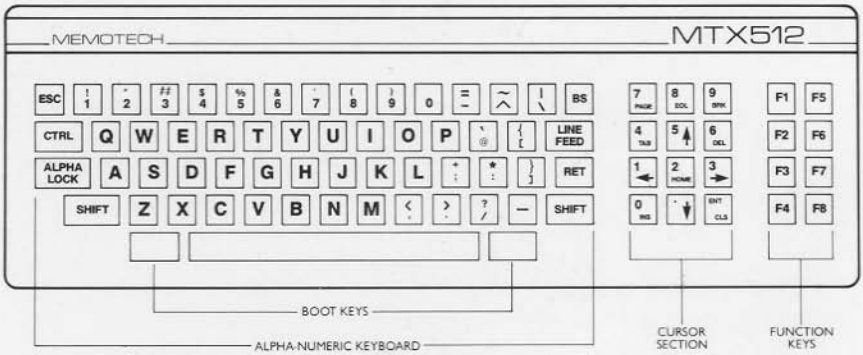


Fig. 6

The computer keyboard is sub-divided into three distinct areas as shown in Fig. 6.

Alpha/Numeric Section

Used to type in program names or to create program sequences.

Cursor Section

Used to control cursor movements when in the 'Manually Change Settings' mode.

Function Keys

Used to select functions from displayed menus.

System start-up 4

NOTE: This procedure should be followed on initial start-up and following any disconnections from the mains supply.

(a) Switch on the prompt monitor and the power supply to the computer. The monitor will show a blue screen with 'ready' on the bottom left corner. A white flashing cursor will indicate that the computer is ready to accept data from the disc drive unit.

(b) Switch on the power supply to the disc drive unit. The green light in front of the disc drive should be illuminated.

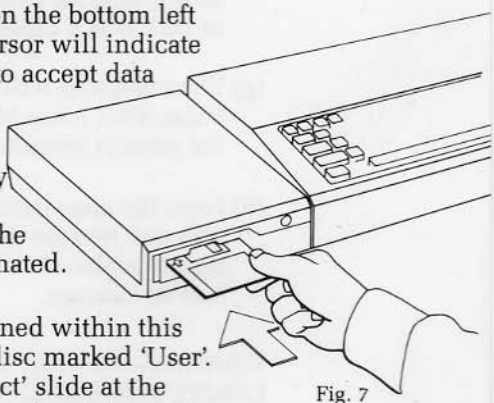


Fig. 7

(c) Two floppy discs are contained within this manual. Select the floppy disc marked 'User'. Ensure that the 'Write Protect' slide at the bottom left of the disc is closed and insert the disc in the disc drive unit. The disc must be inserted with the arrow upwards. Push the disc fully into the disc drive unit until it is locked in position.

(d) Simultaneously press the two 'Boot' keys located at either side of the space bar on the computer keyboard.

(e) The computer will 'read' the program data from the floppy disc, and produce a listing on the prompt monitor ending with A>.

(f) If the computer is connected to an active Video Wall System, type in VW54A followed by RETurn. The computer system, comprising the Memotech computer, disc drive, prompt monitor and power supply units may be used to program the Video Wall without being connected to the other Video Wall equipment. A special development program is included in the floppy disc for this purpose. In this case, type in DEVW54A instead of VW54A.

(g) The computer will 'read' the file data and the Video Wall Main Menu (Fig. 9) will appear on the prompt monitor.

(h) Press the eject button in front of the disc drive unit and remove the floppy disc. Ensure that the disc is replaced in the manual, thereby avoiding loss or damage.

WARNING: NEVER SWITCH OFF POWER TO THE COMPUTER WHILE A DISC IS INSERTED IN THE DISC DRIVE UNIT AS PERMANENT DAMAGE TO THE DISC WILL OCCUR.

The graphic display

5

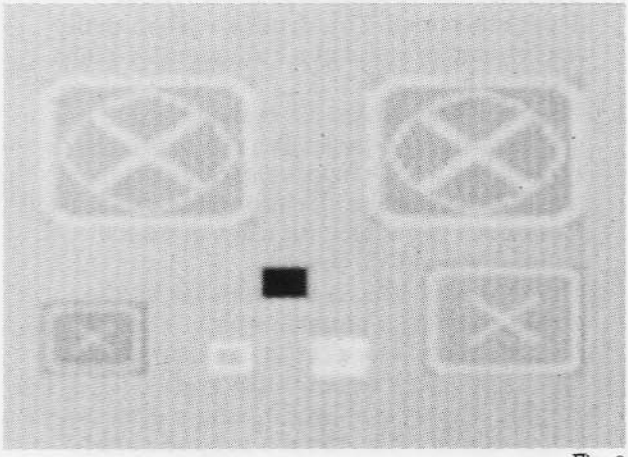


Fig. 8

At all times after start-up, a graphic display will appear at the top left hand side of the prompt monitor (Fig. 8). The display serves as a means of manually positioning picture segments on the Video Wall.

The symbols which appear on the graphic display represent the following:—

(a) The green symbol at the top left-hand of the graphic display represents the 16 monitors of a 4 x 4 Video Wall System.
NOTE: Where a 3 x 3 monitor system is installed, the right hand side and bottom of the full screen picture will be omitted from the active Video Wall, since only nine monitors are fitted. To obtain a full screen picture on a 3 x 3 system, it is necessary to use the pre-programmed segment NW3. (Refer to Section 8.2.)

(b) The green symbol at the top right of the graphic display represents a single picture spread over a 4 x 4 monitor configuration, (i.e., times 4 magnification). This symbol will normally not be used by users of a 3 x 3 monitor Video Wall System.

(c) The orange symbol at the bottom right of the graphic display represents a single picture spread over a 3 x 3 monitor configuration (i.e., a 3 times magnification). This symbol will represent a full screen for users of a 3 x 3 monitor Video Wall System.

(d) The blue symbol on the bottom left of the graphic display represents a picture spread over 2 x 2 monitors (i.e., a times 2 magnification).

(e) The framed pink square at the middle left of the graphic display represents a single picture on a single monitor (i.e., times 1 magnification).
NOTE: This single picture representation relates to a non-digitised picture which cannot be frozen.

(f) The black square at the middle of the graphic display represents a single monitor black screen.

(g) The white square at the middle right of the graphic display applies only to System 200 Video Wall Systems and represents a digitised single picture on a single monitor which can be frozen (Section 8.3.2).

When the Video Wall is first switched on, the Video Wall symbol on the graphic display will indicate that a single picture spread over 16 monitors (4 x 4 Video Wall System) is being displayed on the active Video Wall. Where a 3 x 3 Video Wall configuration is installed, the initial picture on the active Video Wall will comprise a 4 x 4 picture with the right hand and bottom sections of the picture missing.

Screen menus

6

A series of screen menus and functions can be selected by the user as follows:

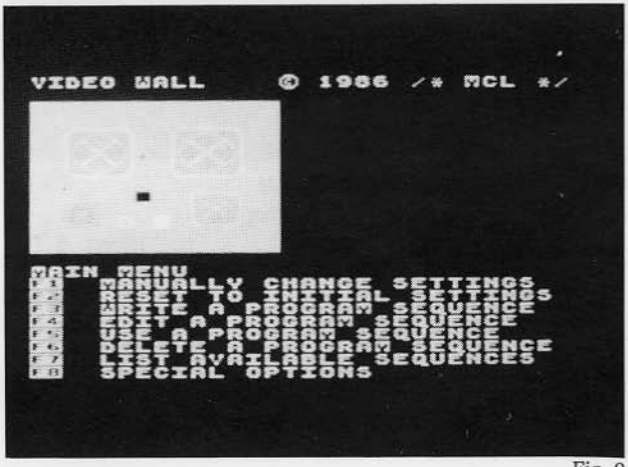
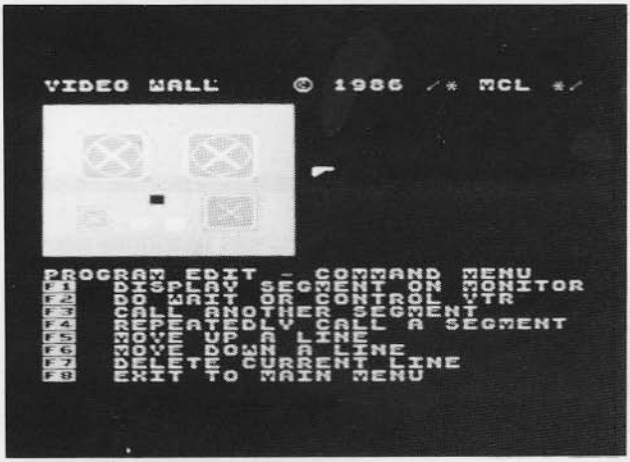


Fig. 9

Main Menu

F1 — Manually Change Settings (Sect. 8.3.)
F2 — Reset To Initial Settings (Sect. 8.4.)
F3 — Write A Program Sequence (Sect. 8.5.)
F4 — Edit A Program Sequence (Sect. 8.11.)
F5 — Use A Program Sequence (Sect. 8.10.)
F6 — Delete A Program Sequence (Sect. 8.12.)
F7 — List Available Sequences (Sect. 8.2.)
F8 — Special Options (Sect. 9.)

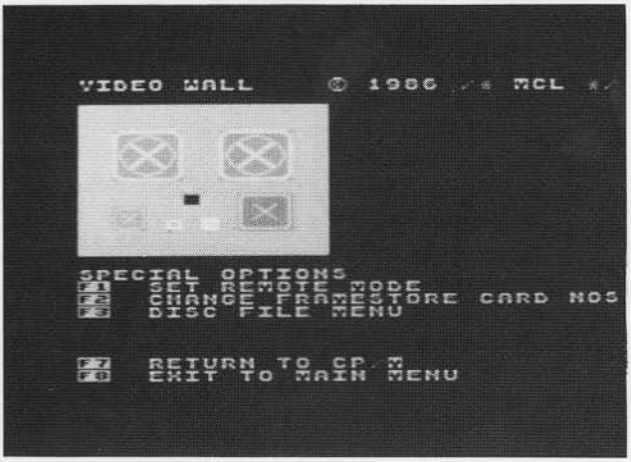


Program Edit/Command Menu Fig. 10

F1 — Display Segments on Monitor (Sect. 8.7.)
F2 — Do Wait Or Control VTR (Sect. 8.9.1., 8.9.2.)
F3 — Call Another Segment (Sect. 8.7.)
F4 — Repeatedly Call A Segment (Sect. 8.9.3.)
F5 — Move Up A Line (Sect. 8.11.)
F6 — Move Down A Line (Sect. 8.11.)
F7 — Delete Current Line (Sect. 8.11.)
F8 — Exit To Main Menu

Wait/VTR Menu Fig. 11

F1 — For A Certain Time (Sect. 8.9.1.)
F2 — Until A Certain Frame (Sect. 8.9.2.)
F3 — Set Frame Code Offset (Sect. 8.9.2.)
F7 — Control VTR (Sect. 8.9.2.)
F8 — Do Not Wish To Wait (Return To Program Edit)



Special Options Menu Fig. 12

F1 — Set Remote Mode (Sect. 9.1.)
F2 — Change Frame Store Card No. (Sect. 9.2.)
F3 — Disc File Menu (Sect. 9.3.)
F7 — Return To CP/M
F8 — Exit To Main Menu

Disc File Menu Fig. 13

F1 — Load A Program File (Sect. 9.3.1.)
F2 — Save A Program File (Sect. 9.3.2.)
F3 — Delete A Program File (Sect. 9.3.3.)
F4 — List All Program Files (Sect. 9.3.4.)
F8 — Exit To Main Menu

Running the test program

7

A test program is included within the 'User' floppy disc to enable the user to check the programming functions of the Video Wall computer. The test program also serves as a demonstration program and it is recommended that new users should run 'Test' in order to see some of the visual effects on the Video Wall using a moving video-tape and a variety of pre-programmed patterns written into a program sequence. To run the test program proceed as follows:

NOTE: The program entitled Test is suffixed by 3, 4, 5, 6 etc., to coincide with the Video Wall configuration, i.e., 3 x 3, 4 x 4, 5 x 5, 6 x 6, etc. When entering the name of the Test program, include the suffix number appropriate to the Video Wall configuration.

(a) Ensure that the 'Main Menu' is displayed on the prompt monitor.
(b) Insert the 'User' floppy disc in the disc drive unit.
(c) Press function key F8 for 'Special Options'.
(d) Press function key F3 for 'Disc File Menu'.
(e) Press function key F4 to 'List All Program Files' "Test ( )" will appear on the program listing on the right hand side of the prompt monitor graphic display.
(f) Press function key F1 to 'Load a Program File'.
(g) Type TEST ( ) followed by RETurn key. The disc drive unit will load the program 'Test' into the computer memory. The green light in front of the disc drive unit will be illuminated during loading.
(h) Press function key F8 to 'Return to Special Menu'.
(i) Press function key F8 to 'Return to Main Menu'.
(j) Press function key F5 to 'Use a Program Sequence'.

(k) Type TEST ( ) followed by RETurn key. The Video Wall and the graphic representation of the Video Wall on the prompt monitor will start to show the sequence of patterns included within the 'Test ( )' program. On completion of the 'Test ( )' program, the prompt monitor will return to the 'Main Menu'. The graphic display on the prompt monitor will indicate the last segment of the test program. To return the Video Wall and graphic display to the initial settings press function key F2.

Programming the Video Wall 8

8.1. General.

The Memotech computer is used to control the picture configuration of the Video Wall monitors. The operator may choose to feature a standard picture pattern throughout the video presentation or decide to apply a variety of picture configurations at various stages of the video. In either case, the format of the Video Wall is entirely decided by the operator.

8.2. Pre-Programmed Segments.

In order to assist the user, a number of standard picture patterns and sequences have been pre-programmed into the computer memory. A complete list of segments is shown on the prompt monitor by pressing the function key F7 on the main menu.

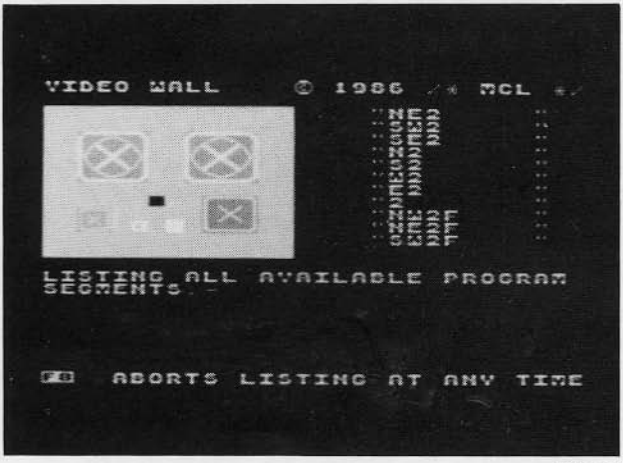


Fig. 14

All pre-programmed segments are named in relation to the points of a compass, e.g., NW2 is a 2 x 2 picture appearing on the north west corner of the active Video Wall.

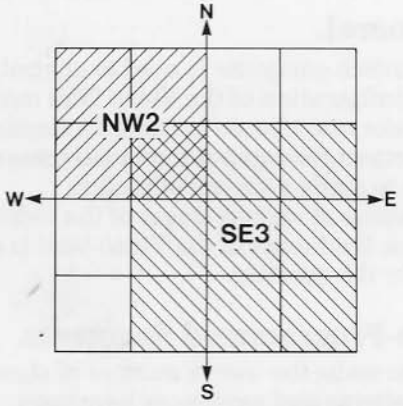


Fig. 15

NOTE: Remember that, in order to obtain a full screen picture on a 3 x 3 monitor Video Wall it is necessary to use pre-programmed segment NW3.

8.3. Manually Changing The Video Wall Settings.

The initial setting of the Video Wall is a single picture spread over all the monitors of the Video Wall (with the exception of a 3 x 3 Video Wall). The setting can be changed manually either by using pre-programmed segments or on a monitor by monitor basis, or a combination of both.

8.3.1 Manually Changing the Video Wall configuration Using Pre-programmed Segments.

(a) Having decided on the fixed configuration of the Video Wall, press the function key F5 to "Use a Program Segment".

(b) Type in the name of the segment (e.g., NW2) followed by the RETurn key. The wall will immediately adopt a picture pattern as shown on the prompt monitor.

NOTE: To display a single picture spread over the 9 monitors of a 3 x 3 Video Wall system, select segment NW3 as described above.

(c) To add another pre-programmed segment to the wall, press function key F5 again and type in the segment name followed by RETurn. In this way, the Video Wall can be quickly constructed from 4 x 4, 3 x 3 or 2 x 2 pictures.

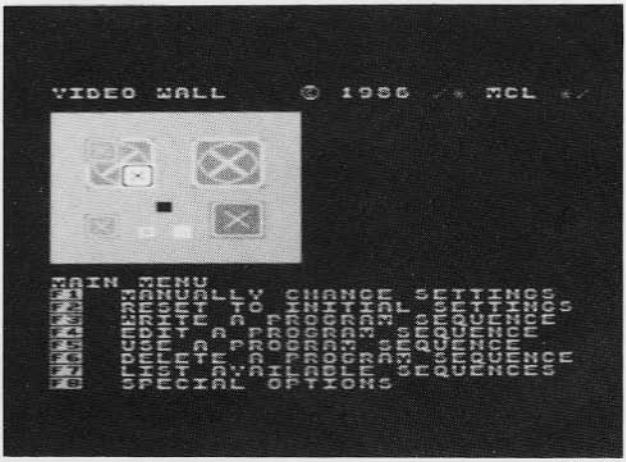


Fig. 16

NOTE: A number of pre-programmed segments with suffix 'F' appear on the list of programmed segments (e.g., SE2F). When selected, the appropriate monitors of the Video Wall will feature a frozen frame picture. It should be noted that in order to select a frozen segment, it is necessary to firstly select the equivalent moving picture segment followed by the frozen segment (i.e., SE2 then SE2F). The frozen picture representation on the graphic display will appear as a negative image.

8.3.2. Manually Changing the Video Wall Configuration Using the Cursor and Graphic Display.

Facilities within the Video Wall computer control system enable the user to construct the wall picture format manually on a monitor by monitor basis. This facility allows the user to create picture patterns which are not included in the list of pre-programmed segments or to add single monitor pictures or black screens to a picture pattern created using pre-programmed segments.

Fig. 17

(a) Press function key F1. A white cursor, representing the size of one monitor will appear on the graphic section of the prompt monitor.

(b) Using the cursor movement keys on the computer keyboard, move the cursor to a segment of the desired picture size. Remember that the 4 x 4, 3 x 3 and 2 x 2 picture representations are made up of 16, 9 and 4 monitors respectively. To construct a complete picture from any of these picture formats, it is necessary to move each segment individually to the Video Wall.

(c) Having located the cursor on the desired segment, press the 'Home' (or 'Fire') key.
NOTE: Holding the cursor movement keys depressed will cause the cursor to move rapidly over the screen.

(d) Using the cursor movement keys, reposition the cursor in the Video Wall diagram at the position you wish the selected picture (single monitor picture) or picture segment or black screen to be moved to.

(e) Press the 'Home' (or 'Fire') key if you desire the monitor to display a picture or picture segment of a moving video picture or a black screen. The Video Wall diagram will show the selected monitor with a graphic representation of the picture or picture segment in the appropriate colour.

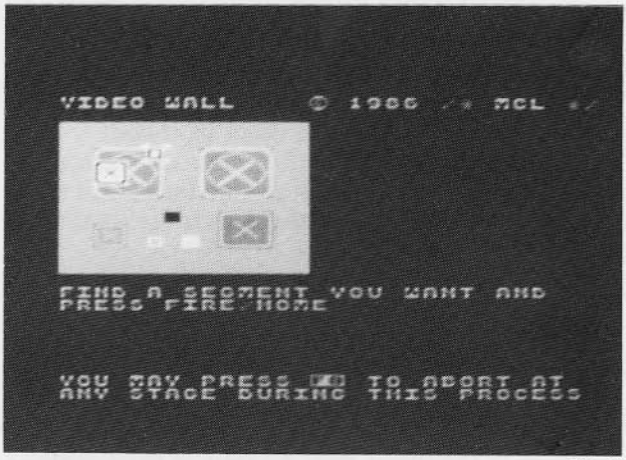


Fig. 18

Freeze Frame Facility

The facility to insert frozen picture segments of a 4 x 4, 3 x 3 or 2 x 2 picture is available on all Video Wall systems. However, the facility to freeze individual single monitor pictures is only available on system 200 Video Wall systems. To freeze picture segments (or single monitor pictures on 200 Video Walls), locate the cursor on the required picture segment (or on the white square at the bottom middle of the graphic display, to select a frozen single monitor picture on system 200) and press 'Fire' (or 'Home'). Move the cursor to the position on the Video Wall graphic display where the picture segment has to be located and press 'Fire' (or 'Home'). The picture segment will appear in the selected position. Press 'Fire' (or 'Home') again, followed by the space bar. The graphic display will then show a negative image of the picture segment, indicating a frozen picture.

(f) Repeat steps (c) to (e) until the desired Video Wall picture configuration is achieved.

8.4. Resetting To Initial Settings.

The Video Wall can be returned to the 4 x 4 moving picture format by pressing function key F2.

8.5. Program Sequence.

A wide variety of different patterns or sequences can be programmed into the Video Wall computer memory and if required, stored on floppy disc for use at a later date.

The patterns or sequences selected by the user can be controlled to start or end at a particular frame of the video tape and/or can incorporate a delay function between patterns or sequences.

The sequence of program segments used to construct a program can be a combination of the following:

(a) Pre-programmed segments (NE2F etc.).
(b) Sub-routines (see para 8.7.).
(c) Time Delay Commands (Wait and VTR Time Commands).

8.5.1. List of Available Sequences

A list of all program sequences currently held on the computer internal memory is listed on the prompt monitor by pressing the F7 function key on the Main Menu. Holding function key F7 depressed will stop the listing from scrolling.

8.6. Preparing To Write a Program Sequence.

Before writing a programme sequence, it is advisable to decide in advance the exact sequence of picture configurations that you wish to take place on the Video Wall and to list the sequence of patterns together with time delays between sequences to co-incide with the video tape.

In addition, it is advisable to load the contents of the floppy disc on to the computer internal memory for use during writing the program sequence. (Para. 9.3.1.)

8.7. Writing Sub-Routines.

Where a desired picture format, sequence, or program instruction features several times within a program listing, it is advisable to prepare this as a sub-routine in advance of writing the program. This allows the user to check the sub-routine and to make adjustments prior to writing the main program.

A sub-routine is simply a small program sequence which is written, tested and stored on computer memory (or floppy disc) and recalled by name to be written into the main program.

To write a sub-routine proceed as follows:

(a) Ensure that the Main Menu is displayed on the prompt monitor and press function key F2 to reset the Video Wall to the initial setting.

(b) Press function key F3 to Write A Program Sequence.

(c) Select a name for the sub-routine. This can be any keyboard character up to a maximum of 8 characters.

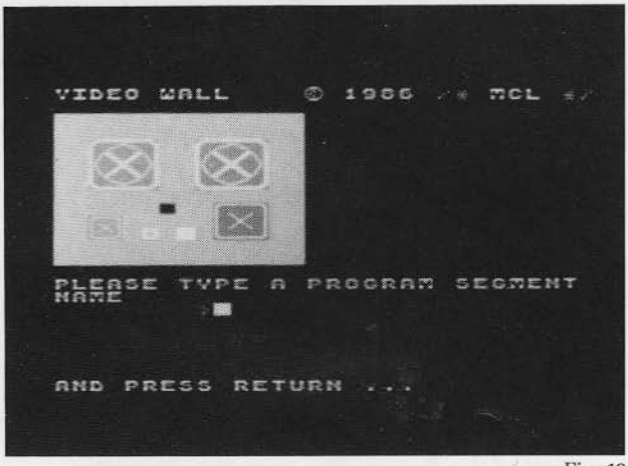


Fig. 19

Fig. 20

(d) Press RETurn. A white cursor will appear at the right hand side of the graphic display on the prompt monitor.

The program sequence is made up of a series of discrete instructions which are read by the computer and used to create the desired pattern(s) on the Video Wall. The patterns are created by using pre-programmed sequences (NW2 etc.) and/or other sub-routines which have been programmed by the user and/or by using the graphic display to manually create specific picture patterns. Sub-routines can also include wait commands and can respond to VTR time codes as necessary.

(e) Select from the Program Edit Command Menu the function appropriate to the method of creating the first step of the sub-routine as follows:

(i) To manually create a picture using the cursor and graphic display, press function key F1 to Display Segment on Monitor and proceed as described in Section 8.3.2. (b)-(f). Each picture segment moved to the Video Wall will appear on the program listing at the right hand side of the graphic display on the prompt monitor.
NOTE: The design of each symbol on the graphic display is such as to identify each segment of a 4 x 4, 3 x 3 or 2 x 2 picture even on a monochrome monitor.

(ii) To insert a 'Wait' command between picture configurations or to make the program sequence respond to VTR time codes, press function key F2 and proceed as described in Section 8.9.1. or 8.9.2.

(iii) To use pre-programmed segments (e.g., SW3 etc.,) or other sub-routines which have been previously programmed by the user, press function key F3 and type in the segment name, followed by RETurn. The segment name will appear on the program listing.
NOTE: Unless a sub-routine is saved on floppy disc, it will be deleted from computer memory whenever the computer is switched off. If it is necessary to save a sub-routine for future use, refer to Section 9.3.2.

(f) Repeat step (e) until the desired sub-routine program sequence has been completed.

8.8. Testing a Sub-Routine.

When the desired Video Wall configuration for a sub-routine has been completely programmed as described in Section 8.7. it should be tested to ensure that the desired pattern displayed on the Video Wall is correct before proceeding to use the sub-routine in the main program. Should any alterations be required to the sub-routine refer to Section 8.11.

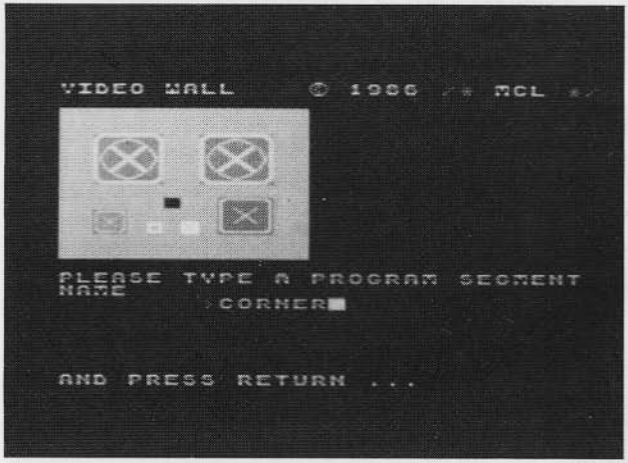


Fig. 21

(a) Press function key F8 to Exit to the Main Menu.
(b) Press function key F2 to Return To Initial Settings.
(c) Press function key F5 to Use A Program Sequence.
(d) Type in the name of the sub-routine followed by the RETurn Key. The computer will read the program by that name and the resultant Video Wall configuration will appear on the prompt monitor.

8.9. Writing a Program Sequence.

As previously stated, a program sequence can be made up of pre-programmed segments (e.g., NW2). Sub-Routines and time delay commands.

Having selected the sequence of patterns, written the sub-routines where appropriate and decided on the time delay commands necessary to produce the desired visual effect, the user may proceed to write a program sequence. The procedure for writing a program sequence is identical to that previously described for writing sub-routines. (Section 8.7.)

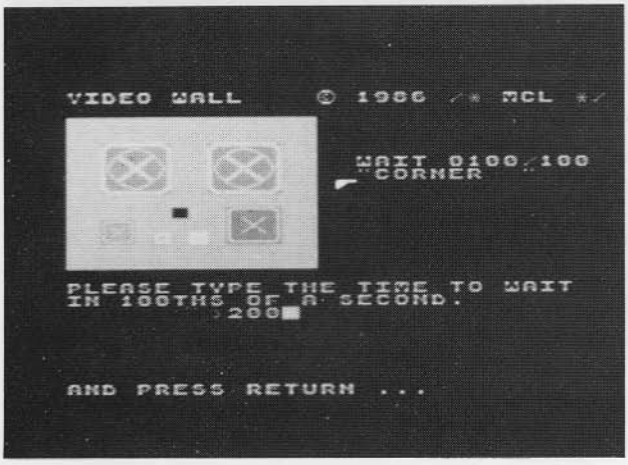


Fig. 22

8.9.1 Programming a Wait Command

A programmed pattern can be held on the Video Wall for a period of between 1/100th of a second and 99.99 seconds. To program a wait command proceed as follows:

(a) Press function key F2 for Wait/VTR Menu.
(b) Press function key F1 to select wait time.
(c) Type in the waiting time in 100th of a second (e.g., for a 2 second delay, type in 200).

Where a wait command of a fixed time is used repeatedly throughout a program sequence, it may be helpful to write a sub-routine for the wait command and to call the sub-routine by name instead of using the Wait/VTR Menu. The sub-routine for the wait command would simply comprise one command (e.g. wait 0400/100 for a 4 second delay) and may be called WT4. The sub-routine would be produced as described in paragraph 8.7. steps (a) to (d).

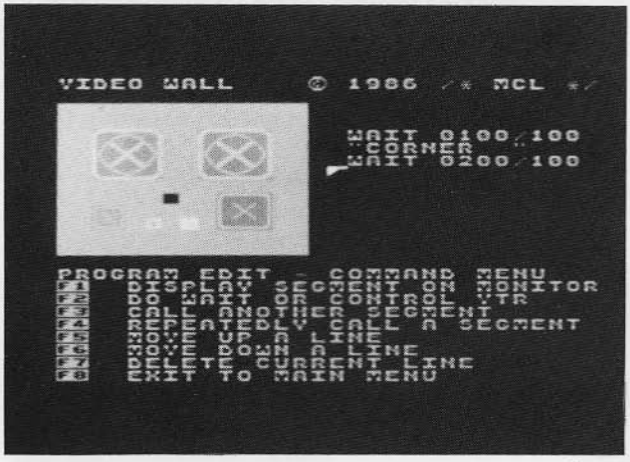


Fig. 23

8.9.2. Programming the Video Wall to Respond to the VTR Time Codes*

The sequence of patterns displayed on the Video Wall can be programmed to respond to E.B.U. Longitudinal Time Codes. Each frame of the video tape is given a discrete time code based on a VTR speed of 25 frames/seconds. A particular frame can be identified by its time code in terms of hours/minutes/seconds and frame number. The time code can be used within the computer programming of a sequence as follows:

(a) Controlling a Program Using VTR Time Codes:

(i) Press function key F2 for Wait/VTR Menu.

(ii) Press function key F2 and enter the time code of the video frame at which the existing program segment has to end in the form:

Hours in range 0-39
Minutes in the range 0-59
Frames in the range 0-24

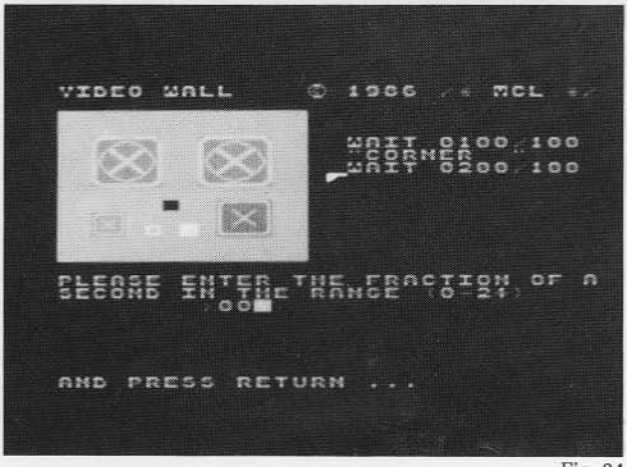


Fig. 24

*A more detailed explanation of VTR Time Codes is provided in Section 12 of this manual.

(iii) Press RETurn.

(iv) Type in the frame number (in the range 0-24) relating to the exact frame at which the existing program segment has to end.

(v) Press RETurn. The wait command signal will be displayed on the program listing and the user can proceed with programming the sequence.

NOTE: The VTR time control can be the first command in a program listing. In this case the sequence of the program commands will not proceed until the video tape has reached the programmed time code. Any number of VTR time codes can be incorporated in a program to change the Video Wall pattern or sequence of patterns.

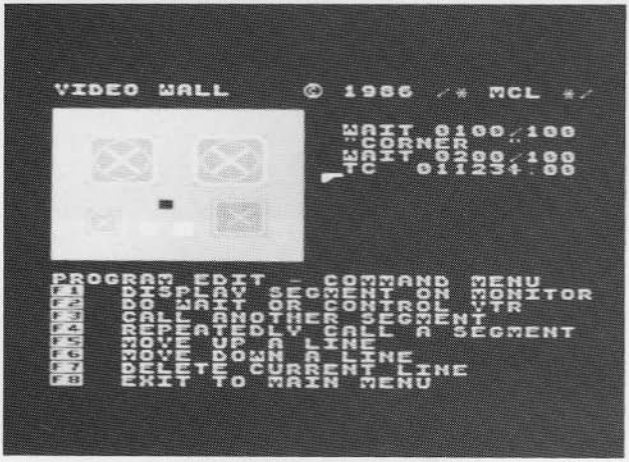


Fig. 25

(b) Controlling a Continuous Video Using VTR Time Codes*

Where a video tape is set to run continuously or to be repeated at preset intervals, it is necessary to offset the VTR time code such that the Video Wall sequence will be controlled at the same frame of the video tape as for the first showing of the video. To set the frame code offset proceed as follows:

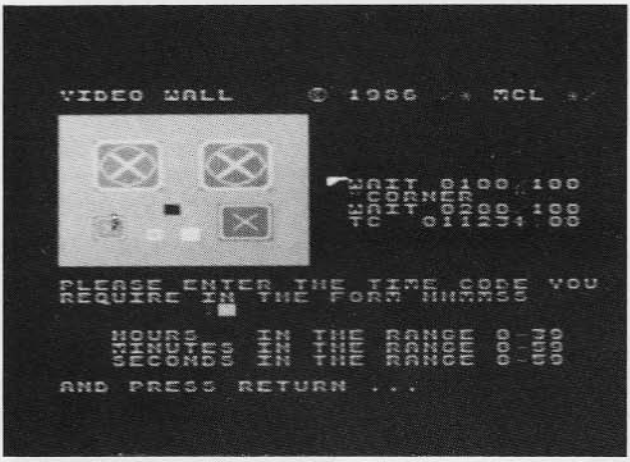


Fig. 26

(i) Press function key F2 for Wait/VTR Menu.

(ii) Press function key F3 to Set Frame Code Offset.

(iii) Type in the offset time in the form:

Hours in the range 0-39
Minutes in the range 0-59
Frames in the range 0-24

(iv) Press RETurn.

(v) Type in the frame number in the range 0-24 relating to the exact offset time code.

*A more detailed explanation of VTR Time Codes is provided in Section 12 of this manual.

(vi) Press RETurn. The program listing will show the offset time code and the user may proceed with programming.

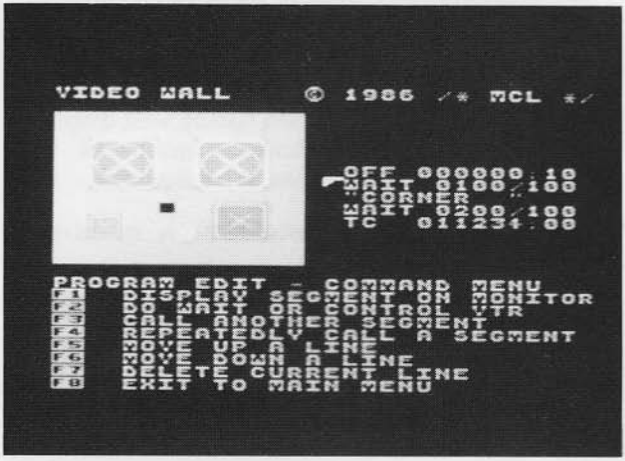


Fig. 27

8.9.3. Repeatedly Calling A Segment

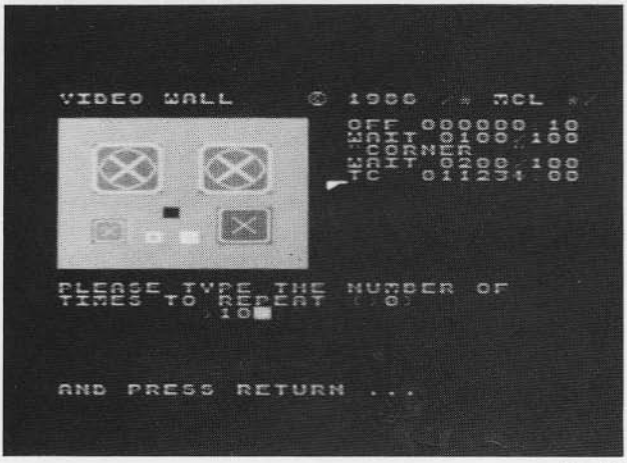


Fig. 28

A program segment, sub-routine or pre-programmed segment which comprises a series of Video Wall patterns can be programmed to repeat up to ninety nine times. To repeatedly call a segment during programming a sequence, proceed as follows:

(a) Press function key F4 and type in the name which you have given the sub-routine or the pre-programmed sequence name (e.g. SPIRAL).
(b) Press RETurn.
(c) Type in the number of times you wish the segment to be repeated in the range 1-99.
(d) Press RETurn. The program listing will display the segment name and show the number of times that that segment has to be repeated.

* Refer to Section 12 for a detailed explanation of Auto Repeat Programs.

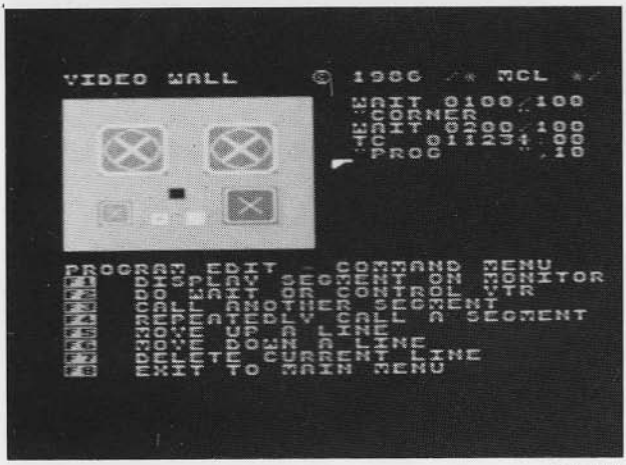


Fig. 29

8.10. Using a Program Sequence.

Any current program sequence which appears on the List of Available Sequences (paragraph 8.5.1.) can be used on demand by the user. Program sequences which are stored on floppy disc require to be loaded from the disc file to the computer memory. (Refer to paragraph 9.3.1.)

To use a program sequence proceed as follows:

(a) Press function key F5 to Use A Program Sequence.

(b) Type in the name of the program sequence followed by RETurn. The active Video Wall and the prompt monitor Video Wall representation will immediately follow the program instructions contained in the program by the name requested.

(c) On completion of the program sequence, the active Video Wall and the Video Wall representation on the prompt monitor will stop at the last instruction. To return to the initial settings press function key F2.

NOTE: A digital counter will appear on the prompt monitor during any program sequence where a time delay is included in the program instructions. The digital counter will reset to zero after each delay.

8.11. Editing a Program Sequence.

A program sequence can be edited either during programming or at a later date. In either case, editing comprises making amendments to the program list of commands.

8.11.1. To Edit a Program During Programming

This can be achieved by moving the cursor up or down the program listing using function keys F5 or F6 respectively. Typing a new command at the cursor position will insert the command at that position in the program listing. Function key F7 can be used to delete unwanted commands.

8.11.2. To Edit an Existing Program

(a) Press function key F4.

(b) Type the name of the program to be edited followed by RETurn.

(c) Use function keys F5 and F6 to position the cursor at the position where an amendment is required and function key F7 to delete commands as necessary. New command can be inserted at the cursor position.

8.12. Deleting a Program Sequence.

Program sequences can be held on the computer internal memory as long as power remains connected to the computer. If a program sequence is required to be saved for future use, it is necessary to save the program on the floppy disc (refer to paragraph 9.2.). Programs which are stored on the computer internal memory can therefore be considered as temporary programs. However, if a temporary program is no longer required, it can be deleted from the computer as follows:

(a) Press function key F6

(b) Type the program segment name to be deleted followed by RETurn key. The prompt monitor will return to the Main Menu and the program will have been deleted.

(c) Press function key F7 to List Available Sequences. The program sequence deleted will not be shown on the program listing.

Special options

9

9.1. Setting Remote Mode.

The Remote Mode function is not implemented in software version 5.4A. Please refer to your dealer if this facility is required.

9.2. Changing Framestore Card Numbers.

The facility to change the framestore card numbers to utilise a spare framestore card is available within the software. However, this is intended as an engineer facility. Please contact your dealer for further information.

9.3. Disc File Menu.

The disc file menu is designed to permit access to data stored on the floppy disc. Facilities include:

(a) Loading a program from floppy disc on to computer memory.

(b) Saving a file from the computer memory on floppy disc.

(c) Deleting programs previously saved on floppy disc.

(d) Listing all programs previously saved on floppy disc.

Fig. 30

9.3.1. To Load a Program File

(a) Insert the floppy disc into the disc drive unit.

(b) With the Main Menu displayed on the prompt monitor press function key F8 for Special Options.

(c) Press function key F3 for Disc File Menu.

(d) Press function key F1 to Load A Program File.

(e) Type the name of the program to be loaded from floppy disc, followed by RETurn. The disc drive unit will load the program into the computer internal memory.

(f) Remove the floppy disc from the disc drive unit and replace in the manual.

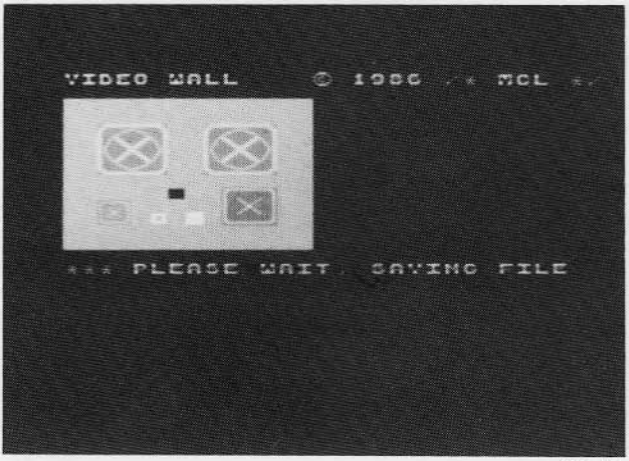


Fig. 31

9.3.2. Saving a Program File

(a) Insert the floppy disc into the disc drive.
(b) With the Main Menu displayed on the prompt monitor, press function key F8 for Special Options.
(c) Press function key F3 for Disc File Options.
(d) Press function key F2 to Save A Program File and type in the name of the program to be saved.
(e) Press RETurn. The disc drive unit will save the program on floppy disc. The green light on the front of the disc drive unit will be illuminated during saving the program.
(f) Remove the floppy disc from the disc drive unit and replace in the manual.

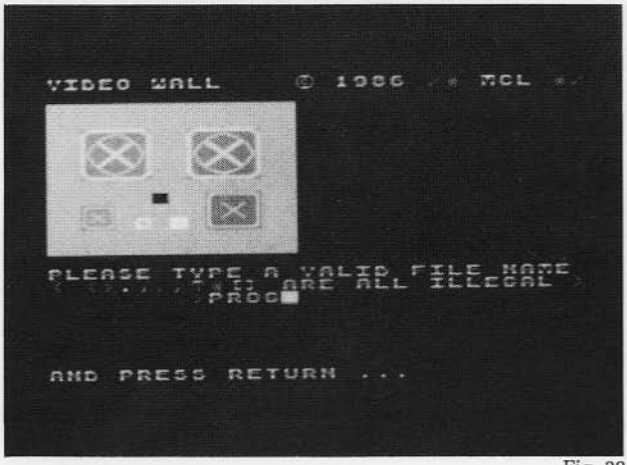


Fig. 32

9.3.3. To Delete a Program File

To delete a program previously saved on floppy disc proceed as follows:

(a) Insert floppy disc in disc drive unit.
(b) With the Main Menu displayed on the prompt monitor, press function key F8 for Special Options.
(c) Press function key F3 for Disc File Menu.
(d) Press function key F3 to Delete A Program File.
(e) Type in the name of the program to be deleted from the floppy disc followed by RETurn. The disc drive unit will delete the program from the floppy disc.
(f) Remove the floppy disc from the disc drive unit and replace in the manual.

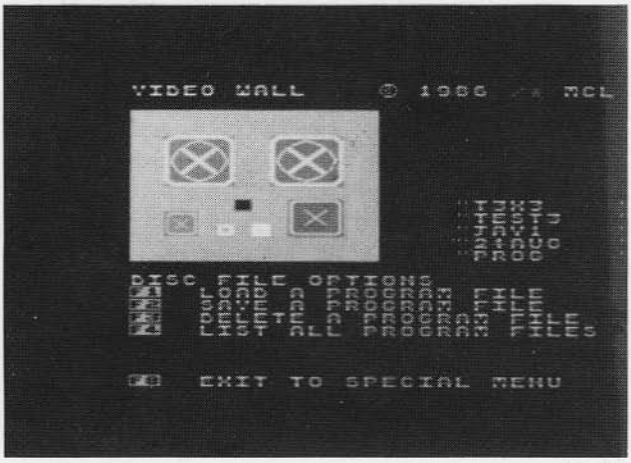


Fig. 33

9.3.4. To List All Program Files

A list of all programmes previously saved on floppy disc can be requested as follows:

(a) Insert floppy disc in drive unit.

(b) With the Main Menu displayed on the prompt monitor, press function key F8 for Special Options.

(c) Press function key F3 for Disc File Menu.

(d) Press function key F4 to List All Program Files.

(e) A list of all programs previously stored on floppy disc will appear to the right of the graphic display on the prompt monitor.

(f) Unless the user intends to save, delete or load programs from the disc file, the floppy disc should be removed from the disc drive.

Using a program sequence 10

As previously described, program sequences can be temporarily stored on the computer internal memory or saved on the floppy disc. If a program sequence has been previously stored on floppy disc, the program can be loaded into the computer memory as described in para. 9.3.1. and proceed as described below. If the program sequence is a temporary program proceed as follows:

(a) Ensure that the Main Menu is displayed on the prompt monitor.
(b) Press function key F5 to Use A Program Sequence.
(c) Type in the name of the program sequence, sub-routine or pre-programmed segment to be used.
(d) Press RETurn. The selected program will start immediately. On completion of the program the prompt monitor will return to the Main Menu.

Specifications 11

INPUT SIGNAL:

Pal, NTSC or component (RGBS)
(IV Pk-Pk, 75Ω)

OUTPUT SIGNAL:

RGB & SYNC 1v PK-Pk, 75Ω

SAMPLE RATE:

8MHz RGB

QUANTISATION:

RGB 6 BIT × 3 A to D Convertors

FRAME STORE CAPACITY:

192K Colour Words Per Frame Store
Double Buffered
Full Interlace Interpolation
Anti Aliasing

PROGRAMMABLE MODES:

More Than 128 Modes Per Monitor

TIME CODE INPUT:

EBU Longitudinal Time Code Reader
Signal Level: 2 – 4 volts Pk-Pk

An introduction to VTR time codes

12

There are presently two versions of SMPTE/EBU Time Code (Society of Motion Picture and Television Engineers 'SMPTE' and European Broadcasting Union 'EBU'). The first version is recorded on an audio or time code track of the video tape and is called 'Longitudinal Time Code'. The second is recorded on the video tracks and is called 'Vertical Interval Time Code' (VITC). While both versions are similar, the Multi-Effect Video Wall can only read Longitudinal Time Codes.

When a Longitudinal Time Code is included on a video tape, the Video Wall user has the opportunity of synchronising programmed Video Wall patterns with particular frames of the video tape.

12.1 Including Time Codes On Video Tape

The time code signal, produced by a separate time code generator, is connected to either the 'CH2 Audio Track', or the 'Time Code' input on the video recorder .

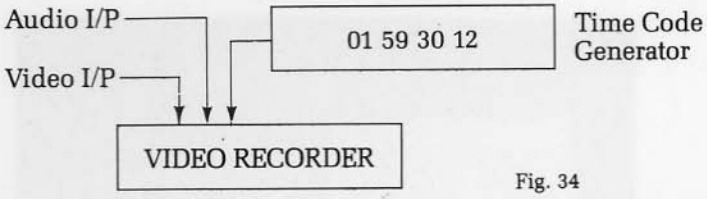


Fig. 34

The time code, comprising binary pulse coded electronic signals are used to uniquely identify each video frame recorded on the video tape. Individual frames are identified by hour, minute, second and frame, e.g., 12 30 59 20.

12.2 Connecting The Video Wall System for VTR Time Codes

When writing programmes using tapes which have longitudinal time codes, it is necessary to connect the time code output of the video recorder to the 'Ear' input at the back of the Memotech Computer.

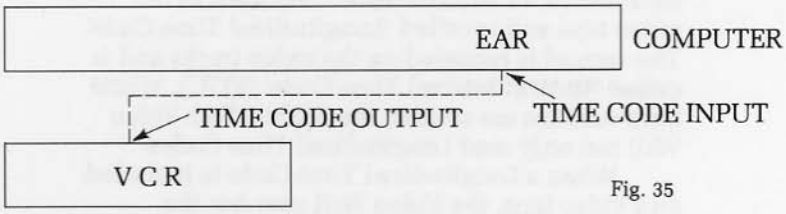


Fig. 35

12.3 Testing VTR Time Codes

By writing a simple program called 'TCTEST', the user can check that the system is reading VTR time codes. The program 'TCTEST', comprising the following commands, is used to display the VTR time codes on the prompt monitor as shown.

```
TCTEST
4
TC 23 59 59 24
SPIRAL
```

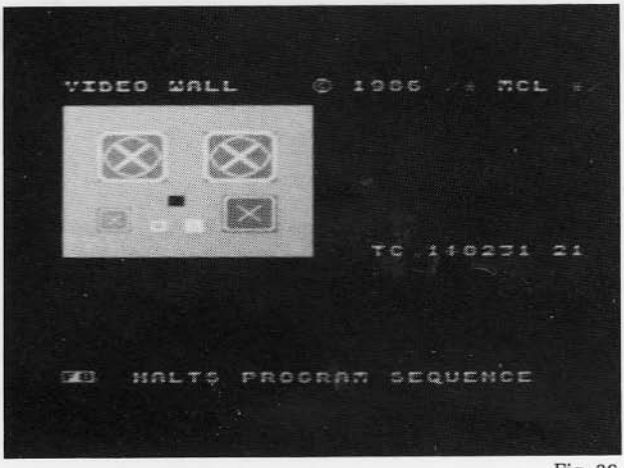


Fig. 36

NOTE: Running the 'TCTEST' program will produce a X4 magnification picture on the active Video Wall and on the prompt monitor graphic display. This pattern will be held until the video tape reaches the frame coded 23 59 59 24. The value of time code selected for TCTEST is the maximum value which can be generated and is unlikely to appear on the video tape. The program segment 'SPIRAL' will therefore never be initiated and the time code will be displayed on the Video Wall throughout the video.

12.4 Using The Computer As A Time Code Reader

If the video recorder connected to the Video Wall System is not fitted with a time code indicator or a separate time code reader is not available, the Memotech Computer can be used to read the video tape time codes by running the 'TCTEST' program as described in 12.3.

NOTE: The computer will only read time codes at normal speed, i.e., when the recorder is in the 'Play' mode. When in the 'Fast Forward' or 'Fast Rewind' mode, the time code will either not be read, or will be read incorrectly by the computer. In addition, inaccuracies will occur when using the 'Pause' control.

This method of monitoring the time codes is not recommended where accurate frame synchronising is required.

12.5 Accurately Synchronising Video Wall Programs To VTR Time Codes

There are two methods of accurately synchronising the Video Wall programs to the video tape time codes as follows:

(a) The video and time code outputs from the video recorder can be connected to an external time code reader with an overlay facility. The video output of the time code reader is then connected to a monitor which will display the video picture with the time code superimposed on the picture.

(b) The video tape can be played back in an edit suite where the edit controller has the facility to read longitudinal time codes. Using the edit controller, it is then possible to shuttle the video tape to the exact frame, without effecting the accuracy of the time code.

12.6 Using VTR Time Codes In A Video Wall Program

When using VTR time codes to control a Video Wall program, it is normal to view the video tape in conjunction with a time code reader and to produce a 'Story Board' comprising time codes and events as shown below.

Time Code	Event
00 00 00 12	Freeze Frame (X4)
00 00 01 30	Spiral
00 00 04 00	Place 2 x 2 in Centre Of The Video Wall

Fig. 37

Whenever the 'Story Board' is complete, the user can structure the Video Wall program, i.e., decide on which steps of the 'Story Board' are to be written as sub-routines before writing the main program.

12.7 Time Code Offset

A facility within the Video Wall software to offset the VTR time code is included for two reasons as follows:

(a) Where a time-coded video tape has been dubbed onto a second tape, there may be a slight difference between the start time codes of the original and dubbed tapes. By offsetting the start of the Video Wall Program by the difference in start time codes between the two tapes, the Video Wall program will automatically compensate for the difference.

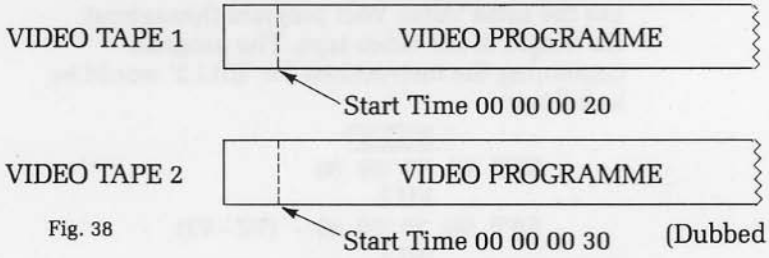


Fig. 38

If the Video Wall program for Tape 1 was called 'BOB' and the program commenced as follows:

BOB
TC 00 00 00 20
SPIRAL
etc.

Then, to offset the dubbed tape such that the Video Wall events occured at exactly the same frames, it would be necessary to write a second program called 'BOB2' comprising:

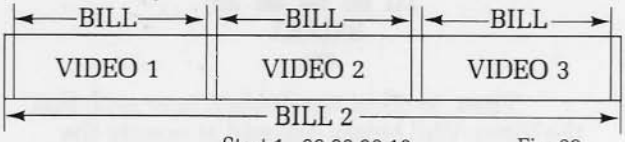
BOB2
OFF 00 00 00 10
BOB

When the dubbed tape is run in conjunction with the Video Wall program BOB2, all time codes within the BOB program will be offset by the value of the offset instruction in BOB2, thereby ensuring that all events on the dubbed tape occur at exactly the same time as for the master tape.

(b) Where a Video Wall program for say, a 20-minute video production has been prepared and called 'BILL' and three copies of this video production are to be dubbed onto a 60-minute tape, it is only necessary to calculate the offset between Video 1 and 2 and Video 1 and 3 and use the same Video Wall program throughout the length of the video tape. The program containing the instructions for 'BILL2' would be as follows:

BILL2
OFF 00 00 00 00
BILL
OFF 00 20 00 10 - (V2 - V1)
BILL
OFF 00 40 00 20 - (V3 - V1)

NOTE: The 'Offset' instruction 00 00 00 00 at the beginning of BILL2 will reset the offset counter if BILL2 is to be used continuously.



Start 1 00 00 00 10
Stop 1 00 20 00 10
Start 2 00 20 00 20
Stop 2 00 40 00 20
Start 3 00 40 00 30
Stop 3 01 00 00 30

Fig. 39

12.8 Repeatedly Calling A Time-Coded Video Wall Program

This mode of operation would apply where a 60-minute time-coded video tape is required to play continuously in conjuction with a Video Wall program (e.g., BILL2). The modes of operation of the video recorder and the Video Wall system would be as follows:

(a) Video Recorder
The video recorder would be in the 'Automatic Repeat' mode, where it would play the tape until the end, then automatically rewind and replay.

(b) Video Wall System
The Video Wall System would enter a program which would 'Repeatedly Call A Segment' (e.g., BILL2).

In order to run the Video Wall program 'BILL2' for a period of 8 hours it is necessary to repeatedly call 'BILL2' 8 times (since BILL2 lasts for 1 hour). In order to achieve this objective, it is necessary to write a third program called 'BILL3' as follows:

BILL3
BILL2, 08

NOTE: 08 in the second instruction indicates the number of times the program has to be repeated.

BILL2 would then run for 1 hour (until the end of the tape)* then wait for the tape to rewind and enter the 'Play' mode before running BILL2 again at the correct time code.

*Avoiding Problems with Auto Repeat Programs

On completion of the BILL3 program (i.e., after one hour play) the computer should be waiting for the first time code at the beginning of the rewound tape. If, however, a time code is received which is greater than the first time code in BILL3, then the program will start to run with effectively zero wait times between events until BILL3 has caught up with the received time code.

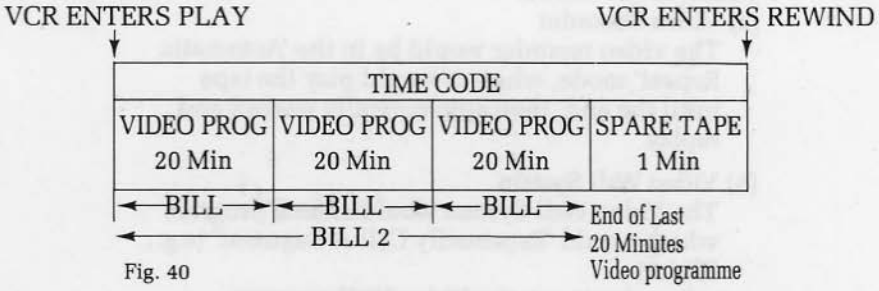


Fig. 40

In the example shown above, a section of tape remains after the last 20-minutes of video program. Since the start of the spare tape contains a time code which is greater than the time code at the beginning of BILL2, then BILL2 will be initiated by the first time code on the spare tape.

In order to avoid this effect, it is necessary to delay the start of the Video Wall program until the video recorder has entered the 'Rewind' mode. The Video Wall program BILL2 would therefore require to be modified as follows:

```
BILL2
OFF 00 00 00 00
BILL
OFF 00 20 00 10
BILL
OFF 00 04 00 20
BILL
WAIT 6000/100
```

NOTE: The last instruction in the program will cause the Video Wall program BILL2 to be inhibited for a period of 1 minute after the completion of the BILL2 program.

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