

HERCULES CENTRAL PROCESSOR INSTALLATION

CHAPTER 3: THE HERCULES CENTRAL PROCESSOR HARDWARE AND SOFTWARE INSTALLATION



INTRODUCTION

The *Hercules Central Processor* provides the central control platform for the *Universal Theater Control System* (UTCS), and is made of both hardware and software components.

The *Hercules Central Processor* consists of the following components:

1. The *Hercules Show Control Card*, a card that will be installed into the theater's main host computer.

Note: Some components on this card are sensitive to charges of static electricity. The card should remain in its anti-static shipping bag until needed.
2. A 37 wire ribbon cable, 18 inches in length, with a **DB37** connector and mounting plate on one end and a 40-pin socket connector on the other.
3. The *Hercules Show Control Software* which is provided on either 3.5 inch floppy disk or a CD-ROM.

The installation of the *Hercules Show Control Card* into an MS-DOS computer is similar to that of any peripheral board, and should be undertaken by someone with experience in such procedures. The interface card will require a computer with a **full-length, 16-bit ISA slot**. If the optional **DB37** cable is installed to access additional control bits, then a second slot will be taken up.

Examine the intended computer. Make sure the following requirements are met before proceeding.

1. It does indeed have a **full length 16-bit slot** for the interface board. If it does not, then another computer will need to be procured.
2. The computer will boot normally into DOS or Windows. Remove any software that is preventing a clean boot process.
3. No existing hardware is using I/O location 300h - 303h. This can be checked in the BIOS settings of the computer. Otherwise *Hercules* will perform erratically.

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HARDWARE INSTALLATION

Installation of the *Hercules Show Control Card* should be done by someone who has experience and comfortable doing so. A Phillips-head screwdriver will probably also be needed. Proceed by performing the following steps:

1. Insure that the computer is powered off. Insertion or removal of any card with the power on could cause permanent damage to both the computer and the card. The computer should remain plugged into a grounded power outlet. This will prevent any damaging static electricity buildup.
2. Remove the cover screws and cover of the computer according to the manufacturer's directions.
3. Touch the power supply case to discharge any personal static electricity.
4. Locate the **16-bit ISA slot** for the interface board. If the ribbon cable is to be installed, a second slot will need to be adjacent to the interface card. This second slot does not need to be a **16-bit ISA slot**.
5. Remove the case endplates associated with these slots, saving the screws.
6. Remove the *Hercules Show Control Card* from its anti static shipping bag, and insert into the chosen slot. Make sure it is seated firmly, then replace the screw to hold it securely in place.
7. If the ribbon cable is to be installed, attach the 40-pin socket connector to the 40-pin header plug near the front of the board. The ribbon cable should run back towards the rear of the computer case.
8. Slide the plate with the **DB37** connector into place and replace the screw to hold it in securely.
9. Replace the computer cover and tighten the cover screws.

The installation of the *Hercules Show Control Card* is now complete. The communications cables from the *Aquila Time Code Controller* and *Intelligent Controllers* can now be connected to the interface board. There are two female **DB9** connectors located at the rear of the interface card.

The bottom connector is used only for communications with the *Aquila*.

The top connector is used only for **Device Commands**. If a *Cygnus EX Manual Control Brain* is used in the system, then a communication cable will go from the *Hercules Show Control Card* to the *Cygnus*, before continuing to the other *Intelligent Controllers* in the system. Otherwise, any *Intelligent Controller* can be connected to the *Hercules Show Control Card* and then onto the rest of the communications network.

HERCULES CENTRAL PROCESSOR INSTALLATION

SOFTWARE INSTALLATION

The *Hercules Show Control Software* (hereafter referred to as simply *Hercules*) can be run from either a floppy disk or the computer's hard drive. When *Hercules* is installed on the computer's hard drive, ECCS recommends that a new directory just for *Hercules* be created.

If this is a new installation of the software, use the following procedure to install *Hercules*:

1. If this computer will be used as an off-line tool without the *Hercules Show Control Card*, go on to the next step. Otherwise, install the *Hercules Control Interface Card* in the host computer. Refer to the previous section for details on hardware installation.
2. Boot (turn on) the computer. If Windows starts automatically, quit Windows to MS-DOS. On a Windows 98 system, this is accomplished by accessing the Windows start menu at the bottom left corner of the screen. Choose 'Shut Down' from the pop-up menu. Then choose 'Quit to MS-DOS' from the pull-down menu. The following DOS prompt on should appear on the screen:
C:\WINDOWS>

Type in 'CD\' and press the <ENTER> key.
The C prompt should appear:
C:\
3. Insert the supplied 3.5 inch disk into the disk drive. (Usually drive A:)
4. Type 'A:install' and press the <ENTER> key.
This will create a subdirectory on the C: drive called 'HERCULES' and copy all the necessary files to the subdirectory.
5. To manually start *Hercules* from the DOS prompt, type the following:
CD\HERCULES <ENTER>
HERC <ENTER>

If *Hercules* is not being installed for the first time on this computer, but is being upgraded to a newer software version, **DO NOT** use the above procedure. The existing *Configuration File* will be overwritten with the default *Configuration File* included for new installations, and the theater devices will no longer follow *Hercules* commands properly.

SOFTWARE FILES

Hercules must include the following files in the same directory in order to function properly:

HERC.EXE	The primary <i>Hercules</i> program.
HERCEDT.EXE	The <i>Configuration File</i> editor.
HERCMS.CFG	The <i>Configuration File</i> .

By looking at the directory catalog for the *Hercules* subdirectory, either in DOS or with Windows Explorer, the three files listed above should be seen, as well as any *Show Files* that have been created. Files organization will be discussed in the *Hercules Show Control Software* section of this manual.

HERCULES CENTRAL PROCESSOR INSTALLATION

TO CONFIGURE THE HOST COMPUTER SO HERCULES WILL AUTO-BOOT AT STARTUP (OPTIONAL)

The computer can be configured so that *Hercules* automatically starts on power up.

1. From the DOS prompt, type the following:
CD\ <ENTER>
EDIT AUTOEXEC.BAT <ENTER>
This opens a DOS editing program so that the start-up file, autoexec.bat, can be edited.
2. From the editor, scroll down to the bottom of the file. If the last line says WIN, type 'REM' <SPACE> in front of it. This prevents Windows from Auto booting.
3. Add the following two lines at the end of the file:
CD\HERCULES <ENTER>
HERC <ENTER>
This instructs the auto-execute file how to locate and start *Hercules* on power up.
4. From the editor menu bar, save the file and exit the editor.
5. Restart the computer. It should now start *Hercules* every time the computer is powered up.

TO EXIT HERCULES AND OPEN WINDOWS

1. Choose <ALT> (Q)uit to (M)SDos from the *Hercules System Command Menu*.
2. If Windows does not automatically start at this point, but a DOS prompt appears, type in:
CD\ <ENTER>
CD\WINDOWS\ <ENTER>
WIN <ENTER>
3. Windows should now start.
4. To re-open *Hercules*, shut down Windows normally and turn the computer off when told it is safe to do so.
5. Restart computer.

HERCULES CONFIGURATION FILE

CHAPTER 4: THE HERCULES CONFIGURATION FILE



INTRODUCTION

The *Hercules Configuration File* is the key to customizing the UTCS for a unique presentation venue. This file describes the devices in the theater to the *Hercules Show Control Software*.

The *Hercules Utilities* program is used to create and edit the *Configuration File*. This program can be invoked directly from *Hercules* by utilizing the (Q)uit to (U)tilities command from the *Hercules System Command Menu*. This is done by pressing <ALT> + 'Q' then <ALT> + 'U' while on the main screen of *Hercules*. The *Hercules Utilities* can also be started from the DOS command line by typing HERCEDT and then pressing <ENTER>.

The *Configuration File* must exist in the same directory (usually /HERCULES) as *Hercules*, or else *Hercules* will not function correctly.

Note: It is possible to delete the *Configuration File* using the *Hercules Utilities Program*. Do not delete this file and exit the *Hercules Utilities Program* without making a new one!

Multiple *Configuration Files* (with different names) may exist in the /HERCULES directory under different names. To be a valid *Configuration File*, the file name must be in the form of *filename.cfg*, where *filename* is any legal DOS file name. However, while there may be more than one *Configuration File* created by the *Hercules Utilities Program*, *Hercules* will only use the *Configuration File* named HERCMS.CFG.

Once a *Configuration File* has been created for your theater, be sure to keep a current back up of this file in a safe place, perhaps with your *Show File* backups.

Now, take a closer look at the *Hercules Utilities Program*.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor		
File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max

Notice there is a *System Command Menu* across the top of the screen. This *System Command Menu* functions as it does in the *Hercules Show Control Software*. A new *Configuration File* can be created with the (F)ile (N)ew command, or an existing *Configuration File* that has been saved to another disk, or volume, can be opened with the (F)ile (O)pen (V)olume command.

HERCULES CONFIGURATION FILE

After any changes have been made, use the (S)ave command to save the changes. **Do not** exit without saving, or the changes will not be reflected next time the *Configuration File* is opened. After saving any changes, exit the *Hercules Utilities* program with the (Q)uit Editor command (<ALT> + 'Q'). This exits back to the *Hercules Show Control Software* program.

When the *Configuration File* is opened for the first time, a screen similar to the illustration below should be displayed. The example below is from a default *Configuration File* which ECCS has set up and distributes with new *Hercules* program disks. This file can be altered, or an empty file can be created with the (F)ile (N)ew command.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)ele	(P)rint	(Q)uit	Editor			
File: HERCMS.CFG											
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max	
1	L1	SLD PROJ LEFT 1	SP	1	1	0	-	-	0	100	
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100	
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100	
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100	
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100	
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100	
7				0	0	0	-	-	0	100	
8				0	0	0	-	-	0	100	
9				0	0	0	-	-	0	100	
10				0	0	0	-	-	0	100	
11				0	0	0	-	-	0	100	
12				0	0	0	-	-	0	100	
13				0	0	0	-	-	0	100	
14				0	0	0	-	-	0	100	
15				0	0	0	-	-	0	100	
16				0	0	0	-	-	0	100	

EDIT DEVICE CODE - Enter (1-8) alphanumeric characters (spaces are illegal).
The first character must be alphabetic.

THE DEVICE NUMBER

The first column in the file lists the **Device Number**. Values range from 1 to 256, indicating that up to 256 devices may be controlled by the UTCS. This unique number is used by *Hercules* to identify a projector or other device attached to the control system. This leads to two interesting properties of the association between the **Device Number** and the device assigned to it.

1. Once a device is assigned to a given **Device Number**, and *Show Files* have been written to use that device, the device should not be moved to another number. If it is moved, the old *Show Files* will not be able to access that device unless they are edited.
2. If a new device replaces an older device at the same **Device Number**, the new device will automatically be accessed from old *Show Files* in place of the old device.

HERCULES CONFIGURATION FILE

THE DEVICE CODE

To start adding slide projectors, video devices, and special effects to the *Configuration File*, use the arrow buttons on the keyboard to choose a **Device Number** for the first device. The *Configuration File* displays sixteen lines of device listings on the screen at any given time. Navigate quickly through the *Configuration File* a page at a time by using the <PAGE UP> and <PAGE DOWN> keys.

When the *Configuration File* is opened, the **DevCode** column will display set of highlighted brackets enclosing a blinking cursor. Scroll up or down through the *Configuration File* using the arrow or <PAGE UP> and <PAGE DOWN> keys until at the device line to be edited.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor			
File: HERCMS.CFG											
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max	
1	<L1 >	SLD PROJ LEFT 1	SP	1	1	0	-	-	0	100	
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100	
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100	
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100	
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100	
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100	
7				0	0	0	-	-	0	100	
8				0	0	0	-	-	0	100	
9				0	0	0	-	-	0	100	
10				0	0	0	-	-	0	100	
11				0	0	0	-	-	0	100	
12				0	0	0	-	-	0	100	
13				0	0	0	-	-	0	100	
14				0	0	0	-	-	0	100	
15				0	0	0	-	-	0	100	
16				0	0	0	-	-	0	100	

EDIT DEVICE CODE - Enter (1-8) alphanumeric characters (spaces are illegal).
The first character must be alphabetic.

Enter a **Device Code** for the first device. The **Device Code** can be any group of alphanumeric characters from one to eight characters long. The **Device Code** must start with an alphabetic character. ECCS suggests using an easy to remember, descriptive code. In the example above, **L1** was chosen to indicate **LEFT SP #1**.

Once the **Device Code** has been entered, press the <ENTER> key.

HERCULES CONFIGURATION FILE

THE DEVICE DESCRIPTION

Now notice the brackets and blinking cursor appear in the **Description** column. This is where a longer **Device Description** can be entered to help in recognizing devices as a *Show File* is being written with *Hercules*. The **Device Description** can be any group of 1-18 alphanumeric characters. *ECCS* suggests that the description entered be a longer version of the **Device Code**, as illustrated below.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor			
File: HERCMS.CFG											
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max	
1	L1	<SLD PROJ LEFT 1 >	SP	1	1	0	-	-	0	100	
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100	
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100	
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100	
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100	
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100	
7				0	0	0	-	-	0	100	
8				0	0	0	-	-	0	100	
9				0	0	0	-	-	0	100	
10				0	0	0	-	-	0	100	
11				0	0	0	-	-	0	100	
12				0	0	0	-	-	0	100	
13				0	0	0	-	-	0	100	
14				0	0	0	-	-	0	100	
15				0	0	0	-	-	0	100	
16				0	0	0	-	-	0	100	

EDIT DEVICE DESCRIPTION - Enter (1-18) alphanumeric characters.

When the **Device Description** is finished, press the <ENTER> key.

As cues are entered into a *Show File*, *Hercules* will automatically display this **Device Description**. This feature makes it easier to troubleshoot a *Show File*.

HERCULES CONFIGURATION FILE

THE DEVICE TYPE

The next column, **Type**, is for the **Device Type**. The **Device Type** is a two digit alphanumeric code. This cryptic designation defines the type of device for *Hercules*. Only recognized codes will be accepted. This important entry allows *Hercules* to correctly display and update the device status. The currently defined **Device Types** are as follows:

SP	Slide Projector (Power Control/ Lamp Control/ Bidirectional Tray Control/ Tray Home Sensing)
FX	Standard Special FX Control (Fan Control/ Lamp Control/ Motion Control & Reset/ Aux. Control)
LO	Lamp Control Only
PS	Position Seek Device (Slue Zoom Positioning, etc.)
VD	Video Disk (LD, DVD, etc.)
VT	Video Tape (VCR, AstroFX, MIDI Machine)
DB	Dubhe - 8X1 - 8 Lamps, one at a time
DM	Dubhe - 4X2M - 4 lamp/ motor pairs, one at a time
DF	Dubhe - 4X2F - 4 lamp/ fan pairs, one at a time
HL	Hedco Leitch Switcher
BR	Barco Video Projector
S1	Switch (Relay)
24	Switch - 2 groups of 4 interlocking
18	Switch - 1 group of 8 interlocking
S8	Switch - 1 group of 8 not interlocking
LR	Level/ Relay Control (MC10 only)
GV	General Value Card (MC10 only)
GP	Device Group (up to 16 Devices)
L1	Lamp/ Motor 1 (Special Effect with motor reset on update)
L2	Lamp/ Motor 2 (Special Effect with no motor reset on update)
DM	Daily Motion
LM	Latitude Motion
HM	Heading Motion
AM	Annual Motion
PM	Precessional Motion
EM	Extra Motion
VS	Video Switcher/Fader (Updates Lamp Status and Video Source)

Once the **Device Type** for a device has been determined, type it in the field, and press <ENTER>.

Note: Some of these **Device Types** may not be applicable for all theater configurations. Please consult more detailed information under the *Intelligent Controller* sections of this manual.

If necessary, contact **ECCS** with questions about the appropriate **Device Type** needed.

HERCULES CONFIGURATION FILE

WHAT DOES THE DEVICE TYPE TELL *HERCULES*?

The **Device Type** tells *Hercules* what information to provide to each device during a *Device Status Update*. It also tells *Hercules* how to display the information for each device in the current *Show File*. *Hercules* displays this information in the *Device Status Area* of the main *Hercules* screen.

Each **Device Type** will generate a different display and update protocol.

Any device that appears in the *Configuration File* and is the source of *Time Code* **must** be left with an undefined **Device Type**. This is to prevent *Time Code* dropouts and unacceptable program performance. These devices include the Fostex D2424LV, Fostex VF 160, or any other audio device with a *Time Code* track.

Device Types most commonly used are: **SP, FX, LO, PS, VD, VT, BR, GP, and VS**. Most other **Device Types** will require installation by **ECCS**, and/ or modification to equipment. Please consult **ECCS** for more information.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor		
File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
1	L1	SLD PROJ LEFT 1	<SP>	1	1	0	-	-	0	100
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100
7				0	0	0	-	-	0	100
8				0	0	0	-	-	0	100
9				0	0	0	-	-	0	100
10				0	0	0	-	-	0	100
11				0	0	0	-	-	0	100
12				0	0	0	-	-	0	100
13				0	0	0	-	-	0	100
14				0	0	0	-	-	0	100
15				0	0	0	-	-	0	100
16				0	0	0	-	-	0	100
EDIT DVC TYPE - SP=SldPrj;FX=SpcEff;LO=Lmp;PS=Pstn;S1,S8,18,24=Swrch;GV=GVC;GP=Grp;LR=LvlRly;VD=VdDsk;VT=BCD;HL=HeLe;BR=Barco;B1=Bit;B8=Byt;D8,DM,DF,D0=Dubhe										

HERCULES CONFIGURATION FILE

THE GROUP DEVICE TYPE

The **Group (GP)** Device Type is a special case. Up to 16 individual devices can be collected into a single ‘pseudo device’. This allows the *Hercules* to access multiple devices with a single line of programming. While any previously assigned devices may be included in the **Group Device**, the most useful groups will include logical groups of devices such as *All Sky* or *Panorama* projectors.

When the **Device Type GP** is entered, a new dialogue box opens, as is illustrated below. This is where the **Device Codes** for the individual devices that are to make up this **Group** are entered.

Enter the name of the device that is to be added between the highlighted brackets. After entering in the **Device Code** for a device, press the <ENTER> key to move to the next device. Continue until the **Group** is complete, or until the limit of 16 devices is reached. To remove a device from the Group, move the highlighted brackets with the arrow keys to the device to be removed, and press the <DELETE> key.

Note: The individual devices must be defined prior to entering the **Group Device**, as each entry is tested as it is entered.

```
<ALT>  (N)ew  (O)pen  (S)ave  Save(A)s  (D)elete  (P)rint  (Q)uit Editor
File: HERCMS.CFG
Dvc#  DevCode  Description          Type  Unit#  Slot#  Branch  Bank  Scrn  Init  Max
1     L1        SLD PROJ LEFT 1
2     L2        SLD PROJ LEFT 2
3     C1        SLD PROJ CENTER 1
4     C2        SLD PROJ CENTER 2
5     R1        SLD PROJ RIGHT 1
6     R2        SLD PROJ RIGHT 2
7
8
9
10    INFO     ALL SLIDE PROJ
11
12
13
14
15
16
```

Device Group Assignments

Selected Device => **INFO**

L1	L2	C1	C2
R1	R2	<	>

6 devices assigned (maximum 16)

(A)ccept changes or (Q)uit editing

```
EDIT DEVICE GROUPING - Enter device names for this group.
```

When the addition of all individual devices are complete, press <ALT> **(A)** to Accept the changes. The dialogue box will close. The only additional entry that has any meaning for this **Group Device** is that of the **Maximum Value**, described in a later section.

HERCULES CONFIGURATION FILE

UNIT NUMBER

The **Unit#** column is the communication network address number of the *Intelligent Controller* that the device is attached to. Keep track of all **Unit Numbers** assigned throughout the system. **Unit Numbers** do not need to be assigned in any particular order, and they can be arranged anywhere in the communication network chain.

Typically, **Unit Numbers** in the twenties are assigned to *Orion Star Machine Control System* functions, so if an **ECCS Orion Star Machine Control System** has been installed in the theater, check the **Unit Numbers** carefully. Assigning more than one unit the same communication system address will result in poor system performance, and errors in execution of device cues.

Valid **Unit Numbers** for *Intelligent Controllers* are numeric values between 1 and 64. Additionally, Unit #65 is reserved for a *Cygnus EX Manual Control Brain*, and Unit #99 is reserved for the *Aquila Time Code Controller*.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor		
File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
1	L1	SLD PROJ LEFT 1	SP	<1 >	1	0	-	-	0	100
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100
7				0	0	0	-	-	0	100
8				0	0	0	-	-	0	100
9				0	0	0	-	-	0	100
10				0	0	0	-	-	0	100
11				0	0	0	-	-	0	100
12				0	0	0	-	-	0	100
13				0	0	0	-	-	0	100
14				0	0	0	-	-	0	100
15				0	0	0	-	-	0	100
16				0	0	0	-	-	0	100
EDIT UNIT NUMBER - Enter numeric value from 0 to 99. This is the Unit to which this device is attached.										

Once the **Unit Number** has been entered in the field, press the <ENTER> key.

HERCULES CONFIGURATION FILE

SLOT NUMBER

The **Slot#** is the *Device Control Port Number* of a device. Typically, the *Device Control Port* will be numbered 1 through 4. *Device Control Ports* on the **Gemini General Purpose Controller** and **Virgo Video Device Controller** are numbered in ascending order from the center of the rear panel, with port 1 closest to the power entry module.

Devices that are controlled through the switch closures of a **Gemini** will be assigned *Device Control Port (Slot)* numbers 5 through 12. This includes devices that are controlled through a **BOB Break Out Box**.

Devices that are controlled through the switch closures on an **Aquila Time Code Controller** will be assigned *Device Control Port (Slot)* numbers 1 through 8.

Devices that are controlled through an **RH Gray MC10** system will be assigned *Device Control Port (Slot)* numbers 1 through 127.

Certain devices that are controlled via **DMX** lighting control through a **Virgo Device Control Port** will be assigned **Slot Numbers** correlating to their **DMX** channel number plus ten. Valid *Device Control Ports* for these individual **DMX** channels are **11 - 106**.

Consult individual device information and *Intelligent Controller* specifications for more information.

<ALT> (N)ew (O)pen (S)ave Save(A)s (D)elete (P)rint (Q)uit Editor										
File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
1	L1	SLD PROJ LEFT 1	SP	1	<1 >	0	-	-	0	100
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100
7				0	0	0	-	-	0	100
8				0	0	0	-	-	0	100
9				0	0	0	-	-	0	100
10				0	0	0	-	-	0	100
11				0	0	0	-	-	0	100
12				0	0	0	-	-	0	100
13				0	0	0	-	-	0	100
14				0	0	0	-	-	0	100
15				0	0	0	-	-	0	100
16				0	0	0	-	-	0	100

EDIT SLOT NUMBER - Enter numeric value from 0 to 127.
This is the Slot of the Unit to which this device is attached.

Once the **Slot Number** has been entered, press the <ENTER> key.

HERCULES CONFIGURATION FILE

BRANCH NUMBER

The **Branch** column is a further control specification. **Branch Numbers** are used on a small number of devices that can be controlled through a *Virgo Video Device Controller*. **Branch Numbers** indicate individual faders or audio outputs on **Yamaha** or **Rane** audio mixers.

Most devices are not assigned a **Branch Number**.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor			
File: HERCMS.CFG											
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max	
1	L1	SLD PROJ LEFT 1	SP	1	1	<0 >	-	-	0	100	
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100	
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100	
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100	
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100	
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100	
7				0	0	0	-	-	0	100	
8				0	0	0	-	-	0	100	
9				0	0	0	-	-	0	100	
10				0	0	0	-	-	0	100	
11				0	0	0	-	-	0	100	
12				0	0	0	-	-	0	100	
13				0	0	0	-	-	0	100	
14				0	0	0	-	-	0	100	
15				0	0	0	-	-	0	100	
16				0	0	0	-	-	0	100	

EDIT DEVICE CODE - Enter (1-8) alphanumeric characters (spaces are illegal).
This first character must be alphabetic.

If a **Branch Number** is needed, enter it, then press the <ENTER> key.

HERCULES CONFIGURATION FILE

BANK AND SCREEN ASSIGNMENTS

The next two columns, **Bank** and **Scrn** are used exclusively with slide projectors that have been grouped into matrices for **Matrix Addressing**.

Valid values for the **Bank Assignment** are 1 through 8.

Valid values for the **Screen Assignment** are alphabetic characters between A and G.

For more information about **Matrix Addressing** and programming with matrices, see the *Hercules Show Control Software* manual.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor			
File: HERCMS.CFG											
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max	
1	L1	SLD PROJ LEFT 1	SP	1	1	0	<->	-	0	100	
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100	
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100	
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100	
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100	
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100	
7				0	0	0	-	-	0	100	
8				0	0	0	-	-	0	100	
9				0	0	0	-	-	0	100	
10				0	0	0	-	-	0	100	
11				0	0	0	-	-	0	100	
12				0	0	0	-	-	0	100	
13				0	0	0	-	-	0	100	
14				0	0	0	-	-	0	100	
15				0	0	0	-	-	0	100	
16				0	0	0	-	-	0	100	

EDIT BANK ASSIGNMENT - Enter numeric value from 1 to 8.
This is the Bank of the Matrix to which this slide projector is assigned.

Enter **Bank Assignment** then press <ENTER> to move to **Screen Assignment** field. After entering **Screen Assignment**, press the <ENTER> key again.

HERCULES CONFIGURATION FILE

INITIAL CONDITION

The **Init** field assigns an **Initial Condition** value for a device. For all devices with lamps, this sets the initial lamp value in percentage points. Valid entries are 0 to 99 and represent lamp illumination to #%.

For switch group devices, the **Initial Condition** sets the initial switch pattern. The 8 bit switch pattern must be converted to a decimal number. Valid entries are **0** through **255**.

When an INITSYS command is issued, a (F)ile is (O)pened, or a (F)ile (N)ew command is issued, all devices revert to their **Initial Conditions**.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor		
File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
1	L1	SLD PROJ LEFT 1	SP	1	1	0	-	-	<0	>100
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100
7				0	0	0	-	-	0	100
8				0	0	0	-	-	0	100
9				0	0	0	-	-	0	100
10				0	0	0	-	-	0	100
11				0	0	0	-	-	0	100
12				0	0	0	-	-	0	100
13				0	0	0	-	-	0	100
14				0	0	0	-	-	0	100
15				0	0	0	-	-	0	100
16				0	0	0	-	-	0	100

EDIT INITIAL CONDITION - Enter numeric value from 0 to 99.
This is the Initial Condition for this device.

After setting the **Initial Condition** for the device, press the <ENTER> key.

HERCULES CONFIGURATION FILE

MAXIMUM VALUE

The **Maximum Value** is assigned to each device with lamp or motor control. This value is used by *Hercules* as the default value for the **Limit** parameter of a cue line. *Hercules* assumes that you wish to fade up the lamp to this value or to ramp up the motor to this value. This default value can be overridden on a cue by cue basis if necessary. The **Maximum Value** is expressed as #%.

Note: This **Maximum Value** is simply a programming aid and does not function as a limit on the lamp or motor rate. The value can be overwritten during cue entry or editing. If a calibrated device requires a hard limit, it must be achieved via another method. Consult **ECCS** for more information.

<ALT>	(N)ew	(O)pen	(S)ave	Save(A)s	(D)elete	(P)rint	(Q)uit	Editor		
File: HERCMS.CFG										
Dvc#	DevCode	Description	Type	Unit#	Slot#	Branch	Bank	Scrn	Init	Max
1	L1	SLD PROJ LEFT 1	SP	1	1	0	-	-	0	<100>
2	L2	SLD PROJ LEFT 2	SP	1	2	0	-	-	0	100
3	C1	SLD PROJ CENTER 1	SP	1	3	0	-	-	0	100
4	C2	SLD PROJ CENTER 2	SP	1	4	0	-	-	0	100
5	R1	SLD PROJ RIGHT 1	SP	2	1	0	-	-	0	100
6	R2	SLD PROJ RIGHT 2	SP	2	2	0	-	-	0	100
7				0	0	0	-	-	0	100
8				0	0	0	-	-	0	100
9				0	0	0	-	-	0	100
10				0	0	0	-	-	0	100
11				0	0	0	-	-	0	100
12				0	0	0	-	-	0	100
13				0	0	0	-	-	0	100
14				0	0	0	-	-	0	100
15				0	0	0	-	-	0	100
16				0	0	0	-	-	0	100

EDIT MAXIMUM VALUE - Enter numeric value from 1 to 100.
This is the Maximum Value of the default lamp level for this device.

Enter the **Maximum Value** for the device then press the <ENTER> key.

HERCULES CONFIGURATION FILE

SAVE BEFORE EXITING

After completing the full device entry line for all the devices in the *Configuration File*, remember to save the new, updated *Configuration File* by holding down the <ALT> + (S)ave key combination.

It is also a good idea to save a backup copy of the *Configuration File* at this time. Keep the *Configuration File* with the rest of the theater *show files*. All show files and the *Configuration File* should fit onto a single 3.5 inch floppy disk.

Once the *Configuration File* update is completed and saved, exit the *Hercules Utilities*. The new device is ready for control through the UTCS.

CHAPTER 5: THE HERCULES SHOW CONTROL SOFTWARE



INTRODUCTION

At the center of the *Universal Theater Control System* (UTCS) is the *Hercules Show Control Software*. It is the origin of all user-scripted commands sent via the communications network to the *Intelligent Controllers* throughout the system. The *Hercules Show Control Software* is copyrighted; however, it is not copy protected. This means that backup copies of the software can and should be made in the event that they are needed.

The *Hercules Show Control Software* can be divided into three distinct parts:

1. *System Files* consist of the actual computer code and programs that make up the *Hercules Show Control Software*. If any of these files are damaged or missing, the software will be unable to function. These files are hidden from the user while *Hercules* is in use; however, they are accessible from disk utilities programs (like Windows or DOS). Care must be taken not to delete or move these files.
2. *Configuration Files* contain the information that uniquely customizes the software for a particular presentation venue. These files can not be accessed from the *Hercules* work space, but can be created, edited, or destroyed from the *Hercules Utilities*.
3. Each *Show File* is composed of a cue list for a particular program. A cue can be a device command or a *Hercules Show Control Software* command. These files are created, edited, and executed from the *Hercules* workspace.

The *Hercules Show Control Software* will run on a computer without the *Hercules Show Control Card* installed on the computer. This provides off-line programming and production capabilities away from the operating theater.

ECCS also recommends that a regular habit be made of creating backups of all *Show Files* as well as the theater's *Configuration File*. The simplest way to backup all files, is to copy the entire *Hercules* directory.

HERCULES SHOW CONTROL SOFTWARE

STARTING HERCULES

As *Hercules* starts, copyright information and the *Hercules Show Control Software* version number is displayed on the computer screen. After a few seconds, the system's diagnostic routine will report on the current status of the system, including information on the *Hercules Show Control Card*. To accelerate the exit from this diagnostic routine, press any key twice. *Hercules* will present the main work space, as illustrated below:

a

b

c

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit

0000						
0001						
0002						
0003						
0004						

d

a The **System Command Menu** is located at the top of the screen. This is a list of system commands that are available by pressing the <ALT> key and the key indicated by the parentheses associated with the desired command. The options on this menu will change as you navigate the program.

b The **System Status Area** is located directly below the **System Command Menu**. This area displays the name of the current file loaded and the current mode of *Hercules*. Any *System Error Messages* will also appear in this area.

c The **Program Area** is located below the dashed line. *Show Files* are created, edited, and executed from this area.

d The **Device Status Area** is located at the bottom of the work space. The current status of all devices being used by the active file is displayed here.

The *Hercules* workspace will soon become very familiar. A closer look will be taken at each of the workspace areas, and how they fit into the operation of the *Universal Theater Control System (UTCS)*.

HERCULES SHOW CONTROL SOFTWARE

THE SYSTEM COMMAND MENU

System Commands are instructions that affect the *Universal Theater Control System (UTCS)* as a whole, or affect the *Show File* currently being accessed through the *Hercules* software. *System Commands*, with a few exceptions, do not directly affect the individual devices connected to the *UTCS*.

The *System Command Menu* is always located across the top of the *Hercules* workspace. The *System Command Menu* displays the currently available menu options and will not always offer the same options. To invoke a *System Command*, the <ALT> key must be held down while the *Command Letter* for the desired command is pressed. The *Command Letter* is the letter that appears in parentheses in the command description displayed in the *System Command Menu*.

To carry out any individual *System Command*, at least two selections will need to be made from the *System Command Menu*. The *System Command Menu* is set up in a hierarchical manner, with increasingly narrow choices being offered from the main menu. The main *System Command Menu* is illustrated below:

```
<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules
```

Each selection from the main menu will open an appropriate submenu. The submenu will replace the main menu at the top of the screen. Each submenu contains a new list of options that can be selected using the <ALT> + <Command Letter> method. Each submenu includes the option to (Q)uit back to the main *System Command Menu*. In most cases, pressing <ESC> will also return the user to the main *System Command Menu*.

The *Hercules* workspace *Program Area* can be accessed only while the main *System Command Menu* is displayed. No cursor will appear in the program area when another *System Command Menu* is displayed.

A closer look will now be taken at each of the submenus, and how the *System Commands* they invoke affect the *UTCS* or *Hercules*.

HERCULES SHOW CONTROL SOFTWARE

THE (F)ILES SUBMENU

The (F)iles submenu of the *System Command Menu* offers the means to open, save, print *Show Files*, and handle disk operations. *Hercules* passes control of all disk operations to the DOS (disk operating system) of the host computer.

A NOTE ON FILE ORGANIZATION:

DOS is hierarchical in nature. This means that disk space can be divided into separate areas called folders, or directories, with *Show Files* stored in different folders. Folders can be further subdivided into more folders. *Hercules* is capable of taking full advantage of this system and allowing operators to organize *Show Files* into a configuration that makes sense for their theater. Like most 'organizational' systems, thoughtful use of this folder structure can result in organized and easily accessed program folders, but haphazard organization can lead to 'lost' files and frustration.

Note: There is a limit of 128 *Show Files*, folders, or IHP/ ISA files in any *Hercules* directory.

THE (F)ILE COMMANDS

The commands available from the (F)ile submenu are described below.

(F)ile (N)ew	Clears current <i>Show File</i> and resets all devices.
(F)ile (O)pen	Displays list of folders and <i>Show Files</i> in current folder. Use <UP ARROW> and <DOWN ARROW> keys to select desired <i>Show File</i> or folder. The following submenu is available:
(V)olume	Searches for another disk volume.
(O)pen	Opens selected <i>Show File</i> or folder.
(C)lose	Closes current folder.
(Q)uit Opening	Return to main menu.
(F)ile (S)ave	Saves program to current folder under current name.
(F)ile Save (A)s	Displays list of folders and <i>Show Files</i> in current folder. Displays dialog box for entry of new program name. The following submenu is accessible:
(V)olume	Searches for another disk volume.
(O)pen	Opens selected folder.
(C)lose	Closes current folder.
(N)ew Folder	Creates new folder with name from dialog box.
(S)ave	Saves <i>Show File</i> with name from dialog box.
(Q)uit Saving	Return to main menu.
(F)ile (D)elete	Displays list of folders and <i>Show Files</i> in current folder. Use <UP ARROW> and <DOWN ARROW> keys to select desired <i>Show File</i> or folder. The following submenu is available:
(V)olume	Searches for another disk volume.
(O)pen	Opens selected folder.
(C)lose	Closes current folder.
(D)elete	Deletes selected <i>Show File</i> or folder (the folder must be empty).
(Q)uit Deleting	Return to main menu.
(F)ile (P)rint	Prints file if interface with printer is active.
(F)ile (Q)uit Files	Return to main System Command Menu .

HERCULES SHOW CONTROL SOFTWARE

THE (E)DIT SUBMENU

The (E)dit submenu of the *System Command Menu* offers commands necessary to cut, copy, and paste *Show Segments*. Segments can be a single line of code, a block of code, or even a complete *Show File*. Segments can be copied and pasted within the current *Show File* being edited, into an existing *Show File*, or into a newly created *Show File*.

To **copy a single line** from a *Show File* to the clipboard, use the following steps. (To cut a single line from a *Show File* substitute <X> for <C> in the following procedure.)

1. Move to the line to be copied.
2. Press <ALT> + <E> to enter the (E)dit submenu.
3. Press <ALT> + <C> to select the (C)opy option. The current line will highlight.
4. Press <ALT> + <C> again to (C)opy the selected line to the clipboard.

To **copy multiple lines** from a *Show File* to the clipboard, use the following steps. (To cut multiple lines from a *Show File* substitute <X> for <C> in the following procedure.)

1. Move to the first line to be copied.
2. Press <ALT> + <E> to enter the (E)dit submenu.
3. Press <ALT> + <C> to select the (C)opy option. The current line in will highlight.
4. Move to the last line to be copied. All selected lines will highlight.
5. Press <ALT> + <C> again to (C)opy all of the selected lines to the clipboard.

To **copy the entire Show File** to the clipboard, use the following steps.

1. Press <ALT> + <E> to enter the (E)dit submenu.
2. Press <ALT> + <C> to select the (C)opy option. The current line will highlight.
3. Press <ALT> + <A> to select the (A)ll option. All lines in the *Show File* will highlight.
4. Press <ALT> + <C> again to (C)opy the selected line to the clipboard.

To **paste from the clipboard** into a *Show File*, use the following steps.

1. Move to the line at which the clipboard contents are to be inserted.
2. Press <ALT> + <E> to enter the (E)dit submenu.
3. Press <ALT> + <V> to select the (V)Paste option. The contents of the clipboard will be inserted.

THE (E)DIT COMMANDS

The commands available from the (E)dit submenu are described below.

(E)dit (X)Cut		Prepares for <i>Show Segment</i> cutting. Select segment as described above. The following submenu is accessible:
	(X)Cut	Complete the cutting operation.
	Select (A)ll	Selects the entire <i>Show File</i> for cutting.
	(Q)uit Cutting	Return to main menu.
(E)dit (C)opy		Prepares for <i>Show Segment</i> copying. Select segment as described above. The following submenu is accessible:
	(C)opy	Complete copying operation.
	Select (A)ll	Selects the entire <i>Show File</i> for copying.
	(Q)uit Copying	Return to main menu without copying.
(E)dit (V)Paste		Insert <i>Show Segment</i> .
(E)dit (Q)uit Edit		Return to main menu without editing.

HERCULES SHOW CONTROL SOFTWARE

THE (G)OTO SUBMENU

The (G)oto submenu of the *System Command Menu* offers commands to jump to locations in the *Show File*. Jump-to locations can be identified by cue number, time, or label.

THE (G)OTO COMMANDS

The commands available from the (G)oto submenu are described below. Most (G)oto commands will open a dialog box to enter the cue number, time, or label to jump-to.

(G)oto (C)ue	Presents a dialog box to enter the desired cue number.
(G)oto (T)ime	Presents a dialog box to enter the desired time cue.
(G)oto (L)abel	Presents a dialog box to enter the desired label.
(G)oto (Q)uit Goto	Return to main menu.

HERCULES SHOW CONTROL SOFTWARE

THE (M)ODE SUBMENU

The (M)ode submenu of the *System Command Menu* provides the commands to set the *Hercules* operational mode. The current mode is displayed on the second line of the *System Status Area*. *Hercules* operates in one of four basic modes, described below.

THE (M)ODE COMMANDS

The commands available from the (M)ode submenu are described below.

(M)ode (R)eal Time	Sets <i>Hercules</i> to REAL TIME MODE . Every device instruction is executed as it is entered or cued, with no emphasis placed on the chronological order of the instructions in the <i>Show File</i> . This is the normal mode for 'manual' keyboard operation of the UTCS . The <i>Device Status Area</i> will reflect the expected status of the devices as the commands are executed.
(M)ode (E)dit Program	Sets <i>Hercules</i> to EDIT PROGRAM MODE . Cues in the <i>Show File</i> can be entered and edited without affecting any devices because all data communication is disabled. The <i>Device Status Area</i> will change as cues are entered and edited. Be aware that the displayed <i>Device Status</i> may not be accurate if moving backwards or jumping around within the program file.
(M)ode (F)ollow Program	Sets <i>Hercules</i> to FOLLOW PROGRAM MODE . <i>Hercules</i> assigns chronological significance to the ordering of cues in the <i>Show File</i> . This causes the status of the devices to follow the current location of the cursor in the <i>show file</i> . The <i>Device Status area</i> will be updated to reflect the expected status of the devices.
(M)ode (C)lock Drive	Sets <i>Hercules</i> to CLOCK DRIVE MODE . Execution of the <i>Show File</i> will be driven by a time signal supplied by the Aquila Time Code Controller , or from the internal <i>Hercules</i> clock. As in FOLLOW PROGRAM MODE , the <i>Show File</i> is treated as a chronological set of cues. When the time signal is first acquired, the <i>Hercules</i> will go to the appropriate point in the <i>Show File</i> , calculate the correct device status for that point in the show, and then issue commands to update the actual status of the devices. The <i>Device Status Area</i> will be updated to reflect the expected status of the devices.
(M)ode (S)tandby	Initializes all devices, then sets EDIT PROGRAM MODE . Cues in the <i>Show File</i> can be entered and edited without affecting any devices because all data communications are disabled. The Device Status Area will change as the cues are entered and edited, but the status displayed will not be the actual <i>Device Status</i> .
(M)ode (Q)uit Mode	Return to main menu without changing mode.

HERCULES SHOW CONTROL SOFTWARE

THE (T)IMES SUBMENU

The (T)imes submenu of the *System Command Menu* provides commands necessary to manipulate time cues in the *Show File*. Several operations can be performed with these commands. First, time cues may be placed in chronological order. Second, time cues can be replaced entirely with **TX** cues. Third, a user specified offset value can be added or subtracted from cues. Finally, wait cues can be changed to time cues.

To perform a (T)imes operation use the following procedure.

1. Move to the line where the operation is to begin.
2. Press <ALT> + <T> to enter the (T)imes submenu.
3. Press <ALT> + <Command Letter> of the operation desired. The line will highlight.
4. Select the Show Segment to be modified, or select the entire Show File by pressing <ALT> + <A> to use the Select (A)ll option.
5. Press <ALT> + <Command Letter> of the current operation again. This will complete the operation and exit the (T)imes submenu.

Note: (O)ffset commands will require a **TIME** value to be entered before the operation can be completed.

THE (T)IMES COMMANDS

The commands available from the (T)imes submenu are described below.

(T)imes (J)ustify		Prepares for <i>Show Segment</i> justification. Select <i>Show Segment</i> as described above. The following submenu is available:
	(J)ustify	Sorts the selected cue blocks by time cues (Re-orders program cues to follow chronologically).
	Select (A)ll	Selects the entire <i>show file</i> for justification.
	(Q)uit Justifying	Return to main menu without justifying times.
(T)imes (R)eplace		Prepares for <i>show segment</i> replacing. You must select <i>show segment</i> as described above. The following submenu is accessible:
	(R)eplace	Replaces all time cues in the selected cue blocks with TX cues.
	Select (A)ll	Selects the entire <i>show file</i> for replacing.
	(Q)uit Replacing	Return to main menu without replacing times.
(T)imes (O)ffset		Prepares for <i>show segment</i> offsetting. You must select <i>show segment</i> as described above. The following submenu is accessible:
	(O)ffset (L)ater	Adjusts all time cues in the selected cue blocks by the specified time increment later.
	(O)ffset (E)arlier	Adjusts all time cues in the selected cue blocks by the specified time increment earlier.
	Select (A)ll	Selects the entire <i>show file</i> for offsetting.
	(Q)uit Offsetting	Return to main menu without offsetting times.

HERCULES SHOW CONTROL SOFTWARE

THE (T)IMES COMMANDS (CONTINUED)

(T)imes (W)aits to Times	Prepares for <i>Show Segment</i> to convert waits to times. Select a <i>Show Segment</i> as described above. The following submenu is accessible:
(C)onvert Waits to Times	Converts all wait cues in the selected cue blocks to time cues.
Select (A)ll	Selects the entire <i>Show File</i> to convert wait cues to time cues.
(Q)uit Converting	Return to main menu without converting cues.
(T)imes (Q)uit Times	Return to main menu.

THE (S)PECIAL SUBMENU

The (S)pecial submenu of the *System Command Menu* provides access to the miscellaneous commands that can not be placed elsewhere. These commands can invoke the system diagnostics routine, instruct the *Aquila Time Code Controller* to output time code, or upload special keepfile commands to the *Aquila*.

THE (S)PECIAL COMMANDS

The commands available from the (S)pecial submenu are described below.

(S)pecial (W)rite Clock	Presents a dialog requesting the time value for the <i>Aquila</i> to begin writing time code. After entering a time value, the <i>Aquila</i> is instructed to begin writing time code at that point.
(S)pecial (T)est System	Tests the UTCS and displays the results, as follows: System Test: Hercules Central Processor ©2002 Version X.XX Hercules Card Test: Hercules Card Ready Version X.XX RS-232 Remote enabled
(S)pecial (U)pload to Aquila	Prepares to upload special <i>keepfile</i> commands to the <i>Aquila</i> . Note that this option is not used in normal planetarium operation. This option is used for programming an <i>Aquila keepfile</i> (see <i>Aquila</i> manual) from <i>Hercules</i> when the <i>Aquila</i> is used in stand-alone operations.
(S)pecial (Q)uit Special	Return to main menu.

HERCULES SHOW CONTROL SOFTWARE

THE (Q)UIT SUBMENU

The (Q)uit submenu of the *System Command Menu* provides easy exit from *Hercules*.

Note: If the *Show File* is not saved before exiting from *Hercules*, it will be lost. Once lost, there is no way to recover a file not saved with the (F)ile (S)ave or (F)ile Save (A)s menu options.

THE (Q)UIT COMMANDS

The commands available from the (Q)uit submenu are described below.

(Q)uit to (U)tilities	Shuts down <i>Hercules</i> and starts the <i>Hercules Utilities Program</i> .
(Q)uit to (M)sDos	Shuts down <i>Hercules</i> and returns to the DOS environment. If your computer is configured to do so, Windows will open automatically after exiting from <i>Hercules</i> .
(Q)uit (Q)uiting	Return to main menu without quitting.

HERCULES SHOW CONTROL SOFTWARE

THE SYSTEM STATUS AREA

The *System Status Area* provides information about the active *Show File*, and the current *Hercules* operating mode.

<ALT>	(F)ile	(E)dit	(G)oto	(M)ode	(T)imes	(S)pecial	(Q)uit Hercules
File: UNTITLED							
Mode: REAL TIME		ERROR: COMMUNICATIONS FAILURE UNIT 1					
Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit		

File:

The name of the currently active *Show File* will be displayed on the first line of the *System Status Area*. *Show File* names can be up to eight characters long and can consist of any combination of alpha-numeric characters, provided they begin with an alphabetic character. Choose file names carefully to make them easy to identify. If the active file has not yet been saved, UNTITLED will appear as the file name.

Mode:

Hercules operates under one of four basic program modes. The current program mode will be displayed in the second line of the *System Status Area*. The four basic *Hercules* modes are:

1. **REAL TIME MODE** is the default program mode. Device cues are executed as entered or cued, with no emphasis placed on the chronological order for the instructions in the *Show File*. This is the mode to use for 'manual' keyboard operation of the **UTCS**. The *Device Status Area* will reflect the expected status of devices as commands are executed.
2. **EDIT PROGRAM MODE** allows cues to be entered and edited in the *Show File* without affecting any devices because all data communication is disabled. **EDIT PROGRAM MODE** should also be used when editing a *Show File* on an off-line computer (without a *Hercules Show Control Card* installed). The *Device Status Area* will be updated as cues are entered and edited. Be aware that the displayed *Device Status* may not be accurate if going backwards or jumping around within the *Show File*.
3. **FOLLOW PROGRAM MODE** allows *Hercules* to assign chronological significance to the ordering of cues in a *Show File*. This results in the actual status of devices following the current location of the cursor in the *Show File*. The *Device Status Area* will be updated to reflect the expected status for the devices.
4. **CLOCK DRIVE MODE** enables *Hercules* to synchronize execution of the *Show File* with a SMPTE time signal supplied by the *Aquila Time Code Controller* or with an internal *Hercules* time signal. The *Show File* is treated as a chronological set of cues. When the time signal is first acquired, *Hercules* will go to the appropriate point in the *Show File*, calculate the correct *Device Status* for that point in the show, and then issue commands to update the actual device status to match the programmed status. The *Device Status Area* will be updated to reflect the expected status of the devices.

System Messages

Any *System Messages* will be also be displayed in this area. They will appear on the same line as the mode information just to the right of screen center. Take note of any *System Error Messages* that appear, as they will provide valuable information for troubleshooting the **UTCS**. A list of *System Messages* can be found in the chapter on **Troubleshooting**.

HERCULES SHOW CONTROL SOFTWARE

THE PROGRAM AREA

The *Program Area* is located below the dashed line in the main *Hercules* workspace. *Show Files* are created, edited and executed from this area. A *Show File* is simply a list of *Device Commands*, or *Hercules* instructions, that can control the actions of devices attached to the system. These *Device Commands* are also called cues. The *Show File* is also known as a script, and the art of writing a program is scripting.

Take a closer look at the *Program Area*:

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit

0000					
0001					
0002					
0003					
0004					

The first column in the *Program Area* consists of the cue numbers and is labeled, appropriately, **Cue#**. The purpose of the cue numbers is to help identify *Show File* locations. The cue numbers cannot be edited. A highlighted cue number indicates that the associated cue may be manually executed or edited.

To the right of the **Cue Number** column, is the first editable column, or field. This field is called the *Cue Code Field* and is labeled **Dev Cmd (Device Command)**. A cue code is an abbreviation of eight characters or less for a *Device Command*. Since *Hercules* has a database of all possible valid entries, each character is tested as entered. Only valid entries will be accepted.

A complete list of cues and cue codes can be found elsewhere in this manual, or in the *Hercules Quick Reference*. Many of the cues are described in more detail as exploration the **UTCS** capabilities continues.

The *Cue Description Field* (labeled **Cmd Description**) is next. In most instances, *Hercules* will simply print the long description of the **Cmd Description**. However, some commands will require additional information to be entered at this point.

Next is the *Device Code Field* (labeled **Dev Code**). This field is used only for commands that require device identification, not for *Hercules* system commands. The **Device Code** is the unique identifier, of one to eight characters, for a device attached to the system. **Device codes** are assigned in the *Configuration File* using the *Hercules Utilities Program*.

The *Device Name Field* (labeled **Device Name**) follows, allowing *Hercules* to list the full name of the device specified by the **Device Code** in the previous field. The **Device Name** is also assigned in the system *Configuration File*.

The final entry field is the *Parameter Field* (labeled **Limit**). Cues that require additional information, such as lamp fade levels, require use of this field.

HERCULES SHOW CONTROL SOFTWARE

DEVICE STATUS AREA

The *Device Status Area* is directly below the **Program Area** in the main *Hercules* workspace. This area displays the status of each individual device addressed by the **UTCS** in the *Show File*. Devices will appear in the *Device Status Area* after *Hercules* executes a command directed at those specific devices. Devices that include lamps will appear highlighted in the display area when their lamps are faded up above the zero level. Additional information is available for some devices, depending on the **Device Type** as assigned in the *Configuration File*.

For example, slide projectors will display the slide position, special effect projectors will display motor status, and position control devices will display current positions. Navigate through the *Device Status Area* using the << and >> keys to move over by columns.

HERCULES SHOW CONTROL SOFTWARE

CUE ENTRY

The cue number must be highlighted before attempting to open a cue for entry or editing. A cue is not accessible if any *System Command Menu* other than the main menu is open, or if **CLOCK DRIVE MODE** is engaged.

To open a cue for entry or editing, press the <TAB>, <ENTER>, or <RIGHT ARROW> keys. The cue number will then no longer be highlighted. An input prompt consisting of a pair of brackets will appear in the *Cue Code Field*, indicating that *Hercules* is ready to accept a **Device Command**. As each character of the **Device Command** is entered, *Hercules* will test it for validity. Any illegal entries will not be accepted. If the **Device Command** uniquely identifies the command before the entire command is entered, *Hercules* will 'fill-in' the remaining characters and move to the next appropriate field. Some **Device Command** will require the pressing of the <ENTER> key to advance to the next field.

Hercules will continue to test entries for validity and advance to the next field until the entire cue has been entered. Then *Hercules* will display a <RETURN> symbol at the far right side of the cue line. Once verifying that the cue is correct, press the <ENTER> key. This will complete cue entry, cause *Hercules* to execute the cue (unless in **EDIT PROGRAM MODE**), and advance to the next cue line.

The following pages walk through entering a complete cue line.

HERCULES SHOW CONTROL SOFTWARE

ENTERING THE FIRST PROJECTOR COMMAND

Before programming the system can start, the software needs to be correctly configured for the theater. This can be done by sending a few simple commands to each individual device, and making sure that the system is functioning as planned. (It's much easier to spend a little time checking the system set up now, rather than spending a great deal of time troubleshooting after the whole program has been entered!)

Step 1: Begin in front of the computer, with *Hercules* started, in the main workspace. Notice that the cue number 0000 in the *Program Area* is highlighted. All cues will be entered in the *Program Area* below the dashed line.

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit

0000						
0001						
0002						
0003						
0004						

Step 2: Press the <TAB> key. The cue number is no longer highlighted, but there is an entry field with a blinking cursor in the next column, **Device Command**, labeled 'Dev Cmd'. *Hercules* is now waiting for a command to be entered.

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit

0000	<	>				
0001						
0002						
0003						
0004						

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Step 3: Enter 2N. As each keystroke is entered, *Hercules* checks to see that the entry is valid. If it is not, the program beeps and refuses to accept the entry. The prevents unknown commands from being entered.

As soon as enough of the **Device Command** has been typed for *Hercules* to uniquely identify the command, it will fill in the rest of the command, and print the description in the next column, labeled '**Cmd Description**'. In this example, the description is '**2 Sec Dissolve On**' because *Hercules* was told to ramp a lamp on over 2 seconds.

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit

0000	2N		2 Sec Dissolve On	<	>	
0001						
0002						
0003						
0004						

Step 4: Now *Hercules* needs to know which lamp to ramp on. Type in a **Device Code** that was entered into the theater's *Configuration File*. This section uses examples from the default *Configuration File* distributed with the *Hercules* software. Type in C1.

Once again, as soon as enough characters have been entered to uniquely identify the device, *Hercules* will finish the **Device Code**. Hercules will also fill in the **Device Name** as defined in the *Configuration File*.

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit

0000	2N		2 Sec Dissolve On	C1	CENTER SP #1	<+100>
0001						
0002						
0003						
0004						

HERCULES SHOW CONTROL SOFTWARE

Step 5: A **Device Command** and a **Device Code** have been entered in the **Program Area**. *Hercules* needs one last parameter so that the command can be executed. The cursor is in the column labeled **Limit**. Many of the commands used will not require an entry in this field. However, any time a lamp on command is given, *Hercules* needs to know the degree of illumination required.

When the theater's devices were entered into the **Configuration File**, a default maximum value was also entered. *Hercules* will assume the default value unless otherwise specified. To accept the default value of **+100**, simply press the <ENTER> key. To specify a different value, type the new value over the default value *Hercules* is displaying, and then press the <ENTER> key.

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	2N		2 Sec Dissolve On	C1	CENTER SP #1	+100 <
0001						
0002						
0003						
0004						

Step 6: This is the final chance to check this **Program Line** and be sure that this is indeed the command *Hercules* is to execute. Once satisfied that all is correct, press the <ENTER> key once again, and *Hercules* will execute the command.

As soon as the <ENTER> key is pressed, **C1 00** appears in the **Device Status Area**. This states that the slide projector **C1** is on, and that the slide tray is at position 00.

<ALT> (F)ile (E)dit (G)oto (M)ode (T)imes (S)pecial (Q)uit Hercules						
File: UNTITLED						
Mode: REAL TIME						
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	2N		2 Sec Dissolve On	C1	CENTER SP #1	+100
0001						
0002						
0003						
0004						
C1	00					

HERCULES SHOW CONTROL SOFTWARE

Congratulations! The first successfully entered and executed *Hercules* command has been completed. The process will become much faster and easier with more experience.

Step 7: The single command show can now be saved as a *Show File*. It currently resides in computer memory that will be lost when the computer is turned off. To save a show, use the *System Command Menu* that appears at the top of the screen.

Press and hold the <ALT> key, then press the <F> key. A new *System Command Menu* will appear.

<ALT>	(F)ile	(E)dit	(G)oto	(M)ode	(T)imes	(S)pecial	(Q)uit Hercules
File: UNTITLED							
Mode: REAL TIME							
Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit	

0000	2N		2 Sec Dissolve On	C1	CENTER SP #1	+100	
0001							
0002							
0003							
0004							
c1	00						

Step 8: Since this is a new file that has not yet been named, select the **Save (A)s** option by holding down the <ALT> key and pressing <A>. A list of existing show files will appear on the screen along with a dialog box asking for the name of the new *Show File*.

Choose and enter a name for the new *Show File*. When this file is needed in the future, it can be accessed through the <ALT> (F)ile (O)pen system commands.

<ALT>	(V)olume	(O)pen	(C)lose	(N)ew Folder	(S)ave	(Q)uit Saving
Pathname: C:\HERCULES						
	\$	TEST.SHW				
	\$	UNTITLED.SHW				
	•	ISA116.IHP				
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Enter new file name: <_ ></div>						

HERCULES SHOW CONTROL SOFTWARE

EDITING CUES

Editing existing cues is very similar to entering cues. Cues are available for editing only when the main *System Command Menu* is open and *Hercules* is not in **CLOCK DRIVE MODE**.

Navigate through the *Show File* using the keyboard so that the be to edited is highlighted. Once the target cue is highlighted, open it by pressing the <TAB> or <ENTER> key. The cue highlight will disappear and the input prompt consisting of a pair of brackets will appear in the cue code field around the existing entry. Make a new entry in the *Cue Code Field*, use the <TAB> key to accept the field as displayed and move on the next field, or use the <LEFT ARROW> and <RIGHT ARROW> keys in conjunction with normal keys to modify the existing field entry.

Hercules will function as when entering a cue for the first time. Each keystroke checked for legality, and refusing to accept invalid entries. In order for a change to take effect, the full cue line must be accepted by pressing <ENTER> at the end of the cue line. If it is decided not to edit the cue line from its original content, use the <LEFT ARROW> key to return to the cue number.

Remember that all changes made to existing program will only be saved if *Hercules* is told to do so using <ALT> (F)ile (S)ave. If the edited *Show File* is not saved, all changes made will be lost.

INSERTING CUES

To insert a new cue between existing cues, navigate through the *Show File* using the keyboard until the cue that represents the insertion point is highlighted. Depress the <CONTROL> key while simultaneously pressing the <A> key OR the <INSERT> key. The subsequent cue line will be moved down one line, and a space will open at this point. A new command can now be entered as before.

DELETING CUES

To delete an unwanted cue, navigate through the *Show File* using the keyboard until the offending cue is highlighted. Depress the <CONTROL> key while simultaneously pressing the <DELETE> key. The unwanted cue will be removed, and the remaining cues will be moved up to close the hole.

To delete large portions of the *Show File*, it is more efficient to use the Cut function, <ALT> (E)dit (X)Cut.

HERCULES SHOW CONTROL SOFTWARE

EXECUTING CUES

After a *Show File* has been opened and cue lines exist, the cues can be executed manually if so desired. To execute cue manually, *Hercules* must be displaying the main *System Command Menu* at the top of the screen. *Hercules* must also not be operating under **CLOCK DRIVE MODE**.

The cursor position in the *Show File* is indicated by the highlighted cue number. A single cue is executed by pressing the **<DOWN ARROW>** key. If *Hercules* is operating in **REAL TIME MODE** or **FOLLOW PROGRAM MODE**, the command will instantly be carried out. If *Hercules* is operating under **EDIT PROGRAM MODE**, *Hercules* will simply move to the next cue, and no commands will be executed because the communication data line is disabled.

Pressing the **<UP ARROW>** key while in **FOLLOW PROGRAM MODE** will cause *Hercules* to calculate the status of all devices as if the last command has not occurred. *Hercules* then sends a *Device Status Update* command to all devices, updates the *Device Status Area*, and moves up to the previous cue line.

Pressing the **<UP ARROW>** key while in **REAL TIME MODE** or **EDIT PROGRAM MODE** will cause *Hercules* to just move up to the previous cue line.

HERCULES SHOW CONTROL SOFTWARE

EXECUTING MULTIPLE CUES

Most of the time when advancing through a *Show File*, more than one cue at a time will need to be executed. To help accomplish this, individual cues will be organized into sets called *Cue Blocks*. Individual cues in *Cue Blocks* are meant to be executed at the same time. An example would be to fade on two slide projectors simultaneously, or cross-fade between two different images.

The simplest way to group cues into blocks is to use the *Hercules* command MQ or MANUAL CUE. Once individual cues are divided into groups separated by MQ, executing each *Cue Block* becomes a simple, one keystroke operation.

Here is an example:

Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit

0000	MQ		>>> MANUAL CUE <<<			
0001	3N		3 Sec Dissolve On	R1	RIGHT SP #1	+050
0002	3N		3 Sec Dissolve On	L1	LEFT SP #1	+050
0003	MQ		>>> MANUAL CUE <<<			
0004	3F		3 Sec Dissolve Off	R1	RIGHT SP #1	
0005	3F		3 Sec Dissolve Off	L1	LEFT SP #1	
0001	3N		3 Sec Dissolve On	C1	CENTER SP #1	+050
0007	MQ		>>> MANUAL CUE <<<			

In this illustration, the first *Cue Block* instructs two slide projectors to ramp lamps on to 50% intensity at the rate of a 3 seconds simultaneously. The second *Cue Block* instructs the two projectors that are on, to ramp off while the third slide projector ramps on to 50% at the same time.

To execute each *Cue Block*, the highlight the cue number for the associated MQ (MANUAL CUE), then press the <PAGE DOWN> key. If *Hercules* is in REAL TIME MODE or FOLLOW PROGRAM MODE the *Cue Block* will be executed, the *Device Status Area* will be updated, and *Hercules* will move to the start of the next *Cue Block*. If in EDIT PROGRAM MODE, *Hercules* will simply move to the start of the next *Cue Block*.

Pressing the <PAGE UP> key in FOLLOW PROGRAM MODE will cause *Hercules* to calculate the status of all devices as if the last *Cue Block* had not occurred, send *Device Status Update* command, update the *Device Status Area*, and move up to the start of the previous *Cue Block*. In REAL TIME MODE or EDIT PROGRAM MODE, *Hercules* will simply move to the start of the previous *Cue Block*.

Using *Cue Blocks* separated by MANUAL CUE allows creation of *Show Files* that execute complex cue sequences without having to manually type in cues. This can give great flexibility in presenting 'live', computer-assisted programs that leave the operator free to concentrate on interactions with the audience, rather than the technical requirements of the A/V presentation. A system using an optional hardwired or wireless remote control can offer even more presentation options.

HERCULES SHOW CONTROL SOFTWARE

THE WAIT CUE

One of the special *Hercules* commands is the `wait` command. The wait command causes *Hercules* to pause for a specified number of seconds before executing subsequent cues in a *Cue Block*. The length of the pause can range from 0.01 second to 99.99 seconds. Longer waits can be achieved by adding multiple waits immediately after one another.

The following example illustrates a ripple dissolve on of a seven projector *Panorama* using the `wait` cue. At the start of the *Cue Block*, the 4 second dissolve on begins immediately on the first panorama projector. After a pause of 0.2 seconds, the same dissolve on is started on the second projector. This sequence is followed until all seven projectors are fading up.

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ	>>> MANUAL CUE <<<			
0001	4N	4 Sec Dissolve On	PAN1A	PAN A SP #1	+100
0002	W0.20	Wait 0.20 Sec			
0003	4N	4 Sec Dissolve On	PAN2A	PAN A SP #2	+100
0004	W0.20	Wait 0.20 Sec			
0005	4N	4 Sec Dissolve On	PAN3A	PAN A SP #3	+100
0006	W0.20	Wait 0.20 Sec			
0007	4N	4 Sec Dissolve On	PAN4A	PAN A SP #4	+100
0008	W0.20	Wait 0.20 Sec			
0009	4N	4 Sec Dissolve On	PAN5A	PAN A SP #5	+100
0010	W0.20	Wait 0.20 Sec			
0011	4N	4 Sec Dissolve On	PAN6A	PAN A SP #6	+100
0012	W0.20	Wait 0.20 Sec			
0013	4N	4 Sec Dissolve On	PAN7A	PAN A SP #7	+100
0014	MQ	>>> MANUAL CUE <<<			

Note: The timing of the subsequent commands is determined relative to the first command. This means that the start time of the *Cue Block* can be changed without affecting the appearance of the ripple dissolve.

HERCULES SHOW CONTROL SOFTWARE

WAIT CUE PROPERTIES

Properties of the `WAIT` cue are:

1. A `WAIT` cue that is active (currently counting seconds) and visible on the screen will display an hourglass between the **Cue Number** and **Device Code** columns.
2. `WAIT` cues will not function correctly if the *Hercules Show Control Card* is not installed.
3. Pressing `<ESC>` before a `WAIT` cue has timed out causes the `WAIT` to be aborted, and the cues following the `WAIT` will not be executed.
4. The `WAIT` cue is a deferred command; it will not be executed as it is entered, but only at run time.
5. Up to eight different *Cue Blocks* using `WAITS` may be executing simultaneously. This is illustrated in the following example. The first *Cue Block* is the example from the previous page. The second *Cue Block* can begin before the first *Cue Block* ends. It does not have to wait for the completion of the first *Cue Block* to begin.

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ	>>> MANUAL CUE <<<			
0001	4N	4 Sec Dissolve On	PAN1A	PAN A SP #1	+100
0002	W0.20	Wait 0.20 Sec			
0003	4N	4 Sec Dissolve On	PAN2A	PAN A SP #2	+100
0004	W0.20	Wait 0.20 Sec			
0005	4N	4 Sec Dissolve On	PAN3A	PAN A SP #3	+100
0006	W0.20	Wait 0.20 Sec			
0007	4N	4 Sec Dissolve On	PAN4A	PAN A SP #4	+100
0008	W0.20	Wait 0.20 Sec			
0009	4N	4 Sec Dissolve On	PAN5A	PAN A SP #5	+100
0010	W0.20	Wait 0.20 Sec			
0011	4N	4 Sec Dissolve On	PAN6A	PAN A SP #6	+100
0012	W0.20	Wait 0.20 Sec			
0013	4N	4 Sec Dissolve On	PAN7A	PAN A SP #7	+100
0014	MQ	>>> MANUAL CUE <<<			
0015	M1N	Motor 1 On	SPCEFF1	SPECIAL EFFECT #1	
0016	W1.53	Wait 1.53 Sec			
0017	3N	3 Sec Dissolve On	SPCEFF1	SPECIAL EFFECT #1	+100
0018	MQ	>>> MANUAL CUE <<<			

HERCULES SHOW CONTROL SOFTWARE

THE LOOP CUE

Hercules provides simple looping techniques to execute repetitive cue sequences. **Loop** programming must follow these rules:

1. The start of the **Loop** must be defined using the **LS (LOOP START)** cue.
2. The end of the **Loop** and the number of repetitions is defined using the **RP# (REPEAT)** cue. The number of times the **Loop** is repeated is can range from 0 to 999 and is represented by the '#' character .

Note: The cue(s) inside a **Loop** are executed the **RP# (REPEAT)** plus one times.

3. The **Loop** cannot span multiple *Cue Blocks*.

The following example illustrates the construction of a **Loop** to flash a lamp one hundred times at a rate of five times per second. In this example, the lamp on time is the same as the lamp off time, one tenth of a second. For different effects, the lamp on and the lamp off time can be different.

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit

0000	MQ	>>> MANUAL CUE <<<			
0001	LS	Loop Start			
0002	LN	Lamp On	C1	CENTER SP #1	+100
0003	W0.10	Wait 0.10 Sec			
0004	LF	Lamp Off	C1	CENTER SP #1	
0005	W0.10	Wait 0.10 Sec			
0006	RP99	Repeat 99 Times			
0007	MQ	>>> MANUAL CUE <<<			

Note: The **LS (LOOP START)** and **RP# (REPEAT)** cues are deferred commands. They are not executed as they are entered, but only at run time.

HERCULES SHOW CONTROL SOFTWARE

NESTED LOOPS

Hercules allows **Loops** to be inserted inside other **Loops**. This is called nesting. Nests may be up to eight **Loops** deep. The following example illustrates this concept with two nested **Loops**. Notice that both **Loops** share the same starting point, the LS in cue #1. To calculate the number of times a nested **Loop** will execute, use the following formula:

$$\begin{aligned} \text{Total} &= (\# \text{ of repetitions of inside Loop}) * (\# \text{ of repetitions of outside Loop}) \\ \text{Total} &= (99 + 1) * (999 + 1) \\ \text{Total} &= (100) * (1000) \\ \text{Total} &= 100,000 \end{aligned}$$

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ	>>> MANUAL CUE <<<			
0001	LS	Loop Start			
0002	LN	Lamp On	C1	CENTER SP #1	+100
0003	W0.10	Wait 0.10 Sec			
0004	LF	Lamp Off	C1	CENTER SP #1	
0005	W0.10	Wait 0.10 Sec			
0006	RP99	Repeat 99 Times			
0007	RP999	Repeat 999 Times			
0008	MQ	>>> MANUAL CUE <<<			

SIMULTANEOUS LOOPS

Hercules allows the execution of up to eight **Loops** simultaneously. The following example demonstrates how two independent **Loops** can be executing at the same time. Here, the projector in the first **Loop** is ramping its lamp at one second intervals while the projector in the second **Loop** is ramping its lamp at three second intervals. Each **Loop** is associated with a different *Cue Block*, and the second *Cue Block* can be started while the first is still in progress.

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ	>>> MANUAL CUE <<<			
0001	LS	Loop Start			
0002	1A	1 Sec Alternate	C1	CENTER SP #1	
0003	W1.00	Wait 1.00 Sec			
0004	RP15	Repeat 15 Times			
0005	MQ	>>> MANUAL CUE <<<			
0006	LS	Loop Start			
0007	3A	3 Sec Alternate	C2	CENTER SP #2	
0008	W3.00	Wait 3.00 Sec			
0009	RP9	Repeat 9 Times			
0010	MQ	>>> MANUAL CUE <<<			

HERCULES SHOW CONTROL SOFTWARE

SEQUENTIAL LOOPS

Hercules allows the programming of an unlimited number of **Loops** to execute sequentially, as in the following example. Although this looks similar to the previous example, notice that both **Loops** are contained in the same *Cue Block*. This means that the second **Loop** will not start executing until the first **Loop** has completed.

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ	>>> MANUAL CUE <<<			
0001	LS	Loop Start			
0002	1A	1 Sec Alternate	C1	CENTER SP #1	
0003	W1.00	Wait 1.00 Sec			
0004	RP15	Repeat 15 Times			
0005	LS	Loop Start			
0006	3A	3 Sec Alternate	C2	CENTER SP #2	
0007	W3.00	Wait 3.00 Sec			
0008	RP9	Repeat 9 Times			
0009	MQ	>>> MANUAL CUE <<<			

LOOP CUE PROPERTIES

There are a few properties of the **Loop** cue to keep in mind when programming:

1. At any time, up to eight **Loops** can be active. This includes the sum of simple, nested, and simultaneous **Loops**. This does not mean that only eight **Loops** are allowed in the *Show File*, but that only eight **Loops** can be executing simultaneously.
2. Pressing <ESC> before a **Loop** has completed causes the **Loop** to be aborted, and all devices will remain in the state that they were in at the time the <ESC> key was pressed.

HERCULES SHOW CONTROL SOFTWARE

DEVICE ADDRESSING

The most common way to address a device controlled by the **UTCS**, when programming a *Show File*, is by individual **Device Addressing**. Devices are accessed using the **Device Code** that was entered into the system's *Configuration File* using the *Hercules Utilities Program*. Simply stated, only one device is instructed to do something per cue line. The previous examples have all been examples of individual **Device Addressing**. This is the easiest way to remember what device is being used with a particular command, and most cues in a Show File will be programmed in this manner.

However, there are times when it is much easier to issue the same command to multiple devices with a single cue line. An example would be dissolving a multi-projector *Panorama* on and off. The following example shows the number of repetitive cues used to address each slide projector individually.

Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ		>>> MANUAL CUE <<<			
0001	4N		4 Sec Dissolve On	PAN1A	PAN A SP #1	+100
0002	4N		4 Sec Dissolve On	PAN2A	PAN A SP #2	+100
0003	4N		4 Sec Dissolve On	PAN3A	PAN A SP #3	+100
0004	4N		4 Sec Dissolve On	PAN4A	PAN A SP #4	+100
0005	4N		4 Sec Dissolve On	PAN5A	PAN A SP #5	+100
0006	4N		4 Sec Dissolve On	PAN6A	PAN A SP #6	+100
0007	4N		4 Sec Dissolve On	PAN7A	PAN A SP #7	+100
0008	W30.00		Wait 30.00 Sec			
0009	4F		4 Sec Dissolve Off	PAN1A	PAN A SP #1	+100
0010	4F		4 Sec Dissolve Off	PAN2A	PAN A SP #2	+100
0011	4F		4 Sec Dissolve Off	PAN3A	PAN A SP #3	+100
0012	4F		4 Sec Dissolve Off	PAN4A	PAN A SP #4	+100
0013	4F		4 Sec Dissolve Off	PAN5A	PAN A SP #5	+100
0014	4F		4 Sec Dissolve Off	PAN6A	PAN A SP #6	+100
0015	4F		4 Sec Dissolve Off	PAN7A	PAN A SP #7	+100
0016	MQ		>>> MANUAL CUE <<<			

If all the slide projectors in the *Panorama* could be given the same command with a single cue, then it would have saved a great deal of typing.

Hercules provides two methods of addressing a **Group** of devices. The first is called **Group Addressing** and the second is called **Matrix Addressing**. Individual **Device Addressing**, **Group Addressing**, and **Matrix Addressing** can be freely intermixed within the same *Show File*. The operator is free to use whichever method will accomplish the necessary task in the most efficient manner possible.

HERCULES SHOW CONTROL SOFTWARE

GROUP ADDRESSING

Group Addressing allows up to 16 individual devices to be assigned to a **Group**. Once assigned the **Group**, all 16 devices can be accessed with a single cue. **Group Addressing** can be used with any **Device Type**. Seven slide projectors can be **Grouped** as a *Panorama*. Three snow projectors can be **Grouped** to cover the dome as a single effect. A number of single shot constellation projectors can be **Grouped** to display the Winter Triangle. Any set of devices that are often used together to create an effect, are a good candidates for **Group Addressing**.

The **Group** must be defined in the *Configuration File* using the *Hercules Utilities Program*. A **Device Code** and **Device Description** are given just like any single device, but the **Device Type** is defined as **GP**. When the **Device Type GP** is entered, a new dialogue box opens, as is illustrated below. This is where the **Device Codes** for the individual devices that are to make up this **Group** are entered.

The **Group Assignment** dialogue box is shown below. See the *Hercules Configuration File* section of the manual for more information on creating a **Group**.

```
<ALT> (N)ew (O)pen (S)ave Save(A)s (D)elete (P)rint (Q)uit Editor
File: HERCMS.CFG
Dvc# DevCode Description Type Unit# Slot# Branch Bank Scrn Init Max
17 PAN1A PAN A SP #1
18 PAN2A PAN A SP #2
19 PAN3A PAN A SP #3
20 PAN4A PAN A SP #4
21 PAN5A PAN A SP #5
22 PAN6A PAN A SP #6
23 PAN7A PAN A SP #7
24
25
26 PANA ALL PAN A SP
27
28
29
30
31
32
```

Device Group Assignments

Selected Device => **PANA**

PAN1A	PAN2A	PAN3A	PAN4A
PAN5A	PAN6A	PAN7A	< >

7 devices assigned (maximum 16)

(A) ccept changes or (Q) uit editing

```
EDIT DEVICE GROUPING - Enter device names for this group.
```

HERCULES SHOW CONTROL SOFTWARE

GROUP ADDRESSING CONTINUED

After assigning the individual *Panorama* slide projectors to a **Group** with the **Device Code** PANA, the number of cue lines needed to dissolve the *Panorama* on and off goes from this:

Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ		>>> MANUAL CUE <<<			
0001	4N		4 Sec Dissolve On	PAN1A	PAN A SP #1	+100
0002	4N		4 Sec Dissolve On	PAN2A	PAN A SP #2	+100
0003	4N		4 Sec Dissolve On	PAN3A	PAN A SP #3	+100
0004	4N		4 Sec Dissolve On	PAN4A	PAN A SP #4	+100
0005	4N		4 Sec Dissolve On	PAN5A	PAN A SP #5	+100
0006	4N		4 Sec Dissolve On	PAN6A	PAN A SP #6	+100
0007	4N		4 Sec Dissolve On	PAN7A	PAN A SP #7	+100
0008	W30.00		Wait 30.00 Sec			
0009	4F		4 Sec Dissolve Off	PAN1A	PAN A SP #1	+100
0010	4F		4 Sec Dissolve Off	PAN2A	PAN A SP #2	+100
0011	4F		4 Sec Dissolve Off	PAN3A	PAN A SP #3	+100
0012	4F		4 Sec Dissolve Off	PAN4A	PAN A SP #4	+100
0013	4F		4 Sec Dissolve Off	PAN5A	PAN A SP #5	+100
0014	4F		4 Sec Dissolve Off	PAN6A	PAN A SP #6	+100
0015	4F		4 Sec Dissolve Off	PAN7A	PAN A SP #7	+100
0016	MQ		>>> MANUAL CUE <<<			

To this:

Cue#	Dev	Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ		>>> MANUAL CUE <<<			
0001	4N		4 Sec Dissolve On	PANA	ALL PAN A SP	+100
0002	W30.00		Wait 30.00 Sec			
0003	4F		4 Sec Dissolve Off	PANA	ALL PAN A SP	+100
0004	MQ		>>> MANUAL CUE <<<			

In this example, **Group Addressing** significantly reduced the number of cue lines required to carry out the same command.

HERCULES SHOW CONTROL SOFTWARE

MATRIX ADDRESSING

Matrix Addressing can only be used with slide projectors. The *Configuration File* must include the slide projector's **Matrix Address** before a projector can be accessed in this fashion.

The **Matrix** is illustrated below shows two sets of *Panorama* projectors, as well as a set of *All Sky* projectors. The numbered rows represent different **Banks** of projectors, while the lettered columns represent different projector **Screens**. This means that each projector can be identified with a combination of a number and letter such as 1A, 2G, or 7F. A total of 56 slide projectors can be represented in this way, arranged in eight **Banks** of seven **Screens** each.

	A	B	C	D	E	F	G
1	PAN1A	PAN2A	PAN3A	PAN4A	PAN5A	PAN6A	PAN7A
2	PAN1B	PAN2B	PAN3B	PAN4B	PAN5B	PAN6B	PAN7B
3	+	+	+	+	+	+	+
4	+	+	+	+	+	+	+
5	+	+	+	+	+	+	+
6	+	+	+	+	+	+	+
7	+	+	+	+	+	+	+
8	AS1	AS2	AS3	AS4	AS5	AS6	+

The **Matrix Address** of *Panorama 1*, **PANA** is 1: ABCDEFG
 The **Matrix Address** of *Panorama 2*, **PANB** is 2: ABCDEFG
 The **Matrix Address** of the *All Sky*, **ALLSKY** is 8: ABCDEF

The illustration below shows the **Matrix Addresses** defined above used to dissolve on **PANA**, wait 10 seconds before cross-fading into **PANB**, dissolving off **PANB** after 20 seconds, and then dissolving on the *All Sky* projectors with a MQ (MANUAL CUE).

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	MQ	>>> MANUAL CUE <<<			
0001	4N	4 Sec Dissolve On	/Matrix: 1	:ABCDEFGG	+100
0002	W10.00	Wait 10.00 Sec			
0003	4D	4 Sec Dissolve	/Matrix: 12	:ABCDEFGG	
0004	W20.00	Wait 20.00 Sec			
0005	4D	4 Sec Dissolve	/Matrix: 2	:ABCDEFGG	
0006	MQ	>>> MANUAL CUE <<<			
0007	4N	4 Sec Dissolve On	/Matrix:	8:ABCDEF	+100

Note: Use the forward slash </> character in the **Device Code** field to enter the **Matrix Address** of the projector(s) need for the cue. To quit entering a **Matrix Address** and use an individual **Device Address** or a **Group Address** instead, press the forward slash </> again.

HERCULES SHOW CONTROL SOFTWARE

UTCS GLOBAL ISSUES

The *Universal Theater Control System* (UTCS) is designed to be as reliable and ‘goof proof’ as possible. In order to insure the best performance, theater initial conditions must be under control and well defined. A brief look will be given to these issues, and at the commands *Hercules* can issue to restore the theater to these initial conditions.

INITIAL CONDITIONS AND THE CONFIGURATION FILE

The *Configuration File* contains a field that defines the initial condition for every device controlled by the UTCS. If the device includes a lamp, the field ‘**Init**’ allows an initial brightness level for that lamp to be defined. The values may range from 0 to 100%. Any lamp with a non-zero value as the ‘**Init**’ field will be activated to that level any time the system issues an `INITSYS` or a `HOMESYS` command.

The ‘**Init**’ field is also used by MC10 switch groups, and allows the presetting of certain switches. Any switch group with a nonzero value in the ‘**Init**’ field will automatically be preset to the ‘**Init**’ value any time the system issues an `INITSYS` or a `HOMESYS` command.

All other device are not affected by their ‘**Init**’ field values.

THE INITSYS COMMAND

The `INITSYS` command forces all devices in the system to assume their initial conditions. The following actions occur:

1. All lamps assume their ‘**Init**’ field value in the *Configuration File*.
2. All MC10 switch groups assume their ‘**Init**’ field setting in the *Configuration File*.
3. All motions with home sensors seek home.
4. All other motors, switches, and functions turn off.

THE HOMESYS COMMAND

The `HOMESYS` command forces all devices in the system to assume their initial conditions, just like the `INITSYS` command. In addition, all slide trays are returned to the zero position. The following actions occur:

1. All lamps assume their ‘**Init**’ field value in the *Configuration File*.
2. All MC10 switch groups assume their ‘**Init**’ field setting in the *Configuration File*.
3. All motions with home sensors seek home.
4. All other motors, switches, and functions turn off.
5. All slide projectors home their trays (return to zero position).

HERCULES SHOW CONTROL SOFTWARE

UTCS USE OF HOMESYS AND INITSYS

The *Universal Theater Control System* (UTCS) will automatically issue a HOMESYS or INITSYS command at certain times in order to maintain synchronicity between *Hercules* and the rest of the system. In addition, the commands can be issued manually from the *Program Field*, or programmed into a *Show File*. The following is a summary of actions that invoke these commands:

The HOMESYS command is issued when:

1. *Hercules* starts up.
2. The HOMESYS command is issued manually from the *Program Field*.
3. *Hercules* executes the HOMESYS command as part of a *Show File*.
4. An <ALT> (F)ile (N)ew command is issued.

The INITSYS command is issued when:

1. An <ALT> (M)ode (S)tandby command issued.
2. The INITSYS command is issued manually from the *Program Field*.
3. *Hercules* executes the INITSYS command as part of a *Show File*.

PROGRAMMING NOTE:

Because the UTCS does not automatically home the slide trays when a *Show File* is opened, **Find Slide** commands should be issued at the top of each *Show File* to insure that the slide trays will be in the correct location during *Device Status Updates*. If these commands are not included, the system will appear to fail to track the slide tray locations. This will be especially apparent if the show is shuttled to another section and restarted.

GLOBAL COMMANDS AFFECTING MANUAL OPERATIONS

Many UTCS installations use intelligent or ‘system aware’ manual controls such as *Cygnus Manual Control Panels* or MC10 Protocol Translators. For these installations, two additional commands are available to set the entire system for manual or automation control.

THE MANSYS COMMAND:

The MANSYS command enables manual control and disables computer control on all devices. The MANSYS command is issued when:

1. The MANSYS command is issued manually from the *Program Field*.
2. *Hercules* executes the MANSYS command as part of a *Show File*.
3. The operator exits *Hercules*.

THE AUTOSYS COMMAND:

The AUTOSYS command disables manual control and enables computer control on all devices. The AUTOSYS command is issued when:

1. The AUTOSYS command is issued manually from the *Program Field*.
2. *Hercules* executes the AUTOSYS command as part of a *Show File*.
3. The operator starts *Hercules*.

HERCULES SHOW CONTROL SOFTWARE

AUTOMATED PROGRAMMING INTRODUCTION

The *Universal Theater Control System* (UTCS) is optimized for fully automatic show playback and capable of perfectly synchronizing the devices it controls with the presentation soundtrack. For this to be possible, an electronic timing signal, called *Time Code*, is recorded onto the soundtrack with a device such as the *Aquila Time Code Controller* prior to show programming. The time signal allows *Hercules* to uniquely identify any point in the show. It is used during show programming and playback to specify the exact sequence of actions taking place at any given time during the show. The *Time Code* signal provides *Hercules* with the current show time.

During a typical show playback operation, the *Aquila* is responsible for reading and interpreting the electronic time signals and presenting them to *Hercules*. *Hercules* uses these signals to synchronize its internal clock to the *Time Code* recorded on the soundtrack. The internal clock has a resolution of 10 milliseconds, or 1/100th of a second.

To use this timing information to control program playback, time cues are placed in the *Show File*. Like the MANUAL CUE (MQ), the TIME cue separates blocks of device cues. In contrast to the MANUAL CUE, TIME identifies the show time at which a block of cues will be executed.

The following example illustrates this concept.

Cue#	Dev Cmd	Cmd Description	Dev Code	Device Name	Limit
0000	TIME	00:00:05.00			
0001	FS6	Find Slide #6	C1	CENTER SP #1	+100
0002	M1N	Motor 1 On	SPCEFF1	SPECIAL EFFECT #1	
0003	TIME	00:00:12.20			
0004	5D	5 Sec Dissolve	C1	CENTER SP #1	
0005	TIME	00:00:13.50			
0006	14D	14 Sec Dissolve	SPCEFF1	SPECIAL EFFECT #1	

At a show time of 5.0 seconds, the C1 slide projector is instructed to find slide #6, and motor #1 on the special effect projector is activated. At 12.2 seconds, a 5 second lamp ramp begins on the C1 slide projector, and at 13.5 seconds, a 14 second lamp ramp begins on the special effect.

Note that *Time Code* cues must be in chronological order to execute correctly.

TIME CODE SOURCES

The *time code* information can come from one of three sources.

1. Most commonly, a *Time Code* signal originates from an external source such as a soundtrack. This signal is decoded by the *Aquila* and sent to *Hercules*.
2. The *Aquila* can provide a *Time Code* signal by pressing the RUN button on the front panel.
3. *Hercules* can use its own internal clock to drive the program. This can be done by pressing the <DOWN ARROW> key while in CLOCK DRIVE MODE.

HERCULES SHOW CONTROL SOFTWARE

AUTOMATED PLAYBACK

To play back a *Time Code* based show, *Hercules* must operate in a special mode called **CLOCK DRIVE MODE**. When in **CLOCK DRIVE MODE**, the highlight is removed from the current cue number, and an arrow pointing to the start of the next cue block is added to the display between the current cue number and the current cue code. While in **CLOCK DRIVE MODE**, the *Show File* cannot be edited, and command menu selections are not available. **CLOCK DRIVE MODE** can be exited by pressing the <ESC> key to return to **REAL TIME MODE**.

1. Automatic *Show File* playback can be accomplished by:
2. Open the appropriate *Show File* using the <ALT> (F)ile (O)pen selection from the command menu.
3. Engage **CLOCK DRIVE MODE** USING the <ALT> (M)ode (C)lock Drive selection from the command menu.
4. Start the *Time Code* source (soundtrack, *Aquila*, or *Hercules* internal clock).

As soon as *Hercules* receives *Time Code* information, it will locate the appropriate section of the *Show File*, calculate the correct *Device Status* for each device in the system, and send *Device Commands* to each device to match the *Show File*. This insures that show playback can begin anywhere in the *Show File* with each device at its expected position.

The *Time Code* source may be halted at any time. Program execution will halt, excepting any *Cue Blocks* or **Loops** that were already in progress. Playback may be resumed at any point, with *Hercules* once again adjusting projectors to match the appropriate point in the show.

If the *Time Code* source is also controlled by the **UTCS**, the audio server (Fostex VF160, D108, D2424LV, etc.) will need to be added to the *Configuration File* with the **Device Type** left undefined (blank). Otherwise, *Hercules* will attempt to update the audio server, and possibly interrupt the soundtrack and *Time Code* playback.

At the end of a show, *Hercules* will automatically return to **REAL TIME MODE**. *Hercules* may be manually disengaged from **CLOCK DRIVE MODE** by pressing the <ESC> key. The first time the <ESC> is pressed, the mode will revert to **REAL TIME MODE**. A second press of the <ESC> key will result in *Cue Blocks*, **WAITS**, and **Loops** halting.

HERCULES AUTOSTART FEATURE

Hercules includes an autostart feature that allows a *Show File* to be opened, and even execute a command list if desired. When *Hercules* is started, it looks for a *Show File* named **STARTUP.SHW**. If a *Show File* called **STARTUP** exists, *Hercules* automatically loads the file, enters **CLOCK DRIVE MODE**, and readies the system for playback. If the first command in the **STARTUP** is **TIME 00:00:00.00**, *Hercules* will automatically execute the first *Cue Block*. This feature is useful mostly in non-traditional planetarium settings, such as theater displays with one program running for a long period of time. Planetariums that run one program for an extended period of time may want to re-name the single program, **STARTUP**, for the duration of the show run.

A more useful feature is the **TIME 00:00:00.00** cue. When entered as the first cue in a program, it causes *Hercules* to immediately enter **CLOCK DRIVE MODE** and execute the first *Cue Block*. The first *Cue Block* can be set up to execute slowly with a series of **WAIT** cues or, **MQ (MANUAL CUES)** can be used to step through a set-up sequence.

HERCULES SHOW CONTROL SOFTWARE

AUTOMATED SHOW PROGRAMMING

Programming **TIME** cues that separate *Cue Blocks* can be accomplished in a couple different ways. First, the value of the **TIME** cue can be determined manually by watching the show time display and then noting when events are scheduled to occur. Then, each individual **TIME** can be entered into the **TIME** cue argument.

Alternately, **TIME** cues can be calculated automatically by *Hercules* using the **TX (TIME X)** cue instead of a **TIME** cue, and the following procedure:

1. Enter the **Device Commands** into the *Show File*, preceding all cue blocks with a **TX** cue.
2. Go to a **TIME** cue in the *Show File* prior to any **TX** cue, or to the first **TX** cue in the *Show File*.
3. Engage the **CLOCK DRIVE MODE**. (<ALT> **(M)**ode **(C)**lock)
4. Start the *Time Code* source (soundtrack, *Aquila*, or *Hercules* internal clock). The *Time Code* will be displayed in the upper right-hand corner of the computer monitor.
5. As the *Show File* plays back, *Hercules* will pause at each **TX** cue. At the correct **TIME** in the show, press any key (except <ESC>). *Hercules* will automatically replace the **TX (TIME X)** cue with a **TIME** cue including the current show time, and move on the next *Cue Block*.
6. Exit this procedure by hitting the <ESC> key.

EDITING AIDS FOR AN AUTOMATED SHOW

Individual **TIME** cues can be edited easily, using the procedure described earlier to edit a single cue. This allows the **TIME** of a cue to be changed with only a few keystrokes. For performing larger scale edits on the **TIME** cues, special commands are available from the *System Command Menu*.

If, during editing, the **TIMES** change so much that they are no longer in chronological order, the <ALT> **(T)**ime **(J)**ustify command can be invoked from the *System Command Menu*. This will sort a selected section of the *Show File* by **TIME** and insure that all **TIME** cues in the *Show File* are chronologically correct.

If a section of the *Show File* needs to be uniformly shifted earlier or later in time, the <ALT> **(T)**ime **(O)**ffset command can be used.

If a section of the *Show File* needs to be redone, use the <ALT> **(T)**ime **(R)**eplace command to replace all **TIME** cues in the selected program file section with **TX** cues.

HERCULES SHOW CONTROL SOFTWARE

UTCS PROGRAMMING COMMANDS

The *Universal Theater Control System* (UTCS) is a cue-based control system, so all **Device Commands** are in the form of discrete commands, or cues. Some cues are carried out instantaneously, like those that turn switches on or off. Other cues start processes that occur over time, like gradual lamp fades. In the UTCS, everything that happens is the result of a command issued from *Hercules*.

The UTCS can control many different types of devices with different operating characteristics through one central and uniform user interface. Because of the wide variety of devices and device functions, this results in a large number of commands. Some commands are valid for only one **Device Type**, while other commands are valid for several **Device Types**. Occasionally, this can be confusing, especially for novice users.

The following section of this manual presents the entire collection of **Device Commands** that exist for the UTCS. Commands are grouped by **Device Type**, so, if a command is used with more than one **Device Type**, it will appear multiple times.

A short description of each command is presented here. More detailed explanations can be found under sections devoted to each individual **Device Type** and interface. A *Hercules Quick Reference* guide containing an abbreviated version of this command list/ description can be found in the appendix to this manual.

Please experiment with these **Device Commands**. The UTCS will prevent the theater devices from being hurt. A **Device Command** unique to a slide projector can be sent to a special effect projector by mistake, but the system will issue an *Error Message* before an attempt at execution takes place.

Have fun!

HERCULES SHOW CONTROL SOFTWARE

SLIDE PROJECTOR COMMANDS (TYPE SP)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp in ramp of # seconds duration. Slides are advanced by one tray position at the end of the down ramp.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration. Slides are advanced by one tray position at the end of the down ramp.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration. Slides are advanced by one tray position at the end of the down ramp.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly. Slide trays are not advance when lamp turns off.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly. Slide trays are not advance when lamp turns off.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off. Slide trays do not advance.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
PLMP	Pulse Lamp	Triggers ½ second lamp pulse.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. F0,0 disables flashing. This command is a layered command. The lamp must be ramped on with another command to see the effect. After the lamp is faded down, a F0,0 cue must be entered to disable the flash.
FS#	Find Slide # (0 ≤ # ≤ 80)	Access slide in tray position #.
PF	Projector Forward	Advances tray position by one slide.
PR	Projector Reverse	Reverses tray position by one slide.
PH	Projector Home	Turns lamp off. Reverses tray until home sensor is reached, or until tray has been reversed 81 times.
PWRON	Power On	Activates projector power manually.
PWROFF	Power Off	Returns projector power to automatic cycling.

HERCULES SHOW CONTROL SOFTWARE

SPECIAL EFFECT COMMANDS (TYPE FX)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
PLMP	Pulse Lamp	Triggers ½ second lamp pulse.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. FO,0 disables flashing. This command is a layered command. The lamp must be ramped on with another command to see the effect. After the lamp is faded down, a FO,0 cue must be entered to disable the flash.
M1N	Motion 1 On	Activates special effect motion #1.
M1F	Motion 1 Off	Deactivates special effect motion #1.
MiR	Motion 1 Reset	Instructs special effect motion #1 to seek HOME position.
PM1	Pulse Motion 1	Triggers ½ second pulse on motion #1.
M2N	Motion 2 On	Activates special effect motion #2.
M2F	Motion 2 Off	Deactivates special effect motion #2.
PM2	Pulse Motion 2	Triggers ½ second pulse on motion #2.
PH	Projector Home	Turns lamp off. Homes special effect motion #1.
PWRON	Power On	Activates projector power manually.
PWROFF	Power Off	Returns projector power to automatic cycling.

HERCULES SHOW CONTROL SOFTWARE

SLEW-ZOOM COMMANDS (TYPE PS)

Hercules Command	Command Name	Command Description
INIT	Initialize	Triggers sequence to determine motion limits.
RT=#	Rate = (0 ≤ # ≤ 100)	Runs slew-zoom in positive direction at # at % (Limit) of full rate.
RT=-#	Rate = -(0 ≤ # ≤ 100)	Runs slew-zoom in negative direction at # at % (Limit) of full rate.
PS=#	Position = (0 ≤ # ≤ 255)	Finds slew-zoom position # at % (Limit) of full rate.

HERCULES SHOW CONTROL SOFTWARE

8×1 DUBHE COMMANDS (TYPE D8)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
PLMP	Pulse Lamp	Triggers ½ second lamp pulse.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. F0,0 disables flashing. This command is a layered command. The lamp must be ramped on with another command to see the effect. After the lamp is faded down, a F0,0 cue must be entered to disable the flash.
DB#	Dubhe Bank (1 ≤ # ≤ 8)	Sets <i>Dubhe Bank</i> to #.
DB+	Increment Dubhe Bank	Sets next <i>Dubhe Bank</i> .

HERCULES SHOW CONTROL SOFTWARE

4×2F DUBHE COMMANDS (TYPE DF)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
PLMP	Pulse Lamp	Triggers ½ second lamp pulse.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. FO,0 disables flashing. This command is a layered command. The lamp must be ramped on with another command to see the effect. After the lamp is faded down, a FO,0 cue must be entered to disable the flash.
DB#	Dubhe Bank (1 ≤ # ≤ 8)	Sets <i>Dubhe Bank</i> to #.
DB+	Increment Dubhe Bank	Sets next <i>Dubhe Bank</i> .
PWRON	Power On	Activates projector power manually.
PWROFF	Power Off	Returns projector power to automatic cycling.

HERCULES SHOW CONTROL SOFTWARE

4×2M DUBHE COMMANDS (TYPE DM)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
PLMP	Pulse Lamp	Triggers ½ second lamp pulse.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. F0,0 disables flashing. This command is a layered command. The lamp must be ramped on with another command to see the effect. After the lamp is faded down, a F0,0 cue must be entered to disable the flash.
DB#	Dubhe Bank (1 ≤ # ≤ 8)	Sets <i>Dubhe Bank</i> to #.
DB+	Increment Dubhe Bank	Sets next <i>Dubhe Bank</i> .
M2N	Motion 2 On	Activates special effect motion.
M2F	Motion 2 Off	Deactivates special effect motion.

HERCULES SHOW CONTROL SOFTWARE

MC10 LEVEL/ RELAY CARD (LRC) COMMANDS (TYPE LR)

Hercules Command	Command Name	Command Description
#A	# Sec Alternate (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#D	# Sec Dissolve (0.1 ≤ # ≤ 999.9)	Changes state of lamp (on to off or off to on) in a ramp of # seconds duration.
#N	# Sec Dissolve On (0.1 ≤ # ≤ 999.9)	Lamp dims up in a ramp of # seconds duration to a lamp level of % (Limit). Can be used to ramp from one % (Limit) to new % (Limit).
#F	# Sec Dissolve Off (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
#FNF	# Sec Dissolve Off (No Forward) (0.1 ≤ # ≤ 999.9)	Lamp dims down in ramp of # seconds duration.
FA	Fast Alternate	Changes state of lamp (on to off or off to on) instantly.
HC	Hard Cut	Changes state of lamp (on to off or off to on) instantly.
LN	Lamp On	Turns lamp on to a level of % (Limit).
LF	Lamp Off	Turns lamp off.
FZ	Freeze	When issued during a lamp ramp, the ramp will freeze at that level. When issued again, the lamp ramp will resume.
PLMP	Pulse Lamp	Triggers ½ second lamp pulse.
F#, #	Flash Lamp #1, #2 (0 ≤ # ≤ 99)	Flashes lamp at regular intervals. #1 represents 'on' time in system heartbeats; #2 represents 'off' time in system heartbeats. F0,0 disables flashing. This command is a layered command. The lamp must be ramped on with another command to see the effect. After the lamp is faded down, a F0,0 cue must be entered to disable the flash.
SN	Switch On	Activates LRC relay.
SF	Switch Off	Deactivates LRC relay.

MC10 GENERAL VALUE CARD COMMANDS (TYPE GV)

Hercules Command	Command Name	Command Description
RT=#	Rate = (0 ≤ # ≤ 100)	Runs slew-zoom in positive direction at # at % (Limit) of full rate.
RT=-#	Rate = -(0 ≤ # ≤ 100)	Runs slew-zoom in negative direction at # at % (Limit) of full rate.
RMP#	Ramp # (0 ≤ # ≤ 100)	Ramps speed in # seconds to rate of % (Limit) of full rate.

MC10 SWITCH CARD (SW8) COMMANDS (TYPE S8, 18, 24))

Hercules Command	Command Name	Command Description
S#N	Switch # On (1 ≤ # ≤ 8)	Activates relay # on SW8 card.
S#F	Switch # Off (1 ≤ # ≤ 8)	Deactivates relay # on SW8 card.

HERCULES SHOW CONTROL SOFTWARE

AQUILA AND GEMINI SWITCH CLOSURE COMMANDS (TYPE S1)

Hercules Command	Command Name	Command Description
SN	Switch On	Activates <i>Aquila</i> or <i>Gemini</i> switch closure.
SF	Switch Off	Deactivates <i>Aquila</i> or <i>Gemini</i> switch closure.
SPLS	Switch Pulse	Triggers ½ second pulse to <i>Aquila</i> or <i>Gemini</i> switch closure.

AUDIO TAPE MACHINES VIA AQUILA RELAY COMMANDS (TYPE S1)

Hercules Command	Command Name	Command Description
PLAY	Play	Plays tape.
PAUSE	Pause	Pauses tape.
STOP	Stop	Stops tape transport.
FASTFWD	Fast Forward	Fast forwards the tape.
REWIND	Rewind	Rewinds tape.
RECORD	Record	Activates record mode on tape deck.

HERCULES SHOW CONTROL SOFTWARE

PROGRAM FLOW COMMANDS

Hercules Command	Command Name	Command Description
MQ	Manual Cue	Show execution halts until key or remote cue button is pressed.
TX	Time X	Unknown time cue. Primarily used in while programming new show. If Hercules is in CLOCK DRIVE MODE , then the press of any key, except <esc> , will cause tx to be replaced with the current clock time.
TIME	Time (hh:mm:ss:ff)	Used when running <i>Show Files</i> in CLOCK DRIVE MODE . When current time is equal to or greater than time cue, all commands in cue time block will be executed.
W#	Wait # Seconds ($0.01 \leq \# \leq 99.99$)	Forces a delay of # seconds before execution of the next command. The Hercules Control Interface Card must be installed for this command to function correctly.
LS	Loop Start	Defines the start of a repeat loop.
RP#	Repeat Loop # Times ($0 \leq \# \leq 999$)	Defines the end of a repeat loop and how many times loop will repeat.
LABEL	Label <??????>	Seven character identifier.
CHAIN	Chain <filename>	Loads and executes next program segment.
GCUE#	Go to cue # ($0 \leq \# \leq \text{max program cue \#}$)	Jumps to cue # and continues program execution

GLOBAL SYSTEM AND MISCELLANEOUS COMMANDS

Hercules Command	Command Name	Command Description
AUTODVC	Set Device Auto	Disables MANUAL MODE and enables AUTO MODE of the addressed device.
MANDVC	Set Device Manual	Enables MANUAL MODE and disables AUTO MODE of the addressed device.
AUTOSYS	Set System Auto	Disables MANUAL MODE and enables AUTO MODE for all devices.
MANSYS	Set System Manual	Enables MANUAL MODE and disables AUTO MODE for all devices.
INITSYS	Initialize System	Returns all lamp levels and MC10 switch settings to their INIT state, deactivates all motors, and slide trays hold current positions.
HOMESYS	Home All Devices	Returns all lamp levels and MC10 switch settings to their INIT state, deactivates all motors, and slide trays find HOME position.

HERCULES SHOW CONTROL SOFTWARE

EDITING AND CONTROL COMMANDS

Hercules Command	Command Name	Command Description
<CONTROL><A>	Add	Add (insert) a cue in current <i>Show File</i> .
<CONTROL><INSERT>	Add	Add (insert) a cue in current <i>Show File</i> .
<CONTROL><DELETE>	Delete	Delete a cue in current <i>Show File</i> .
<CONTROL><S>	Skip	Skip a cue in current <i>Show File</i> . Advances to next cue without executing in REAL TIME MODE only.
<CONTROL>	Back	Go back to previous LABEL in current <i>Show File</i> .
<CONTROL><N>	Next	Go to next LABEL in current <i>Show File</i> .
<CONTROL><R>	Night Vision	Toggles night vision screen display mode. Screen toggles red or white.
<CONTROL><HOME>	Home	Go to first cue in current <i>Show File</i> .
<CONTROL><END>	End	Go to last cue in current <i>Show File</i> .
<ENTER>	Enter	Denotes end of keyboard entry when necessary.
<TAB>	Tab	When editing existing cues, advance to next cue field entry.
<RIGHT ARROW>	Rewrite	Rewrite existing cue entries.
<LEFT ARROW>	Backspace	Backspace on existing cue entries.
<DOWN ARROW>	Advance	Advance one cue when executing or selecting.
<UP ARROW>	Reverse	Reverse one cue when executing or selecting.
<ESC>	Escape	First press exits CLOCK DRIVE MODE and returns to REAL TIME MODE . Second press terminates LOOPS , WAITS , and <i>Aquila</i> time code writing.

DISPLAY MANIPULATION COMMANDS

Hercules Command	Command Name	Command Description
<	Left	Shift Device Status Display left one column.
>	Right	Shift Device Status Display right one column.

HERCULES SHOW CONTROL SOFTWARE

DOS BIOS ERROR MESSAGES

The following is a list of **Dos** and/ or **Bios** error messages that can be received from the host computer of the *Hercules Central Processor*. These messages are generated by the host computer system and not the *Hercules Show Control Software*. If these messages are encountered, then there may be a host computer issue that will need to be resolved before the *Hercules Central Processor* can continue to function reliably.

Invalid Function Number

File Not Found

Path Not Found

No Handles Available

Access Denied

Invalid Handle

Memory Controlblocks Destroyed

Insufficient Memory

Invalid Memory Block Address

Invalid Environment

Invalid Format

Invalid Access Code

Invalid Data

Not Enough Room To Save File

Invalid Drive

Attempt To Remove Current Directory

Not The Same Device

No More Files

Disk Write Protected

Unknown Unit

Drive Not Ready

DOS BIOS ERROR MESSAGES CONTINUED

Unknown Command

CRC Error

Bad Request Structure Length

Seek Error

Unknown Media Type

Sector Not Found

Out Of Paper

Write Fault

Read Fault

General Failure

Sharing Violation

Lock Violation

Invalid Disk Change

FCB Unavailable

Sharing Buffer Overflow

Unable To Complete File Operation

Print Queue Full

Not Enough Space For Print File

Print File Deleted

File Already Exists

Cannot Make Directory Entry

Failure On INT 24

HERCULES SHOW CONTROL SOFTWARE

HERCULES SHOW CONTROL SOFTWARE ERROR MESSAGES

The following is a list of error messages that can issued by the *Hercules Central Processor*. If these messages are encountered, . . .

PROGRAM FILE FULL

FILE NAME MISSING

NOTHING TO PASTE

NOT ENOUGH ROOM

FILE IS EMPTY

NOT ENOUGH BUFFERS

TOO MANY DEVICES ON ONE CHANNEL

MISSING INTERFACE

DEVICE/ UNIT/ SLOT MISMATCH

PRINTER NOT READY

MOTION HOMING

MOTION INTERLOCKED

CHECKSUM ERROR

ILLEGAL SLOT

BAD ENTRY - TRY HH//DD/MM/YY

BAD ENTRY - TRY HH:MM:SS.TT

COMMAND/ UNIT MISMATCH

COMMAND/ DEVICE MISMATCH

UNIT/ TYPE MISMATCH

ARGUMENT OUT OF RANGE

ALL DIMMERS BUSY ON THIS UNIT

TOO MANY SIMULTANEOUS WAITS

HERCULES SHOW CONTROL SOFTWARE

HERCULES SHOW CONTROL SOFTWARE ERROR MESSAGES CONTINUED

TOO MANY SIMULTANEOUS REPEATS

UNSUPPORTED UNIT NUMBER

NO HERCULES CARD INSTALLED

MATRIX POSITION EMPTY

NO DEVICES ASSIGNED TO THIS GROUP

TOO MANY DEVICES ASSIGNED TO THIS GROUP

NOT AN AQUILA DEVICE

NO INTERFACE INSTALLED

COMM BUFFER FULL

BCD-5000 NOT READY

BUFFER FLUSHED

DRIVER NOT INSTALLED

BUFFER ERROR

BAD ISA COMMAND

HERC FIFO ERROR

HERC NOT TAKING DATA

BAD IHP DATA RECORD

BAD GOTO ARGUMENTS

COMMUNICATION FAILURE UNIT ##

COMMUNICATION ERROR

BAD STATUS RETURN

BAD REMOTE COMMAND

HERCULES SHOW CONTROL SOFTWARE

HERCULES SHOW CONTROL SOFTWARE MESSAGES

The following is a list of messages that can issued by the *Hercules Central Processor*. These messages can occur in the normal operation of the UTCS, and should not cause undo concern.

UPDATING PROJECTOR STATUS

CLOCK STOPPED

DEVICE IN MANUAL MODE

WAITING FOR TIMECODE RECYCLE

READY TO CONTINUE

REMOTE COMMAND EXECUTED

DATA TRANSFER MAXED OUT