N
Drawing Timelines

Timelines let you create animations on a Web page without having to use Flash or write the Dynamic HTML code yourself. Timelines animate layers and thus appear to animate any object that's in a layer on the page.

Timelines use JavaScript to control layers (see **Figures 17.1** through **17.4** on the next page). A layer can move, resize, appear, or disappear—and these actions are controlled by a sequence of *animation frames.*

These frames are similar to the idea of frames in films, cartoons, and flipbooks. And if you've made movies with Flash, Director, or Final Cut Pro—or even if you've made an animated GIF—then you've already manipulated frames to create animation. Just like the frames of footage in a movie, each frame can be slightly different from the last, which creates the illusion of movement over time on a 2-D surface. In this case, of course, the 2-D surface is a Web page projected on a computer screen rather than a film projected on a movie screen.

Timelines can look kind of cute, and on the few sites that use them, they provide cool special effects. But can they actually be useful? Well, because certain properties of a layer change (such as visibility, position, stacking order, and size), and because these properties can be triggered by a user event, you could use them to create showy navigation schemes or, in combination with JavaScript, you could even trigger requests for user registration, set cookies, or provide bubble captions to go with a photo gallery or catalog that someone is browsing. But you could do those things using image rollovers or the Change Property or Show-Hide Layer behaviors without creating a timeline.
Because the intrinsic function of timelines is to make these events happen
over time, the main use of timelines is for simple animations—and whether animation is useful is a question you'll have to answer for yourself.

✔ Tips

■ Because timelines rely on layers in order to work their magic, they can only be viewed in 4.0 and later browsers.

■ A layer, you may recall, is a container for content that can be positioned anywhere on a page. Layers can also overlap or stack on top of one another, a property called z-index or stacking order. Layers generally use the <div> tag and their other properties include size, visibility, and background color or transparency.

Figure 17.1 The magic bus at futurefarmers.com uses a timeline in a JavaScript pop-up window.
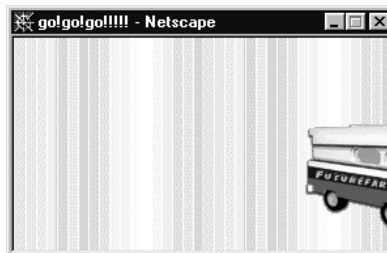

Figure 17.2 It moves!

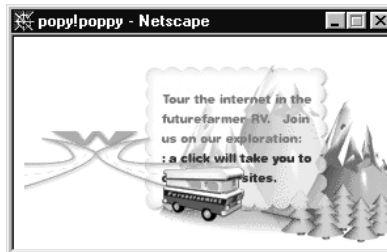**Figure 17.3** It keeps moving until it's off the screen, and then it starts over.

Figure 17.4 One click opens a new little window with a new timeline.
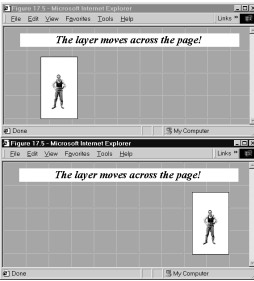
Figure 17.5
The timeline moves the layer from left to right. You can use more complex movements, too.

Figure 17.6 You can use a timeline to show or hide layers. In this case, three layers appear over the background image. You can have this happen over time or you can have a user event trigger the action. The layers can appear all at once or in sequence.

Figure 17.7 The timeline changes the Z-index of the layers. In the first screen, the layers "person" and "deadend" are stacked behind "map." In the second screen, the map layer has the lowest z-index and is thus stacked behind the other two.
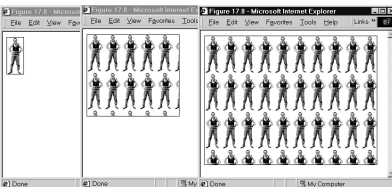
Figure 17.8 The timeline increases the size of the layer. This layer uses a background image that is tiled as the layer expands.

What Timelines Can Do

Timelines can incorporate three types of objects: layers, images, and behaviors.

In this chapter, we're going to rely on a few modules to try to illustrate motion on the page. The layers on this page include a bordered one with an image of a little person in it, and a map.

Layer properties that a timeline can change include the following:

- ◆ **Moving a layer** by changing its X+Y coordinates (on the page or within the parent layer) (**Figure 17.5**).

- ◆ **Showing or hiding a layer** by changing its visibility. You can switch between the three optional states: visible, hidden, or default (**Figure 17.6**).

- ◆ **Changing the stacking order**, or Z-index (**Figure 17.7**).

- ◆ **Resizing a layer** by adjusting its dimensions (**Figure 17.8**).

WHAT TIMELINES CAN DO

✔ Tip

■ Navigator 4 does not support resizing layers during a timeline.

The only image property that a timeline can change directly is the **image source**. (You cannot change, say, the image size or border.) By swapping the source—that is, by making the image path point to a different image— you can perform image rollovers during a timeline without writing additional JavaScript, or inserting additional behaviors, or asking the user to do anything at all.

Timelines can also **call a behavior** from a particular frame. You can also use a behavior to start, stop, or skip to a particular frame within a timeline. (If you're not familiar with behaviors, they're little interactive JavaScript widgets that you can write using Dream-weaver's tools rather than by hand-coding. These events can be *called*—that is, triggered— by a user event or by another script, which is what the timeline itself is.

WHAT TIMELINES CAN DO

The Timelines Panel

The Timelines panel (**Figure 17.9**) is the tool you use to create and modify timelines in Dreamweaver.

To view the Timelines panel:

◆ From the menu bar, select Window > Others > Timelines.

or

Press Alt+F9.

Either way, the Timelines panel will appear in its own panel group at the bottom of the Document window. We show it both docked and undocked in this chapter.
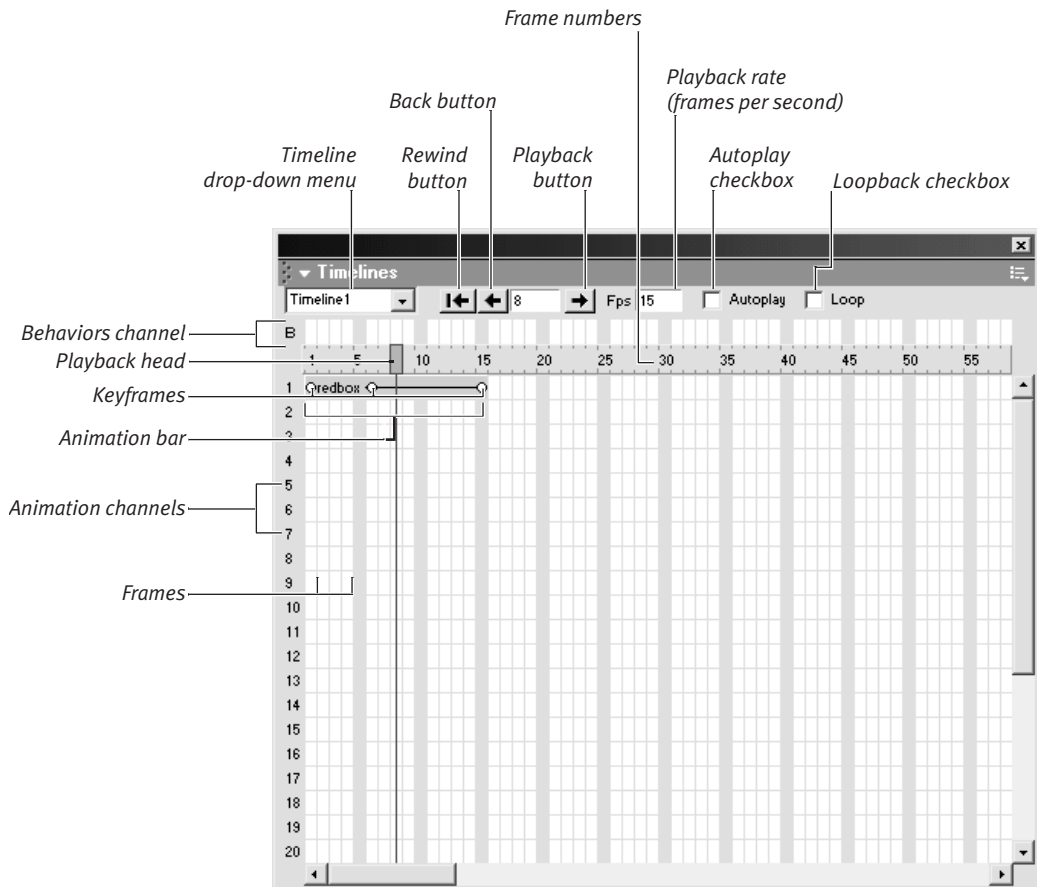

Figure 17.9 The Timelines panel.

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Dissecting the Timelines Panel

Each part of the Timelines panel controls a different aspect of a timeline. Some of these elements won't really make much cognitive sense until you see them in operation, but you can use this page as a reference for what things do. Let's start at the top (**Figure 17.10**).

If you include more than one timeline on a page, you can switch between timelines by choosing the timeline name from the **Timeline drop-down menu**.

You can play timelines in the Document window using the Timelines panel's playback controls. The **Rewind button** rewinds the timeline back to the beginning. The **Back button** rewinds one frame at a time; hold it

down to play the timeline backwards. The **Playback button** advances one frame at a time; hold it down to play the entire timeline. The current frame is indicated in the **Frame number** text box.

The **playback rate** is in frames per second (fps). The default is 15 fps; you can set it higher or lower depending on your content.

You can easily add behaviors to control how the animation plays when loaded in the browser. The **Autoplay checkbox** adds a behavior that will make the timeline start as soon as the page finishes loading. The **Loopback checkbox** adds a behavior that will make the timeline play continuously while the page is in the browser.
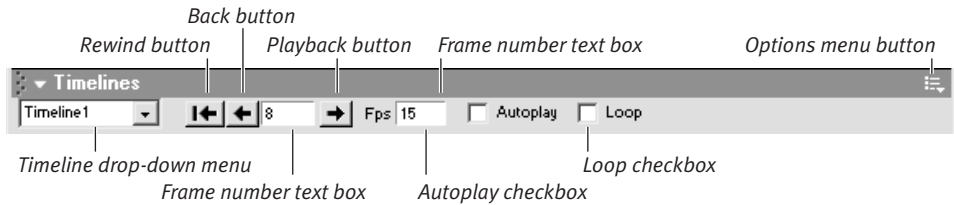
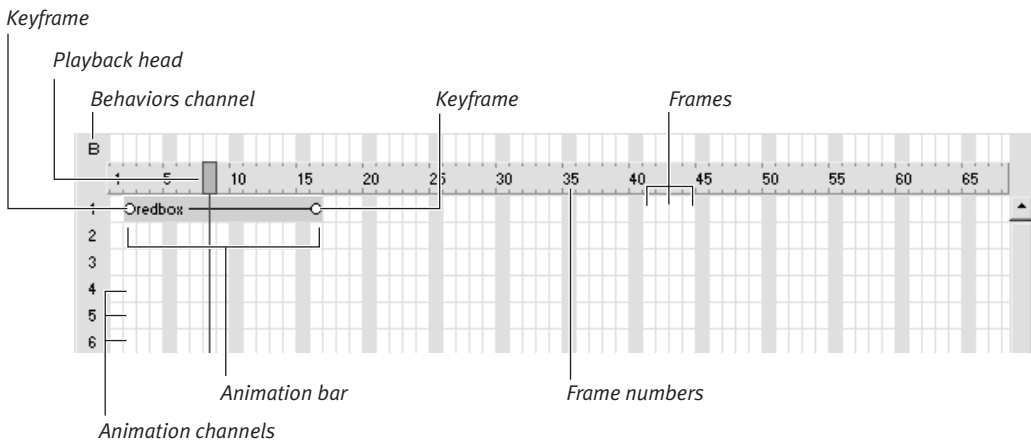

Figure 17.10 The Toolbar on the Timelines panel.

Figure 17.11 The content area of the Timelines panel.

Options menu button

Cut
Copy
Paste
Delete

Add Keyframe
Remove Keyframe
Change Object...

Add Object
Remove Object
Record Path of Layer

Add Behavior
Remove Behavior

Add Frame
Remove Frame

Add Timeline
Remove Timeline
Rename Timeline...

Help

Group Timelines with ▶
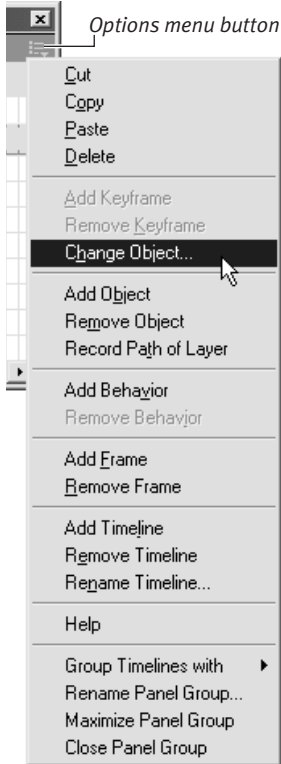Rename Panel Group...
Maximize Panel Group
Close Panel Group

Figure 17.12
The options menu on the Timelines panel offers quick access to timeline commands.

Now we move to the part of the Timelines panel that controls the content (**Figure 17.11**).

Use the **Behaviors channel** to add behaviors that will be called from a certain frame in the timeline.

Each numbered column in the Timelines panel is a **frame**. Each frame is numbered. The **playback head** (the red bar) shows the advance of the playback. As the playback head passes over each frame, the frame number will appear next to the Playback button.

Each numbered row in the Timelines panel is an **animation channel**. Different objects usually use different animation channels.

When an object is added to a timeline, the Timelines panel displays an **animation bar** in that object's animation channel. The little bullets at the beginning and end of the animation bar are **keyframes**. You can add other keyframes in the middle of an animation bar to add actions to the timeline.

✔ Tips

- A *keyframe* is a point on a timeline where something happens. A timeline is comprised entirely of "frames"—like the frames in a movie—and a keyframe, just like in animation or digital video, is an action point. When you set two actions in two keyframes, the animation program— Dreamweaver in this case—creates a smooth flow to get from one point to another. So if in one keyframe King Kong is on the ground, and in another keyframe King Kong is on top of the Empire State Building, in the intervening frames, he'd be ascending the building.

- In Figure 17.10, at the right side of the Timelines panel, you can see an Options menu button. This button pops up a menu of commands (**Figure 17.12**) you can use when editing a timeline.

DISSECTING THE TIMELINES PANEL

Adding a Layer to a Timeline

You create a timeline by adding a layer to the Timelines panel. Once you drag or add the layer, Dreamweaver creates a timeline for it and adds the code to the page automatically.

To add a layer to a timeline:

1. Make sure the object you want to animate is in a layer, and that the layer has the size and position that you want it to start with.

2. Select the layer in the Document window (**Figure 17.13**) by selecting its handle or tag.

3. From the menu bar, select Modify > Timeline > Add Object to Timeline.

    or

    Right-click (Ctrl+click) on an animation bar in the Timelines panel, and select Add Object from the context menu.

A new, named animation bar will appear in the Timelines panel (**Figure 17.14**).

Layer selected, not image   Layer marker

‹div› tag selected in Tag selector

Layer named in Property inspector
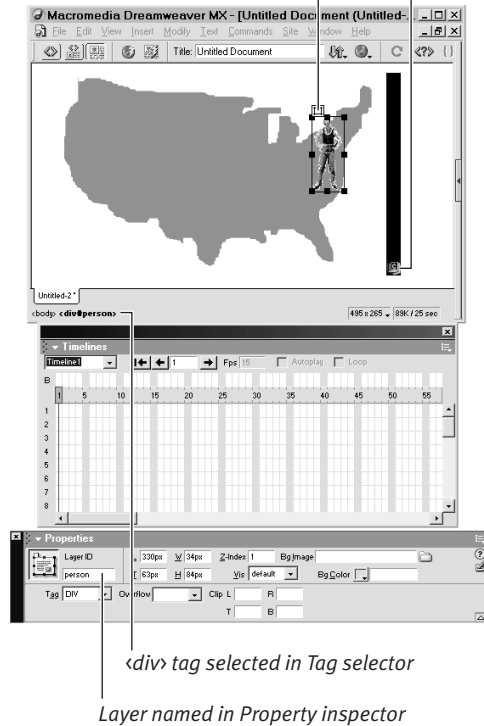
Figure 17.13 Select the layer in the Document window. Notice that the Timelines panel doesn't have any objects in it yet.
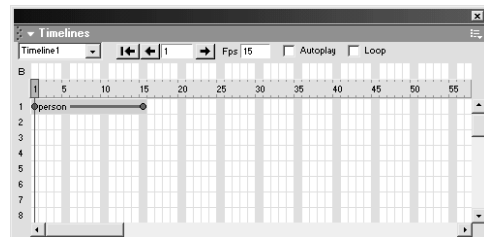
Figure 17.14 When you add the layer to the timeline, an animation bar appears in the first available animation channel.
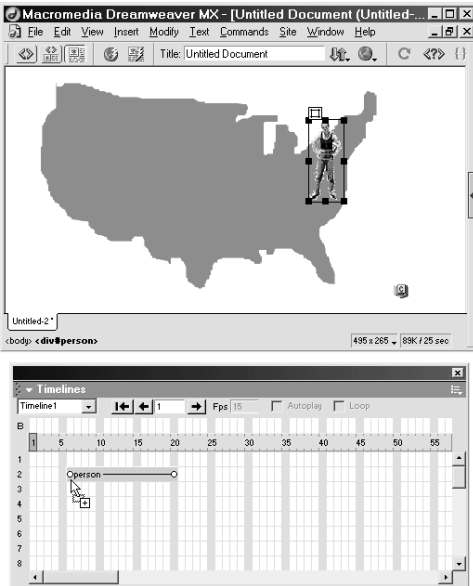
Figure 17.15 Dragging and dropping a layer into the Timelines panel—it lands in the channel and starts at the frame where you drop it.

✔ Tips

■ Before you add a layer to a timeline, be sure that you name it in the Property inspector. Named layers are easier to manage than numbered ones.

■ You can also have a timeline call image rollovers or another JavaScript behavior. See the sections *Adding an Image Rollover to a Timeline* and *Adding a Behavior to a Timeline* later in this chapter.

■ You can also drag a layer onto the Timelines panel to add it to the timeline. Click on the layer and drag it to the location (channel and frame) where you want it to appear (**Figure 17.15**).

ADDING A LAYER TO A TIMELINE

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Timeline Actions

Timeline actions were briefly described in *What Timelines Can Do* earlier in this chapter. In the next few sections, we're going to go over each action, step by step, starting with moving a layer. As we go through each action a layer can perform, we'll describe the various modifications you can make to a timeline.

Moving a layer

The easiest way to start learning about timelines is to move a layer on the page.

To move a layer using a timeline:

1. Add the layer to the timeline.

2. In the Timelines panel, click on the keyframe bullet at the end of the layer's animation bar (**Figure 17.16**). The playback head (the red bar) will move to that frame.

   The layer will automatically be selected in the Document window.

3. Click on the layer's selection handle and drag it to the position on the page where you want it to end up (**Figure 17.17**).
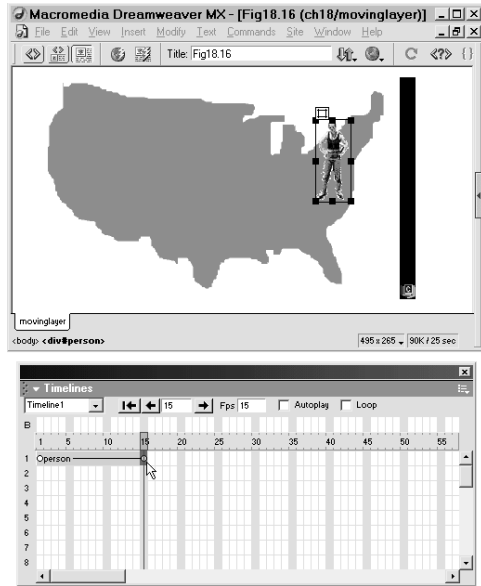
Figure 17.16 Click on the last keyframe bullet in the layer's animation bar to select that frame as well as the layer.
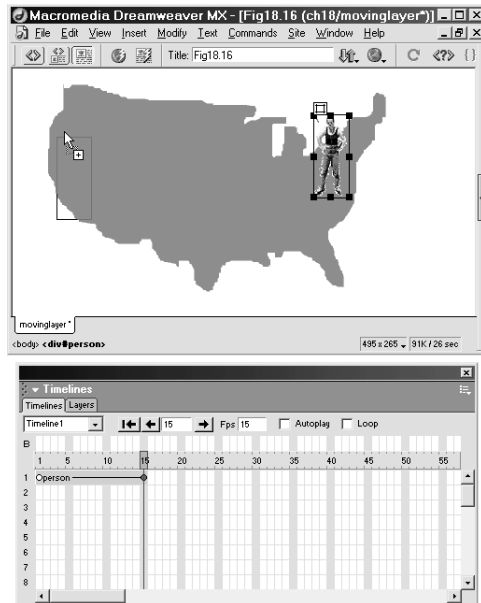
Figure 17.17 With the end keyframe selected, drag the layer to a new location and let go.

Figure 17.18 The Timelines panel will record the new position and draw a line from position 1 (where the layer used to be) to position 2 (where you dropped the layer).

You'll see a line drawn from the layer's old position to its new position (**Figure 17.18**). The line connects the top-left corners of the layer in each position. This is the path the layer will follow.

✔ Tips

■ Notice in Figure 17.17 that we've stacked the Layers panel with the Timelines panel. We can flip back and forth between them easily and save desktop space, and we don't have to keep the side stack of panels open. (By default the Layers panel appears initially on the Advanced Layout panel group.) To move a panel onto or off of another one, click the panel's Options menu button and select Group [Panel] With > [Other Panel Group].

■ Notice also that in Figure 17.17 the layer marker is no longer visible. From the menu bar, we selected View > Visual Aids and unchecked Invisible Elements.

TIMELINE ACTIONS

Recording movement

If you want your layer to travel in a line that isn't straight, you can record its movement.

To record a layer's path:

1. Select the layer by its handle and move it to its starting position.

2. In the Timelines panel, click within the animation frame where you want movement to begin.

3. From the menu bar, select Modify > Timeline > Record Path of Layer.

4. Drag the layer's selection handle along the path you want to use. Loop-de-loops are allowed (**Figure 17.19**). As you drag, dots will mark the path you're drawing.

5. When you let go of the mouse button, the layer's path will be translated into an animation channel (**Figure 17.20**), with keyframes marking specific spots between which the layer travels along its path.

6. Click and hold the Play button ▶ to watch the layer retrace the path you drew for it.

✔ Tips

■ Recording the path of a layer will add the layer to the timeline, even if it already appears there. To rearrange animation bars, see the next section.

■ Occasionally, you may get an error message stating that a layer with the same name is already in the timeline. Click within a different frame and draw your movement again.
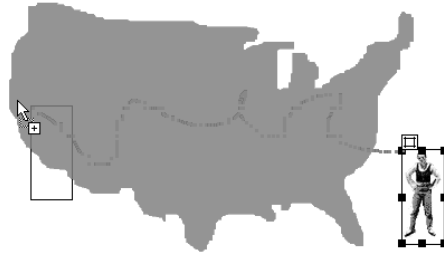
Figure 17.19 Using the Record Path of Layer command, we can drag a layer all over the place and the timeline will follow. The little dots represent points that the top-left corner of the layer has graced.
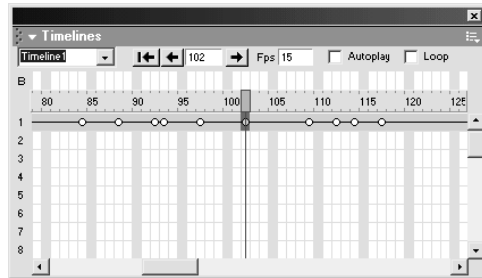

Figure 17.20 After we recorded the path of the layer, the layer appeared as an object in the Timelines panel—with more than 100 frames.

Setting the Playback Rate

The default playback rate for Dreamweaver timelines is 15 frames per second. Macromedia advises not to set this rate much faster; the 15 fps rate is based on optimal performance on the average machine. Setting a faster playback rate might not actually make the animation go faster; although it might do so on your local machine, all the images and layers that you're playing with are stored in your memory cache. You can, however, set a lower rate for slower speeds.
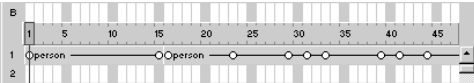
Figure 17.21 If you've already added this layer to the timeline, Dreamweaver will add a separate animation sequence (with its own beginning and ending keyframes) after the initial sequence.
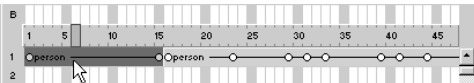

Figure 17.22 In this case, we haven't added any actions to the initial animation sequence. We can select it and delete it. We can also cut, copy, and paste it, as long as it doesn't overlap another sequence with the same object in it.
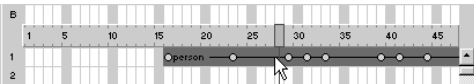

Figure 17.23 After deleting the sequence that didn't have any actions in it, we select the sequence that includes the recorded path by clicking on a non-key (unmarked) frame.
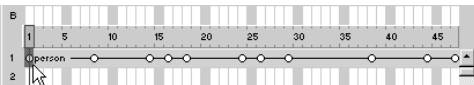
Figure 17.24 We drag the sequence to Frame 1 of the timeline. You can also drag sequences to later in the timeline or to other animation channels.

Deleting and moving animation sequences

Recording the path of a layer adds that layer to the timeline. If the layer already appears in the timeline, Dreamweaver will add the layer again later in the same animation channel (**Figure 17.21**). Animation bars cannot overlap.

You can delete or move animation bars. For example, in Figure 17.21, the initial, blank bar remains. We select the bar (**Figure 17.22**) and press Delete to remove it. Then, we select the bar that includes the recorded path (**Figure 17.23**) and drag it to the beginning of the timeline (**Figure 17.24**).

Timeline Actions

Playing it back

You can watch the movements you've recorded by playing back the timeline.

To play back a timeline:

1. In the Timelines panel, click on the Rewind button **I←** to move the playback head back to the beginning of the timeline.

   or

   Click on Frame 1 in the Timelines panel to move it back (**Figure 17.25**).

2. If the Timelines panel is undocked, move it out of the way in the Document window.

3. In the Timelines panel, click on and hold down the Play button **→**.

You'll see the layer move across the page (**Figure 17.26**).

✔ Tips

- You can click within any frame to see what the page looks like at that point in the timeline.

- You can play and rewind little bits of the timeline with the Rewind, Back, and Play buttons (**Figure 17.27**).

- To fine-tune a point within a timeline, see *About Keyframes*, on the next page.

Previewing in a browser and setting Autoplay

A timeline won't play when previewed in a browser unless you instruct it to do so. If you add the Autoplay behavior, the timeline will play as soon as the page finishes loading.

Just check the Autoplay checkbox on the Timelines panel (**Figure 17.28**), and then preview the page (**Figure 17.29**). For more on controlling timelines, see *Making Timelines Go*, later in this chapter.
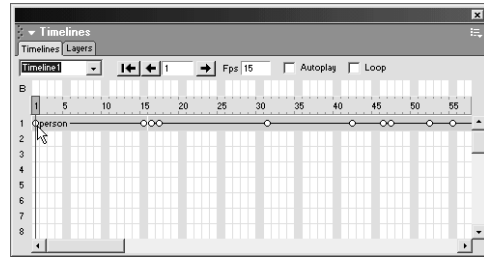

Figure 17.25 Click on Frame 1, or click on the Rewind button to return the timeline to its beginning.
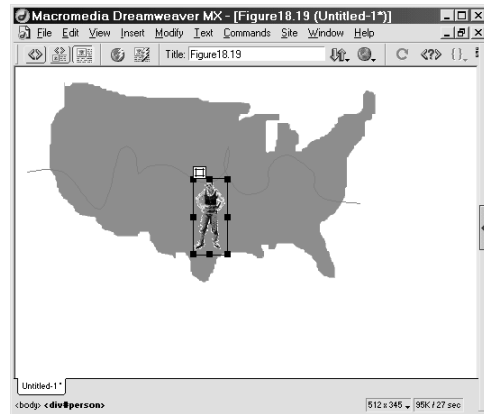

Figure 17.26 The timeline in mid-play.

Figure 17.27 The Rewind, Back, and Play buttons.

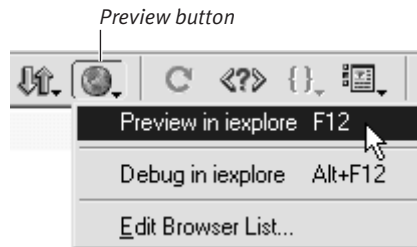**Figure 17.28** Click on the Autoplay checkbox to make the timeline play in the browser window.

Preview button

Figure 17.29 Preview your timeline in a 4.0 or later browser.
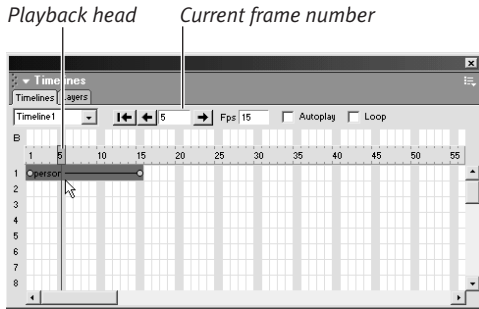
Playback head   *Current frame number*

Figure 17.30 Click at the point on the animation bar where you want to add the new keyframe. The playback head will move, and you'll see the frame number in its text box.
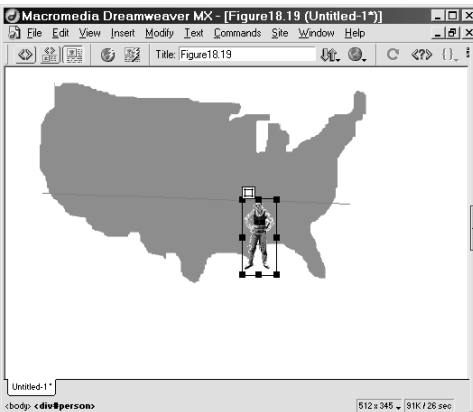

Figure 17.31 Our person goes from Maryland straight to California. We want her to pay a visit to New York City first. We play the timeline and stop at a fairly early point, where we'll add a keyframe.
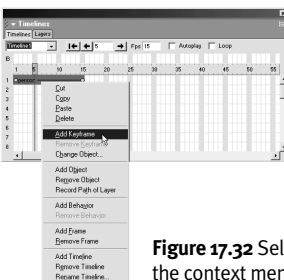

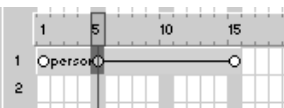**Figure 17.32** Select Add Keyframe from the context menu.

Figure 17.33 A keyframe bullet will appear on the animation bar.

About Keyframes

The Timelines panel tracks the movement of a layer from one point to another, frame by frame, and it paces the movement of an object so that the frame-to-frame transitions are smooth.

If there are only two points in a timeline, the line in which the layer moves must be a straight one. You can add a third point to a timeline to make a layer move in an arc, or you can add points for multiple positions or actions.

You do this by adding keyframes. A *keyframe*, as mentioned earlier in the chapter, is a point on a timeline where something happens. Each animation bar in a timeline includes at least two keyframes: the beginning frame and the end frame.

To add a keyframe:

1. In the Timelines panel, click on the place on the animation bar where you want the new action to happen (**Figure 17.30**), or press the Play button until you reach it (**Figure 17.31**). The playback head will move to the new frame.

2. From the menu bar, select Modify > Timeline > Add Keyframe.

   or

   Right-click (Ctrl+click) on the object's animation bar in the Timelines panel, and select Add Keyframe from the context menu that appears (**Figure 17.32**).

   or

   Press F6.

The Timelines panel will add a keyframe bullet to the animation bar (**Figure 17.33**).

Now you can attach a new position to that keyframe.

To add a new layer position to a keyframe:

1. In the Timelines panel, click on the new keyframe. The layer will become selected automatically (**Figure 17.34**).

2. Move the layer to the position on the page where you want it to be when that keyframe is played (**Figure 17.35**).

The line drawn between the beginning position on the page and the end position on the page will now arc to fit the third point into the movement line (**Figure 17.36**).

Play back the timeline now to see how this movement looks.

Now you know how to change a layer's position, play back a timeline, and add keyframes (and therefore, additional actions) to a timeline. Let's look at some of the other things timelines can do.

✔ Tips

- You can add keyframes and then attach other actions to them, too. We'll do this throughout this chapter.

- How do you detach movements from a layer? What if you make a layer move and then change your mind? First, click on the frame in which the layer is where you want it to be. Then, open the Property inspector and take note of the L(eft) and T(op) measurements. In the Timelines panel, move to the keyframe where the movement changes. In the Property inspector, type the numbers you jotted down in the L and T text boxes. Repeat for any additional keyframes where the layer's position attributes have changed.
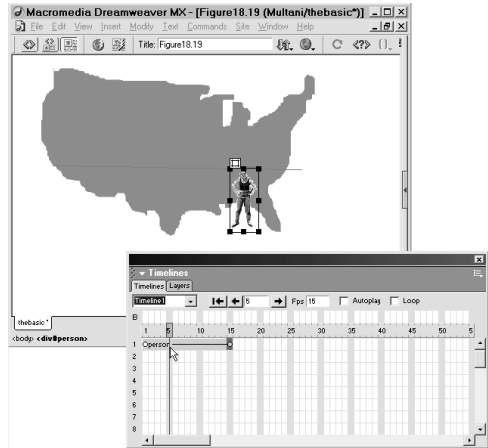

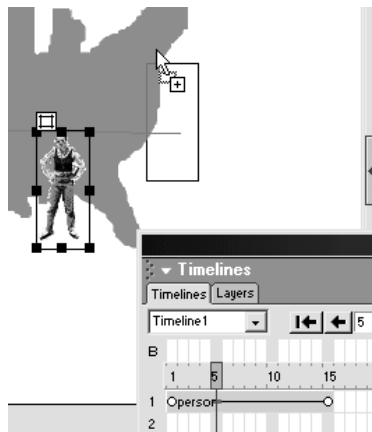**Figure 17.34** Select the keyframe, and the layer will automatically become selected.

Figure 17.35 With the keyframe selected in the Timelines panel, move the layer to its new location.

Figure 17.36
We fast-forwarded to later in the timeline so you could see the arc drawn by Dreamweaver between the three keyframes.
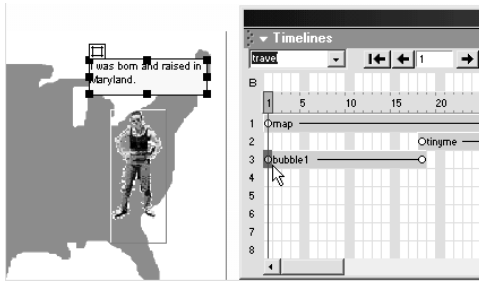
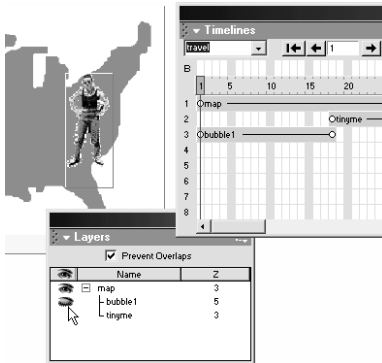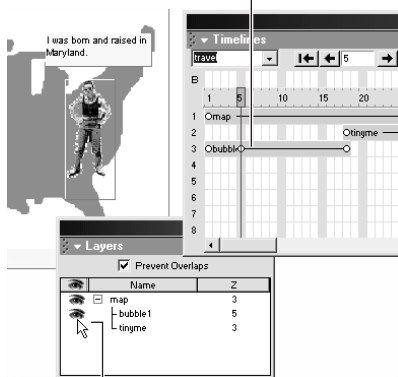**Figure 17.37** First, we add the new layer to the timeline, and put text in it.

Figure 17.38 Then, we set its initial visibility to hidden on the first keyframe.

Keyframe 5 is selected for "bubble1" layer

Visibility set to visible on Keyframe 5

Figure 17.39 Finally, we added a new keyframe and set the layer's visibility to visible on the fifth keyframe. When the timeline plays, the second layer will appear on Keyframe 5 after the first layer starts moving.

Showing and Hiding Layers

You can show or hide a layer in a timeline by changing its visibility to visible, hidden, or default.

To show or hide a layer:

1. If the layer is not already added to the timeline, add it.

2. Click on the first keyframe on the layer's animation bar (**Figure 17.37**).

3. Using the Layers panel or the Property inspector, set the layer's visibility to the state you want it to be in when the timeline begins playing (**Figure 17.38**).

4. On the layer's animation bar, add the keyframe where you want the visibility change to occur.

5. With the proper keyframe selected, change the visibility of the layer (**Figure 17.39**).

6. If you want the layer to change visibility again at the end of the timeline, click on the keyframe at the end of the layer's animation bar, and change the layer's visibility.

To change the location of a keyframe:

1. In the Timelines panel, click on the keyframe you want to move.

2. Hold down the mouse button and drag the keyframe bullet to a different frame.

3. Let go of the mouse button.

Voilà! The keyframe has moved.

✔ Tip

■ Images that are in hidden layers are automatically downloaded with the page. This is a good way to preload images for swapping image source. Or skip the source swapping altogether and just show or hide the layers that the new images are in.

Changing the Overlaps

As you know, a layer's Z-index, or stacking order, is what makes layers so layer-like. You can change the way layers overlap during a timeline (**Figure 17.40**) so that layers appear stacked in a different order. If you want Pop on top, you can make him hop.

✔ Tips

- Make sure all the layers have the Z-index you want them to have at their beginning keyframe(s) in the timeline (Figure 17.40).

- Z-index numbers affect the overlap of only those objects that are inside a layer; you can't make a layer hide under an image that isn't in a layer itself.

To change the Z-index of a layer during a timeline:

1. In the Timelines panel, add any keyframes you need to the layer's animation bar.

2. Click on the keyframe that marks the point at which the Z-index will change. The layer will be selected automatically.

3. Using the Layers panel or the Property inspector, change the Z-index number of the layer (**Figure 17.41**).

4. Play back the timeline to watch the layer move over or under another layer on the page (**Figure 17.42**).
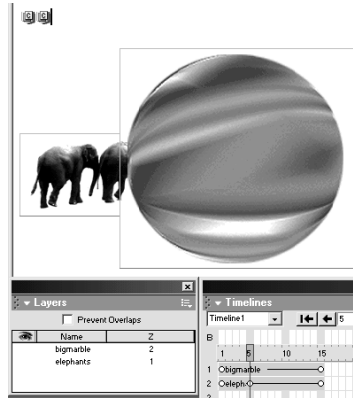

Figure 17.40. You can change the Z-index of a layer in the timeline. We set the Z-index in the first frame so that the marble overlaps the elephants.
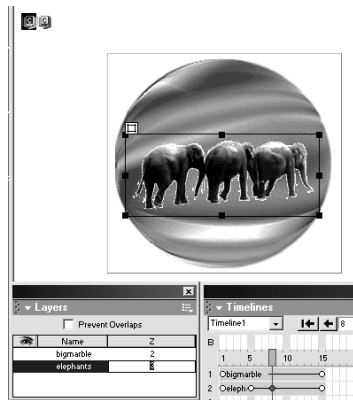

Figure 17.41 At Frame 8, we added a keyframe and changed the Z-index of the elephants layer so that it will surface over the marble.
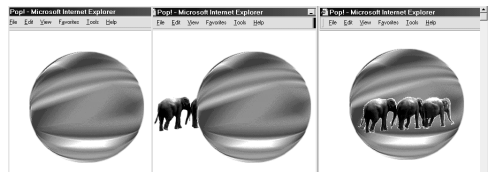

Figure 17.42 Here are three frames from a timeline. In Frame 1, only the marble is visible. In Frame 5, the elephants appear, and the marble is stacked on top of them. In Frame 8, the elephants' Z-index changes so that they're on top of the marble.
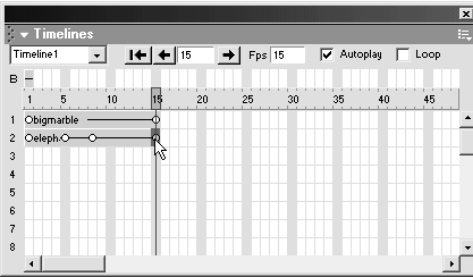
Figure 17.43 Click on the end keyframe and drag it to a new location.
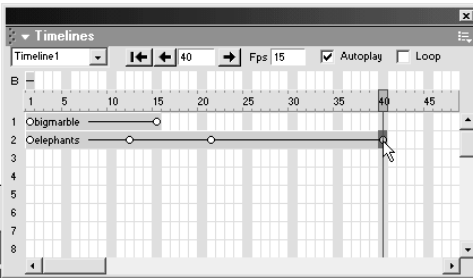

Figure 17.44 We lengthened the animation bar we selected in Figure 17.43. Notice how the keyframes in the middle of the animation bar are spaced out over the new length of the animation bar.
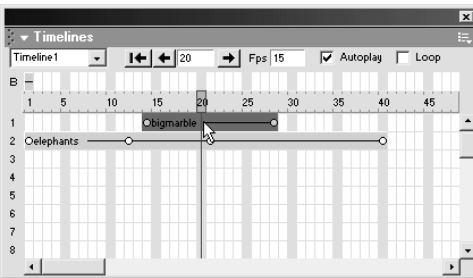

Figure 17.45 We moved the animation bar with the marble in it. It will both start and end later in the timeline now.

Figure 17.46 You can also type a different playback rate in frames per second (FPS) in the Fps text box. Keep in mind that many computers can't process a faster playback rate than 15 FPS.

Changing the Timing

You can change the length and duration of an animation bar if you want an action to start sooner or end later within the timeline.

To move the beginning or end of an animation bar:

1. In the Timelines panel, click on the beginning or ending keyframe on the layer's animation bar (**Figure 17.43**).

2. Drag the keyframe to a new frame number within the animation channel (**Figure 17.44**). You may notice the other elements in the timeline moving around as you drag the keyframe.

3. Play the timeline to see how it looks.

4. Repeat Steps 1 and 2 as needed.

Longer timelines allow for more actions and more gradual movement.

✔ Tips

■ If you drag the end keyframe to lengthen the timeline, any keyframes within the timeline will be spaced out in proportion to their original position, to preserve the gradual arc of the timeline (Figure 17.44).

■ You can also move an entire animation bar to make the action for that layer start at a different time. Click on the middle of the bar (not on a keyframe) to select the whole thing, and drag it to a new location (**Figure 17.45**).

■ To find out how to move an individual keyframe, see *To change the location of a keyframe*, earlier in the chapter.

■ You can also change the frames per second (fps) of a timeline. Type a number *less than* 15 in the Fps text box (**Figure 17.46**). Remember that most computers can't process faster playback speeds.

Changing Layer Dimensions

Besides changing the visibility and Z-index of a layer, you can also use a timeline to change the dimensions of the layer.

✔ Tips

- Layer size changes work only in Navigator 6 and Internet Explorer 4 and later, and not in Navigator 4.

- If you want to make a layer shrink in size, remember to change the layer's overflow setting to *hidden* or scroll in the Property inspector; otherwise, the shrinking may not have any effect.

To change the dimensions of a layer using a timeline:

1. In the Timelines panel, click on the keyframe where you want the size change to occur. The layer will become selected automatically (**Figure 17.47**).

2. Change the size of the layer by dragging its handles, or by changing the W(idth) and H(eight) settings in the Property inspector (**Figure 17.48**).

3. Play back the timeline to see how the settings affect the size change.

✔ Tips

- Because the timeline code makes layer properties change gradually rather than abruptly, the size change will begin a few frames before the set keyframe (**Figure 17.49**).

- If, instead, you'd like to see an abrupt size change, put two keyframes in adjacent frame numbers. In the first keyframe, we'll call it Frame 8, set the size at its status quo. In Frame 9, then, set the layer's size at its new measurements. The layer will appear to jump into its new size.
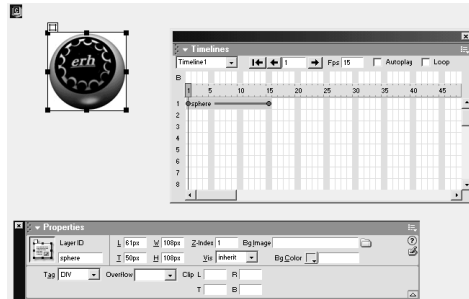

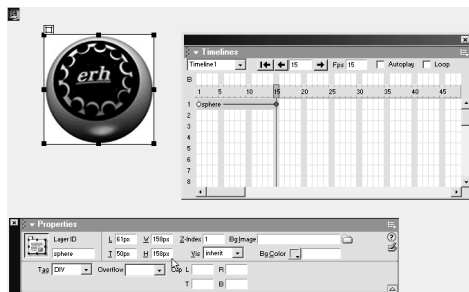**Figure 17.47** We added the layer to the timeline.

Figure 17.48 We selected the end keyframe and changed the size of the layer. If we click on each individual frame on the animation bar, the Property inspector will display the layer's size in each succeeding frame, leading up to the end frame's dimensions.

Figure 17.49 Three browser windows showing the progression in size from Frame 1 to Frame 8 to Frame 15. We set two sizes: one in Frame 1, and one in Frame 15. With Dreamweaver timelines, these changes happen gradually; for an abrupt change, make the size change happen in two adjacent keyframes.
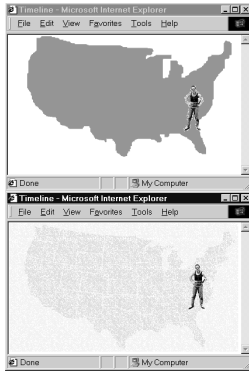
Figure 17.50 In our map timeline, we use two different map images: a green one (the solid map, on top) and a pink speckled one. We use a rollover to make the images switch at a certain point in the timeline.

Figure 17.51 In the example on the next page, these are the two images we'll be using.

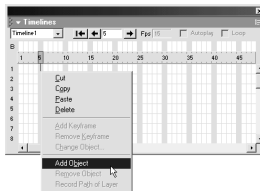**Figure 17.52** Name your image before you add it to the timeline.

Figure 17.53 Add the image to the timeline by right-clicking (Ctrl+clicking) on an empty animation channel and selecting Add Object from the context menu.
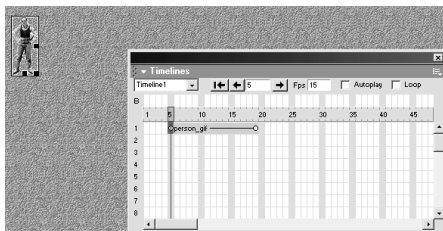

Figure 17.54 Here we are in the Document window. We've just added the image of the person—this time independent of any layers—to the timeline.

Adding an Image Rollover to a Timeline

You can also add an image rollover to a timeline (**Figures 17.50** and **17.51**). The only available action for images that are *not* in layers is swap source: That is, you can make an image roll over, but you can't make it hide or disappear unless it's in a layer. (In that case, you apply the changes to the layer tag and not the image.)

To add the image rollover to a timeline:

1. Place (or select) the initial, pre-roll image in the Document window.

2. Name the initial image, using the Property inspector (**Figure 17.52**).

3. From the Document window menu bar, select Modify > Timeline > Add Object to Timeline.

or

Right-click (Ctrl+click) on an empty animation bar in the Timelines panel, and select Add Object from the context menu that appears (**Figure 17.53**).

A new animation bar will appear in the Timelines panel (**Figure 17.54**).

On the next page, we'll add the rollover.

✔ Tip

■ One way to preload images for source swapping is to place them in a hidden layer on the page. Another is to add the Preload Images behavior to the page.

Making the rollover work

Changing an image source with a Timeline is similar to using the Swap Image behavior to create image rollovers, except the rollover will occur as time elapses rather than when triggered by a user event.

To change an image source using a timeline:

1. Add the image to the timeline, as described on the previous page.

2. Add any keyframes you need to the image's animation bar (**Figure 17.55**).

3. Click on the keyframe in which you want the image to roll over.

4. In the Property inspector, change the source of the image to the source of the new image (**Figures 17.56** and **17.57**) by editing the filename in the Src text box, or by clicking on Browse 📁 and selecting a new image.

5. To make the image stay in its second state for the rest of the timeline, select the end keyframe and set the source to be that of Image 2.

   or

   To make the image revert to its original state, add two keyframes, first the end-stop for the source for Image 2, and second, the resetting of the source for Image 1.

Play back the timeline to watch the effect (**Figure 17.58**).

✔ Tips

- Sometimes, when you change the source of the image, Dreamweaver discards height and width information for both the original and the preloaded image. If you want the images to conform to a certain size, jot down the height and width before you create the rollover, and go back and fix them afterward.
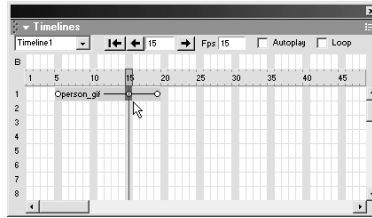

Figure 17.55 We added a keyframe to the image's animation bar; that's the point at which the source will change.

Figure 17.56 The two images, side by side for comparison. With the keyframe selected, change the source in the Property inspector. The image, which we selected with the mouse, shows the rectangular borders of the transparent image.
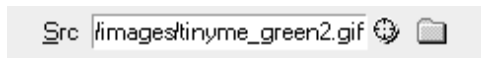

Src /images/tinyme_green2.gif 🜨 📁

Figure 17.57 Edit the filename in the Src text box (for example, type person2.gif instead of person.gif), or click on the Browse button to open the Select Image File dialog box and choose a different image.
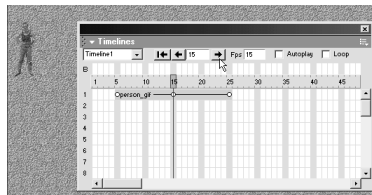

Figure 17.58 When the timeline plays the keyframe, the source changes to the second image. In this case, it's a subtle change of colors from one image to the next so that the person fades more into the background. You can use whatever images you like for the rollover, as long as they're the same size.

- In previous versions of Dreamweaver, the image's animation bar had to be extended to the end of the timeline to make the source stay swapped. This has been fixed as of Dreamweaver 4 and should function properly in Dreamweaver MX.
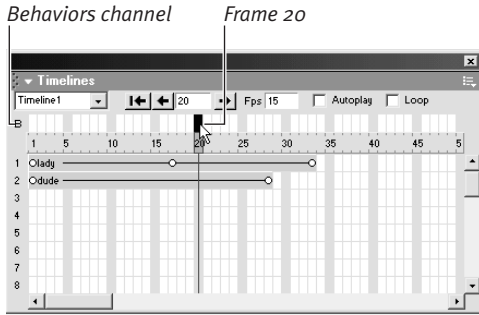
Behaviors channel   Frame 20

Figure 17.59 We double-clicked on the intersection of the Behaviors channel and Frame 20, and the Behaviors panel appeared. It's empty until you add an action.
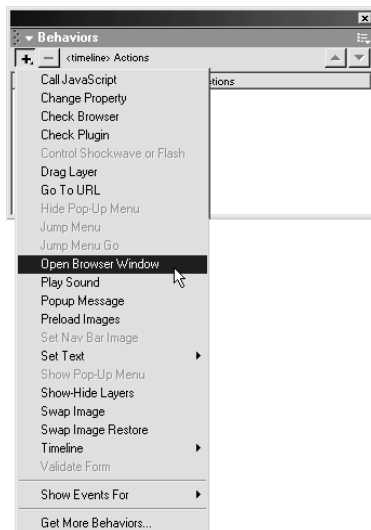

Figure 17.60 On the Behaviors panel, click on the + (plus) button, and choose an action from the pop-up menu.

Adding a Behavior to a Timeline

All the clever behaviors that come with Dreamweaver MX can be added to a timeline. For instance, you can make the timeline execute an animation and then load a new page; you can play a sound at a certain frame in a timeline; or you can use a timeline to start playing a Shockwave movie at a certain frame.

To add a behavior to a timeline frame:

1. In the Timelines panel, click on the frame that will launch the behavior to move the playback head to it.

2. Double-click on the frame number within the Behaviors channel (**Figure 17.59**). The Behaviors panel will appear in the Design group (and of course it can be undocked). The browser version (4.0 and later browsers) will be preset.

3. In the Actions area of the Behaviors panel, click on the + (plus) button [icon] to pop up the menu of available actions (**Figure 17.60**).

4. Choose the action you want to add. The associated dialog box will appear.

5. Fill out the dialog box and click on OK. The name of the action will appear in the Actions list box (**Figure 17.61**). The event, onFrameNumber, will be added to the Behaviors panel automatically.

The behavior will be added to the timeline. You'll see a little marker at that particular frame in the Behaviors channel.

✔ Tips

■ For a thorough look at behaviors for beginners, see Chapter 16 in the

    Dreamweaver MX Visual QuickStart
    Guide.

■ You can add a behavior to a frame by moving the playback head to that frame and selecting Modify > Timeline > Add Behavior to Timeline from the menu bar.
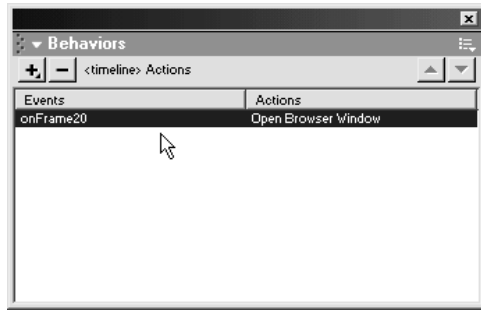

Figure 17.61 We added the Open Browser Window action to Frame 20 of the timeline; when the timeline is played, the window will launch on Frame 20. The event will be added automatically after you finish selecting the action.

Figure 17.62 When you check the Autoplay checkbox, a dialog box will appear informing you that it's going to add the Autoplay behavior. Once you get the point, you can make this dialog box go away by checking the Don't show me this message again checkbox.

Making Timelines Go

Timelines won't start playing in a browser unless another piece of JavaScript tells them to. There are two ways you can make a timeline start playing, both of which use JavaScript behaviors.

One way is to make the timeline play automatically when the page is finished loading. The other way is to use a behavior, so that a user event such as a click or a mouseover triggers the timeline.

The Autoplay behavior is an onLoad behavior; once the page loads, the animation will begin.

To make a Timeline play automatically:

◆ In the Timelines panel, place a check-mark in the Autoplay checkbox. A dialog box will appear (**Figure 17.62**) letting you know that Dreamweaver will add the Autoplay code.

Simple, yes?

MAKING TIMELINES GO

Behavior Modification

What sort of behaviors could you add to a timeline? The timeline itself offers actions similar to Show/Hide Layer and Rollover Image. Here are some ideas to get you started.

◆ Set Text of Layer, Set Text of Status Bar, Set Text of Text Field, Popup Message: The user sees a message when a certain frame in the timeline passes.

◆ Open Browser Window, Popup Message: During or at the end of the timeline, a window or dialog box opens.

◆ Drag Layer: An animation plays in the timeline, and after it's over, all the layers become draggable.

◆ Play Sound: On a certain frame, a sound plays. For example, when the mouse hits the cat in the head with a hammer, the user hears "Doink!"

◆ Check Browser: When the page loads (onLoad), the user is sent to a page with a timeline if the browser is 4.0 or later, and to a page without the timeline if the browser is 3.0 or earlier. (It would be a nice idea to detect the browser with a timeline frame, but 3.0 browsers may or may not play the timeline properly. If you want to try this, you should test it in the browsers you're targeting.)

Making a Behavior Play a Timeline

You can also make a behavior play a timeline when the user clicks on or mouses over a link or image.

To make a behavior play a timeline:

1. In the Document window, click on the object you want to use to make the timeline play (`a`, `img`, `input` for menu or form button). Make sure you do not have a behavior selected in the Timelines panel, or the behavior will be added to the timeline instead of the link.

2. If a timeline is on your page, the browser version will be preset to 4.0 and Later browsers. To check this, click the + (plus) button, and then select Show Events For > 4.0 and Later Browsers.

3. In the Actions area of the Behaviors panel, click on the + (plus) button.

4. From the menu that appears (**Figure 17.63**), select Timeline > Play Timeline. The Play Timeline dialog box will appear (**Figure 17.64**).

5. If there is more than one timeline on your page, select the timeline you want to use from the Play Timeline drop-down menu.

6. Click on OK to close the Play Timeline dialog box.

7. To specify the user event that triggers the action, click on the arrow button and choose the event (`onClick`, `onMouseOver`) from the menu (**Figure 17.65**).

The event will play the timeline when the page is loaded in a browser.

✔ Tip

■ To make a link that can play a timeline and doesn't open a page, the content of the link should be "#".
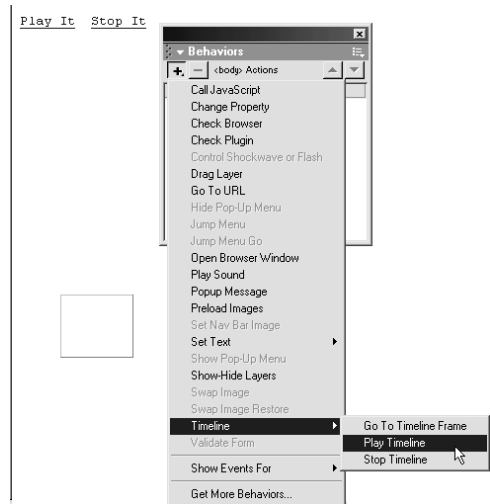
Figure 17.63 We selected the link called Play It and added the Play Timeline action.

Figure 17.64 We chose Timeline › Play Timeline from the Add Action menu, and now we can select our timeline in the Play Timeline dialog box.
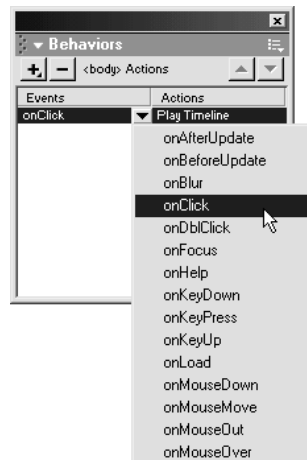

Figure 17.65 After you select the Play Timeline (or other) action, specify the user event by choosing it from the drop-down list.
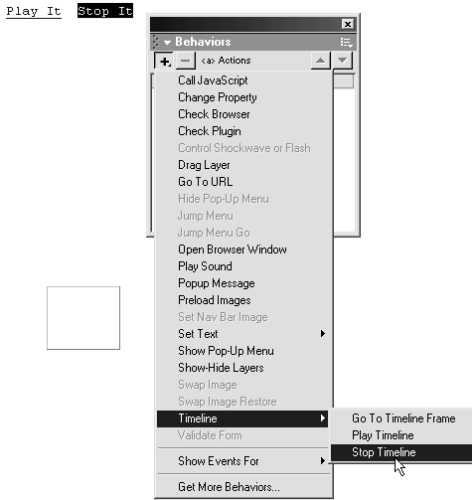
Play It Stop It

Figure 17.66 Having selected the Stop It link, we chose Timeline › Stop Timeline from the Add action menu.

Figure 17.67 In the Stop Timeline dialog box, you can choose to stop all timelines or one selected timeline.

Stopping a timeline

You can also make a behavior stop a timeline. This is a quite smart thing to do, especially if you're using the Loop function (we'll get to that in a minute). The browser's Stop button will not stop an in-progress timeline.

To make a behavior stop a timeline:

1. In the Document window, click on the object you want to use to make the timeline stop (`a`, `img`, `form button`).

2. On the Behaviors panel, click on the + (plus) button ⊞, and from the menu that appears, select Timeline > Stop Timeline (**Figure 17.66**). The Stop Timeline dialog box will appear (**Figure 17.67**).

3. If there is more than one timeline on your page, select the timeline you want to use from the Stop Timeline drop-down menu.
   or
   Select ALL TIMELINES from the drop-down menu.

4. Click on OK to close the Stop Timeline dialog box.

5. Click on the arrow button and select the user event from the drop-down menu (`onClick`, `onMouseOver`, and so on).

✔ Tip

■ You cannot make the same link (or image) both play and stop a timeline. An event that signals both a Play and a Stop event will only advance the timeline one frame at a time. (If the order is Stop and then Play, it won't stop at all.) We have to admit, though, that this was a great way to get screen captures for this chapter.

MAKING A BEHAVIOR PLAY A TIMELINE

Loop and Rewind

Some timelines are so beautiful, you wish they'd go on forever. (Actually, the first 10 or so timelines you make will automatically be that beautiful.) You can make a timeline repeat either indefinitely or a certain number of times by using the Loop feature.

To add the Loop:

◆ In the Timelines panel, place a checkmark in the Loop checkbox. A dialog box will appear, letting you know that Dreamweaver will add the Go To Frame behavior code (**Figure 17.68**).

The Loop behavior uses the Go to Frame action. In case of automatic loop, the timeline reaches the end and returns to frame 1.

To modify the Loop:

1. In the Timelines panel, locate the last frame in the timeline. You'll see a marker in the Behaviors channel in the frame after that.

2. Double-click on the last Behaviors marker (**Figure 17.69**). The Behaviors panel will appear.

3. Double-click on the action Go To Timeline Frame listed in the Actions list box. The Go To Timeline Frame dialog box will appear (**Figure 17.70**).

4. To make the loop pick up at a frame other than Frame 1, type the frame number in the Go to Frame text box.

5. To make the loop continue for a number of times less than infinity, type a number in the Loop text box.

6. Click on OK to close the Go to Timeline Frame text box.

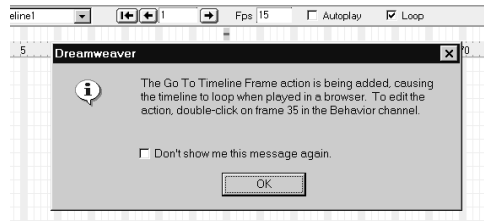Preview the timeline in a 4.0 or later browser to see if it does what you think it will.

Figure 17.68 Click on the Loop checkbox, and this friendly dialog box will appear to tell you what's up and to which frame number it's adding the behavior. To make it go away, click on the Don't show me this message again checkbox.
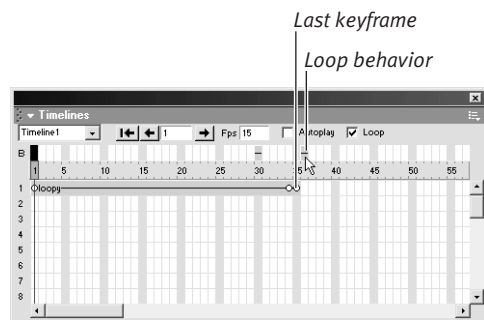
Last keyframe

Loop behavior

Figure 17.69 The Behaviors channel in this timeline has two behavior markers. The one that follows the last frame is the one to double-click if you want to edit the Loop behavior.
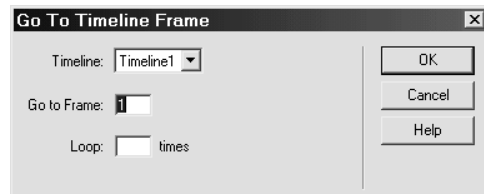

Figure 17.70 The Go To Timeline Frame dialog box controls the Loop behavior.

✔ Tip

■ You can move a behavior to a different frame if you want. Just click on the associated keyframe, if any, and move it to a different frame, and then click on the behavior (as in Figure 17.69) and move it to that same frame.
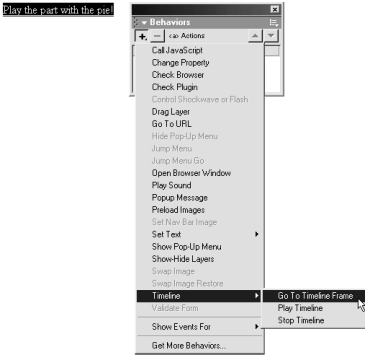
Figure 17.71 First, select your object. Then, click on the + (plus) button on the Behaviors panel, and select Timeline › Go to Timeline Frame from the menu.

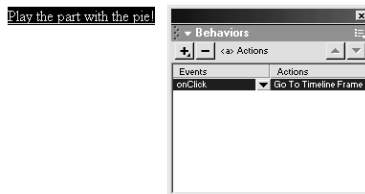**Figure 17.72** In the Go To Timeline Frame dialog box, we specified Frame 45.

Figure 17.73 We added the onClick event and the Go to Timeline Frame action to the "Play the part with the pie" link.

✔ Tip

■ You can add a Go to Timeline Frame behavior within a timeline, too—not just at the end. Just add the behavior to the Behaviors channel within your timeline. Imagine this: On Frame 8, an image appears in a layer. On Frame 14, the Go to Timeline action makes the timeline jump back to Frame 7. With the number of loops set to 3, the timeline would go back to Frame 7 three times to make the image pop up three times before the animation continued to the end.

Jumping to or starting with a specific frame

You can also use the Go to Frame behavior with an object outside the timeline. For instance, you can have a "Play Animation" button, a "Stop Animation" button, and a "Go Back to the Part with the Pie" button. You can use a link or button to begin playing the timeline at any frame.

To add a Go to Frame behavior:

1. In the Document window, click on the object you want to use to make the Timeline jump to a particular frame (`a`, `img`, `form button`).

2. Be sure that you don't have a behavior selected in the Timeline panel; click on any frame without a behavior marked in the Behaviors channel.

3. On the Behaviors panel, click on the + (plus) button, and from the menu that appears, select Timeline > Go to Timeline Frame (**Figure 17.71**). The Go To Timeline Frame dialog box will appear (**Figure 17.72**).

4. If there is more than one timeline on your page, select the timeline you want to use from the Timeline drop-down menu.

5. Choose the frame to go to (the frame to rewind or fast forward to), and type its number in the Go to Frame text box.

   You cannot set a loop from outside the timeline.

6. Click on OK to close the dialog box.

7. Click on the arrow button and select the user event from the drop-down menu (`onClick`, `onMouseOver`, and so on) **(Figure 17.73).**

When the user commits the event, the action will cause the timeline to jump forward or backward to a particular frame.

LOOP AND REWIND

29

Adding and Removing Frames

We've already told you how to move the beginning and end of an animation bar, as well as the keyframes. You can also add frames to or remove frames from the middle of a timeline.

To add frames to a Timeline:

1. In the Timelines panel, click on a frame to move the playback head to the place in the Timeline where you want to add a frame (**Figure 17.74**).

2. From the menu bar, select Modify > Timeline > Add Frame.

   or

   Right-click (Ctrl+click) on the object's animation bar in the Timelines panel, and select Add Frame from the context menu that appears (**Figure 17.75**).

The frame will be added to the right of the playback head (**Figure 17.76**).

You can also remove frames from a timeline if you want to shorten the duration of the animation or the space between keyframes.

To remove frames from a Timeline:

1. In the Timelines panel, move the playback head to the place in the timeline from which you want to remove a frame.

2. From the menu bar, select Modify > Timeline > Remove Frame.

   or

   Right-click (Ctrl+click) on the object's animation bar in the Timelines panel, and select Remove Frame from the context menu that appears.

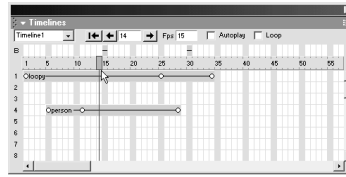The frame that the playback head is resting on will be removed.

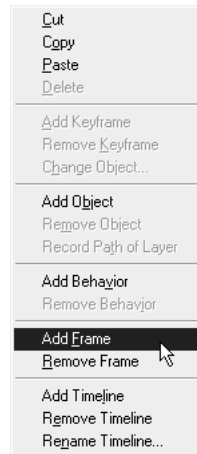**Figure 17.74** We placed the playback head one frame before a behavior on our Timeline.

Figure 17.75 Right-click (Ctrl+click) on the frame, and select Add Frame from the context menu.
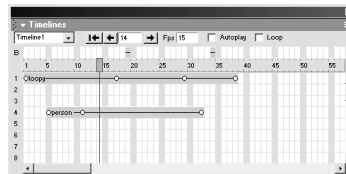

Figure 17.76 We added five new frames between the playback head and the behavior. If we want, we can move the keyframe back five frames by dragging it.

✔ Tips

- Tinkering with the middle of the timeline by changing the number of frames is easier than moving around all the keyframes, behaviors, and objects.

- Adding and removing frames from the middle of a timeline will remove any keyframes or behaviors that reside in those frames.
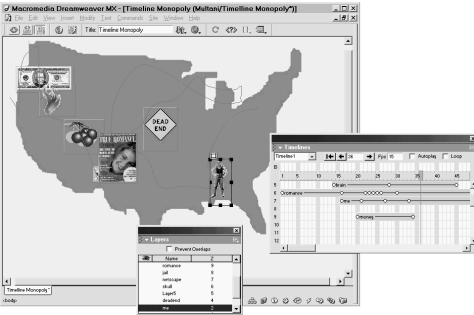
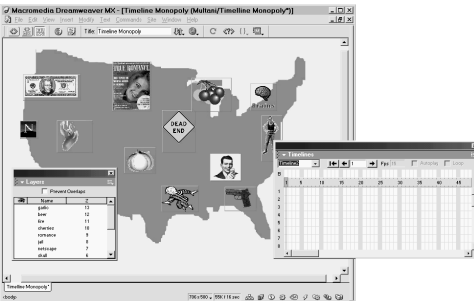**Figure 17.77** The Before Picture: Here's Timeline 1, in mid-play.

Figure 17.78 The After Picture: We just added Timeline 2. All traces of Timeline 1 are hidden—all the pictures are placed in their original positions, they're all visible, and they've got their original overlap settings.
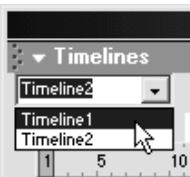

Figure 17.79 Choose which timeline to work with from the drop-down menu on the Timelines panel.

Using Multiple Timelines

You may want to use more than one timeline if you want more than one animation to be available on the page. You can use the same objects in different timelines, which could then be called by behaviors attached to different links or buttons.

To add a timeline:

◆ From the menu bar, select Modify > Timeline > Add Timeline.

The Timelines panel will reset, hiding the animation bars for the original timeline; additionally, all the indicators of the timeline will disappear from the Document window (**Figures 17.77** and **17.78).**

To toggle between timelines:

◆ In the Timelines panel, select the name of the timeline you want to work with from the Timeline drop-down menu (**Figure 17.79**).

You can have as many timelines as you want.

✔ Tips

■ Each timeline should be fairly simple, or your page will take several days to load and will offer more opportunities to crash browsers around the world.

■ You can have both timelines play simultaneously, or you can have a behavior in a keyframe in the middle or at the end of one timeline call another timeline and have it start playing. Use the Play Timeline behavior, and add it to the first timeline.

Renaming and Deleting Timelines

Tired of flipping between "Timeline 1" and "Timeline 2"? Rename them.

To rename a Timeline:

1. View the timeline you want to rename.

2. From the menu bar, select Modify > Timeline > Rename Timeline. The Rename Timeline dialog box will appear (**Figure 17.80**).

3. Type the new name for your timeline in the Timeline Name text box.

4. Click on OK. The Rename Timeline dialog box will close.

The new name for your timeline will appear in the Timeline drop-down menu in the Timelines panel.

Removing a timeline from a page is easy. Make sure you select the proper timeline—and if you want no timelines, delete each one.

To remove a timeline:

1. In the Timelines inspector, select the name of the timeline you want to remove.

2. Click on the Options menu button on the side of the Timelines panel, and select Remove Timeline from the menu (**Figure 17.81**).

Poof! It's gone.

✔ Tips

■ If you have a timeline with objects and behaviors already added to it, it is a good idea to save a version of the document (File > Save As) before deleting so that you don't lose the entire thing. You might decide that you want to use a version of it later on.

Figure 17.80 Type a new name for the timeline in the Timeline Name text box.
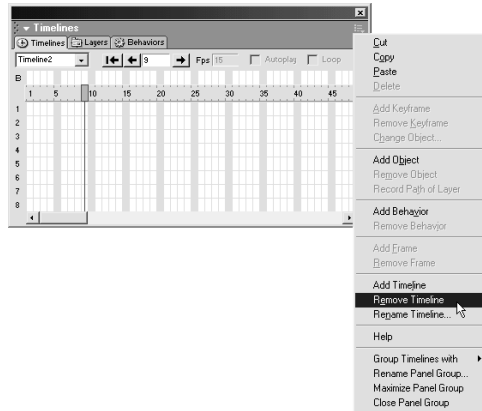
Figure 17.81 Select Remove Timeline from the shortcut menu to remove the timeline code from the page.

■ If you accidentally remove a Timeline, remember the magic word: Undo. Select Edit > Undo from the Document window menu bar, or press Ctrl+Z (Command+Z).
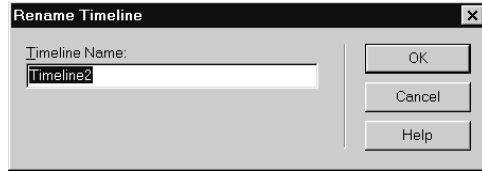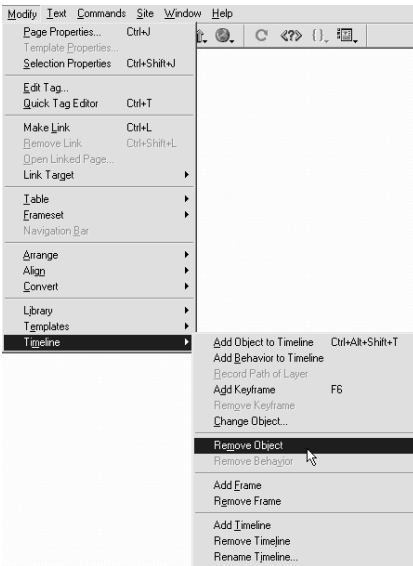
Figure 17.82 To remove an object, select Modify › Timeline › Remove Object. The Timelines panel doesn't even need to be open for this.

Figure 17.83 The Change Object dialog box allows you to transfer an animation channel from one object to another.
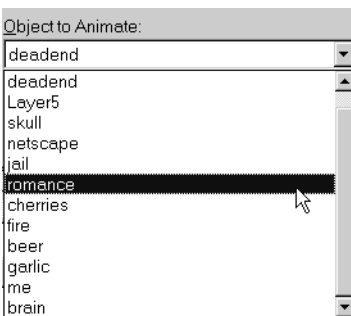

Figure 17.84 To switch which object is animated, select the name of an object from the Object to Animate drop-down menu.

Removing or Changing Objects

You can remove an object from a timeline if you no longer want to include it in the animation, or you might decide that the actions you've set up for a layer are dandy, but that they'd work better for a different layer.

To remove an object from a timeline:

1. In the Timelines panel, click on the animation bar for the object you want to remove from the timeline.

2. Press Backspace (Delete). The object will be removed from the timeline, but it will remain on the page.

✔ Tips

■ You can also select the object in the Document window and then use a menu command to remove it. From the menu bar or from a context menu, select Modify > Timeline > Remove Object (**Figure 17.82**).

■ To remove a behavior from a Timeline, select Modify > Timeline > Remove Behavior from the menu.

To change objects:

1. In the Timelines panel, select the animation bar for the object you want to switch with another object.

2. From the menu bar, select Modify > Timeline > Change Object. The Change Object dialog box will appear (**Figure 17.83**).

3. From the Object to Animate drop-down menu, select an object (**Figure 17.84**).

4. Click on OK to close the Change Object dialog box. The animation bar will now describe the object you selected.

Bringing It All Together

Timelines are quite versatile, although moving objects are difficult to illustrate in print. To wrap up this chapter, we're going to visually dissect a quasi-useful timeline we constructed using almost all timeline capabilities. Follow the figure captions for **Figures 17.85** through **17.93**.

One note about **Figures 17.90** through **17.92**: The Map layer doesn't do anything in the second timeline, but we added it so it would be visible while working. Dreamweaver displays the default image rather than the one that's been swapped in.

✔ Tip

■ To see this timeline in action, pay a visit to www.tarin.com/newtoys/toys.html.
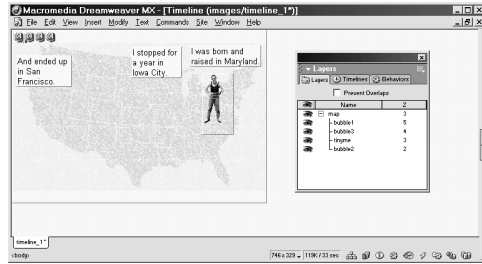
Figure 17.85 Here are the raw materials. The page contains five layers: the map, the person, and three "bubbles." The other layers need to be positioned relative to the map, so they're all nested within the map.
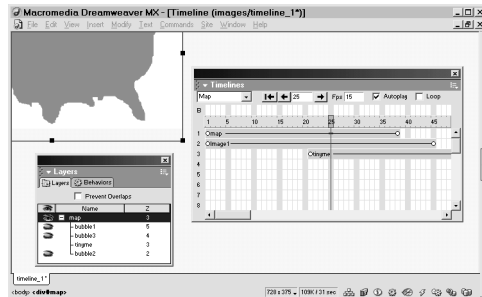

Figure 17.86 Frame 25 of the first timeline, called Map. We want the window to be blank to start. Then the first map is brought in from off screen.
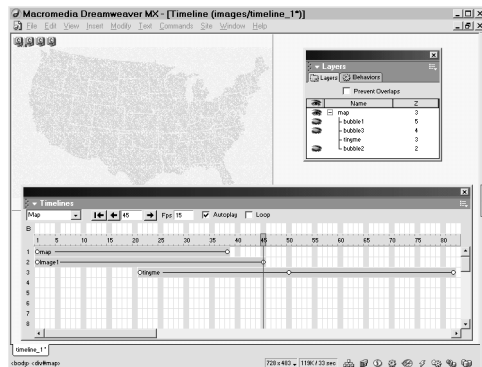

Figure 17.87 Frame 45 of the Map timeline. A few frames after the map layer arrives, the image source changes into a different map (on Frame 45, we changed the source in the Property inspector). This map has a larger file size, but the image had been preloaded in a layer.
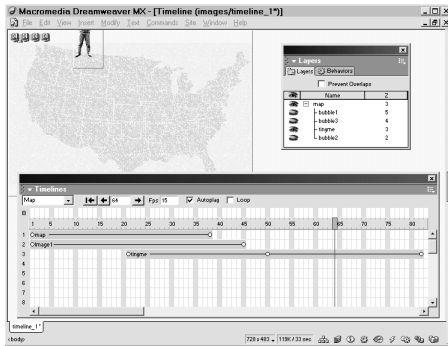
Figure 17.88 Frame 64 of the Map timeline. The person layer ("tinyme") begins to arrive from off screen. Like the map layer, the person was given negative coordinates (L –400px,T –300px) at the start of the timeline.
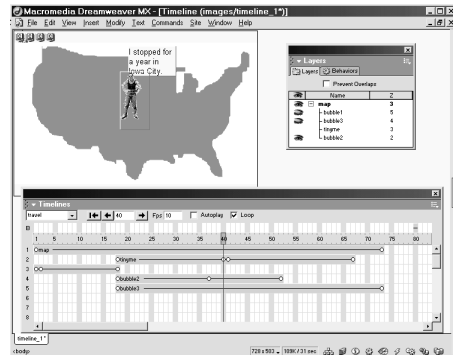

Figure 17.89 Frame 82 of the Map timeline. The person has arrived. A few frames later, in Frame 95, a behavior will play the second timeline, called Travel.

Figure 17.90 In Frame 1 of the Travel timeline, the layer "Bubble 1" appears above the person's head.

Figure 17.91 Frame 41 of the Travel timeline. The person has moved halfway across the country. Bubble 1 is hidden and Bubble 2 appears. Note that the playback rate is 10 fps rather than 15; this timeline moves more slowly.
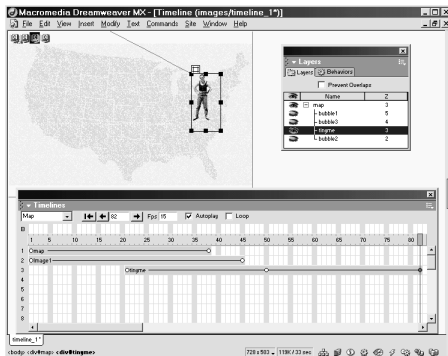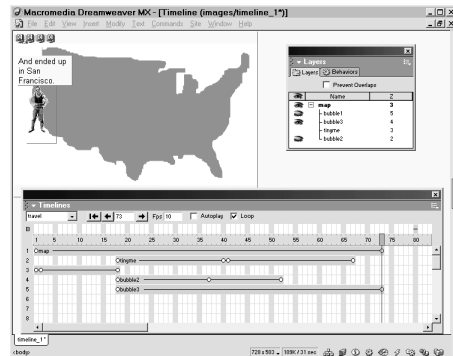

Figure 17.92 Frame 73 of the Travel timeline. At the end of the timeline, the person is all the way across the map. Bubble 2 is hidden, and Bubble 3 appears. We also added a Loop behavior inFrame 80; after a pause, the second timeline will replay.
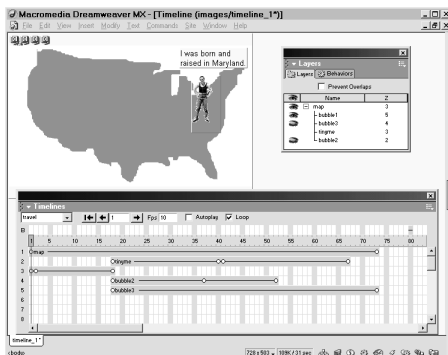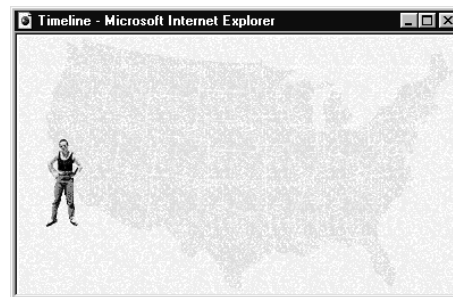

Figure 17.93 The work in action. We created a link to this timeline in a JavaScript window the same size as the map images.

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