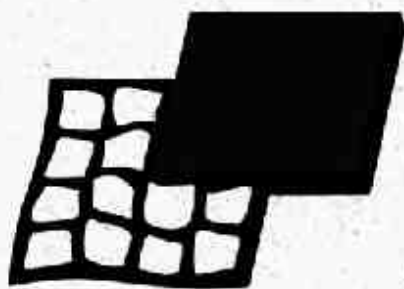# DraCo
SYSTEMS INC.

DraCo Vision
Manual

DraCo

The Nonlinear Workstation

Credits

Hardware: Harmut Sprave

Software: Henning Friedl, Claus Bonnoff, and Edwin Bielawski

Manual: Sherwood Stockwell, and Doug Nakakihara

Contents

Preface

Welcome to the Preliminary manual for the DraCo Workstation. Product launches are always a major undertaking and it is hard to have all the ducks lined up right at the start.

Since there is a necessary lag between Software Development, and Documentation, we have produced a manual that covers the core features in the software, but does not delve into the more complex operations, which have been going through a great deal of modification in recent months.

The intent of this manual is to provide an overview of using the DraCo Workstation as a nonlinear editing system. Initial sections of the manual have been detailed to provide a novice computer user with enough information to get their job done, without having to get a degree in computer science. It is hoped that the explication of the DraCo Vision Editing Software's core functionality will keep the interest of more advanced users.

On-line Help

There is a wealth of information in the on-line help file. Access on-line help by pressing the help (hilfe) key on the keyboard while the DraCo Vision Editing Software is running.

Technical Support

If at any time you have problems with your DraCo Workstation, which can not be resolved by the following documentation, please reach us at

DraCo Systems Technical Support: 303-440-5399

Internet email: draco-support@draco.com

Manual Feedback

If you have specific input on the documentation, please contact

Sherwood Stockwell · CVGS

Internet email: stockwel@cvgs.com

Manual Typographic Conventions

Formatting Convention	Type of Information
Italic type	Used for specialized terms or emphasized information.
SMALLCAPS	All key names will be shown in small capital letters, like ENTER or CTRL.
Menu\Submenu	Menu items can sometimes be several layers deep. A directory path-like convention will be used to describe a particular menu item. For example: Windows\Settings\Project means the Project menu item in the Settings submenu that is under the main Windows menu.

DraCo's Graphic Interface

Interaction with the DraCo Digital Video Workstation occurs though a graphic user interface similar to operating systems such as Microsoft Windows and MacOS. There are some important differences here, so you should look over these introductory sections, even if you are familiar with other systems.

Interface Gadgets

Icon — Icons appear as small pictures. Clicking or double-clicking them generally causes some pre-defined action to take place.

String Gadget — String gadgets hold text which can usually be modified by the user. To enter something in a string gadget, simply click in it and add the text. If something is already there, utilize the BACKSPACE, DELETE, and CURSOR keys.

Cycle Gadget   Cycle Gadgets have a looping arrow symbol on the
                          left side. Click on them to cycle through the
                          available settings.

                          C Until Break

Toggle Gadget   Toggle Gadgets have only two states, active or
                          inactive. If active, a checkmark appears.

                          Free Running: ✓

Slider Gadget   Slider Gadgets are dragged by their grab point to
                          set a value.

                          HUE: 0°

                          ———Grab Point
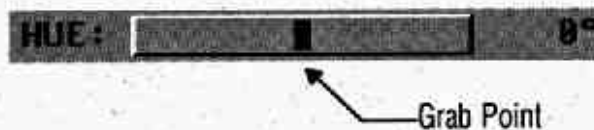
Mouse Actions

Right mouse button actions usually involve navigating the pull down
menus. The drag mouse action, is used exclusively.

Left mouse button actions involve all other actions like, selecting or
activating icons and gadgets in the graphic user interface. Dragging,
clicking, and double clicking actions are used with the left mouse
button.

Common Actions

Drag   Hold down a mouse button as you
                                            move the mouse pointer,

                                            To select a number of adjacent items,
                                            To move a gadget or icon,
                                            To access a menu.

Right Mouse Button Actions

Pull-down menus

Pressing the right mouse button reveals menus in the title bar (at the top of the screen).

Once the menus appear, continue to hold down the mouse button and position the mouse pointer over the desired menu heading.

Then drag the mouse down the menu that pops up to the desired item, or down a submenu to a submenu item.

Release the right mouse button, when the desired item is selected to execute that menu item.

Note: If you don't want to execute a menu item, simply move the mouse pointer off the menu, then release the button.

Left Mouse Button Actions

Click

Press a mouse button to select an item.

Double-click

Press a mouse button twice quickly, to activate an item.

Part One • Setting Up

What you will learn in the following section

The initial sections of this manual are very thorough, for the benefit of those who may have no computer experience.

In addition to general orientation for computer novices, the opening sections also lay out:

- Taking Inventory
- Setting up the Draco
- The foundations and logic of the DraCo Vision Editing Software.
- The method and structure in which the DraCo stores and accesses data.

Equipment Checklist

- Draco Box
- Keyboard
- Mouse
- Draco user manual

Other Equipment You Will Need

- VGA computer monitor
- NTSC/PAL Video monitor
- Audio monitoring system
- Audio/Video cables
- Multi-outlet surge-protected power strip

Connecting Up

Preparation

1. Pick a suitable location for your system that is away from smoke, heat, dust, vibrations, and electrical interference.

2. Make sure the rear ventilation duct is not obstructed and adequate airflow exists.

3. Use a surge-protected outlet strip recommended for computer use.

4. Never connect or disconnect any peripherals while the system is powered up.

Connecting Electrical Power

Plug the power cord into the appropriate socket on the rear panel. Make sure the power transformer switch is set to the appropriate voltage for your area. This switch is located between the two power sockets, to the right of the fan.

115/230 Volts
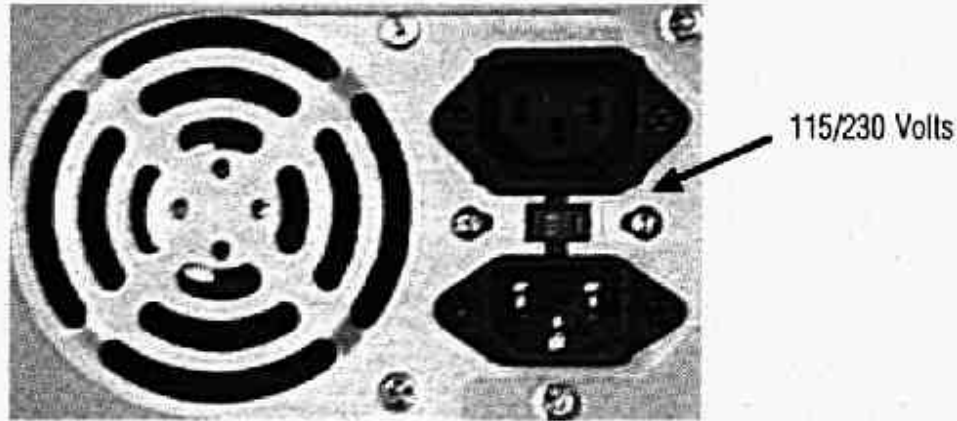
Connecting your Computer Monitor

Any SVGA RGB monitor should work with Draco providing it has a 15-pin HD male connector.

Connecting Video Equipment

Connect the Y/C output of your video device to the Y/C input of the DraCo. If you have a composite Input you will need to ask out Tech Support department for a special cable to connect the composite input into the Y/C input.

Y/C h SCART Out Y/C OUT CVBS Out

Audio Out   Audio In
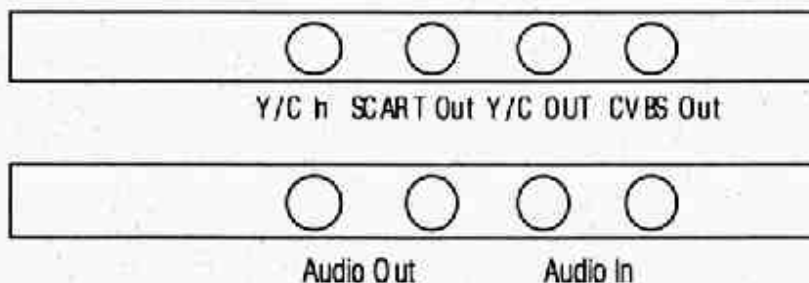
Connecting Keyboard And Mouse

These devices connect to the back of the DraCo at the ports labeled "Keyboard" and "Mouse." You may need to examine the keyboard plug and it's socket to determine it's proper orientation.

Connecting External SCSI Devices

Before you connect External SCSI devices, you will first want to start the computer as described below, and then consult the Appendix of this manual on Hard Disk Storage to learn about using HDtoolBox Software to determine the SCSI ID's of devices mounted internally.

If you have this information, you can attach the external device giving it an unused SCSI ID number. You will need to disable external Termination in the DraCo Boot menu. Hold down the right mouse Button when the DraCo is booting up to enter the DraCo Bootup Menu.

Terminate the last external device in the SCSI chain.

Getting Started

In this section, we will cover the basics of starting your Draco, and running the DraCo Vision Editing Software.

"Booting" DraCo

Your Draco system will 'boot up' when the power switch is turned on. This is called a "cold boot." You can also perform a "warm boot" by simultaneously pressing the CONTROL + LEFT COMMAND + RIGHT COMMAND keys. The COMMAND Keys are the keys on either side of the SPACEBAR.
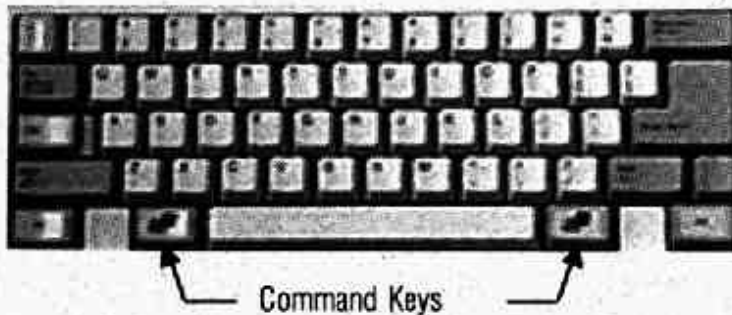
Command Keys

*Note: These keys, especially the one on the right of the Keyboard, are used extensively for keyboard shortcuts. **The Command Key on the left of the Spacebar has a unique function separate from the Command Key on the Right of the Spacebar.***

The DraCo can also be warm booted by pressing the Reset button on the front panel as well.
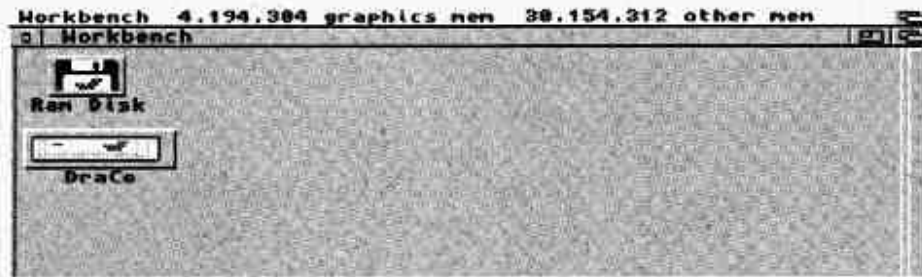
After booting, the Workbench screen should appear. This is the main graphical user interface screen for the DraCo's Operating System.

Starting DraCo Vision Editing Software

Assuming you have your System and Application software installed on a partition called DraCo, Double-click on the icon labeled "DraCo."
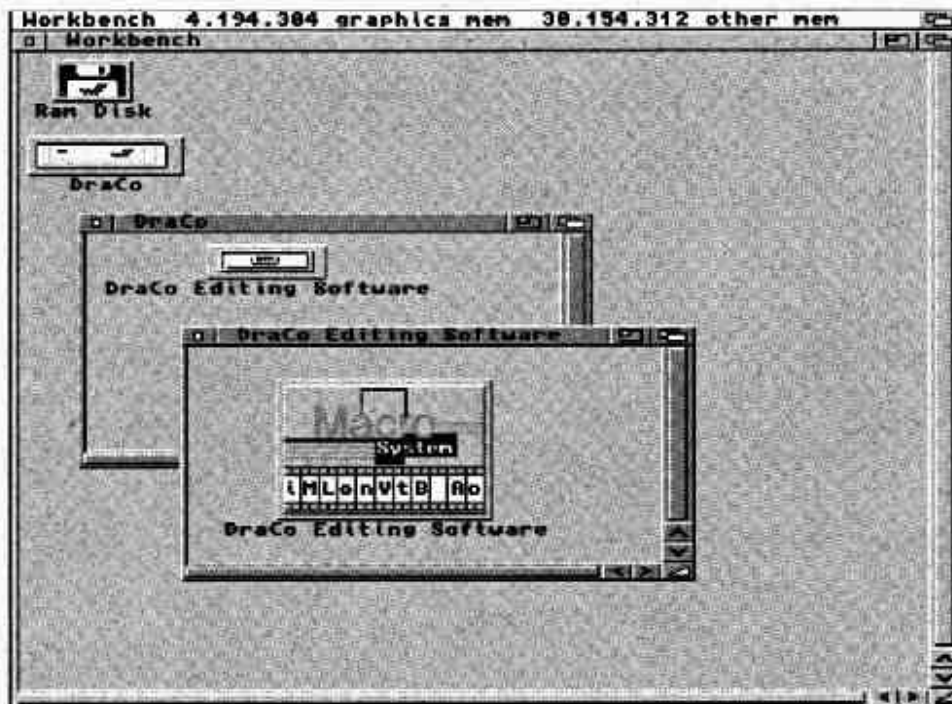
When that drawer opens up into a window, locate the DraCo Vision Editing Software Drawer. Double-click on the DraCo Vision Editing Software drawer icon to open it's window.

Now double-click on the DraCo Vision Editing Software icon to run that application.

Clearing the Slate

When DraCo Vision Editing Software opens up it will display across the top of the screen a title bar with the words:

| MovieShop 4.8 | '' | VP=? AP=? |

DraCo Vision Editing Software has numerous windows and pull down menu items. It is easy to get overwhelmed with all the options. So, generally, it is a good idea to close any windows that you are not using.

Below the title bar, there may also be various windows on the screen. If there is a window labeled Window Arrangements, locate the entry in its list for Clean Screen, and double click on that item, by,

1. Holding the mouse pointer over the words "Clean Screen",

2. And then, with the left mouse button clicking twice rapidly.

This should result in the other windows on the screen disappearing.

Working By Mouse

In the upper left hand corner of the Window Arrangements window, there is a gadget that is called a 'close gadget. Click this gadget to close that window, leaving you with a clean screen.

If you do not see a window called Window Arrangements, or if there is not an entry in the Window Arrangements list for Clean Screen, use the close gadget, to close all the windows on the screen.

Working By Keyboard

The keyboard shortcut for closing a window is RIGHT COMMAND 0 (zero).

So, alternatively, you could use the keyboard shortcut to close windows, by holding down the RIGHT COMMAND key , to the right of the SPACEBAR, while repeatedly hitting the 0 (zero) key, until all the windows are gone.

DraCo provides many methods to help you manage all these elements. Once you have briefed yourself on the basic operations of the DraCo Vision Editing Software, you will want to refer to the appendixes on using this system more efficiently, particularly the sections on customizing DraCo Vision Editing Software, and using Macros.

Setting Up a Project
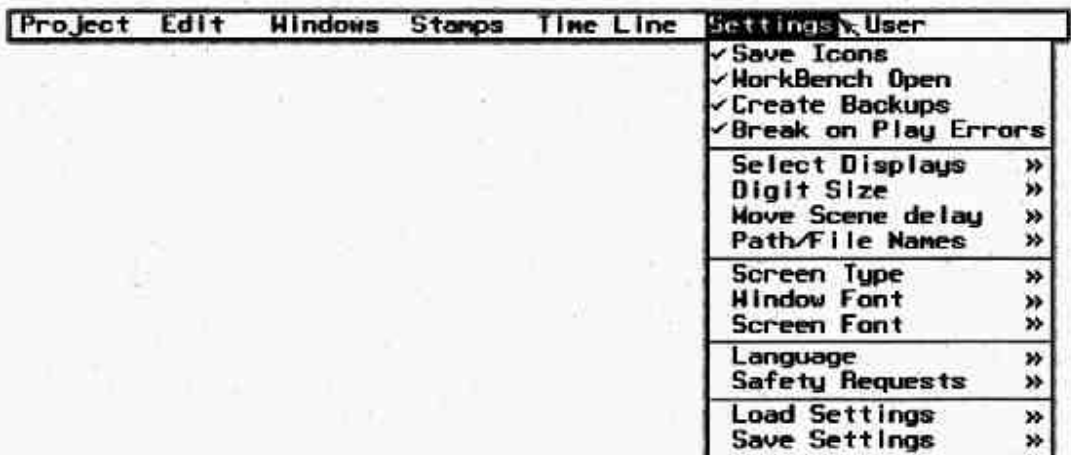
Selecting Data Partitions

Before you can digitally record any data into the DraCo, you need to set up the data partitions for a project. In particular, you need to designate where you are going to store the video and audio data for the project.

Using Pull Down Menus

1. Hold down the right mouse button, to see the row of menu items, across the top of the screen labeled:

```
Project  Edit    Windows  Stamps  Time Line  Settings  User
```

2. While holding down the right mouse button, slide the mouse pointer to the right, so that it is over the Settings menu. A pull down menu list will appear below the word 'Settings'.

```
Project  Edit    Windows  Stamps  Time Line  Settings  User
                                              ✓Save Icons
                                              ✓WorkBench Open
                                              ✓Create Backups
                                              ✓Break on Play Errors
                                              Select Displays      »
                                              Digit Size           »
                                              Move Scene delay     »
                                              Path/File Names      »
                                              Screen Type          »
                                              Window Font          »
                                              Screen Font          »
                                              Language             »
                                              Safety Requests      »
                                              Load Settings        »
                                              Save Settings        »
```

3. Still holding the right mouse button down, drag the mouse pointer down the list to the item 'Path/Filenames', again another list will appear, now to the right.

```
Settings  User
✓Save Icons
✓WorkBench Open
✓Create Backups
✓Break on Play Errors
Select Displays      »
Digit Size           »
Move Scene delay     »
Path/File Names    Video Partition...
Screen Type        Audio Partition...
Window Font        Path for temporary files...
Screen Font        Path for effect modules...
Language             »
Safety Requests      »
Load Settings        »
Save Settings        »
```
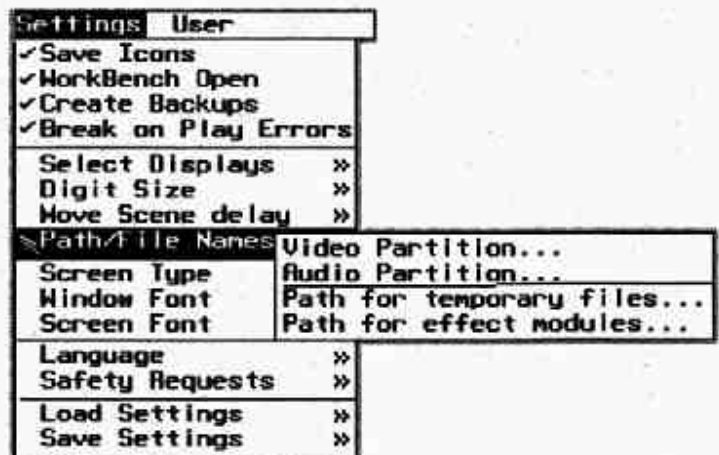
4. While still holding the right mouse button down, drag the pointer out to the right, to the item labeled 'Video Partition...'. The menu item will indicate you have selected that item by inverting the colors of the text. This technique will take a little practice, if you are new to this.

```
Settings  User
  ✓Save Icons
  ✓WorkBench Open
  ✓Create Backups
  ✓Break on Play Errors
   Select Displays        »
   Digit Size             »
   Move Scene delay       »
   Path/File Names  Video Partition... ⩗
   Screen Type      Audio Partition...
   Window Font      Path for temporary files...
   Screen Font      Path for effect modules...
   Language               »
   Safety Requests        »
   Load Settings          »
   Save Settings          »
```
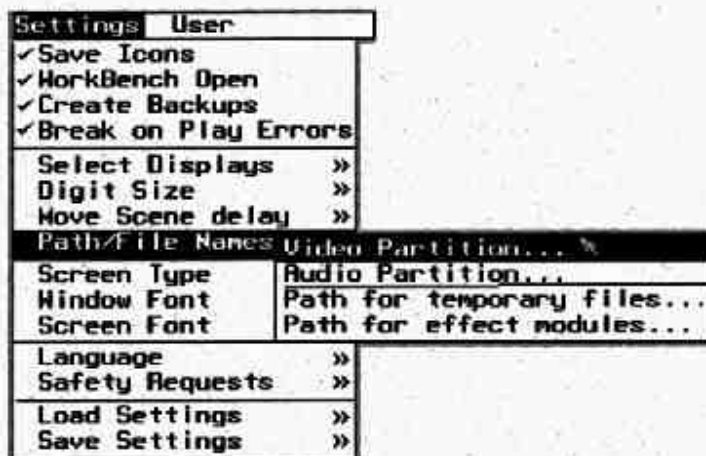
5. Now if you let go of the mouse button, while the Video Partition item is selected, a window will appear, labeled 'Video Partition'.

```
□ Video Partition          ⌷
  DraCo:    581 M    DOS
  AUD1:     581 M    MDOS
  VID1:    3999 M    MDOS

  ▐OK▐                Cancel
```

6. Select one of the items that starts with the letters Vid, Vid1, for instance. Do so by clicking the left mouse button, twice, rapidly, over the item you wish to select.

7. Using the same steps to access the Settings pull down Menu, set the Audio partition's Path/filename. This time use one of the partitions that start with the letters Aud, Aud1, for instance.

```
□ Audio Partition          ⌷
  DraCo:    581 M    DOS
  AUD1:     581 M    MDOS
  VID1:    3999 M    MDOS

  OK                  Cancel
```
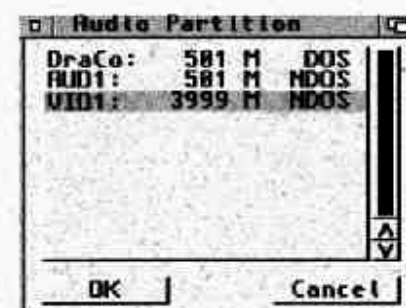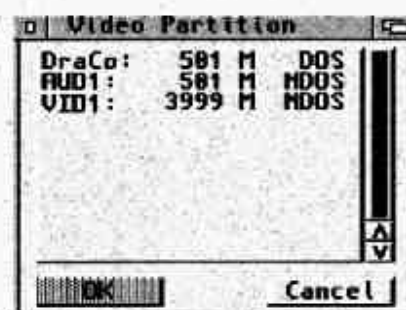
You will notice now that the title bar across the top of the screen, now reflects that you have set, the Video and Audio partitions, by displaying VP= VID1: AP=AUD1:.

```
MovieShop 4.0              ''   VP=VID1:  AP=AUD1:
```

Creating a new Project

You can now start a new project.

1. Hold down the right mouse button and position the mouse pointer at the top of the screen.

2. While holding down the Right mouse button, position the pointer, at the top of the screen, over the Project menu, and then drag the mouse pointer down the project menu to the first item labeled 'New'.

3. Let go of the right mouse button while the New item is selected.

You will note that the quotes in the title bar now contain: 'unnamed', which signifies a that a project named 'unnamed' is now open.

```
┌─────────────────────────────────────────────────────────────┐
│ MovieShop 4.0      'unnamed'     VP=VID1:   AP=AUD1:         │
└─────────────────────────────────────────────────────────────┘
```

Selecting Video Norm

Currently you need a Y/C (S-Video) type connection for input to the DraCo. Input selection should be set to Y/C. To open the input selection settings window:

1. Hold down the right mouse button, and position the pointer at the top of the screen.

2. While still holding the mouse button down, position the mouse pointer over the Windows menu.

3. Drag the mouse pointer down to the Settings submenu item.

4. Drag over to the right, to the Input Selection item.

5. Let go of the mouse button.
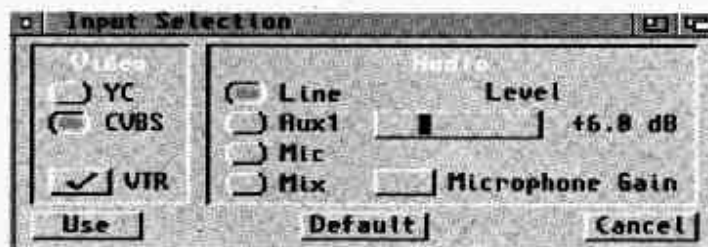
When the Input selection window opens, use the left mouse button to click on the Y/C video option. You can leave this window open for the next adjustment.

Setting Audio Input Levels

You will want to set the Audio level for your first digitizing session, while the Input Selection window is open.

By now you should be comfortable with using the pull down menus, so from now on, accessing menus will be referred to as described in the first section of this manual.

If you need practice with the process of using menus, you may want to go back over some of these last steps, starting with the section "Using Pull Down Menus". Since you have not recorded anything yet, it is a good time to experiment.

Open the Level Indicator
window using the
Windows\Level Indicator
menu item.

Playback the source material that you plan to digitize, selecting an
area where the audio level is representative of the audio that you will
be digitizing.

Use the level slider in the Input Selection window, to adjust the Audio
Level so that the Level Indicator shows the signal is just short of
peaking, where the color of the indicator changes from black to white.

When the Level Indicator window is open, there is an attenuation of the
higher frequencies of the audio signal, so you should only use the Level
Indicator to make adjustments visually.

Once the audio level is set, close both the Level Indicator and Input
Selection windows, by clicking with the left mouse button, in the close
gadget at the upper left corner of the windows.

DVES Project Files

Project files do not store your project's data!

It is important to understand that when you save a project file, that file does not contain any of your audio or video data, it just includes information about how the audio and video data should be presented, that is, what segments to play in what sequence.

The Draco keeps digital information distributed in three separate areas:

Video	Stores the video data for your productions.
Audio	Stores the audio data for your productions.
Software/DOS	Contains the operating system; DraCo Vision Editing Software; and various other programs.
	Also stored in the Software area are the Project files that the DraCo Vision Editing Software uses to index to the data stored in the Video and Audio areas.

Each time you start a new project, you must establish which of your Audio and Video partitions you are going to use for that project. When you create a new project, the selected audio and video partitions will be cleared out, enabling you to start a new project.

You should think of this process as being analogous to erasing a tape, prior to recording on it. And so, once it has been erased, that data is gone.

If you start a new project, and you have not backed up or archived the data that was stored on the currently chosen audio and video partitions, you will not be able to reopen a project that had previously used those partitions.

Once you have gained a general orientation of the DraCo, and you begin to work on your own projects, you will want to familiarize yourself with the various techniques to backup (routinely during the course of a project) or archive (after completing the production) your work. Discussions of these subjects, as well as a more detailed description of Project files and DraCo's storage methodologies, can be found in the Appendixes.

Part Two • Cuts only Editing

What you will learn in the following section

- Data Acquisition
- Block cut, copy, and paste operations for trimming clips
- Basic operations to resequence data non-linearly.

Using DraCo's basic cut and paste operations, a complete production can be assembled and then reassembled into endless variations in real time.

Using the basic DraCo Vision trimming and sequencing tools, you will be able to explore and produce edits, you would have never attempted using traditional tools. And you will be able to evaluate "What if?" variations as quickly as you can imagine them.

Acquiring Video

Assuming you have just completed the previous section, you should have a new project called, 'unnamed' open; and you have set up the audio and video partitions, so that in the titlebar at the top of the DraCo Vision Editing Software screen, you see something like this:

```
| MovieShop 4.0      'unnamed'    VP=VID1:   AP=AUD1: |
```

If you have a video and audio source connected to and providing a video and audio signal to the DraCo, you should be seeing and hearing that video and audio through your monitors. All systems are go! If not, go back and make sure you have made all the proper connections and settings.

Digitizing Video and Audio

Scenes and Scene Control Windows

Open the Scenes window by accessing the Windows\Scenes menu item. This is the log area where all your digitized footage is listed. Currently there is nothing shown.

Open the Scene Control window, by accessing the Windows\Scene Control menu item. This is the transport for the Scenes list, and it allows you to record (digitize) and playback digital video.

Setting Record Length

At the bottom of the Scene Control window, the Record Length cycle gadget should be set to, "Until Break". If that is not the case, using the left mouse button, click on the gadget, in the lower left hand corner of the Scenes Control, so that it reads 'Until Break'.

In this mode, the DraCo will continue digitizing footage until the pause or stop button is clicked on.
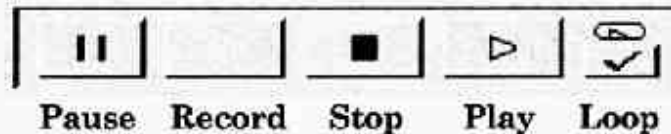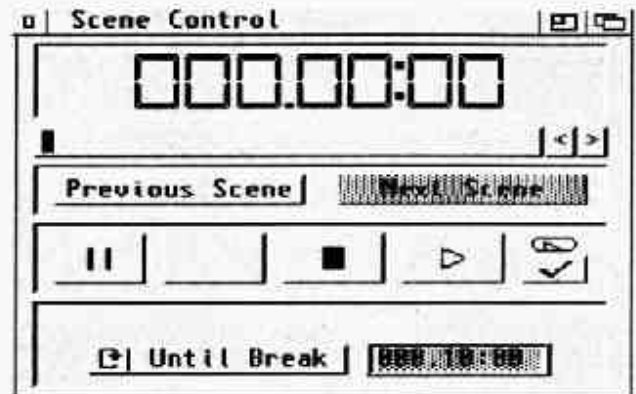
To digitize your first scene,

1. Cue up the video source before a short segment you want to digitize.

2. Let the source roll.

3. Click on the round record gadget with the left mouse button.

4. After a few seconds click on the stop button.

Now you will see there is a scene listed in the Scenes list, called unnamed.

Repeat the steps above to digitize a second short segment. The Scenes list should look like this:
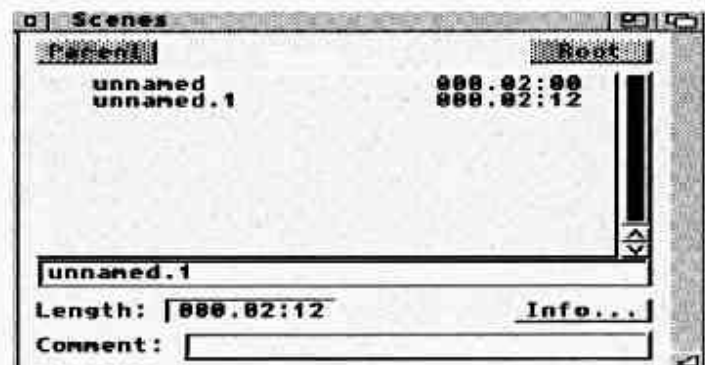
To verify that your system is working properly, click the Play button, and you should now see and hear the segment you have digitized playing back from your hard drives.

Digitizing Video Only

Open the Audio Settings Window, by accessing the Windows\Settings\ Audio Settings menu item.

To digitize a video scene without it's accompanying audio, uncheck the "Record Sound along with Scene" check box. As long as this box is unchecked, the scenes you record will not have audio digitized along with the Video.
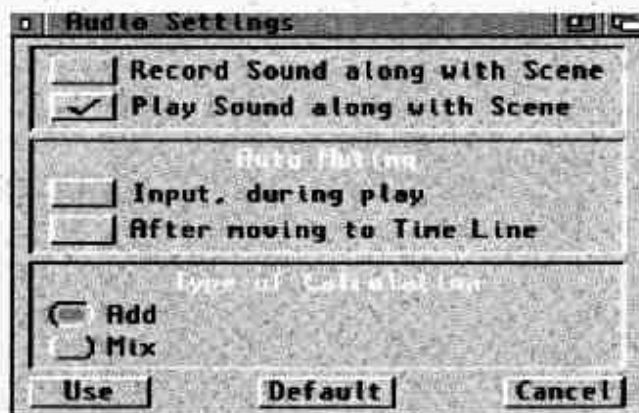
You may want to try this option, by recording a segment of Video and verifying that no audio plays back with that segment.

Return the Audio settings to their previous state, for now, by checking the 'Record Sound along with Video' option. And then, close this window using the close gadget.

Loading Scene files

In addition to bringing Video and Audio into a project by digitizing Analog Sources, you can also load Digital Video, Scene files, that have been saved from previous projects. Scene files can contain both Audio and Video, or Video only.
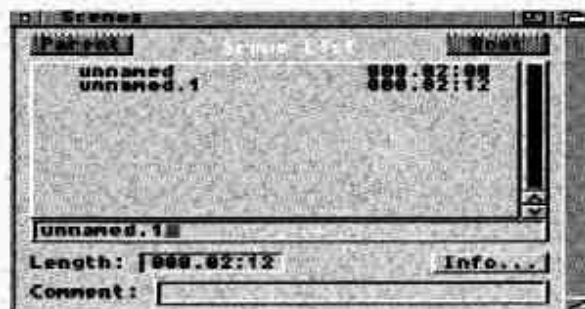
Managing Scenes Lists

Naming Scenes

Below the list of items in the scenes list, there is a string gadget, or 'text box', where you can rename a scene.

Place the mouse pointer in the string gadget, and click once. A shaded box will appear at the end of the text in the box.

Slow, but, sure

To delete the default name, you can backspace over the whole name, using the backspace key.

Fast, but, less sure?

Using a keyboard shortcut, you can
delete the whole text box line at
once, by holding down the RIGHT
COMMAND key, to the right of the
SPACEBAR, and then depressing the x
key.

Be careful using this shortcut,
because it is also the same shortcut that is used to cut a marked block.
So if you don't have the string gadget activated, as indicated by the
shaded box after the text, do not use this shortcut. (Unless, of course,
you want to cut a block from the current scene).

Once you have the original name removed from the string gadget, you
can then enter a new name. The default length for this name is 17
characters.

Rename all the items you have
digitized, so that they have a more
meaningful name. If you want, add
a comment to the comment field
for particular items.
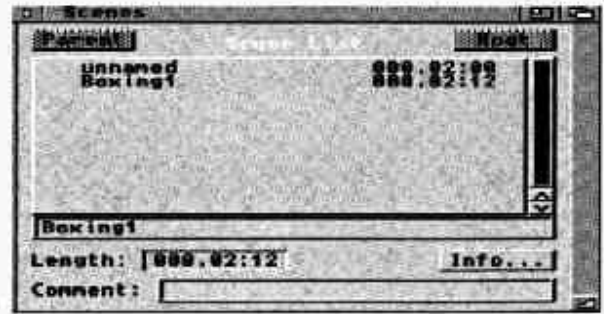
Deleting Scenes

If you digitize something that you really do not want to be part of your
production, you can delete it from the Scenes list.

### To Delete a scene from the Scenes list

1. Hold the mouse pointer with the
   left mouse button depressed,
   over the item you want to
   remove, in a moment the arrow
   pointer will turn into a hand.
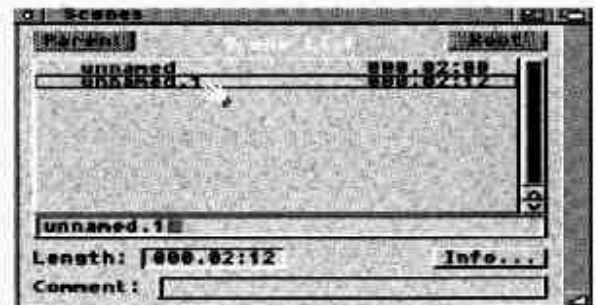
2. While holding down the left mouse button, drag the item out of the Scenes list.

3. As long as you don't drag the scene into another window, a message will appear allowing you confirm the delete operation.

4. You can click on the OK gadget with the left mouse button.
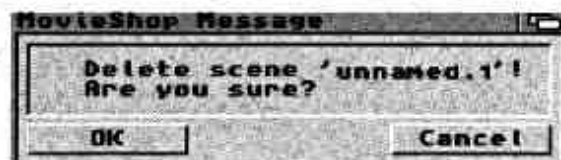
Now the scene is no longer listed in the Scenes list. Yet the item is not actually gone. DraCo Vision Editing Software works in a non destructive manner, so it is very difficult to lose your data, unless you really want to get rid of it.

Recovering Deleted Scenes with Make Master Scene

After you delete a scene from the scenes list, you can recover these items by using the Edit\Make Master Scene menu item. This operation will create a scene that contains all the data you have digitized for this project. This method is available to you at any point, until you reorganize the video or audio partitions, at which point the deleted data will no longer appear in the Master Scene.

Reorganizing a Partition

There will inevitably come a time when you have filled up your data drives, and you really do want to get rid of data you have deleted from the Scenes list. In this event use the Reorg Menu items. These items are under the Project Menu. There are three different options, to either reorganize, Video, Audio, or both.

Performing a reorganization goes through and removes all the 'deleted' and trimmed data. This includes data 'cut' from your scenes using the block operations. After removing the unwanted material, the data is rearranged to make the most efficient use of the hard drives.

This process is one that could result in the loss of data, so that it is strongly advised to back up or archive your data, prior to using this function.

Viewing Scenes with Scene Control

In the top of the Scenes Control window, there is a timecode readout, and directly below that, a slider gadget.

This slider gadget is similar to a jog shuttle, because it lets you quickly move through a video sequence. But since this data is on the DraCo's hardrive, you do not have to move sequentially though the media. So unlike using a jog shuttle, you can move directly to the end or back to the middle very quickly.

To use the shuttle slider gadget:

1. Hold down the left mouse button on the black rectangle, currently located at the left side of the scroll bar.

2. While holding down the left mouse button, you can drag the rectangle back and forth, to the left and right, to move through the video sequence.

The Audio will be muted while you are scrolling.

Keyboard Shortcuts for Scenes List and Scene Control

As You use the Draco more often, you will want to start using shortcuts in your work. When you are first learning this system it is convenient to have things laid out more simply, with little gadgets to click on. But as you become a frequent user of this equipment, you will find there are a number of ways, to make your work more efficient. Look in the appendix for details on this subject.

To navigate the Scenes list:	You can use the keyboards UP and DOWN CURSOR keys, to the left of the numeric keypad,
To step frame by frame:	Use the RIGHT and LEFT CURSOR keys.
To step field by field:	Use the RIGHT and LEFT CURSOR keys while holding down the ALT key.
Fast forward/reverse:	Holding down the SHIFT key while using the RIGHT and LEFT CURSOR keys, the movement is by default to 10 frame increments.
To play:	Press once on the F4 key

To record a new scene:

Press once on the F2 key, while holding down the SHIFT key.

To stop recording:

Press the F3 key.

All of these keyboard shortcuts are customizable. You can see a list of the currently configured keyboard shortcuts, by examining the macros list. You can access the macros list through the Windows\Macros menu item.

Prior to moving on to the next section, you may want to experiment with some of the techniques you have just learned.

In particular, in preparation for the next segment, record a few more scenes and rename the scenes to reflect their contents.

Trimming Video with the Edit Window

Now it is time to open a third window under the Windows menu, open the Edit window using the Windows\Edit menu item.

The process of trimming the items you have digitized is performed using the Edit Window.

Performing Block operations

Using DraCo Vision Editing Software is a lot like using a word processor's cut and paste operations. But there are a number of key differences, so do not make assumptions based on experiences with other software that uses the "cut" and "paste" metaphor.
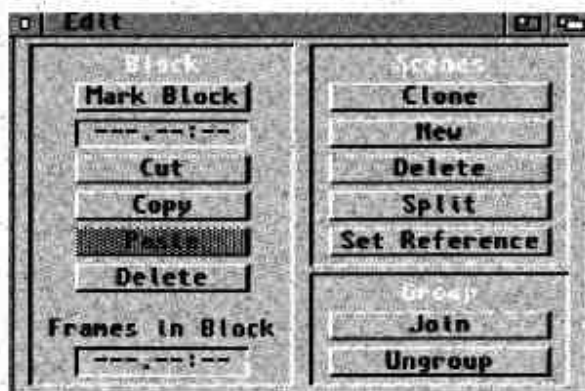
Setting an In point

The Mark Block gadget is only used to mark the in point of the block that you are marking.

Using the slider gadget in the Scenes Control window, shuttle to a point which could be considered an 'in point' of the currently selected item in the Scenes list.

Now, with the left mouse button, click on the 'Mark Block' gadget in the Edit window. The timecode from the Scenes Control window is now entered into the space below the Mark Block button.
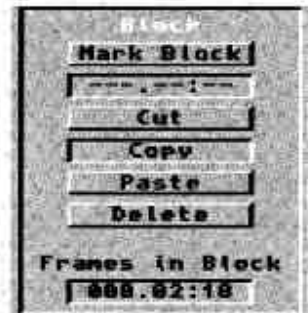
Setting an Out Point

Using the slider gadget in the Scenes Control window, shuttle over to an out point in this sequence.

Copying a segment into the Block

Now click on the Copy gadget in the Edit window. This operation creates a 'Block' which you can think of as, a copy of the segment, that you have just marked with the in and out points.

Creating a New Scene

On the right side of the Edit window click the left mouse button over the New gadget. This will create an empty scene, which will be used in the next operation.

Pasting the Block

On the left side of the Edit window, click the left mouse button over the Paste gadget. This will paste the segment, that you copied over to the Block, into this new scene.

Rename the new scene to signify it has been trimmed. If the original item was called 'Boxing', this could be called 'Boxing trim1'.
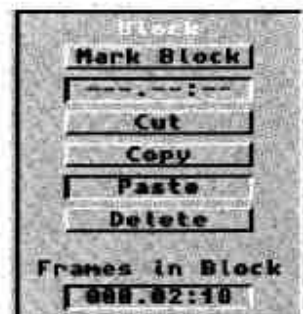
Playing Back the Trimmed Scene

Use the Scene control to playback this trimmed scene, to verify that only the part that you trimmed from the original is now playing back.

‖	↺	■	▷	⤓
Pause	Record	Stop	Play	Loop

Building Blocks

The Block in DraCo Vision Editing Software is analogous to the clipboard in other programs.

Each time you use the Mark Block gadget to:

1. Set an in point,

2. Shuttle to an out point,

3. And then perform a cut, or copy operation,

The data included in that region is placed in the block, replacing what was in there before.

The DraCo Vision Editing Software will ask you if you want to replace the old block, and usually you will want to respond, "yes".

When something is in the Block, whether copied or cut, you can paste it into another scene or into a new scene as many times as you want.

If you paste into an existing scene the block is inserted at the location currently set in the Scene Control window.

Using the Edit window and Blocks in DraCo Vision Editing Software is very flexible, providing you with great control and immediate response in editing your digital video data.

Many roads to the same place

In the last example we copied a segment that we liked out of a longer segment. We could have otherwise defined blocks at the start and end of the original item. And then used the cut operation to extract the defined segments from the original item in the scenes list.

Just as in the copy operation, the cut segment will end up in the Block, and we could then paste that segment into another scene or a new scene, as we did when we copied the segment above.

Before proceeding, create a five or six trimmed segments from the items you have digitized. Try both approaches,

- Cut out segments before and/or after a sequence that you want to keep,

- Copy a segment that you like, from an item in the scenes list, into a new scene, leaving the original item unaffected.

Changing the Speed of a Scene

Before Adjusting the Speed of a scene, you must create a Block.

To create a Block:

1. Use the slider gadget in the Scene Control to shuttle to the in point

2. Click Mark Block gadget in the Edit window .

3. Use the slider gadget in the Scene Control to shuttle to the out point.

4. Click on the Copy gadget in the Edit window.

Before adjusting the speed of the segment in the block, create a new scene, by clicking on the New (scene) gadget, on the right hand side of the Edit window.

If you do not create a new scene for the time adjusted segment, it will be pasted into the currently chosen item in the Scenes list, at the position set with the Scenes Control slider gadget.

Under the Edit menu, choose the Edit\Slow/QuickMotion menu item.

If you want to slow the segment down: Select a negative setting with the slider gadget. A '-2' setting will slow down the segment by a factor of two.

If you want to speed a segment up: A '+2' setting will speed up the video by a factor of two.

If you check the Audio check box, the audio will also be affected. If you do not enable the audio option, the audio will be muted.

After you select the OK gadget, the DraCo performs some calculations and then pastes the speed adjusted segment into the currently selected item in the scenes list. Assuming that item is the new scene you just created above, you may wish to rename this new scene to something that will help you recognize it.

Play back the speed adjusted segment by, selecting the newly created item in the scenes list, and then, clicking on the Play gadget in the Scenes Control window.

Pause   Record Stop   Play Loop

Exporting A Digital Video Sequence

One other important operation that requires first making a block, is the Export Block function. When you have a block defined, you can use the Edit\Export Block function to copy the frames (or fields) of video in the Block out to a DOS partition. This is a necessary step in the process of sharing Digital Video Data with other applications or other Digital Video platforms.

The export operation occurs as determined by the settings in the Video Export Settings Window. Since this operation is fairly involved, we will not execute it here. For more information on this subject, refer to the Appendix on Digital Video Export.
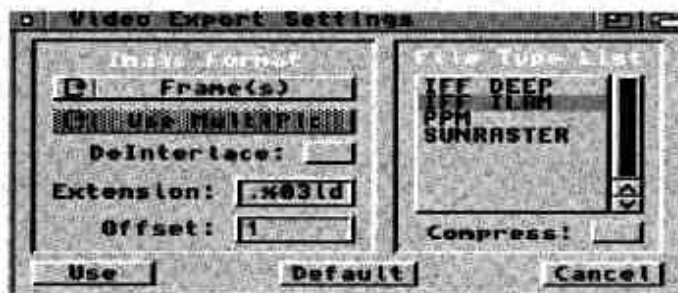
Sequencing Video

In the previous sections of this manual, you have learned how to

- Acquire digital video,

- Peruse the items you have acquired,

- View each segment, in detail, or at a glance,

- And trim out unwanted material, or copy selected material into a new scene.

Now, you will learn how to sequence your digital video using nonlinear editing.

Using the Clipboard to Make Groups

After trimming the acquired material, using the block operations described above, all that is needed for a cuts only production is to place the items in proper sequence.

The first step in sequencing video is making groups with the Clipboard.

Open the Clipboard window by accessing the Windows\Clipboard menu item. The Clipboard window is empty. Place the Clipboard window next to the Scenes list, by dragging the Clipboard window by its titlebar.
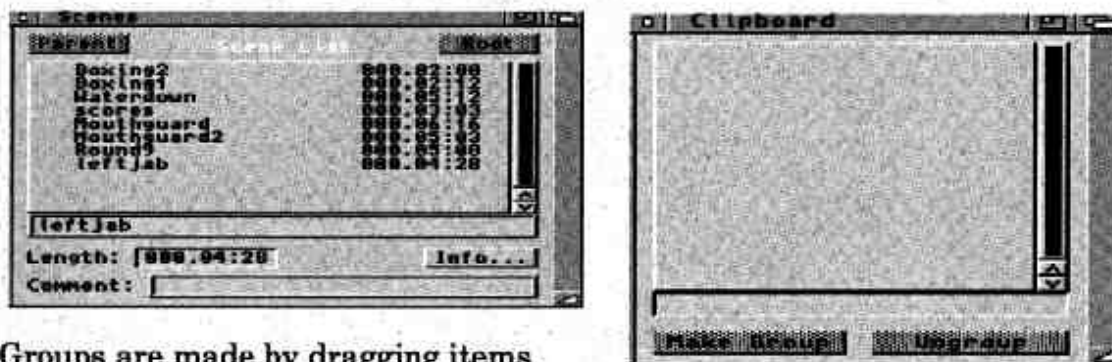

Groups are made by dragging items from the scenes list into the Clipboard.

1. Starting with the left mouse pointer over an item you want to include in a sequence, hold the mouse button down until the pointer turns to a hand.

2. While still holding the mouse button down, drag the item from the Scenes list into the Clipboard window.
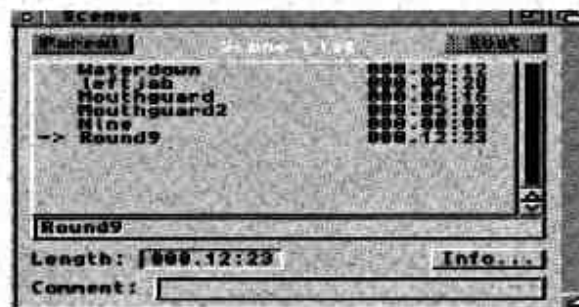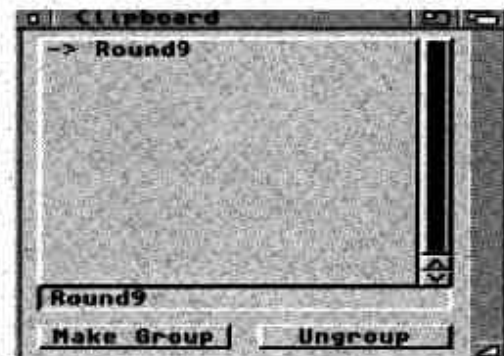
Repeat this procedure for all the items you want to include in this sequence.

Once you have, all the items that you want to play in sequence, moved over to the clipboard, click on the Make Group button.
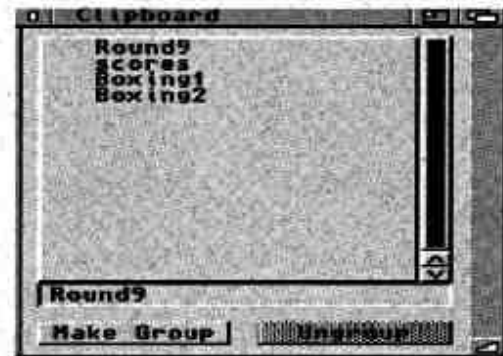
Note that the group is now indicated by an arrow to the left of it's name.

Now you can drag the group back to the Scenes list .

In the Scenes list, the group is still indicated by the arrow. Select the group, by clicking on it's name in the Scenes List. The name of the group appears in the text box below.

When a group is first made, the Group name is taken from the first item in the group.
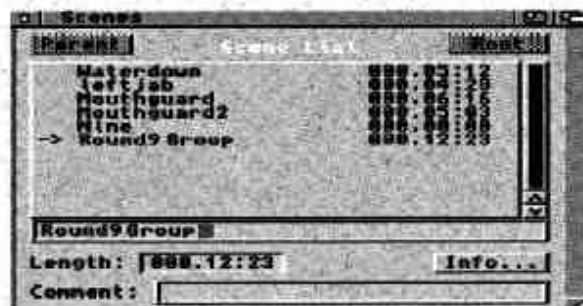
Now that the group name is listed in the Scenes list string gadget, click the mouse pointer in the string gadget so that the text cursor box appears, and change the name using the same method you used above.

While the group is selected, use the Play button in the Scene Control window. On the video monitor you will see that the items in the group, play back in the order that they were listed in the Clipboard, prior to being grouped.

Pause   Record   Stop   Play Loop

In this example the play order is:

- Round9,
- Scores,
- Boxing1,
- Boxing2.

It is possible to rearrange order of these items, by dragging them within the clipboard, but this operation, as shown below, can be performed while in the Scenes list. So, this frees you from having to be concerned with the exact sequence when the groups are made.

Grouping Hierarchies

If you click twice, with the left mouse button, on a group in the Scenes list,
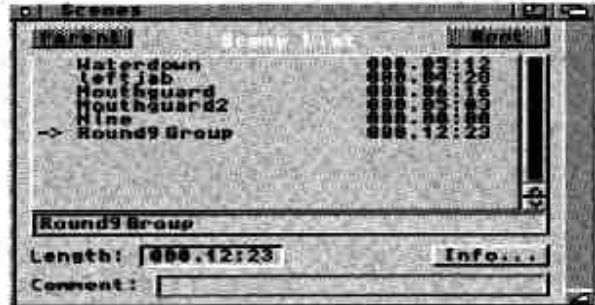
The Scenes list will change to show you the items in that group. Notice that, now that a group listing is displayed in the Scenes list, the Parent and Root gadgets become available, where before they were dimmed.
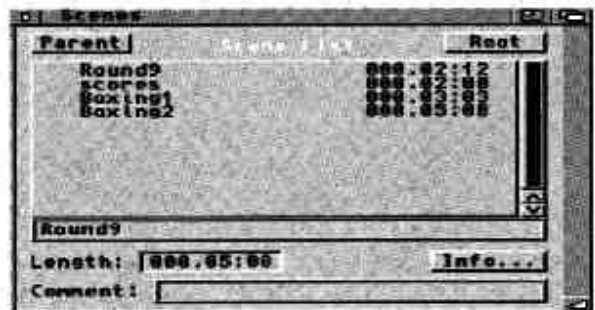
If you click on the Parent gadget, you will return to the view of the Scenes list that was showing prior to entering the group.

If you have used a computer to store data in directories, this will appear familiar to you.

Using the Parent and Root buttons allow you to navigate up the hierarchy of groups in the Scenes list.

If you have groups within groups, you can return to the level at the top of the hierarchy by using the Root gadget.

If you do not have past experience using computers, you should consult the appendix on Hard Disk Storage.

Resequencing Groups in the Scenes list

While in the Scenes list display that shows the items in the group,

1. Hold down the left mouse button over an item in the list, after a few seconds, the arrow will turn into a hand,

2. While keeping the mouse button depressed, you can move the item up or down in the list.
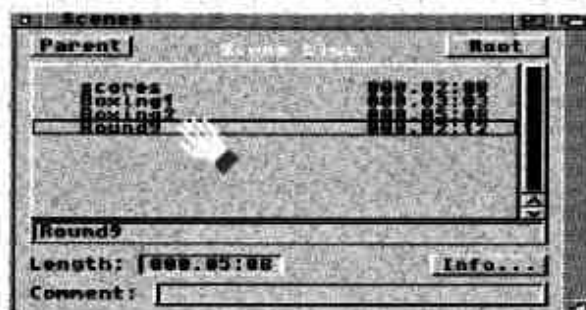
In this example I have rearranged the group so that the list order is

- Boxing1
- Boxing2
- Scores
- Round 9
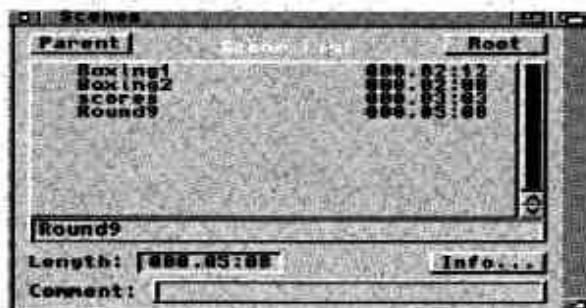
Return to the earlier display of the scenes list, by clicking on the Parent gadget with the left mouse button.

Now when you click on the play button in the Scenes Control window, you will see on your video monitor, that now the play order has been adjusted to reflect the new list.

Pause   Record   Stop   Play   Loop

Groups of Groups
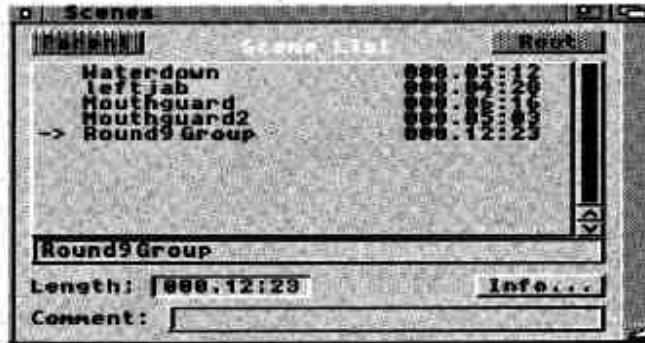
This gets interesting when groups contain other groups.

So that in this example, if all the other scenes from the Scenes list, not placed in the first group,

were moved to the clipboard

And then made into a group,
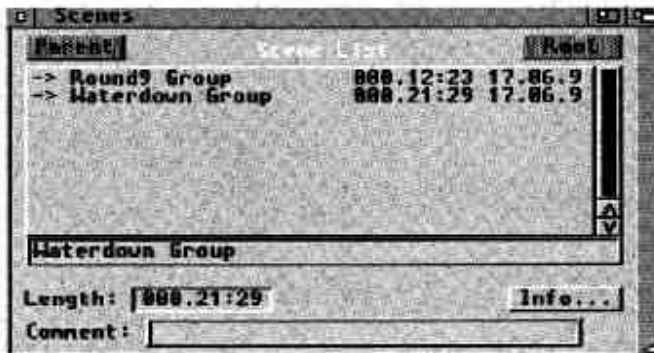
Then this group can be moved back to the Scenes list.

Where, now the Waterdown group can be renamed to "Waterdown Group".
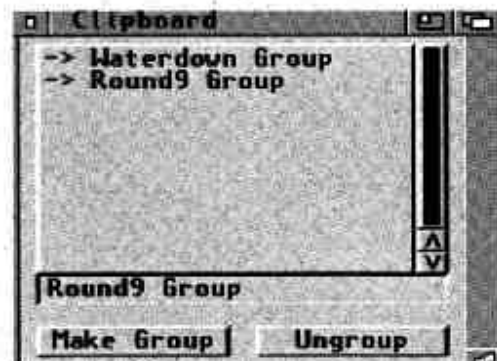
And then if both groups were moved back to the Clipboard, and then made into a grouping of groups.
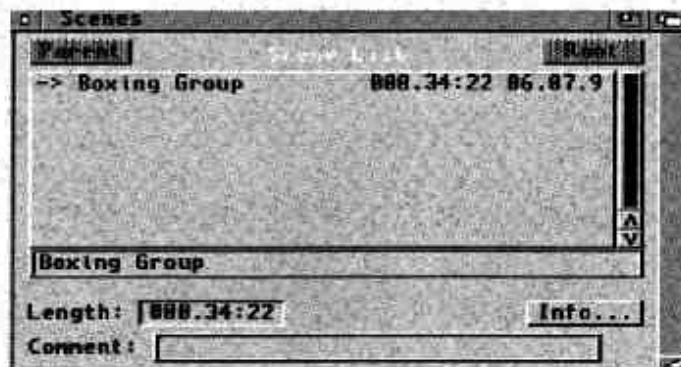
And then dragged back to the Scenes list. Now this new group of groups can be renamed to "Boxing Group".

If you double clicked, this group, the Scenes list would now display the two groups that are contained within it.
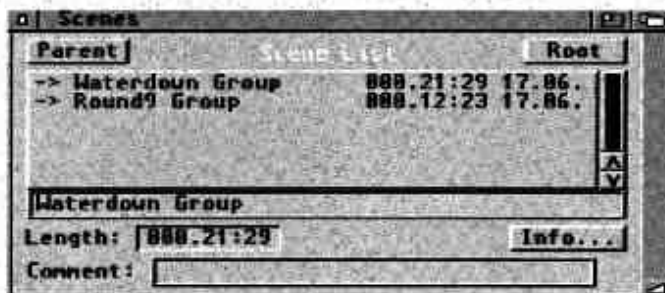
In this case, the Waterdown Group and the Round9 Group:.

Double clicking on either of those groups would show you either the Waterdown Group,
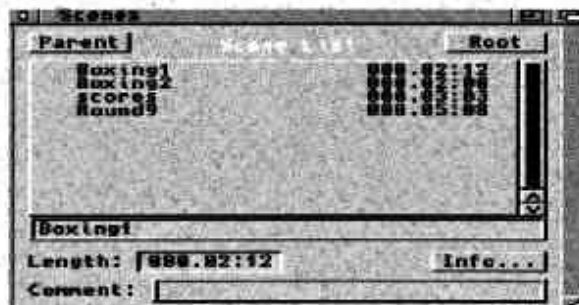
or the Round 9 Group of items as listed here.

When the Scenes list displays the separate items in a group, you can rearrange the sequence of these items, by dragging them as described above. For now, let's just leave the order as it is.

While a Scenes list is showing the items in a group, the Parent and Root buttons at the top of the Scenes window are no longer dimmed. If you click on the "parent" button, the display will move up one level in the hierarchy, to the parent level.
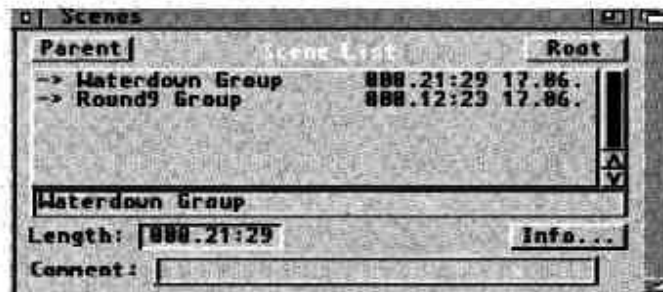
In this case the Scenes list would show the Waterdown Group and Round9 Group, indicated by the arrows to the left of both names.
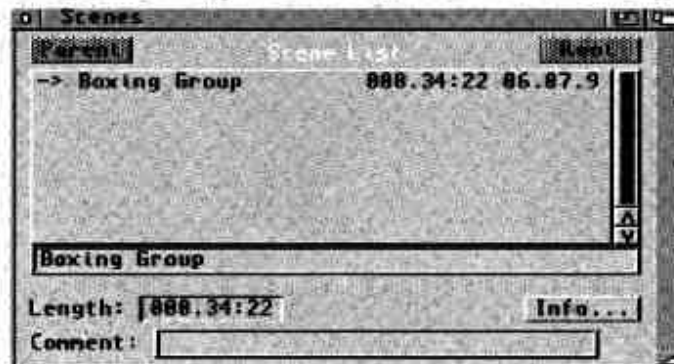
Alternatively, clicking on the Root button would display the Scenes list from the very top of it's hierarchy, the Boxing Group, which contains the WaterDown Group and the Round9 Group.

With the Boxing Group selected, clicking the play button in the Scenes Control window, plays the entire collection of scenes in this order:

- Waterdown
- leftjab
- Mouthguard,
- Mouthguard2
- Boxing1
- Boxing2
- Scores
- Round9

Once items have been grouped, you can manipulate their list order into new variations, and the new sequence will be instantly viewable.

Moving items out of a Group

Items can be moved out of a group by dragging the item from the Clipboard back into the Scenes list.

UnGrouping

You can ungroup items without moving them to the clipboard. Select the Group in the Scenes list and then click on the Ungroup button in the lower right corner of the Edit window.

Before moving on to the next section, take some time now to explore the powerful nonlinear editing method you have just learned.

Saving a Scene File

Now that you have,

• Trimmed a few items in the scenes list and

• Grouped items using the clipboard, and

• Created a scene, sequenced just the way you like it.

Let's save that scene as a file that is stored independently of the data stored on the audio and video partitions. This will allow you to clear the current data partitions and start a new project, after which you will still be able to load in these scene files, into the new project.

This is most useful for commonly used elements like bumpers, trailers and copyright notices.

To save a scene file

Choose one of the groupings made in one of the earlier sessions above. The group name should appear in the string gadget at the bottom of the scenes list, and the reference frame of the scene will show on the video monitor. Grouping order is saved with a Scene, such that when you reload the scene all the groups will be in tact.

Use the Project\Save Scene as... menu item to access a file requester, which will allow you to specify where you want to store this scene.

When the Save Scene file requester appears, click on the Volumes button at the bottom of the window. This will display the available volumes (partitions) for you to store a file on.

Available space on each of these volumes is displayed to the right of the volume name. To see this information, you may need to open the window more, by adjusting the sizing gadget at the bottom right.

You should note the amount of free space on the hard disk (partition) prior to saving a scene. The hard disk that you plan to save this scene to must have enough room to store the scene file.

You will notice that there is no reference to the Video or Audio Data partitions. A discussion of that can be found in the appendix on DVES's Project Structure, along with appendixes on Hard Disk Storage, and Using File Requesters to navigate hard disks.
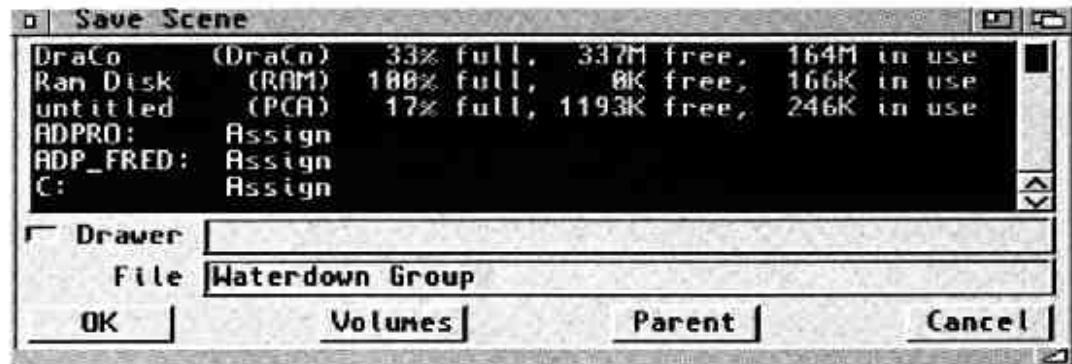
You will need to set a path for the location(drawer) on the hard disk you are going to save the scene file to.

Here we are going to store the file on the DraCo partition, in a drawer called MovieShop.

Double clicking on the Draco partition name at the top of the file requester,

changes the file requester to display, the Drawers in the DraCo partition.

Selecting MovieShop from the list of drawers, the file requester updates to show the contents in the Movieshop drawer.

If, at this point, we wanted to store the scene in a new drawer, we could enter in the new drawer name, in this case a drawer called "new", in the drawer string gadget, by adding, "/new" after the current path:

Draco:MovieShop/**new**

It is just coincidence that the name of this drawer is "new." It could have been called "Untitled", or "Empty", or something descriptive, like "Boxing Scene."

Upon hitting the ENTER key, on the keyboard, another requester will appear.

```
Create Drawer                                    ▭
  ┌─────────────────────────────────────┐
  │ Drawer 'DraCo:MovieShop/new' does   │
  │ not exist. Create it?               │
  └─────────────────────────────────────┘
  Create                              Cancel
```

```
▭  Save Scene                           ▭  ▭
  ┌──────────────────────────────────────┐ ▲
  │                                      │ ▒
  │                                      │ ▒
  │                                      │ ◆
  │                                      │ ▼
  ☐ Drawer  DraCo:MovieShop/new
     File    aterdown Group
  ┌───┐ ┌───────┐ ┌──────┐ ┌──────┐
  │ OK│ │Volumes│ │Parent│ │Cancel│
  └───┘ └───────┘ └──────┘ └──────┘
```
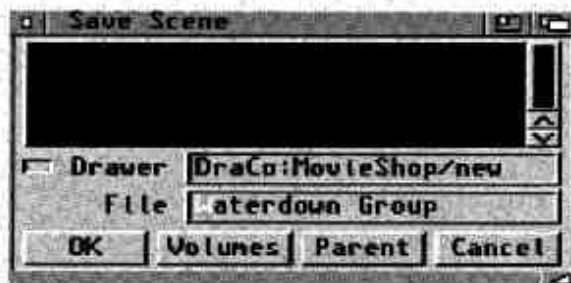
Now you have a new drawer created, and the name from the group is already entered into the File string gadget.

Clicking on OK will start the save process.

Before this save process is actually executed, a requester will inform you how much space the scene will take up. If you are short on storage space, you can abort the process.

```
MovieShop Message                              ▭
  ┌─────────────────────────────────────┐
  │ Scene 'Waterdown Group' requires    │
  │ 45 MByte of disk space!             │
  └─────────────────────────────────────┘
  OK                                  Cancel
```

If you are unfamiliar with using file requesters, or managing DOS resources, see the appendix on Hard Disk Storage.

Extracting Audio from Scenes

Separating the Audio component of a scene is as easy as dragging a scene from the Scenes window to the Sounds window.

Using Sounds Window

Open the Sounds window by accessing the Windows\Sounds menu item.

```
▭  Sounds                           ▭  ▭
  ┌─────────────────────┐ ▒
  │   Sample List       │ ■
  │                     │ ▒
  │                     │ ◆
  Length: [000.05:00]
  Comment: [          ]
```

Like the Clipboard, when this window is first opened, there will not be any items in its list. Unlike the clipboard, once you move a sound to the Sounds window, it stays there until you delete it.
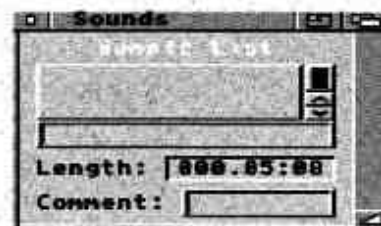
Sounds loaded from the Edit\ Import Sound File menu are also accessed through the Sounds window.
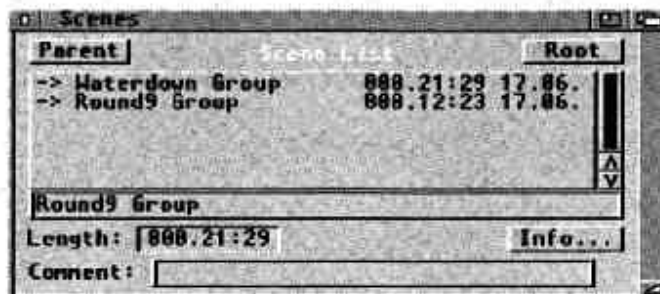
In the Scenes list, enter a group by double clicking an item that has an arrow to the left of it,
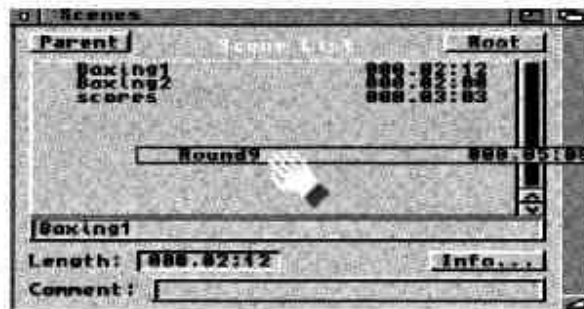
If the Sound component of the Round9 scene is to be used independently of the visual component of the scene which it was recorded with, simply:

- Hold the mouse pointer over the scene name in the scenes list, until the pointer turns to a hand.

- Then drag the scene into the Sounds window while keeping the Mouse button depressed.
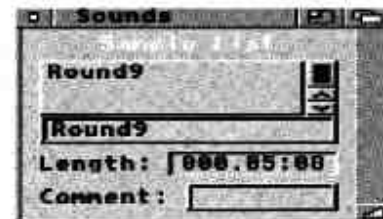
This operation does not remove the initial Audio track that goes with the video. If you play the scene from the Scenes list you will find that the audio still plays.

Now, to play this sound independent of it's video, use the Sound Control window, which works much like the Scenes Control transport.

Digitizing Audio Only

If you wish to record audio without recording any video, use the Sound Control window.

Using Sound Control Window

Open the Sound Control window, by accessing the Windows\ Sound Control menu item.

To Record Sound only.

1. Cue up the sound on your source, and then let it roll a little before the desired section.

2. Click on the round record gadget in the Sound Control window. The mouse pointer will turn to a microphone symbol to let you know its recording.

3. Hit the pause or stop gadget in the Sound Control window a bit after the sound segment finishes.

4. Use the play gadget to hear the sound you just digitized, as well as the sound you extracted from the Scenes window.

Its OK, if you have a bit of extra data before and after the desired segment. We will trim that file in the next section.

The sound will appear in the sounds window, with the default name of 'Unnamed".

In this example, a bell sound was recorded. Then the name of the new sound was changed by overwriting the "unnamed" label in the string gadget.
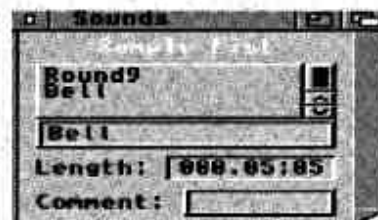
Trimming Audio and Creating New Samples

Whether you, separate a sound from its corresponding video scene, record a sound by itself, or import a sound file using the Edit menu, the sounds will all appear in the Sound window.

Once a sound is in the Sound window, you can trim it down using the Audio Cut window.

Open the Audio Cut window by accessing the Windows\Audio Cut menu item.

Using the Audio Cut window

Trimming audio consists of setting the slider gadgets in the Audio Cut window to adjust the in and out points of the sound sample.

The lower third of the Audio Cut window contains gadgets to help you tune the trimming process.
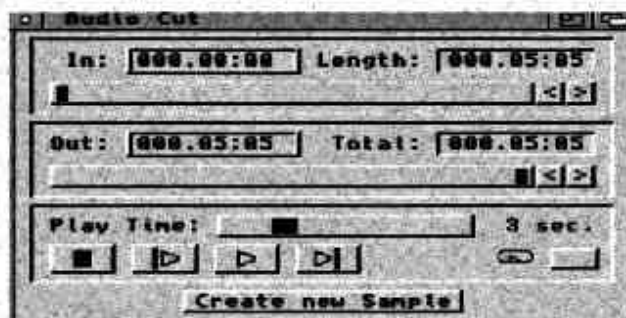
The square stop and triangular play button behave as usual. The other two gadgets are used to play only the beginning or end of a sound sample.

The Play Time slider is used to set the increment of how much of the beginning or end should be played.

To get a rough idea of where you want to place the in and out points, you may wish to use the Sound Control window to playback and pause the sound you plan to trim. Take note of the time codes.

Otherwise, just start the trimming process by moving the In slider, towards the right.

Then use the "play start only" button, to audit how closely you have come to where you want the in point to be. After a few trials you will have the in point set.

Follow the same procedure to set the out point. This time using the "play end only" button.

Once you have a trimmed sample, you can use the Create New Sample gadget, to create a new item in the sounds window.
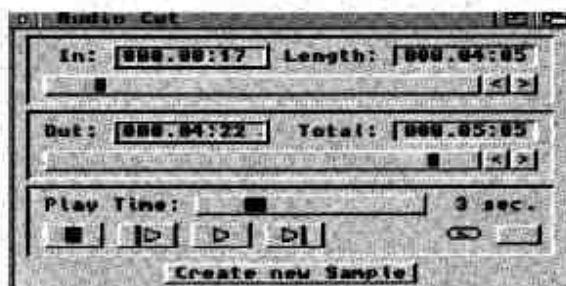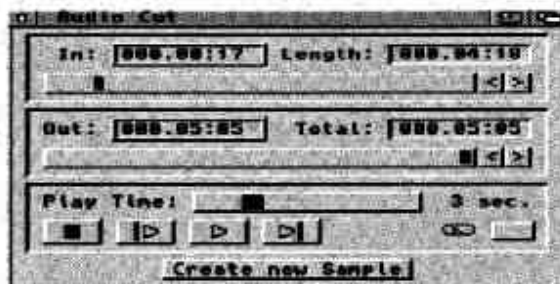
Part Three • A/B Rolls Transitions

Easy TimeLine mode

In this section you can clear your screen of windows other than the Scenes, and Scene Control windows. The Scene Control Window can be zoomed down using the Z gadget in it's title bar.

Now from the Windows menu open these windows:

- Windows\Time Line List
- Windows\Time Line Control
- Windows\Effects Modules

To open an East TimeLine

1. In the Time Lines window, click on the New button.

2. Click on the Easy Button, in the mode window,

3. Click on the OK button, to confirm that mode setting.

A/B rolls type transitions are made by dragging your scenes to the TimeLine. The TimeLine has two modes easy or RPN. In this case we will be using the easy mode. This mode is capable of straight forward two-source cuts, wipes, and dissolves.

Position the mouse pointer over the desired scene in the Scenes list. (It does not have to be the current scene.)

Press and hold the left mouse button. The pointer should turn into hand in a few moments.

Without releasing the mouse button, drag the scene to the bottom line of the TimeLine marked S2 and before releasing the mouse, make sure the outline of the scene, as it is dragged into the timeline, touches the left edge of the Timeline window.

In the requester that pops up, it should read 000.00:00 in the Start Frame string gadget. if not, enter 000.00:00.

Note the Ending Frame setting (you'll need this later) and Click OK.

Drag a different scene to the top line of the TimeLine marked S1 and release.

When the position requester pops up, subtract one second from the first scene's ending frame.

For example, if the ending frame was 000.08:21, one second less would be 000.07.21.

Enter that in the Start Frame string gadget.

From the Effects Modules window, drag the Fade operator to the OP line in the TimeLine. (It's the middle line). Before releasing, make sure the left edge of the operator is on a frame where both scenes overlap in time. Now release the mouse button.

Assuming the fade operator has positioned itself right between the two scenes, just click OK when the Fade operator's position window appears. If the fade operator extends all the way to the start of the timeline, drag the fade operator off the timeline, confirm the delete requester, then repeat the last step.

Then when the Fade operator requester comes up, make sure the cycle gadget is set to the *Through* mode.

Your TimeLine should look something like this:
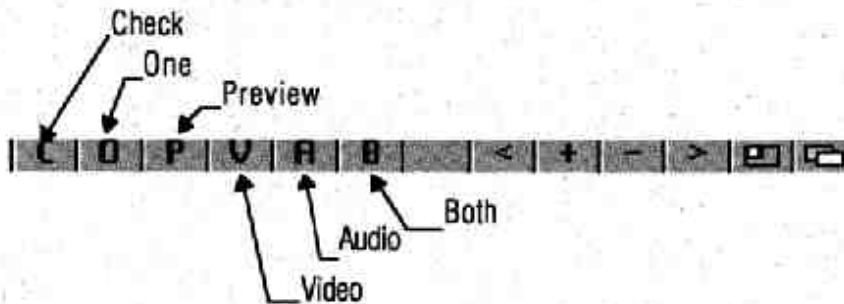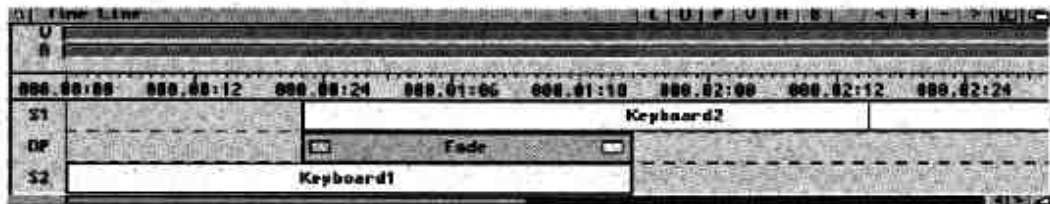
In the top right section of the TimeLine window there is a row of letters, called 'gadgets', which serve these functions.

Check	Checks the time line for errors in construction.
One	Calculates the Frame of the Timeline indicated by the position marker.

Preview	Calculates a thumbnail preview, which is displayed in the preview window.
Video	Calculates the video part of the TimeLine.
Audio	Calculates the audio part of the TimeLine.
Both	Calculates both the video and the audio parts of the TimeLine.
<	Maximum zoom at start of Timeline.
+	Zoom In.
-	Zoom Out.
>	Minimum zoom at end of Timeline.

Click the "C" gadget to check the time line, to make sure it is set up properly. If it reports an error in the timeline, use the Timeline\Delete Entire Timeline menu option from the Timeline menu. Then go back and try to follow the instructions more closely.

When it checks out, click the "V" (video) gadget in the TimeLine Control window. This will calculate the video frames necessary to fade the first scene through to the second.

When the calculation is finished, click the play button in the TimeLine Control window. Note that this is a separate transport than the one used to play items in the Scenes list.

Cuts in the Easy TimeLine mode.

To do a simple cut edit, just butt two scenes together on the TimeLine. They can be on different lines if you like, but it is easier to do it on one.

Practice adding more scenes to this TimeLine. Try using the Wipe operator too.

Titles in Monument Designer

To use the titling program, you need to run the Monument Designer program while the DraCo Vision Editing Software is running. In Monument Designer, DraCo Vision Editing Software is referred to as "MovieShop."

In the upper most right corner of the screen is a small gadget, which when clicked on, takes you through the screens of the various programs that are running.

For some programs you may need to use the keyboard shortcut for this operation, which is LEFT COMMAND M.

While in the DraCo Vision Editing Software, when you click on this screen switching gadget, the Workbench screen appears. Assuming you only have these two applications running, each time you click in the upper most right corner of the screen, the screens will shuffle between these two program's screens. For each additional program you run, this operation will shuffle through all the programs' screens.

While on the Workbench, double-click on the Monument Designer icon, to run that application.

Now switch screens, back to DraCo Vision Editing Software.

On a new "easy" timeline, put a scene in the S1 line.

From the Effects Modules window, drag the Monument Designer operator into the TimeLine window under the Scene in S1. Which should look like this:

A Monument Designer Operator window will open, that is used to switch screens, between DraCo Vision Editing Software and Monument Designer.
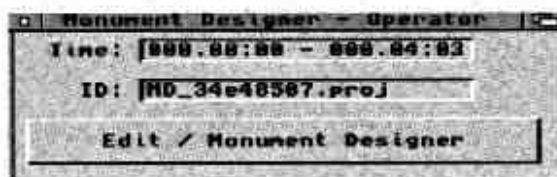
When you click on the Edit/Monument Designer button, the Monument Designer screen appears and you can work on your titles. When you have done your titles, use the Communication button in Monument Designer, to return to DraCo Vision Editing Software. Use this method of screen switching exclusively, when working between these two programs. Refer to the Monument Designer manual for details.

Part Four • Appendixes

Appendix A • DVES Project Structure

DraCo Vision Projects consist of three main parts, distributed in three separate areas:

1. Project file   (DOS•Uses the DraCo's DOS Formatting)

2. Audio Data   (NDOS•Does not use the DraCo's DOS Formatting)

3. Video Data   (NDOS•Does not use the DraCo's DOS Formatting)
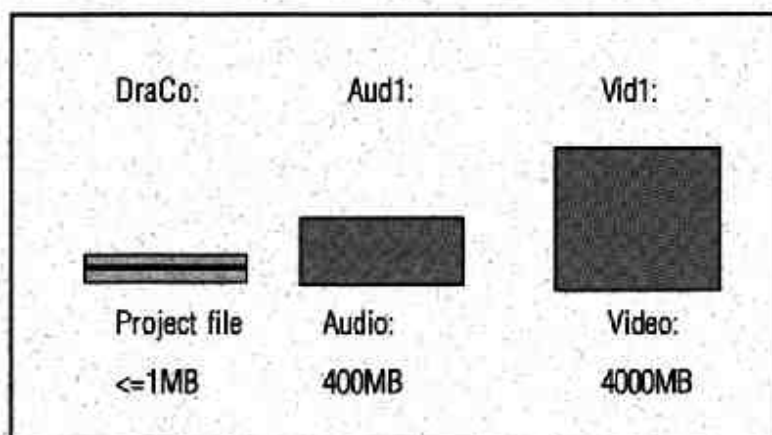
When you record/digitize data into the DraCo, video data is stored on a video partition, audio data is stored on an audio partition, and an index to those sequences of video and audio, is entered into a project file, on the DraCo's system partition.

Both the audio and video data are stored on partitions that are not DOS formatted. Instead of using DOS's directory structure, DraCo Vision Editing Software accesses the video and audio partitions directly.

When you edit the sequence of data on the DraCo, the data is not rearranged in order to play back the data in a different sequence.

Because of DraCo's optimized hardware and software engineering, data stored on it's hard drives can be traversed, in any manner that, without actually moving data, you can view the data in endless variations, just by moving through it differently.

An index of just how you move through that data (as determined by scene groupings), is a large part what the project file consists of.

Additionally, the project file contains various records of the state of the project, like the use of timelines, locators, and other stored settings.

Each time you start a new project, you must establish which of your audio and video partitions you are going to use for that project. When you create a new project, the selected audio and video partitions will be cleared out, enabling you to start a new project.

If you have multiple audio and video partitions, you could have more than one project going on at the same time. But at one point, audio and video partitions, being used for a project, will need to be purged, so that you can use the data partitions to open a new project.

After you start that new project, the data that you had stored on the audio and video partitions is gone, but the project file on the DraCo's system partition will still be present.

This could be a cause for confusion, since the existence of the project file does not mean you can still open that project. If you try to open an old project, which used data partitions that are currently in use by another project, DraCo Vision Editing Software will tell you that you can not open the project.

If, you need to open a project at a later date, after you have started a new project which uses a previous project's data partitions, you will need to back up or archive your data, using one of the methods described in the Appendix on this subject.

Appendix B • Hard Disk Storage

Digital video data requires a great amount of storage. The only practical way to handle this data with modern computing machines is using hard disks. Since digital video operations are largely based on hard disks, it is important to have some understanding of how hard disks operate in modern computers.

Disk Operating Systems

DOS and Compatibility

Even if you know nothing about computers, you have heard the word DOS, which stands for Disk Operating System. The most prevalent DOS is MS DOS, which is made by Microsoft. All DOS's are not alike. Even though they serve the same basic functions, operating systems are not all directly interchangeable.

It is possible to exchange data between different operating systems, using either a network, or software which allows you to read and write to a device that has been formatted with a foreign file system.

Using Cross DOS, the DraCo can exchange data with MS DOS formatted devices, and Using Max Dos or Cross Mac the DraCo can exchange data with devices formatted using the MacOS.

Basic Purpose of a DOS

A disk operating system, is basically a referencing and filing system, like a cabinet of folders with files in them. This allows files to be stored in a meaningful manner and retrieved in short order.

Disk Operating Systems usually involve floppy or hard disks, but there are various other devices that may be accessed using a DOS, like Printers, or modems.

Devices vs. Volumes

Some storage devices have a fixed disk and some storage devices can have their media removed and replaced by other media. The most common case of this is the floppy disk, but the Syquest, Zip, or Jaz type "removable cartridge drive" would also be included in this group. In order to differentiate between a device and the media in it, the concept of volume is used.

Theoretically, a "volume" refers to the name of the removable media. For example, a floppy drive which may be called Df0: as a device, has a floppy disk in it with the volume name "Disk1"

When navigating through data in a Disk Operating System, an important thing to recognize, is whether you are dealing with a volume or a device. The device is always there, whereas volumes can come and go. After you remove the floppy, the device is still there.

In practice, Fixed disks also have volume names, and commonly, fixed disks are divided into separate "partitions", each of which have a device name and a volume name.

Partitions are just subdivisions of devices, so even though they create more things to keep track of, basically partitions are just another level of division used to create order.

Often, both a device name and a volume name for the same device will appear in a list of possible storage locations. While this may be confusing at first, just learn to distinguish when there is a difference between a device and volume, and when there is not. This will at least help you to sort out multiple names that belong to the same entity. After that, it all boils down to separate places in which to store things.

Storage Hierarchies

On a more abstract level a Disk Operating System,

- Defines divisions that create organization, and

- Provides tools to navigate and manage the data stored on disks.

In a Draco Workstation there is:

A Floppy disk drive called DF0: a disk named Disk1: is in the drive.

A system hard disk, which contains a DOS partition with the operating system software and application software.

Also on the system hard disk there is a second partition, that is called DOSData.

This system has these possible storage locations.

Data1:   DraCo: DOSData:

By convention both device and volume names are followed by a colon":."

To create a structure of organization, volumes (devices) are divided into directories, which in turn can be divided into subdirectories. These structures are referred to as directory trees because they resemble family trees.
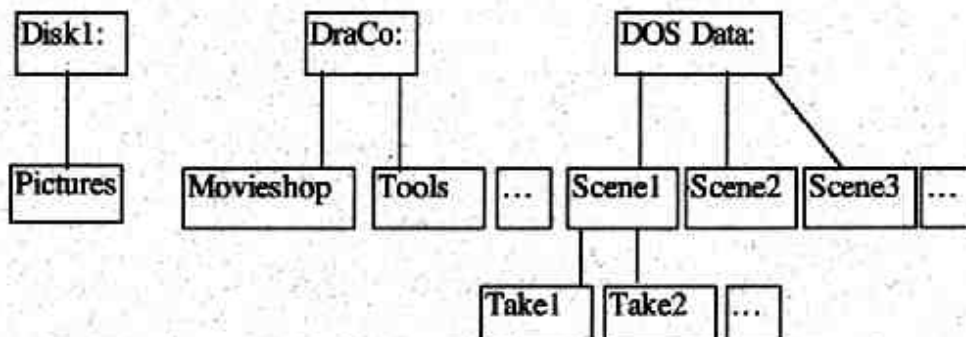
In our example the Disk1 floppy has a directory called Pictures, and the DraCo partition has a number of directories: MovieShop and Tools being two of them. The DOSData: partition has a number of directories called Scene1, Scene2, Scene3 etc... In the scene directories there are subdirectories called Take1, Take2, Take3, etc...

Following the Path

Now that you have seen the structure of how files are stored in directories, it should be fairly easy to learn how to navigate these directory structures.

Storing or retrieving a file in the directory structure is basically a matter of following a path. This path describes the route that you would take moving through the directory tree.

To get to the file called Take2, in the Scene1 drawer, you would use the path,

DOSData:Scene1/Take2

To get to the file called Take3, in the Scene3 drawer, you would use the path,

DOSData:Scene3/Take3.

Using File Requesters

File requesters appear whenever you use the Project menu to load or save a file to or from a DOS device.

Since DraCo audio and video partitions are not DOS formatted, they do not show up in file requesters. File requesters are also opened by

other menus and gadgets, when it is necessary to specify the location of something to be loaded, or saved.

If you understand the principles of directory trees and paths outlined, in the last two sections, using file requesters will be very straight forward.

For example, If you wanted to save a scene file in the DraCo partition(volume), in the drawer(directory) called Movieshop,

- Select the Project\Save scene as... option from the Project menu.

Volume Name   Device Names

Choose from this list to enter a device or volume, or choose a file.

Volume gadget lists all avialable DOS Devices

Parent gadget will display the next higher level in the directory tree
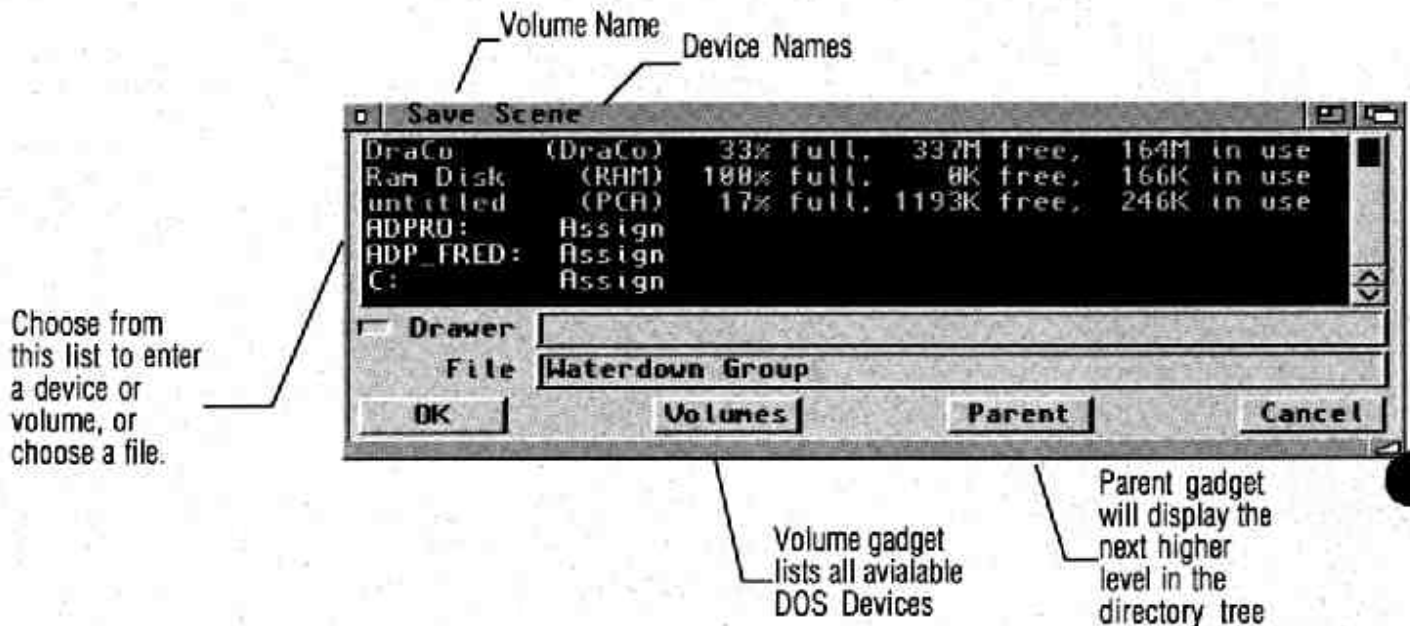
- Select the Volume Gadget at the bottom of the file requester, to display all the volumes.

- Select the DraCo Volume, by double clicking on the Volume name in the list, to display the contents of the DraCo Partition.

- Select the Movieshop Drawer, to display, the contents of the MovieShop Drawer.

- Enter into the file string gadget the File name that you want to save this scene as, by clicking in the string gadget with the mouse pointer. When the shaded box appears in the string gadget you can start entering text.

- Click on the OK button to execute the save process.

The file Waterdown Group, has now been saved to the DraCo:MovieShop Drawer. The path that describes this file's location is DraCo:MovieShop/Waterdown Group. If you wanted to retrieve this file, you would need to use this same path.

Note: In general names with spaces in them should be avoided. Use the underscore character when a space is desired.

To open or load the same file using the file requester, you would follow basically the same steps. By double clicking the names in the list, make your way from the root partition (DraCo:) down the directory tree, to the Movieshop drawer, where upon locating the Waterdown Group file, you could select the file with the mouse pointer, and then select the OK gadget, which would execute the loading process.

Using HDToolBox to Check SCSI ID's

If you plan to use an external drive with the DraCo, you will need to determine what SCSI ID's are being used by the SCSI devices already in the system.

Usually, DraCo Workstations will be configured as follows:

SCSI ID	Description	Volume/Device Name
0	System/Boot Drive	DraCo:
1	Video Partition1	VID1:
2	Video Partition2	VID2:
3	CD ROM Drive	CD0:

If you find, that by using ID's 4,5,6,or 7, that your external device does not show up or prevents the system from booting up, you will want to check SCSI ID's in the HDToolBox program.

Open the HDToolBox program, by first opening the DraCo Drawer, and then the Tools Drawer within the DraCo Drawer.

You may need to Scroll the Tool window's display to the right, using the slider gadget, to see the HDtoolBox program. When you have located the HDToolBox program, double click on it to start it.

When the program first launches, the initial display will list, the devices currently mounted in your system, as well as their respective SCSI ID numbers(addresses).

Termination

With some external devices, which have active termination, you may find that you can leave the termination on in the DraCo boot screen (hold down right mouse button during boot up). Otherwise, you will need to use the DraCo boot screen option to turn off external termination before you add your external device.

Never attempt to add or remove External devices to or from the DraCo's SCSI port while either device is powered up.

Appendix C • Backing Up And Archiving

Backing up to External/Removable Drives

Backing up involves the routine(daily) duplication of your work to a digital copy that is used in the event that the original data is lost.

Digital video data requires so much storage, that it is not feasible to routinely back up your data any other way than by using other hard disks. Currently DLT devices are not supported.

The largest device that can be attached to the DraCo's SCSI chain is a 4GB Drive. This limit is soon to be expanded.

If your projects use partitions that are less than 3.8 GB, you can use the Diavalo software to automate the process of backing up, using either a larger fixed disk or a series of removables. Consult the Diavalo manual for details.

The first step in backing up work in progress to a hard drive, is to portion out your data to fit in the storage increments you have.

If using a Jaz drive to back up, you will need to create groups of scene files that are in total less that 1 GB each. Then using the Project\Save Scene as menu item from the Project menu, back up the scene files.

If the average data rate of video in a project is 3.5 MB/sec, that means that each minute will take 210 MB, and thus a Gigabyte will store a bit more than 4 minutes. Since audio data is also stored with the video in a scene file, some space needs to be provided for that.

This process is somewhat cumbersome, but you have total control of the process.

There are trade offs between manual back ups and Automated Archiving. Instead of spending 12 or more hours storing everything in 8 GB worth of video storage, to 4 DAT tapes, you can just save out the scene files of your work in progress, which should be considerably less then the amount of all your raw footage. If you do end up needing some of the data from your raw footage, it may be quicker to redigitize versus restoring from a set of 4 DAT tapes.

Even if you do want to back up everything you have in a project, it would only take an hour or two to organize the data into 1GB groups, and then store it to eight Jaz cartridges. So this is the only realistic method for routine back ups.

Formatting new Drives

When you add a new drive or removable cartridge, you will need to prep, partition and format it, before you can save data to it.

If the new Drive you are adding to the system is for use as a data partition for DraCo Vision Editing Software, you only need to Prep and partition the Device. If you plan use this device, to back up Scene files, or to transport digital video data between the DraCo and other systems, you will need to format the device, as well as prep and partition it.

Prepping New Hard drives

Open the HDToolBox Program, located in the Tools drawer on the DraCo: partition. You do not need to prep unit three (the CD ROM drive), but all of the other drives that show up as unknown, you will need to prep.

For each Unknown drive:

(For sake of consistency, start with the lowest SCSI ID and work your way up.)

Click once on the drive in the main list in the 'Hard drives in System' window.

Then click once on the 'Change Drive type' button.

Then click once on the 'Define new...' button.

Then Click once on 'Read configuration'. If you are using a 4GB drive do not be alarmed that the size reads something very strange like '-1'.

Also, keep partitions for 4 GB drives below 4096 Mb. DraCo can use these partitions, but you must keep the size just below 4 GB.

Uncheck the 'supports reselection' option.

Exit the define/Edit Drive Type window, by clicking once on the OK button.

Partitioning Drives

After the Drive has been defined, click once on the new drive in the "HardDrives In System" list.

Do not use the help button here, and do not low level Format your drive.

Click once on the Partition Drive button.

The default setting is half of the size of the device, creating two partitions. If that's acceptable, you can provide a Partition Device Name for each partition, and make sure both of the partitions are not Bootable, then click the OK button, in the Partitioning Drive window, and then click on the Save Changes to Drive button in the Hard Drive Preparation, Partitioning and Formatting window.

If you want partition the drive differently, or make one single partition, the size of the entire device or cartridge, first you will need to select the second partition in the Partitioning Drive window, by clicking on right half of the graphic representation.

The right side will turn to black indicating that it is the current partition.

Click on the delete partition button, and the right side of the graphic will turn Grey, indicating it is unused.

Now you can use the little blue triangle below the graphic to adjust the current partition to the full size of the device.

Then provide a Partition Device Name for each partition, and make sure both of the partitions were not Bootable. You can accept these settings with the OK button.

Then, click on the Save Changes to Drive button at the Hard Drive Preparation, Partitioning and Formatting window.

You can go back in to the Partitioning Drive Window to make incremental adjustments as we are in this section and the following section of this instruction. But, as this process becomes familiar, you may wish to combine both this step and the following step all in one cycle.

Setting the Partitions Memory Masks

For each partition, to be used, you will need to set the memory mask. It is easiest to do this while you are partitioning the drive.

While in the Partition Drive subwindow of HDToolbox,

check the Advanced options box.

and then click once on the 'Change...' button.

In the box marked 'mask', point the mouse at the leftmost 'f' in the text entered there. A text cursor will appear. Type '7f (no quotes), and then hit the return key on the keyboard. If you do not hit the return key on your keyboard the changes will not take.

The mask entry should now read '0x7fffffe'.

Click once on the OK button.

Do this for all partitions on all hard drives (SCSI cartridges) being added to the system.

You will need to restart the system for the partitions you have just made to show up on the Workbench.

After there start, use the Format command from the Workbench's Icons menu to Format the drive for DOS. When you format the device, provide a meaningful volume name, so you will recognize the volume in file requesters.

Alternative Dos Drivers

The PCA icon in the Storage /DosDrivers Drawer, will allow you to use MS DOS formatted Floppies. Also it the Storage/ Dos Drivers Drawer is the CD0: icon which you will need to place in the Devs/DosDrivers Drawer if you want to access DraCo Dos formatted CDROMs.

Archiving to SCSI/DAT Tape Drives

Archival is the Storage of a finished Project.

Diavalo will back up all of the project and its data, but it only works with storage sizes less that 3.8 GB. Keep in mind that storing 3.8 GB of data to DAT tape could take six or more hours.

Consult the Diavalo Manual for information on Archiving Movieshop projects.

Appendix F • Customizing DraCo Vision Editing Software

Window Arrangements

To help you manage the different combination of windows that you will want open at various times of your editing, use the Window Arrangements window, to save different setups that you like. By simply double clicking on a arrangement name the windows for that arrangement will open and snap into the place you saved them to.

Macros

Perhaps one of the most useful features found in DraCo Vision Editing Software is the ability to assign a single command (called an "Alias") or entire script file to a shortcut keystroke.

Select Macros from the Windows menu to bring up this window. An alphabetically-sorted scrollable list should show all defined Aliases and script files. Aliases are listed by their Alias name--usually the shortcut keystroke--and script files are listed by their name. (Note: Aliases created with the Alias command will have no keystroke listed.)

The Key field defines the shortcut keystroke. Keystroke combinations can be defined using the following standard DraCo DOS Commodity qualifiers: Shift, LShift, RShift, Alt, LAlt, RAlt, LCommand and RCommand, Control, plus Rightbutton, Leftbutton, and Middlebutton (mousebuttons). Non-alphanumeric keys are defined as: Capslock, Numericpad (or Numpad) <key>, Up, Down, Left, Right (cursor keys), F1 through F10 (function keys), Esc, Tab, Space, Backspace, Help, Return, and Enter.

The Action field can contain a single MovieShop command (for an Alias) or a command script name, including appropriate path information. When defining a script file you may click the Select button and use a file requester to identify the script file.

When a script file is defined, it will automatically be added to the User menu. As such, script files do not have to have a keystroke defined (i.e., the Key field can be left blank.)

DraCo Vision Editing Software comes pre-configured with macros. However, feel free to change and modify these to suit your needs.

Setting Up a Macro

To set up a new macro, follow the these steps:

1. Click the New button.

2. Use the cycle gadget to select the type of macro: Alias (single command) or Script File.

3. Enter the keystroke definition, if any. (May be left blank for script files.)

4. Enter the command or script file name in the Action field.

Deleting a Macro

To delete a macro, simply select it in the list and click the Remove button.

Saving and Loading Macro Settings

To save your macro settings, click the Save As button. The default macros are saved in a file called movieshop.macros. However, the name of the current macros file is saved in the MovieShop settings file. Thus, if you save the macros using a name other than default.macros and then save the settings file, MovieShop will load that macro file the next time it is run.

To load a macro file, just click the Load button and use the file requester.

Appendix G • Trouble Shooting

Boot Screen Menus

Holding down the left mouse button at bootup shows you the OS bootscreen menu. Here you can check which hardware has autoconfiged, and choose which drive to boot from.

Holding down the right mouse button, at bootup brings up the DraCo Boot screen. Here you can adjust various settings such as whether you use CyberGraphics. If you have not installed software to the hard disk yet, the Cybergraphics should be turned off.

At the bottom of the DraCo Boot screen is a checkbox to reset all DraCo setting to Default. This option is helpful especially if there is distortion in the DraCo Graphics display.

No DraCo Boot screen or Workbench

If the DraCo Boot screen or the Workbench screen never comes up, You should first check that nothing has wiggled loose on its journey to you.

1. Unhook the power and other cables from the back of the DraCo.

2. Remove the six Phillips head screws holding the cover on the tower case.

3. Lift the back end up as you pull back the cover away from the front of the system.

4. Inside check these connections:

For reference. The front of the system is where the power switch is and Back of the system is where the cables are connected.

Check the Seating of the Cards

Check to make sure all the cards are properly seated in their slots. This may require laying the unit down on its side so you can see in easier. A flashlight will also be helpful.

If any of the cards appear loose. Unscrew the stay screw holding the backplane of the card down. And remove the card completely. Now while piloting the tongue into the groove for the backplane, gently yet firmly seat the card into the slot. Check to make sure it is fully seated in it's slot.

Do this for all cards, as necessary.

Check the RAM

The main CPU board, with the small fan, is called the Eltanin.

On the Eltanin, check to make sure the RAM SIMMs are properly seated. You may need to take out SIMMs to see if ones further back are seated. A flashlight may be needed.

Check Wires and Ribbon Cables

Smaller wires connected to Eltanin

There are a few double strands of wires that connect to the Eltanin.

A red and white pair connects just behind the SCSI ribbon cable located nearest to the back of the system. The red wire should be closest to the back of the system.

Moving toward the front of the board, a bit past the middle, where the CPU is with its little fan, a blue and white pair of wires should be connected to a pair of pins that are located, right next to the first smaller ribbon cable socket. The blue wire in the pair should be closest to the ribbon cable sockets.

All the ways towards the front of the board, near the last ribbon cable socket, a Green and white pair of wires connects to the three pins in that area, with the white wire closest to the front of the system.

Ribbon cables connected to the Eltanin

With the exception of the floppy drive ribbon cable, which has a keyed connector and must be seated in its socket to fit into the notch, All the ribbon cables connect to the Eltanin, with the red marked side pointing toward the front of the system.

The SCSI Ribbon cable is larger then the rest and so it can only fit in the socket near the back of the system. The other cables generally hang down over their respective sockets. Make sure they are all seated properly into the Eltanin Board.

Now Trace the SCSI cable through the system, to make sure that the ribbon cable is properly seated into all the SCSI devices it is attached to. This may require a flashlight to see clearly. An 'almost' properly seated SCSI connection is going to cause intermittent or strange behaviors, so you should double check that all the connections are solid, by pressing evenly on the connector behind each SCSI device.

Now Trace the Ribbon cable for the floppy. It's socket on the Eltanin, is the second one from the front of the system. Make sure the other end is properly seated onto the floppy drive.

With the case off, reconnect the power chord, mouse, and Keyboard. Try booting up the system again.

If you are still having problems. Place the DraCo Floppy disk in the Floppy Drive, and try booting up. If you do get The Boot up Screen and the Amiga Workbench comes up, you probably need to install the system software onto your system Hard drive.

If your system does not boot off of the DraCo Floppy, contact DraCo Technical Support at

303-440-5399

Glossary

Alias

A user-defined abbreviation for a command line. An Alias is generally associated with a shortcut keystroke, so it can be executed quickly from the keyboard. An Alias can also be used in a script file in place of the command line it represents.

Alpha Channel

Alpha for short. Refers to an intermediary step in making something transparent. The alpha channel determines how much of an image will be mixed into another image. Portions that aren't mixed at all appear transparent, while portions that are 100 percent mixed (i.e., replace what is in the second image) appear opaque. With image processing programs, this can be done at a pixel level and the alpha channel is an actual grayscale image. However, where there is only one level for an entire image, the concept of "alpha" can be thought of as just a transparency setting without directly addressing an intermediate alpha channel.

Antialiasing

This process reduces jaggies by adding in-between colors that visually smooth things out. (see Jaggies)

AppIcon

This is a special Workbench icon where you can drop other icons on it and have it processed. Generally, when you double-click an AppIcon, the relevant program's interface will appear.

Attenuation

To make audio lower in volume.

Bitplanes

This refers to the concept that each pixel in a screen is a certain number of bitplanes "deep." This directly impacts the possible number of colors for each pixel.

For example, a 24-bit screen is 24 bitplanes deep, allowing 16.8 million colors (2^{24}) and an 8-bit screen is eight bitplanes deep, capable of 256 colors (2^8).

Black Burst	This is composite video that is completely black. DraCo must synchronize with a video signal before it can digitize it. If the Free Running is active (see Windows \ Settings \ Hardware), DraCo syncs to a self-generated "black burst." Note: This can cause audio syncing problems when the video source is tape.
Buffer	This is a general term used to describe an area of RAM used to hold information. DraCos main buffers are portions of Amiga RAM reserved exclusively for VLab Motion's use.
Capturing	See Digitize.
Chroma Subcarrier	Hue and color saturation is determined by the chroma subcarrier signal. This signal has a fixed burst that acts as a reference point for subsequent color information. The coding of the subcarrier burst into the video signal can be altered in the Windows \ Settings \ Hardware window. Too much adjustment can create flickering color.
Clip Range	The actual size (height and width) of the recorded video.
Clipping	Occurs when audio input levels exceeds the maximum allowable. Essentially, the recording gets "clipped" off because the device is unable to store all of the audio information. The result is distorted playback.
Codec	Short for compression and decompression algorithm.
Color Keying	Overlaying two video signals. By defining some transparent properties to one signal, the other signal can show through.
Color Saturation	The strength of a color, determined by the intensity of the chroma subcarrier. Fire-engine red has a lot of saturation, while pink has a little.

Command Script File	An ASCII file that uses the MovieShop commands in either a limited MovieShop or standard ARexx format.
Commodity	Commodities are background programs that control certain events and include programs like (DraCo DOS) AutoPoint and Blanker. For additional information on commodities, please refer to your DOS manual.
Composite	Generally, this is analog video where the chrominance and luminance information is combined. See also "Y/C."
Chroma	Abbreviation for Chrominance.
Chromakey	See Color Keying.
Chrominance	Color.
Composing	See Compositing.
Compositing	Merging multiple images together.
Current Frame	Generally, the frame whose number is displayed in the Scene Control windows. The Time Line also has a current frame.
Current Scene	The scene whose name is selected in the Scenes window.
Cuts-Only	Where scenes just cut from one to another without any transition effects, like wipes and fades. Most TV shows and feature films use cuts nearly exclusively.
CVBS	Abbreviation for Composite Video Burst Sync (i.e., component video).
Cycle Gadget	An Intuition gadget that "cycles" through a list of items as it is clicked.
Daisy-chain	Having multiple devices connected to each other in serial fashion. For example, device A is connected to device B, which is connected to device C, etc. etc.
Datarate	This is the amount of data that is being transferred at a particular instant. (e.g., 3MB/sec is a datarate)

Device	Can refer to a hard disk, RAM disk, logical device, volume, external peripheral (e.g., scanner), etc.
Digitize	The process of converting analog information into digital, whether the information is audio or video. In other words, turning sound or video into something a computer can understand.
Drawer	Graphical synonym for a subdirectory.
Dummy Frame	This is an imaginary frame that appears at the end of a scene using the Scene Control window. It acts as a place holder and allows you to append something to the end of a scene.
Element	With respect to the Time Line, this term is used to describe anything placed on a Time Line: a scene, audio sample, or operator.
Envelope, Audio	Graphical representation of volume changes.
Field	Video is drawn on a display one line at a time, top to bottom. First the odd lines are drawn in 1/60 of a second (for NTSC). Then the even lines are filled in taking another 1/60 of a second. The two fields create a single frame taking a total time of 1/30 of a second (NTSC).
Format	A procedure that writes control structures to a disk that the operating system can recognize which allows file management.
Frames	A full frame of video consists of two fields. For NTSC, a frame is displayed every 1/30 of a second.
FRED List	FRED is a utility program that comes with Elastic Realities' ADPro. It is sort of a mini-off-line-non-linear editor that works with scaled down versions of frames. This allows real time playback of the scaled-down frames without special hardware. It can output a so-called "FRED List", which defines a playback sequence for a set of image files.. FRED Lists

provide a nice way of importing frames/fields into MovieShop already in the proper order.

Gadget   Mouse-driven interface objects like buttons, sliders, cycle gadgets, window drag bars, etc. See also "Intuition".

Group   A set of scenes grouped under one name. Similar to a file directory that holds one or more files/directories. Becomes operationally the equivalent of a single scene.

Hot Colors   Video has a more limited color range than computer graphics. Color can exceed this range for a number of reasons, including image processing. Hot colors will tend to bleed on the screen and seem oversaturated. Higher-end video formats are less susceptible to this.

Hue   Refers to color shade (red, yellow, green, blue). In a video signal, a color hue is determined based on a timing difference in the chroma subcarrier. In VLab Motion, this difference can be modified using the Hue adjustment in the Windows \ Settings \ Hardware window.

Intuition   This is the part of the operating system used for the graphical user interface (e.g., windows, gadgets, etc.)

I/O   Stands for Input and Output.

Jaggies   This is a "stair-stepping" effect where curved or angled lines don't appear smooth. (see Antialiasing)

JPEG   A lossy still image compression algorithm defined by the Joint Photographic Experts Group. Generally, compression is achieved by eliminating color information that is beyond the limits of human vision. The amount of compression is adjustable from 1 to 100. VLab Motion uses the official JFIF Q-table definitions.

Logical Device	A logical device appears to the operating system as a physically separate device even though multiple logical devices may be part of a single larger physical hard drive. Sometimes called a logical volume or logical drive.
Lossy	A compression technique that eliminates some portion of the original data, like JPEG.
Lossless	A compression technique where no information is lost. ARC, LHARC, ZIP, etc. are examples of lossless compression.
Luminance	Brightness.
MAUD	The audio format used by Draco.
Motion Capable	Refers to Time Line operators that provide separate beginning and ending parameters allowing the effect to happen over time.
Motion-JPEG	An image compression algorithm for moving images based on JPEG.
Movie	Basically what the Time Line plays after all rendering is completed. In other words, the end product.
MovieShop	This is the main video editing software.
Multitasking	Simultaneously running more than one program.
Multi-select	Multiple options on the same menu can be selected/deselected by clicking the left mousebutton, while holding the normal menu button (i.e., the right mousebutton). Note that not all programs recognize this action.
NTSC	A video system standardized in 1953 by the National Television Systems Committee of the Federal Communications Commission used in North America, Japan, and other areas.
Operator	Generally this is synonymous with an effects module.

PAL

Stands for Phase Alternation Line. This video standard is used in most European countries.

Partition

A hard disk must be "partitioned" before it can be used. Basically, the drive is divided into one or more independent parts. Each part is referred to as a partition.

Pre-Roll

This is extra time at the beginning of a clip of video that can be used for syncing up or doing transitions.

Post-Roll

This is extra time at the end of a clip of video that can be used for doing transitions.

Public Screen

This is an screen that allows other programs to open windows on it through normal system calls.

RAM disk

The Draco OS automatically sets up the ability to use part of your system memory as a storage device, just as if it were a disk. Memory is dynamically allocated so it only uses the amount of RAM needed to store whatever is saved there, plus a little overhead.

Be aware that this is erased when you turn off or restart your system.

RC

See Return Code.

Reference Stamp

A stamp of a specific frame in a scene, selected by the user to represent a scene.

Render

The process of calculating the end result of various video, audio, and effects on the TimeLine.

Result Variable

This is a special ARexx variable that returns information from a command. Note that only some commands return a Result.

Return Code

This is a special ARexx variable that returns a number that indicates what happened in the preceding command. Generally, it is equal to zero if the command executed without problems.

RPN	See Reverse Polish Notation
Reverse Polish Notation	A method for making computations based on stacks of data. Allows processing of complex formulas using a linear approach.
RGB	Stands for Red, Green, and Blue. These are the standard three colors used to define a single color for computer graphics. For 24-bit graphics, each color has 256 levels.
S-Video	See Y/C.
Sample	A digitized piece of audio.
Samplitude	The audio editing program bundled with the Toccata board.
Scene	The smallest single collection of digitized video that the Scene Control can work with. This could be a single frame, but is normally a sequence of frames. A group is operationally the equivalent of a single scene.
SCSI	Stands for "Small Computer Standard Interface". It is a standard for communicating between computer components. There are level I, II, and III SCSI standards.
SIMM	A small circuit board with memory chips. Stands for "Single inline memory module".
Slider	This is an interface gadget that adjusts some setting. The value is changed by dragging the grab point.
Stack	This holds video elements, as a RPN Time Line is being processed. Stack elements are always added and taken from the bottom.
Stamps	Scaled-down reference frames taken from scenes that can be displayed on the MovieShop interface.
Subcarrier	See Chroma Subcarrier.
Thermal Recalibration	As a hard drive heats up, the rotating platters expand, moving the data stored on the platters. Hard drives periodically perform a thermal recalibration to

compensate for this. Unfortunately, this will interrupt the flow of data being transferred at the time. MovieShop's buffers compensate for this.

Transfer Rate	See Datarate.
Trim	To Adjust the in and out points of an edited sequence of Video and/or audio.
Virtual Screen	Refers to an computer display where the image size exceeds the size of the display. Generally, you can scroll around the entire image using the mouse or cursor keys.
Y/C	(Also known as S-Video) Generally, this is analog video where the luminance (Y) and chrominance (C) information is kept separate. See also "Composite."
VGA	Stands for "Video Graphics Array". This is the standard used for video display.
Volume	This can be a partition or logical device.
Windows	Generally refers to full or partial-screen bordered areas that can contain icons, various interface gadgets, and/or text.
Workbench	This is the main graphical user interface screen. Generally, all applications are run from here.
YUV 4:2:2	A digital video term that describes the amount of luminance (four bits) and chrominance (four bits: 2 + 2) information that can be stored digitally. YUV 4:2:2 is the current standard used by most non-linear digital editing systems available today, including DraCo.
YUV	Component A video format that uses three separate signals, one for luminance and two for chrominance. Special encoding of subcarrier signals is not required, which allows component systems (e.g., Betacam SP) to maintain high picture quality.

Index