

Adobe Flash 8

Part 3: Advanced Animations

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California State University, Los Angeles

Version 1.1

Spring 2009

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Introduction

Adobe Flash 8 is the industry's most advanced authoring environment for creating interactive and animated Web sites. It gives Web designers an efficient way to send artwork and animation over the internet. Flash uses vector graphics, which can be scaled to any size without losing clarity/quality. Flash also uses easy scripting for adding interactivity and animation.

This workshop will cover more advanced animation techniques in Flash from adding sounds and movie clips to combining animation techniques. Setting acceleration and deceleration, which can be controlled by setting the *ease* of the tween, will also be covered.

Advanced Techniques

In addition to having a straightforward animation, adding sound can make a big difference. Whether it is background music or sound events like a car engine, it will definitely make an impact on the viewer. Another technique that will be covered is movie clip. Movie clips are special types of symbols that have their own timelines separate from the original scene.

IMPORTING SOUNDS

Adding sounds to the animation will make it more alive. On the other hand it is important to be careful when adding sounds, since sounds will increase the file size of the exported Flash files. Since Flash is primarily not an audio program, sound files will have to be imported.

To import a sound file:

1. Select the **File** menu ► **Open....** The *Open* dialog box appears.
2. Select the “*moving car fla*” file from the data files folder.
3. From **File** menu, select **Import... ► Import to Library...**
4. Select “*carhonk.wav*” and click on **Open** button. This will insert a **carhonk.wav** symbol into the library.
5. In the **sound** layer insert a new keyframe in frame 40.
6. Left-click and drag **carhonk.wav** into the newly inserted frame (see Figure 1).

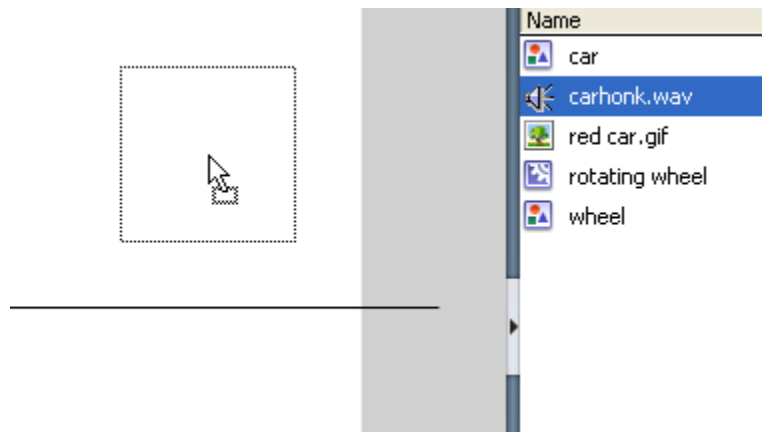


Figure 1 - Adding Sound From Library to Scene

7. The animation is now complete. Hold down the **[Ctrl + Enter]** keys on the keyboard to see the result.

NOTE: Flash can import digital audio of different formats, such as *mp3*, *wav*, *aif*, and *au*. However, there are certain exceptions. In Windows, Flash can only import *aif*, and *au* when **Apple Quicktime** is installed. On a Macintosh *wav* can not be imported.

IMPORTING IMAGES

The drawing tools are the basis of all development in Flash. However, sometimes real-life images can add to the quality of the animation. For example, with sound files, images must be imported in order to be used.

To import an image:

1. Select the **File** menu ► **New....**
2. Click **OK** button. This will create a new flash file.
3. Under the **Insert** menu, select **New Symbol....** The *Create New Symbol* dialog box opens.
4. Type [**car**] and select the **Graphic** option button.
5. From **File** menu, select **Import... ► Import to Stage....** The *Import to Stage* dialog box opens.
6. Select “*red car.gif*” and click the **Open** button. This will add the image to the stage. (Notice how the **red car.gif** symbol has also been added to the library automatically.)
7. Click on the **Scene 1** button on the Timeline to go back to **Scene 1**.
8. From the **Library** panel, left-click on the **car** symbol and drag it over to the middle of the stage.
9. Hold down the [**Ctrl + Enter**] keys on the keyboard to test. The result should look similar to Figure 2.





Figure 2 - An Image of a Red Car

MOVIE CLIPS AND GRAPHIC SYMBOLS

Movie clips let the user create symbols with their own timeline. This is particularly useful when dealing with objects that have a repeatable motion pattern. For example; windshield wipers moving back and forth, rotating wheels, and eyelids opening and closing. Instead of having to define this pattern over and over again, this is automatically done by Flash. Inserting a movie clip is done like any other symbol; by just dragging it over to the desired frame.

To create a wheel graphic symbol:

1. Under **Insert** menu, select **New Symbol....** The *Create New Symbol* dialog-box appears.
2. Type [**wheel**] and select the **Graphic** option button.
3. Click **OK** button. The definition scene for **wheel** symbol opens.
4. From the **Tools** panel, select the **Oval Tool** .
5. In the **Properties** panel, set the stroke color to black, and the fill color to grey. Also increase the line thickness to 10 or more.
6. While holding down the [**Shift**] key, draw a circle in the middle of the stage.
7. From the **Tools** panel, select the **Line Tool** .
8. Draw a vertical and a horizontal spoke on the wheel (see Figure 3).

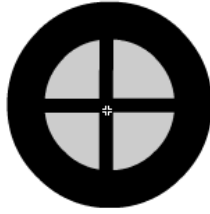


Figure 3 – A Wheel

NOTE: Before creating the movie clip symbol, Flash needs the necessary graphic symbols to apply to the movie clip symbols.

To apply rotation to wheel by using movie clip symbol:

1. Under **Insert** menu, select **New Symbol...** The *Create New Symbol* dialog box appears.
2. Type [**rotating wheel**] and select the *Movie clip* option button
3. Click **OK** button. The definition scene for the **rotating wheel** symbol opens.
4. From the **Library** panel, left-click on the **wheel** symbol and drag it over to the middle of the frame (see Figure 4).

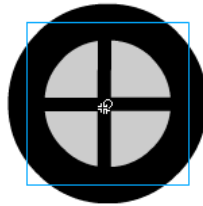


Figure 4 - Inserting the Wheel Graphic Symbol

5. Insert a new keyframe in frame 6.
6. From the **Tools** panel, select **Free Transform Tool** .
7. Apply a 90 degree clockwise rotation on symbol by selecting the symbol and rotating one of the corners (see Figure 5).

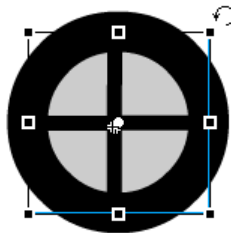


Figure 5 - Applying Rotation Transformation

8. Repeat steps 5 - 7 for frames 12, 18, and 24. This will create a complete 360 rotation on the wheel.

To apply motion tween to the wheel:

1. Left-click in frame 1 of the **rotating wheel** symbol.
2. Hold down the [**shift**] key on the keyboard while left-clicking on frame 24. This will select frames 1 through 24.
3. In the **Properties** panel, select **Motion** from the *Tween:* drop-down list.

To add wheels to the car symbol:


1. Double click on the **car** symbol in the **Library** panel. The definition scene for the **car** symbol becomes activated.
2. From the **Library** panel, left-click on the **rotating wheel** symbol and drag it over to the back of the car.
3. Use the **Free Transform Tool**  to resize the wheel as needed to fit the car.
4. Repeat steps 2 and 3 for the front part of the car. The result should be a car with wheels (see Figure 6).



Figure 6 - Car with Wheels

To view the car movie clip:

1. Click on the **Scene 1** button on the Timeline to go back to **Scene 1**.
2. From the **Library** panel, left-click on the **rotating wheel** symbol and drag it over to the middle of the stage.
3. Animation is done. Hold down **[Ctrl]** while pressing **[Enter]** key on keyboard to test. The result should be a rotating wheel.

To create a windshield wiper graphic symbol:


1. Select the **File** menu ► **New...**
2. Click **OK** button. This will create a new flash file.
3. Under **Insert** menu, select **New Symbol...** The *Create New Symbol* dialog box appears.
4. Type **[wiper]** and select the **Graphic** option button.
5. Click **OK** button. The definition scene for **wiper** symbol opens.
6. From the **Tools** panel, select the **Line Tool** .
7. Draw a vertical line in the middle of the stage (see Figure 7).



Figure 7 - A Windshield Wiper

To create a windshield wiper movie clip:


1. Under **Insert** menu, select **New Symbol...** The *Create New Symbol* dialog box appears.
2. Type **[swinging wiper]** and select the **Movie clip** option button.
3. Click **OK** button. The definition scene for the **swinging wiper** symbol opens.
4. From the **Library** panel, left-click on the **wiper** symbol and drag it over to the middle of the frame.
5. From the **Tools** panel, select **Free Transform Tool** .
6. Left-click and drag pivot-point to the bottom of the wiper so that when the wiper rotates it will rotate around this point (see Figure 8).



Figure 8 - Moving the Pivot Point of the Rotating Windshield

7. Insert a new keyframe in frame 6.
8. From the **Tools** panel, select **Free Transform Tool** .
9. Apply a 90 degree clockwise rotation on symbol by selecting symbol and rotating the top end.



Figure 9 - Applying Rotation to the Right




10. Insert a new keyframe in frame 12.
11. From the **Tools** panel, select **Free Transform Tool** .
12. Apply a 90 degree counter-clockwise rotation on symbol by selecting symbol and rotating the right end. Wiper should now be in original position as in Figure 8.
13. Insert a new keyframe in frame 18.
14. From the **Tools** panel, select **Free Transform Tool** .
15. Apply a 90 degree counter-clockwise rotation on symbol by selecting symbol and rotating the top end (see Figure 10).



Figure 10 - Applying Rotation to the Left

16. Insert a new keyframe in frame 24.
17. From the **Tools** panel, select **Free Transform Tool** .
18. Apply a 90 degree clockwise rotation on symbol by selecting symbol and rotating the left end. Wiper should now be in original position as in Figure 8.

To apply motion tweening to the windshield wiper:

1. Left-click in frame 1 of the **swinging wiper** symbol.
2. Hold down the **[Shift]** key on the keyboard while left-clicking on frame 24. This will select frames 1 through 24.
3. In the **Properties** panel, select **Motion** from the **Tween:** drop-down list.


To view the windshield wiper movie clip:

1. Click on **Scene 1** button on the Timeline to go back to **Scene 1**.
2. From the **Library** panel, left-click on **swinging wiper** symbol and drag it over to the middle of the stage.
3. The animation is now complete. Hold down the **[Ctrl + Enter]** keys on the keyboard to test. The result should be a swinging wiper.

ADDING GOTOANDPLAY ACTION TO FRAME

Movie clip symbols will automatically restart at the last frame. However, there is a short break of 1 frame where it is not playing. This can give a choppy or broken effect that is undesirable. To remove such an effect a simple action needs to be added to the last frame of the movie clip. By telling Flash to automatically go to frame 1, there will not be any dead frames when restarting the movie clip.

To add gotoAndPlay action to a frame:

1. Select the **File** menu ► **Open...** The *Open* dialog box appears.
2. Select the “*wheel.fla*” file from the data files folder.
3. Test the animation by holding down the **[Ctrl + Enter]** keys on the keyboard. (Notice the choppy effect when the movie clip restarts.)
4. Double click on the **rotating wheel** symbol in the **Library** panel. The definition scene for the **rotating wheel** symbol gets activated.
5. Click in frame 24 on the timeline.
6. Click on the **Actions** button ► **Actions** below the stage to active the **Actions** panel.
7. Click the **Add new item to the script** button . This will bring up a sub menu. Select **Global Functions** ► **Timeline Control** ► **gotoAndPlay** (see Figure 11).

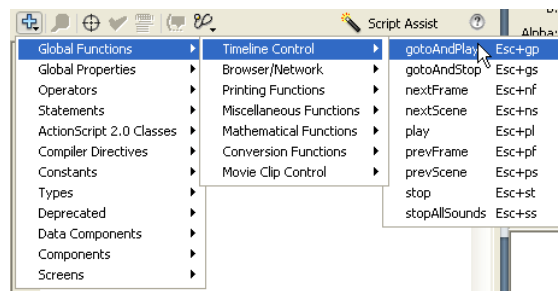


Figure 11 - Adding Action to Frame

8. The text **[gotoAndPlay();]** will automatically be inserted.
9. Make sure the blinking text cursor is between the parentheses. Type **[1]** on the keyboard. The text have now been changed to **[gotoAndPlay(1);]** (see Figure 12).

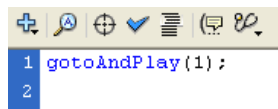


Figure 12 - Adding the GotoAndPlay Action

10. The action has now been added. Test the animation by holding down the **[Ctrl + Enter]** keys on the keyboard. Notice how there is no more dead frames in the Flash movie.

Combining Animation Techniques

This part will demonstrate examples that include combinations of previous techniques used in this handout; motion tweening, graphic symbols, and movie clip symbols. This part also introduces the ease; which is used to set the acceleration/deceleration of a motion tween.

COMBINING MOTION TWEENING WITH MOVIE CLIPS

This example will apply the usage of graphic symbols, motion tweening, and movie clip symbols. Motion tweening will be applied to a car to make it move from the left to the right of the frame. The car will have wheels that rotate. For this effect using the movie clip symbol is best. The final result should look somewhat like Figure 13.



Figure 13 - A Moving Car

To add rotating wheels to car:

1. Select the **File** menu ► **Open...** The *Open* dialog box appears.
2. Select the “*car fla*” file from the data files folder.
3. Double-click on **car** symbol in **Library** panel. The **car** symbol definition scene opens.
4. From the **Library** panel drag the **rotating wheel** symbol over to the back of the car.
5. Repeat also for front of the car (see Figure 14).
6. Click on the **Scene 1** button on the **Timeline** to go back to **Scene 1**.
7. The animation can now be tested. To test, hold down the [**Ctrl + Enter**] keys




Figure 14 – Car with Moving Wheels

NOTE: The car is still not moving from the left to the right as wanted. Applying motion tweening will solve this problem. But first, the timing needs to be planned. How many seconds should the car take to move from the left to the right of the frame? Also, the number of frames per second needs to be considered when choosing how many frames will be used for the animation. So if the car uses 10 seconds to go from the left to the right, and the document has 12 frames per second, the total number of frames will be:

$$10 \text{ seconds} * 12 \text{ frames/second} = 120 \text{ frames}$$

To apply motion tweening to the car:

1. Insert a new keyframe in frame 120.
2. From the **Tools** panel, select the **Selection Tool** .
3. Move the car to the right part of the stage (see Figure 15).

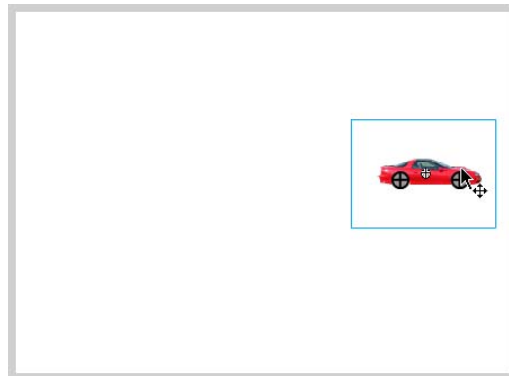


Figure 15 – Moving the Car to the Right Part of the Stage

4. Left-click on frame 1 in the **Timeline**.
5. Hold down [**Shift**] key on keyboard while left-clicking on frame 120. This will select frames 1 through 120.
6. In the **Properties** panel, select **Motion** from the **Tween:** drop-down list.
7. The animation is now complete. Hold down the [**Ctrl + Enter**] keys on the keyboard to test. The result should be a moving car with rotating wheels.

ACCELERATION AND DECELERATION

This example will cover a bouncing ball animation. However, to make it look like its really bouncing, the ball should accelerate before hitting the ground and decelerate after. This effect can be applied by setting the ease of the tween.

NOTE: Ease is a number between 100 and -100. Default ease is 0, which means no acceleration or deceleration. Setting the ease below 0 will result in deceleration, while above 0 will result in acceleration.

Creating a bouncing ball animation:

1. Select the **File** menu ► **New...**
2. Click **OK** button. This will create a new flash file.
3. Go to **Insert** ► **New Symbol...** in the menu. *The Create New Symbol dialog box opens.*
4. Type [**Circle**].
5. Select the **Graphic** option button.
6. Click **OK** button. The symbol definition scene opens.
7. Draw a circle somewhere in the first frame.
8. Click on **Scene 1** to get back to **Scene 1**.
9. Left-click and drag newly created **Circle** symbol from **Library** panel over to top-middle part of frame 1.
10. Insert new keyframes in frames 12 and 24.
11. In frame 12, move the **Circle** symbol to the lower-middle part of the frame.
12. Left-click in frame 1 on the **Timeline**.
13. Select **Motion** from the **Tween:** drop-down list.
14. Set the **Ease:** to **100** (see Figure 16).

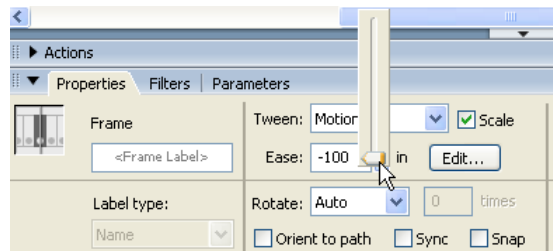


Figure 16 - Setting the Ease

15. Left-click in frame 12 on the **Timeline**.
16. In the **Properties** panel, select **Motion** from the **Tween:** drop-down list.
17. Set the **Ease:** to **-100**.
18. The animation is now complete. Hold down the [**Ctrl + Enter**] keys on the keyboard to see animation (see Figure 17).



Figure 17 - Timeline of a Bouncing Ball

19. Go back to the car exercise file. Try making it so that the car decelerates till about the middle of the stage, then starts accelerating again. This will give the illusion of breaking and speeding.

Supplemental Information

The following section is intended to be used as a supplemental section for users who wish to add sound and graphic images to their Flash content.

SEARCHING THE WEB FOR SOUND FILES

The following Web sites contain search engines for sound files.

FindSounds

FindSounds provides an easy-to-use search interface with numerous options to refine the search. Upon search the user can specify information such as file formats, number of channels, minimum resolution, minimum sample rate, and maximum file size (see Figure 18).



Figure 18 – <http://www.findsounds.com/>

Altavista

Altavista provides an easy-to-use and intuitive search engine for sound files (see Figure 19). Sound type can be specified together with the duration of the files. However, file size can not be specified.



Figure 19 - <http://www.altavista.com/audio/>

SEARCHING THE WEB FOR IMAGE FILES

The following Web sites contain search engines for image files.

stock.xchng

The leading service when it comes to high quality non-copyrighted stock exchange pictures (see Figure 20). In order to take advantage of all the services, a free signup is required.

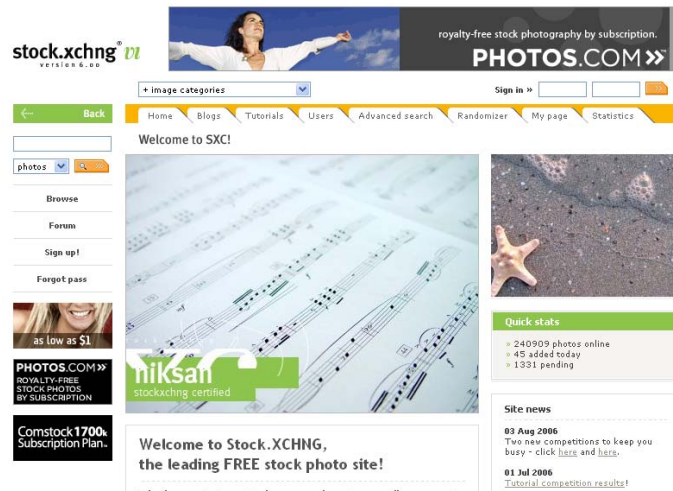


Figure 20 - <http://www.sxc.hu/>

Google

The leading search engine when it comes to image content. However, there is no indicator whether the files are copyrighted or not.



Figure 21 - <http://www.google.com/imghp/>