

Designing Menus with ENCORE DVD

Encore DVD
Version **1.5**

PLAY

- Creative designs for still and motion menus
- Interface Design and usability strategies
- Advanced Photoshop and After Effects techniques

MOTION
MENU



COLOR
SET

San Francisco
Neighborhoods

SLIDE
DOWN

San Francisco
Neighborhoods

* Play
Scenes
Home

LOOP POINT

San Francisco
Neighborhoods

A
RADIAL WIPE
B

TRANSITION

ROTATE

Digital Video
DV
EXPERT SERIES

ROUTLEDGE

by John Skidgel

Designing Menus with Encore DVD

John Skidgel

 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK


EXPERT SERIES

Supplementary Resources Disclaimer

Additional resources were previously made available for this title on DVD. However, as DVD has become a less accessible format, all resources have been moved to a more convenient online download option.

You can find these resources available here: <https://www.routledge.com/9781578202355>

Please note: Where this title mentions the associated disc, please use the downloadable resources instead.

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Dedication

For their unwavering support and love, I dedicate this book to my parents, Herbert and Blanca Skidgel, and to my wife, Allison.

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Introduction

Developing a DVD requires several stages: acquisition, editing, menu design, linking, compression, quality assurance, usability testing, and replication. This book is about menu design with Adobe Encore DVD. You will learn how to create functional, aesthetically pleasing menus.

Menu design is a crucial part of the DVD authoring process because menus are the interface between viewers and the content stored on the DVD.

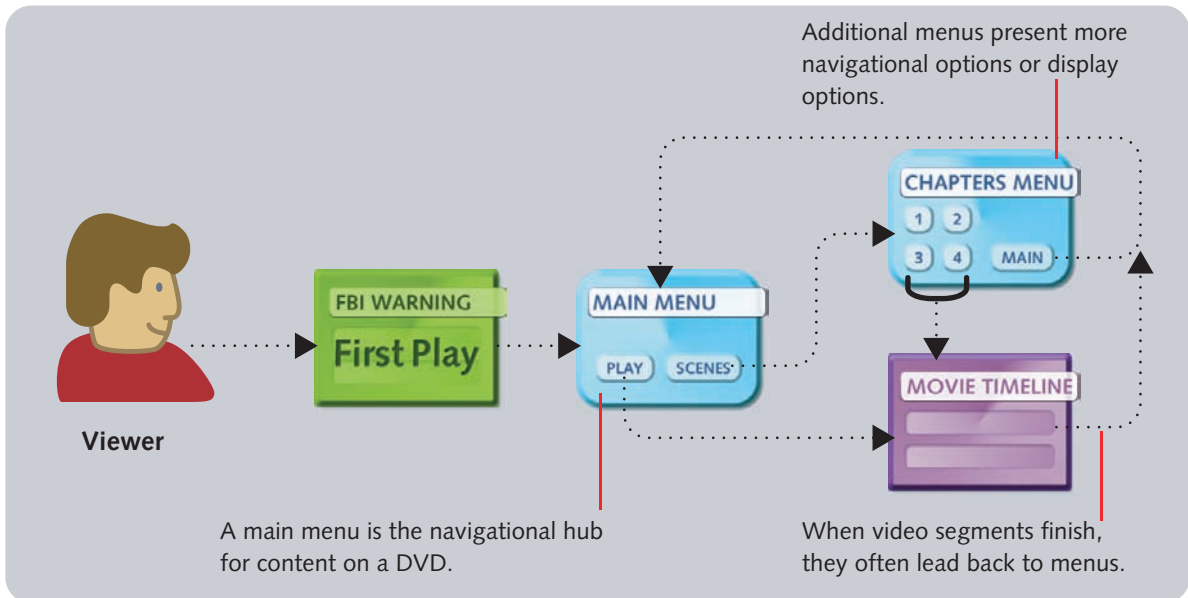


Figure 1-1: Relationship between the viewer and menus on a DVD

How this Book is Organized

To help you design better menus, this book explains all the facets of DVD menu design. The book is organized into four sections: Introduction, Designing for the Screen, Creating Still Menus, and Creating Motion Menus. A set of appendices, a glossary, and an index round out the book's offering.

Section One: Introduction

You're reading Chapter One, which gives you an overview of the book, tips on how to use the book, and hardware and software prerequisites.

Chapter Two discusses the DVD specification as it relates to menus. It covers the structure of a menu and the differences between still and motion menus, NTSC and PAL video formats, and normal and wide screen aspect ratios. I include a descriptive list of the different types of menus you can create for projects at the end of the chapter.

Section Two: Designing for the Screen

Chapter Three explains interaction design for DVD menus. It includes strategies for gathering requirements, mapping interactions, and testing prototypes. If you're new to interface design, you'll want to read this chapter. Chapter Four covers graphic design for DVD menus. This chapter is a primer for visual design topics such as layout, color, typography, imagery, and animation.

Section Three: Creating Still Menus

Chapter Five gives you an insider's tour of the Encore DVD interface, paying particular attention to menu design and editing functions. Chapter Six gives tips for preparing images for menus. Chapter Seven is a collection of tutorials that guide you through the process of creating still menus in Encore DVD and Photoshop.

Section Four: Creating Motion Menus

Chapter Eight distinguishes between the different types of motion menus. You'll learn how still imagery or motion combine with sound to create different kinds of menus. You will also learn how to create introductory and transitional animations. At the end of Chapter Nine, you will create a chapter selection menu with video thumbnails for each button.

Chapter Ten shows you how to create motion menus with Adobe After Effects. It begins with an overview of the interface, and three motion menu tutorials follow.

Icon Glossary

Important information is separated from the main body of text by a light gray background, and several types of callouts (Figure 1-2) list the kinds of notes you will find throughout the book.

**Production tip**

Keyboard shortcuts and time-saving methods.

**Cautionary note**

Production gotchas to avoid.

**Technical note**

References to the DVD specification, and technical definitions.

**Web reference**

Links to Internet resources.

**On the DVD**

Material on the book's DVD.

Figure 1-2: Icon glossary

How to Use the Book and DVD

If you're new to digital video, design, and DVD authoring, read the entire book. It will give you a good foundation in this exciting new medium. If you are an experienced video editor or motion graphics designer, you should read Chapters Two and Chapters Six through Nine. If you have DVD authoring experience but are new to Encore DVD, Photoshop, or After Effects, read Chapters Five through Nine.

The DVD has a lot of resources on it, including templates for planning your project as well as assets for all the tutorials. The DVD also will play in a set-top player and show samples of the menus available on the DVD.



If you are looking for more reference material, book updates, and related information, go to <http://www.skidgel.com/encorebook/index.html>.

Before You Begin

Adobe Encore DVD has several hardware and software requirements. The following pages list these requirements and offer additional advice in configuring your computer for DVD authoring.

Required Software

Adobe Encore DVD is a lot like a page layout application because it is the last leg of a publishing system. You create assets in other applications and then import them into Encore DVD to “publish” a DVD. Adobe Photoshop, After Effects, and Pre-

miere Pro have tight integration with Encore DVD, and this book covers how to make the most of Encore DVD with these applications. Figure Figure 1-3 shows the interaction between the applications.

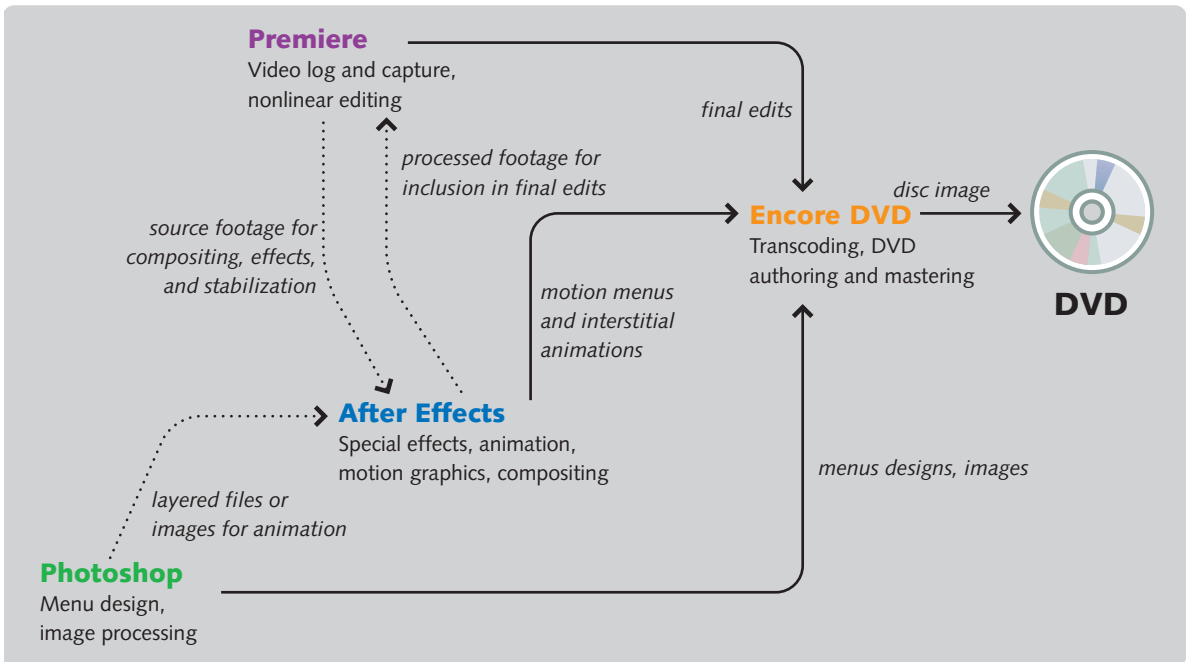


Figure 1-3: Applications used in DVD menu design

OPERATING SYSTEM

Encore DVD requires either Windows XP Professional or Windows XP Home Edition to run. Encore DVD will not run on Windows NT, 2000, or 98.

ADOBE PHOTOSHOP

Section Two explains how to use Encore DVD with Photoshop; you will frequently switch between the two applications. If you plan to edit your menus outside of Encore DVD or would like to use the Edit in Photoshop feature, you will need Photoshop. Photoshop 7 is referenced in this book.

ADOBE AFTER EFFECTS

Section Three covers how to create motion menus with Adobe After Effects. If you want to go beyond the simple chapter index-style motion menu, you will need After Effects.



Although some familiarity with Photoshop and After Effects is expected, you don't need expert knowledge of either program to complete the tutorials.

Suggested Software

You do not need the following applications to run Encore DVD, but they are incredibly helpful in producing a DVD. These are my recommendations, but feel free to use whatever you are most comfortable with.

NONLINEAR EDITOR

You use a nonlinear editor (NLE) to capture, edit, and output video for use in Encore DVD. If you do not currently own a video editor, get Premiere Pro because it has superb integration with Encore DVD. For example, chapter markers can be embedded in MPEG-2 video files exported from Premiere and used in Encore DVD. It also has many powerful features such as real-time video and audio editing. I used Premiere Pro to capture and edit all the video content for this book.

A DRAWING OR DIAGRAMMING TOOL

Either Microsoft Visio or Adobe Illustrator are great tools for creating planning diagrams, referred to as “flowcharts,” of complex DVD projects. Use Visio if you want something that does not require a lot of computer drawing skills. Use Illustrator if you want the ability to customize your diagrams or want to integrate Photoshop files. Both files also can be used to create wireframes for complex and highly interactive DVD projects.

SPREADSHEET OR PROJECT TRACKING SOFTWARE

If you are managing DVD production, consider an application that helps with planning schedules. Microsoft Excel, Project, or Visio can be used for these tasks.

Required Hardware

Figure 1-4 shows a typical hardware configuration for DVD menu design.

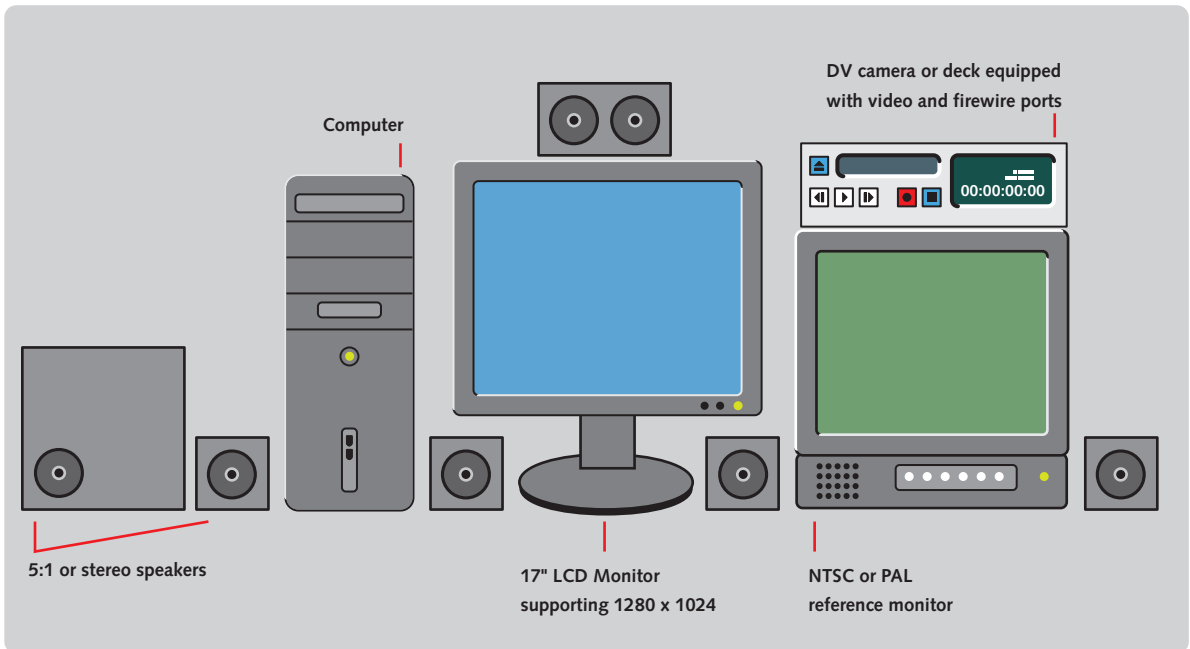


Figure 1-4: A typical computer configuration

COMPUTER AND PROCESSOR

An Intel® Pentium® III 800MHz processor is the minimum requirement. I suggest purchasing the fastest Pentium processor you can afford and consider purchasing a system with Intel's hyper threading technology or a multiprocessor system. Menu rendering, MPEG-2 video encoding, and disc burning all run faster with these processor enhancements.

MEMORY

Although Encore DVD lists its memory requirements as 256 megabytes of RAM, 512 megabytes is recommended to run Encore DVD simultaneously with Photoshop and After Effects. If you can afford 1 gigabytes or more of memory, go for it.

HARD DISK

Because DVD discs range from 4 to 18 gigabytes in size, large-capacity hard disks are a necessity for DVD authoring. Encore DVD requires ten gigabytes of available space. Note that available space is the disk space left over *after* installing the operating system, all software, fonts, and other material—it is not the capacity of the hard disk. Ten gigabytes will fill quickly, and realistically, 10 gigabytes of available space will support authoring one project or at most two projects concurrently. If you plan to do a fair amount of DVD authoring, have 60 gigabytes or more of available storage. Add additional storage such as a second hard disk or a disk array if you plan to edit video on the same machine.

DISPLAY AND VIDEO CARD

Between designing menus, constructing timelines, and simulation, you should have at least one large (1280 by 1024 pixels) monitor. Two monitors are highly recommended. With two displays, you can spread Encore DVD's windows out and quickly access items without having to close and reopen windows.

Your display card should support full color (referred to as “millions of color” or 24-bit color) at 1280 by 1024 pixels. The card should have at least 16 to 32 megabytes of video memory. If you plan to support two displays with a single card, I would recommend purchasing a card with 64 or 128 megabytes of video memory.

DVD-ROM DRIVE AND A SUPPORTED DVD BURNER

The software and additional content ships on a DVD, so you need a DVD-ROM drive. If you plan to create DVDs, you'll need a DVD drive that burns DVDs.



See Adobe's Web site for an updated list of supported DVD burning drives: <http://www.adobe.com/products/encore/systemreqs.html>.

SOUND REQUIREMENTS

A stereo sound card is required to hear audio while previewing a project in Encore DVD. In addition, you should consider purchasing external stereo speakers or, if your sound card supports 5.1 surround sound, surround sound speakers.



Although Encore DVD cannot encode 5.1 surround sound, it can import and preview surround sound audio encoded in another application. It can also write surround sound audio files when building a project.

A CCD is a charged-coupled device, an electronic component behind the lens that records color and light information.

Suggested Hardware

VIDEO CAMERA, VIDEO DECK

If you are producing video for DVDs, purchase or rent a three-CCD video camera equipped with Firewire and a high-speed cabling system for connecting video and storage equipment to computers. It is also known as Sony iLink or the IE1394 standard. Cameras with three CCDs take better video because they capture color and detail better than a camera with a single CCD.

If you own a video camera already, consider purchasing a video deck to capture the video from the camera. A video deck saves wear and tear on your camera and saves you the time of reconnecting your camera to the computer.

A video tripod with a smooth fluid head and level rounds out your camera kit. Although hand-held shots are great, they are not meant for all shots. If you videotape scenery, interviews, or other B roll, a level tripod gives you steady footage and smoother pans and tilts.

A PROFESSIONAL VIDEO NTSC OR PAL VIDEO MONITOR

You should always use a professional television monitor to preview your broadcast video project, even if your computer has action and title safe guides. If you plan to design wide screen menus, look into a video monitor that can switch between 4:3 and 16:9 aspect ratios.

DVD PLAYER

One or more set-top DVD players are crucial for proofing test discs. I recommend purchasing a cheap DVD player so you can test the low end of DVD set-top players in addition to the fancier Sony, Panasonic, or Pioneer player that you might already own. The Sony PlayStation 2 and Microsoft Xbox are also great proofing systems.

DIGITAL CAMERA AND SCANNER

A scanner is useful when you want to input paper sketches, flow charts, illustrations, and photographic prints, negatives, and positives. A digital camera is a great resource for taking photos quickly and transferring photos to Photoshop for embellishment.

The DVD Menu

A menu is the user interface for a DVD. It contains hotspots, which are called buttons. Buttons play video, go to additional menus, display text subtitles, or switch audio tracks. This chapter discusses both still and motion menus and the differences between the two.

This chapter presents the following topics.

- Menu structure
- Digital video and DVD menu design
- The differences between still and motion menus
- Types of menus
- Types of links

Menu Structure

To the viewer, a DVD menu appears to be a background image with buttons on top, but it is actually a single video frame without audio. As the user presses the arrows keys on the remote control, the selection moves among the buttons onscreen. The button's appearance changes as it is selected or activated. Pressing the Enter key activates a selected button and either goes to the button's link destination or executes a command, such as displaying subtitle text. Figure 2-1 shows the components of a menu.

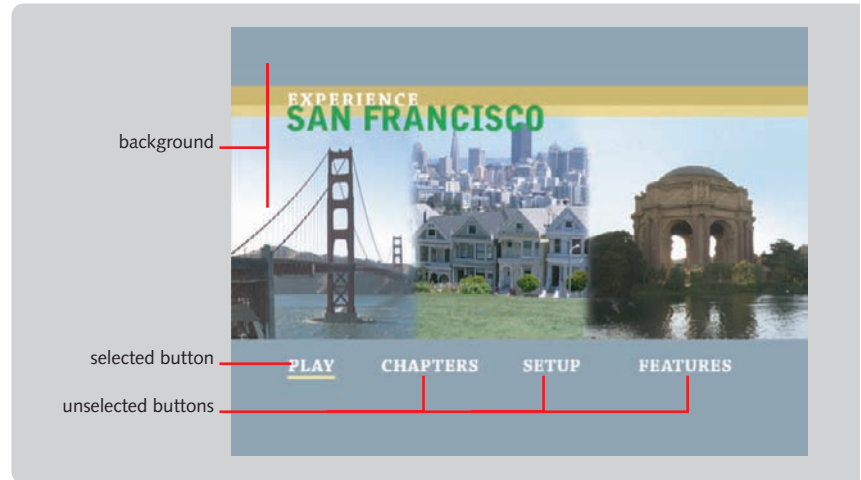


Figure 2-1: A typical menu




Buttons

Although buttons go to links or initiate commands, they need not look like buttons in a software application. A button can be any combination of image, shape, and text. Most DVDs use only text with a simple rollover, as shown in Table 2-1.

BUTTON STATES

A button has three unique states—Normal, Selected, and Activated—triggered by selecting one button, or another button, and engaging the button after selecting it. Table 2-1 shows how the states are shown onscreen with the subpicture and corresponding state colors from the menu's color set.

Table 2-1: Button states from a one-color subpicture

	Normal When a button is not selected.
	Selected A selection is made with the arrow keys on a remote or with the cursor if played on a computer.
	Activated Activation occurs when a button is selected and the viewer presses the Enter key on a remote or clicks on the button on a computer.

When Encore DVD builds the DVD, it flattens the buttons and the background into one videostream, so the viewer interacts with hotspots on the video. The following items create this interaction.

- *Highlight region.* The highlight region is not a visible image—it is a list of screen coordinates specifying where each button, or hotspot, is located. It is analogous to an HTML image map, but note that it's only rectangular.
- *Subpicture.* This graphic is used to create the selected and activated button states. You see a piece of it when you select or activate a button. Subpictures are analogous to an HTML rollover effect.
- *Color set.* This is a color palette containing 15 colors. Each color also has an optional level of transparency. These colors are used to colorize the subpicture to show a button's state. The palette is divided into three colors for the normal state and two groups of six colors for the selected and activated states.
- *Button routing.* This comprises the navigational paths between buttons that are followed when the arrow keys on a remote control are pressed. It is analogous to Tab key order on an HTML form.
- *Button order.* This is the numerical ordering of buttons. Pressing the number keys on a remote control selects buttons on the basis of their button number.



In Encore DVD, you can specify that a button is automatically activated when it is selected. This is useful for touchscreen kiosks or for menus with more visually elaborate button states.

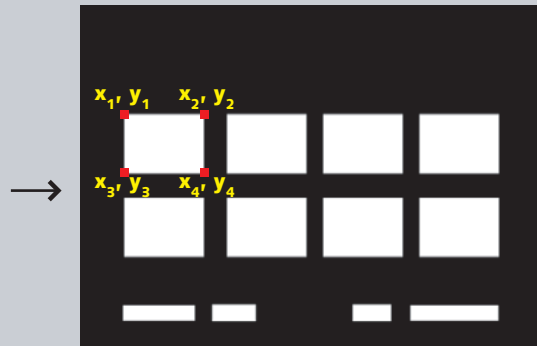
HIGHLIGHT REGION

The highlight region contains x and y coordinates that specify where buttons are and which portion of the subpicture to show for each button. Figure 2-2 is a repre-

sensation of a menu's highlight region, but note that the highlight region is not an image stored on the disc, nor do you create it in Encore DVD.



Encore creates a rectangle around each button.



It then calculates a list of coordinates from the rectangles. The list is referenced during playback to show highlights, and it creates hotspots for PC-based DVD players.

Figure 2-2: Highlight region

If you have ever created highlight regions in other applications, you will be glad to discover that you are spared this task in Encore DVD, which does this automatically.

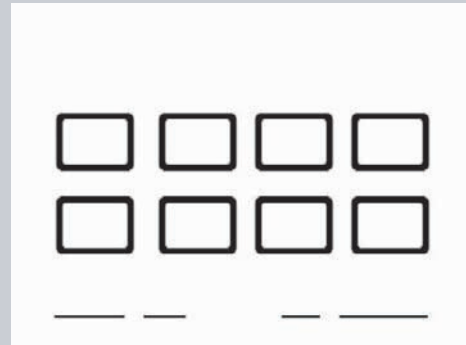
SUBPICTURES

A subpicture is a four-color (2-bit) image composited on top of a DVD menu or timeline during playback. Subpictures serve two purposes. For menus, they are the highlight that appears when a button is selected or activated. For timelines, they are the subtitle text. In both situations, one color is used for a matte, and the

remaining colors (up to three) are for the fill. In most cases, a menu subpicture is only two colors: one for the matte and the other for the fill.



At build time, Encore DVD takes your menu and creates either a flattened MPEG-2 still frame for a still menu or a flattened MPEG-2 video stream.



Encore DVD also takes all the subpictures and combines them into a single 2-bit graphic file.

Figure 2-3: Subpicture

The rollover effect is created by the DVD player. The player shows the subpicture when the user selects or activates a button. The player can also change the color and opacity of the highlight so the selected state looks different from the activated state. When viewing this effect on an NTSC or a PAL television, it appears acceptable because television resolution is too low to show the aliasing. When viewed on a high-resolution computer display, the subpicture's crude aliasing is noticeable.



NTSC is the television standard used in North America and Japan whereas PAL is used in Europe.

The rollover effect on a DVD menu is less flexible than is possible with a Web page or Flash file. These other media allow full-color effects such as smoothly colored glows or animated rollovers. DVD rollovers are a simple color change because DVD players (especially old ones) have limited processing power to display menus and video without crashing.

MENU COLOR SETS

A color set provides the color information for button highlights. It has 15 color options specified in red, green, and blue (RGB). Each option also has an opacity value.



In addition to RGB, a color option can be specified by hue, saturation, and brightness.

Within a set are a normal color group, and two highlight groups. Two things to notice are that all groups within a color set have a Color 1, Color 2, and Color 3 option and each of these have an opacity setting. The three colors correspond to the colors available to the subpicture. They also map to the Photoshop layers used to create the subpicture. The opacity setting allows for portions of a button highlight to be fully, partially, or not transparent.

See *Encore DVD Layer Naming Convention* on page 171 for more information.




















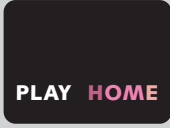
	Color 1	Color 2	Color 3	
Normal Group This group is used for every button's normal state.	 0%	 0%	 0%	 Most DVD menus set the normal group to be fully transparent.
Highlight Group 1 Selected state colors	 100%	 100%	 100%	 The Play button is selected and uses highlight group 1.
Highlight Group 1 Activated state colors	 100%	 100%	 100%	 When the Play button is activated, the colors change to the activated colors.
Highlight Group 2 Selected state colors	 100%	 100%	 100%	 The Home button is selected and uses highlight group 2.
Highlight Group 2 Activated state colors	 100%	 100%	 100%	 When the Home button is activated, the colors change to the activated colors.

Figure 2-4: Menu color set



By having three subpictures of similar color but varying levels of opacity, antialiasing for button highlights can be created.

The normal group is three colors for the unselected button state. In most menu designs, these colors aren't used and are set to be fully transparent. Whereas one button might use highlight group 1 and another button highlight group 2, all buttons on the menu will use the normal group for the unselected button state.

The highlight groups have three colors for both the selected and activated states. Because the activated state is only shown for a short period of time before the DVD advances to the button's link, there is the option to use the same color for both the selected and activated states. Having two groups provides two general color options for buttons. You can select either the first or second highlight group in the Button Properties palette.



A menu can only have one color set. Although it can be changed iteratively during the authoring process, it cannot be changed during playback.

Encore DVD automatically generates a color set from a Photoshop file that follows the Encore DVD layer naming convention, or you can create a custom color set.

See Automatic Color Sets on page 144 for more information on automatic and custom menu color sets.

COMBINING THE SUBPICTURE, COLOR SET, AND HIGHLIGHT REGION

Although it might look like two or three unique graphics being swapped in and out while hovering over a button and activating it, only the single subpicture is dynam-

ically colored. Figure 2-5 shows how these elements are combined to create button states.

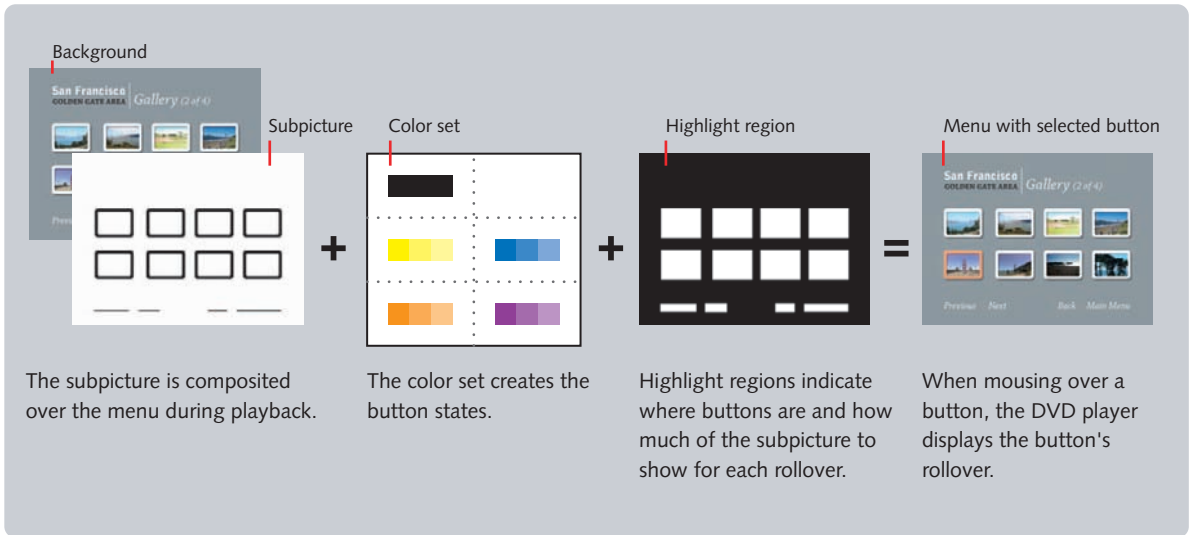











Figure 2-5: Menu video and subpicture graphics

DESIGNING SUBPICTURES

Although most DVD menu designers use only one color for the highlight, a multi-colored subpicture with a varied color set offers more design possibilities. If you are interested in knowing how to design subpictures in Encore DVD and Photoshop, see Chapter Six. It covers button design and highlights in more detail.

Table 2-2: Subpicture examples

NORMAL	SELECTED	ACTIVATED	EXPLANATION
			A single subpicture is used with different colors for the selected and activated states.
			The same effect as above, but instead of an underline, a copy of the text layer is used.
			Three subpictures are used with three colors for the selected and activated states.

BUTTON ROUTING

Button routing is the path designated between buttons. When a viewer presses the arrow keys on a remote control, the routing indicates which button is selected by pressing up, down, left, or right. Encore DVD can determine the routing automatically, or you can set the routing manually if your menu layout is more complicated.

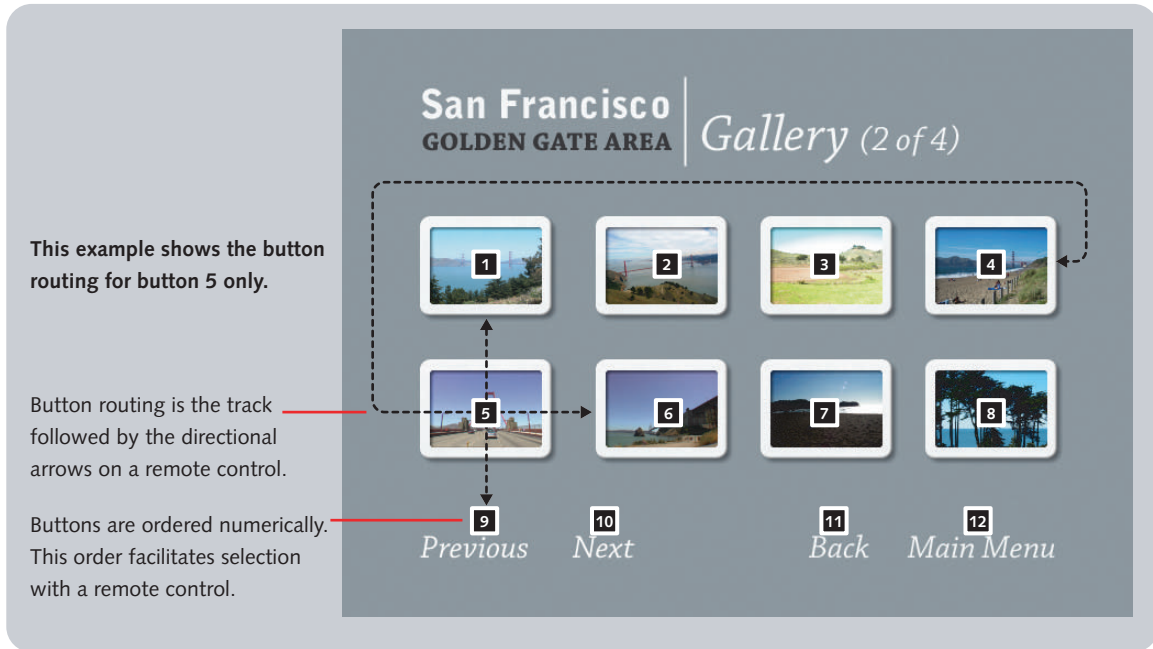


Figure 2-6: Button routing and numbering

Encore DVD has several methods for automatic routing.

- *Route up/down.* This option enables the up and down arrows on a DVD remote control to move between buttons.
- *Wrap around up/down.* This alters the routing so that the selection moves from a button at the bottom of one column to the button at the top of the same or next column.
- *Route left/right.* This option enables the left and right arrows on a DVD remote control to move between buttons.
- *Wrap around left/right.* This alters the routing so that the selection moves from a button at the end of one row to the first button in the same or next row.

Although Encore DVD can automatically calculate this path for you, on occasion, you will want to do this yourself. For instance, if you are designing a set of chapter menus, you will often want the routing between the chapter buttons to function separately from the routing between the Next, Previous and Main Menu buttons.



If your design is circular or does not adhere to a grid, automatic routing might not match your button layout. In these instances, disable automatic button routing and manually edit it.

Routing editing is covered in more detail in [Button Routing](#) on page 143.

BUTTON ORDERING

A DVD menu can have up to 36 buttons and each button is numbered. These numbers are helpful for choosing buttons with the number keys on a remote control. The number for each button is set in the Button Properties palette. If the menu has a 16:9 aspect ratio, only 18 buttons are allowed because two aspect ratios (4:3 and 16:9) are generated and the buttons need to display correctly when viewed in either aspect ratio.

When importing a Photoshop file as a menu, Encore DVD assigns the number 1 to the lowest button layer set and sequentially assigns higher numbers to the layer sets above it. Although Encore DVD initially assigns numbers this way, you can change the numbers to whatever you like through the Button Properties palette. These changes will be preserved even if you edit the menu in Photoshop again and return to Encore DVD.

DEFAULT BUTTON

Every menu has a default button that is selected when the menu is initially displayed. For example, the main menu for a film DVD would mostly likely have the Play Movie button as the default.



If you want a different button to be selected when returning to a menu, set the Override property for the item linking to the button.

Digital Video and DVD Design

This section discusses the frame aspect ratio, resolution, and pixel aspect ratio for the NTSC and PAL video formats. Understanding the nature of these formats will make you a more technically savvy menu designer.

Video Formats

Encore DVD can create video discs for either the NTSC or the PAL television standard. NTSC is the video broadcast standard used in the United States, Canada, and Japan. PAL is the video broadcast standard in Europe, but is used elsewhere too.