Appendix D

Including Sound on Your Web Page

So many people have asked me for help in adding sound to their Web pages that I just felt I had to include a chapter on it, even though this book is not about Web authoring. So this chapter shows you the basics of adding sound to your Web page. But please don't expect too much. I don't have room here to show you how to start your Web page. (I wish I did.) Nor can I show advanced Webmasters how to turn their sites into live broadcast sites — that would take a whole book, at least. So this chapter is for beginning and intermediate Web page authors who want to add a little sound to their existing pages.

What you'll learn:

- Copyright considerations when adding sound to your page
- How to use a sound file as a background sound
- How to link to sound files on your Web page
- Some notes about uploading sound files to your Web server

Copyrights Revisited

In Chapters 11 and 12, I talk a bit about copyright considerations when you record and edit your own sound files. Now I have to raise

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this uncomfortable topic again, because when you make your Web page available on a Web server — no matter how small or how amateur it is — you are *publishing* everything that's on it. If you use a clip of your favorite cartoon quotation or your favorite country singer, you're publishing that clip in a worldwide marketplace. Unless you get the correct permissions, you're almost sure to be violating somebody's copyright and denying them their rightful income from the publication and sale of their work. You may decide to do that — that's up to you — but at least you should be aware that you're infringing upon someone's copyrights. Copyright infringement lawsuits are occurring more and more often as copyright owners get wise to the Web. And by the way, copyright infringement can be considered a Federal crime if someone willfully persists in the infringement for financial gain.

What do you have the right to publish on your Web page?

- Any material that you write, arrange, and record yourself.
- Any public domain material that you arrange and record yourself. For example, you may make your own recording of "Happy Birthday," Lincoln's Gettysburg Address, or Tchaikovsky's *First Piano Concerto*. But you should not record your own performance of "Moon River" or Monty Python's Dead Parrot sketch without permission of the copyright owners, since those items are not yet in the public domain. (If it was created before 1920 or so, it is probably in the public domain.)
- Any recordings that you have written permission from the legal copyright owner to publish on your Web page.
- Parodies are an "iffy" area. You might get away with writing, recording, and publishing a parody of a popular song or show where you make significant changes to the words and music. But if you just record the original words and music in a funny voice and call that a parody, you probably would not win the lawsuit.

How long does a copyright last? Briefly stated, works created in the United States after January 1, 1978 are protected for 50 years after the death of the last surviving creator. Naturally, there's a lot more to it than this. For works created before January 1, 1978, for rights other than copyrights (such as performance rights), and for international laws, please see the copyright references in Appendix E, "Some Handy Internet Sites."

Tip

If you want to buy the rights to some music, search the Web for "copyright-free music" and "royalty-free music." Some places have quite reasonable prices for music they have composed, arranged, and recorded themselves.

Adding Background Sounds to Your Web Page

Would you like to play a sound in the background while someone reads your page? You could welcome people to your page, play some music or sound effects, or whatever is appropriate for your page. You might want to play the sound once or let it loop continuously.

Good sound files and bad

As you know by now, your readers' computers will have a wide variety of sound capabilities. To reach the largest audience with your background sound, I recommend that you use a WAV file for sampled sound and a MIDI file for synthesized music. (Let's hope that a couple of years from now we'll be able to use MP3 instead of WAV.) When you designate a file as a background sound, your readers don't have any choice about downloading it. So remember to minimize the download time by limiting your file size. Figuring that some readers may be able to achieve download rates of only 1 or 2 Kbps during peak times, try to keep your files under 30K. If you really need to use a larger sampled sound file, consider some alternative solutions:

- Don't make it a background sound. Put a link to it on your page as described in the "Linking to Sound Files" section later in this chapter. This gives people the option of downloading it, depending on their bandwidth and patience.
- Offer alternate sound files: a short WAV for people who have no other choice — a longer MP3 or RA for people who have the appropriate plug-ins.

But let's assume for now that you have a WAV or MIDI that would make a good background sound and talk about how to put it on your page.

Editing your HTML code

Your WYSIWYG (What You See Is What You Get) Web publisher may give you an easy way to add background sound to your page. Microsoft FrontPage Express 2.0 provides a perfect example. You choose Insert➪ Background Sound to open a dialog box where you can select the sound file. But most Web publishers don't give you a Background Sound option. Even editors that insert graphics with just a couple of clicks ignore sound. It's annoying, but since the HTML tags for sound are in a state of flux, it's also understandable. You probably have to "get behind" your WYSIWYG editor and insert the needed tags into the HTML source document. Don't worry — even if you've never worked with HTML before, I'll show you exactly what to insert where. Unfortunately, I can't tell you how to access your HTML code, as every editor does it differently — some don't do it at all. I can show you how two popular editors do it:

Microsoft Word 7.0 (or higher) — Choose View➪ HTML Source.

Netscape 4.*x* or higher Composer — Choose Edit ➪ HTML Source.

Even if you use FrontPage Express, you may want to adapt the code that it generates for the Background Sound option. Choose View ➪ HTML to access the HTML code with FrontPage Express.

Tip

Another option with Netscape Composer is to stay on the WYSIWYG view but choose Insert ➪ HTML Tag, which opens a text box where you can type the tag. The inserted tag appears on the WYSIWYG view as a yellow icon. Poise your mouse pointer over the icon to pop up its contents. Double-click the icon to reopen the text box for editing.

If you can't figure out how to edit the HTML source in your Web editor, there's another way. An HTML document is a plain text document, which you can edit it with any text editor. Figure D-1 shows an example of one of my Web pages displayed in Notepad. All those HTML tags in angle brackets (< and >) make it nearly unreadable — thank goodness for WYSIWYG editors so we don't have to read this stuff! — but you can ignore everything that's already in the document and just insert the desired tags. Just be sure not to change anything else in the file and to save it as a plain text or DOS text file with an .htm or .html extension. Figure D-2 shows part of the page created with this HTML document. I captured the bottom of the page where you can see QuickTime's sound control. Visit the page itself at `http://members.aol.com/jnfbooks` to hear the sound. You may see a different sound control or none at all, depending on which browser and which sound plug-in you use.

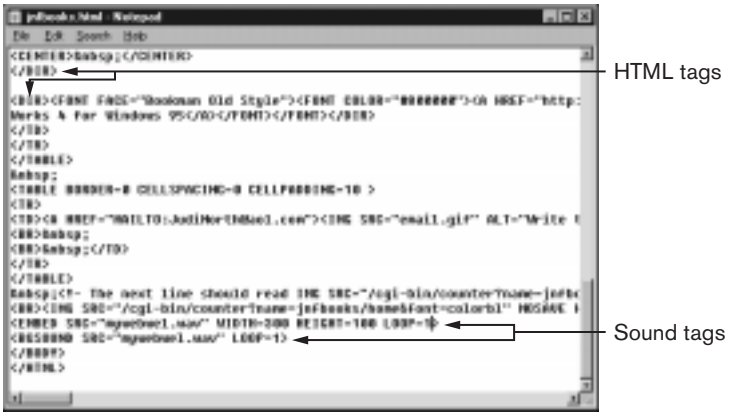

Figure D-1 *This is the HTML source code for my Web page at* `http://members.aol.com/jnfbooks/index.html`.

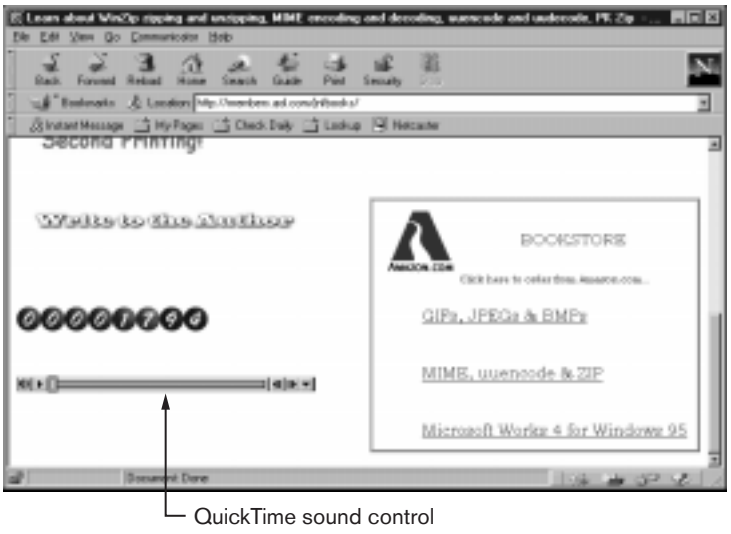

Figure D-2 *This is the page created by the source code in Figure D-1.*

Notice in Figure D-1 that I inserted the sound tags at the end of the document, right before the closing </BODY> tag, where browsers will process them last. That way the visual elements of the

page load first, giving the reader something to look at while the sound file downloads. Readers are much more likely to stick around if you give them something to read while waiting for the rest of the page to load. If you insert your sound commands directly on the WYSIWYG page, be sure to place them towards the bottom of the page. If you insert them into the HTML source document, put them right before the </BODY> tag.

The <EMBED> tag

The most common way of inserting background sound uses the <EMBED> tag, which calls on a plug-in to display or play a file. This tag is typical of the ongoing war between the two major browsers: Netscape Navigator and Microsoft Internet Explorer. The Navigator 2.0 browser provided the original version of this tag, which was not recognized by Internet Explorer (or any other browser). Internet Explorer 2.0 offered <BGSOUND>, which only plays a background sound. It was not recognized by Navigator (or any other browsers). To compete with the <EMBED> tag, Microsoft created the more flexible <OBJECT> tag for Internet Explorer 3.0. This tag places many types of objects on a Web page, including plug-ins.

Both Netscape and Microsoft pushed to get their favorite tag accepted when the HTML standard was upgraded to version 4.0. Microsoft's <OBJECT> tag won the battle and has been standardized with HTML 4.0. <EMBED> is supposed to be phased out in favor of <OBJECT>, but it has become so popular that literally millions of sites already use it. It's not going to disappear for a long time. In the meantime, even though the <OBJECT> tag won the day, Microsoft added the <EMBED> tag to Internet Explorer 4.0 so that their browser could correctly interpret sites using that tag.

I think the <EMBED> tag is much easier for nonprogrammers to understand than the <OBJECT> tag, so that's the tag I'll show you here. I'll also show you how to accommodate browsers other than Microsoft Internet Explorer 4.0 and Netscape Navigator in the

upcoming sections. Read the <EMBED> sections even if you use Microsoft FrontPage Express or another editor with a background sound option. FrontPage Express, for example, inserts only a <BGSOUND> tag into your HTML, so only people using Internet Explorer will hear your background sound. But you can adapt the HTML to include the <EMBED> tag to reach a wider audience.

The basic tag

The simplest <EMBED> tag identifies the file to be played and leaves everything else up to the browser and the plug-in:

```
<EMBED SRC="hula.mid">
```

You can designate a specific plug-in in the tag, as in the following tag for the Crescendo plug-in:

```
<EMBED SRC="hula.mid" NAME="crescendo">
```

But naming the plug-in could cause problems for your readers. If someone doesn't have the specified plug-in, the browser asks to install it. Many people don't want to do download and install new plug-ins, they just want to see (and hear) your Web site. Because almost everyone has some type of plug-in for WAV and MIDI files, I think it's best to not specify the plug-in and let the browser use whichever one is already there.

Control or no control?

A lot of people don't like background sound and want to turn it off immediately — before their bosses come down the hall to find out what that music is. It would be wonderful to give your readers a plug-in control panel so they can stop it, restart it, adjust the volume, and do other control functions. Figure D-3 shows an example of a Web site with a control panel for the plug-in. Notice that the control panel in this example is provided by the Crescendo plug-in.

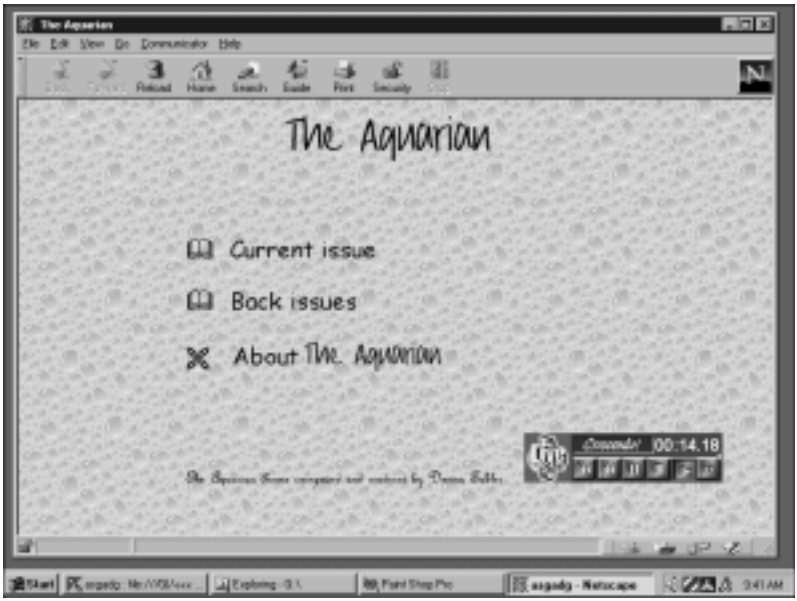

Figure D-3 *This Web site has a control panel for the background sound.*

You can make room for the control panel on your page by specifying HEIGHT and WIDTH parameters, which give the dimensions in pixels. I used the following tag to display the Crescendo control panel in Figure D-2:

```
<EMBED SRC="background.mid" HEIGHT=50 WIDTH=200>
```

But when a browser that uses the QuickTime plug-in displays that same page, QuickTime must display its control panel into the specified dimensions. Unfortunately, the QuickTime control panel has a completely different shape. You can see the unattractive result in Figure D-4.

Figure D-4 *The QuickTime control panel doesn't fit nicely into the Crescendo control's dimensions.*

What to do? One solution goes back to the idea of designating the plug-in so you know what control panel you're dealing with. If you have the time, patience, and knowledge, you could include one <EMBED> tag for each possible plug-in. But with new plug-ins and upgrades appearing every day, I'm afraid it would be impossible to keep up with all the possibilities. Also, you don't want your users to see a dozen "You need this plug-in" messages while their browsers try to load all the plug-ins from the <EMBED> tags.

Another solution is to use dimensions large enough to accommodate any plug-in, perhaps HEIGHT=100 and WIDTH=300. Some plug-ins ignore the extra space, as QuickTime does in Figure D-4; others stretch to fill it. This is the method I use on a white page, where the extra space doesn't show. Some controls don't look their best, but at least they are usable.

The solution most commonly used is to suppress the control panel. You can get rid of it by adding a HIDDEN="true" parameter to your <EMBED> tag as shown below. Many HTML references state that HEIGHT and/or WIDTH are required in an EMBED tag. I haven't found this to be true, but it wouldn't hurt to include HEIGHT and WIDTH even though they are ignored because of HIDDEN. You can just set them both to minimum value, 2 pixels as shown in the following tag.

```
<EMBED SRC="hula.mid" HEIGHT=2 WIDTH=2 HIDDEN="true">
```

I personally do not use HIDDEN. I like to provide a control panel so people can start and stop the background sound as they wish.

Note

You can't suppress the control panel by omitting WIDTH and HEIGHT. The browser allocates a default minimum space (2 by 2 pixels) for the control panel, which the plug-in tries to use with little success. You must use the HIDDEN option to suppress the control panel.

More control panel options

When you display a control panel, some plug-ins, including Netscape's LiveAudio, don't play the file until the reader clicks the play button. AUTOSTART="true" forces plug-ins to start playing as soon as the file is downloaded. With plug-ins capable of playing a MIDI file before it finishes downloading, such as Crescendo, AUTOSTART="true" starts playing as soon as possible. I personally don't care for AUTOSTART because, as I said before, many users don't want background sound.

LOOP controls how many times the file is repeated. You can specify LOOP=*n* to repeat the file *n* times or LOOP="true" to repeat it until something else stops it. (Some users may add, "until

we go bananas and rip the speakers off our computers.") The following example plays the file twice. For most background sounds, two times should be the maximum unless you provide a control panel so people can turn it off.

```
<EMBED SRC="hula.mid" HEIGHT=300 WIDTH=100 LOOP=2>
```

Since some plug-ins loop infinitely unless you specify otherwise, be careful to include LOOP=1 in all your <EMBED> tags unless you want the sound to play more than once. The following tag plays a welcome message one time.

```
<EMBED SRC="welcome.wav" HEIGHT=300 WIDTH=100 LOOP=1>
```

Since <EMBED> is not standardized, most plug-ins offer their own options for it. The ones I've shown you here are pretty much universal. But if you're working with a specific plug-in, you may want to learn its particular options. You should be able to find them by visiting the plug-in's Web site.

Tip

Want to drive some of your readers crazy? QuickTime offers an interesting variation on the LOOP option. When you specify LOOP="palindrome" QuickTime loops the file first forwards then backwards continuously until something stops it. Other plug-ins simply ignore LOOP="palindrome" and use their default LOOP settings.

The <NOEMBED> tag

What about other browsers? They may not implement <EMBED>, so their users may not hear the sound. If you want to catch everyone, you can add a <NOEMBED> tag to your <EMBED> tag. Within the <NOEMBED> tag, you can give your readers a link to play the sound. It won't be a background sound, but at least it will make the sound available on all other browsers. Browsers that implement the <EMBED> tag ignore the <NOEMBED> tag, so readers will see one or the other, not both.

If you use <NOEMBED>, you enclose it between the usual <EMBED> tag and a closing </EMBED> tag. The entire set of tags looks like this:

```
<EMBED options>
<NOEMBED>
link to sound file
</NOEMBED>
</EMBED>
```

Browsers ignore tags they don't understand. So a browser that doesn't implement <EMBED>, ignores <EMBED *options*>, <NOEMBED>, </NOEMBED>, and </EMBED>. But it recognizes and displays the *link to sound file*. If your background file is named `valse.mid`, the entire set of tags should look something like this:

```
<EMBED SRC="valse.mid" WIDTH=300 HEIGHT=100 LOOP=2>
<NOEMBED>
<A HREF="valse.mid">Click here to listen to the beautiful
Valse by Freya Doherty</A>
</NOEMBED>
</EMBED>
```

The <BGSOUND> tag

Remember the <BGSOUND> tag? Microsoft provided it in Internet Explorer 2.0 for playing background sounds. Not too many people use Internet Explorer 2.0 anymore, but millions still use Internet Explorer 3.0. If you want them to hear your sound in the background, you can add the <BGSOUND> tag to your page. <BGSOUND> uses the SRC option (required) and the LOOP option (not required). You can specify LOOP=n or LOOP="infinite". <BGSOUND> does not display a control, so it doesn't use HEIGHT, WIDTH, or HIDDEN. A typical <BGSOUND> tag looks like this:

```
<BGSOUND SRC="justme.mid" LOOP=2>
```

When you choose the Background Sound option in Microsoft FrontPage Express, it inserts the following tag into your HTML. where *filename* is the name of the file:

```
<BGSOUND SRC="FILENAME" LOOP="1">
```

Many older references suggest inserting both <EMBED> and <BGSOUND> tags in your document, to reach both Navigator and Internet Explorer browsers, like this:

```
<EMBED SRC="justme.mid" HEIGHT=100 WIDTH=300 LOOP=2>
<BGSOUND SRC="justme.mid" LOOP=2>
```

But that solution causes problems with Internet Explorer 4.0, which implements both tags. Both sounds play at once. They may be simultaneous or one may be slightly behind the other. The result can be bizarre. To sidestep the problem, enclose the <BGSOUND> tag in <NOEMBED> like this:

```
<EMBED SRC="justme.mid" WIDTH=300 HEIGHT=100 LOOP=2>
<NOEMBED>
<BGSOUND SRC="justme.mid LOOP=2>
</NOEMBED>
</EMBED>
```

When you code it this way, Internet Explorer 3.0 responds to the <BGSOUND> tag and Internet Explorer 4.0 to the <EMBED> tag. Problem solved . . . almost. What about all those non-Netscape and non-Microsoft browsers? If you include a link for them, remember that Internet Explorer 3.0 users will hear the background sound *and* see the link. The text of your link should reflect that. For example, you might say, "Click here if you don't hear the background music. This will download and play a 27K MIDI file." Here is an example of an entire set of tags to cover all browsers:

```
<EMBED SRC="justme.mid" WIDTH=300 HEIGHT=100 LOOP=2>
<NOEMBED>
<BGSOUND SRC="justme.mid LOOP=2>
```

```
<A HREF="justme.mid">Click here</A> if you don't hear the
background music. This will download and play a 27K MIDI
file.
</NOEMBED>
</EMBED>
```

Linking to Sound Files

When you want to give readers the option of listening to a sound file, rather than playing it in the background, you place a link to the file on your Web page, something like this:

```
<A HREF="welcome.wav">A welcome message from our club
president (200K)</A>
```

The browser displays the message "A welcome message from our club president (200K)" as a link, usually in underlined blue letters, although both you and the reader can choose different options for displaying links. When someone clicks the link, the `welcome.wav` file is downloaded and played via the reader's WAV plug-in or helper application.

There's no limit on the number of links you put on a page except the amount of space you have on your Web server to store the sound files. You can create a large cyber-jukebox of sounds if you wish. Figure D-5 shows the page created by the following HTML code (only the <BODY> section is shown below):

```
<CENTER><FONT SIZE=+3>Bird Sounds Album</FONT></CENTER>

<FONT SIZE=+1>I have been recording bird sounds for the
last seven years. Please feel free to download and use
these sounds however you'd like.</FONT>

<P><FONT SIZE=+1>Chickadees</FONT>
<BR><A HREF="bcapchick.wav">Black-capped chickadee
(61K)</A>
<BR><A HREF="carolinachick">Carolina chickadee (59K)</A>
```

```
<BR><A HREF="mountainchick.wav">Mountain chickadee
(47K)</A>

<P><FONT SIZE=+1>Grackles</FONT>
<BR><A HREF="cgrackle.wav">Common Grackle (53K)</A>
<BR><A HREF="btgrackle.wav">Boat-tailed Grackle (36K)</A>
<BR><A HREF="ltgrackle.wav">Long-tailed grackle (39K)</A>

<P>AND SO ON...
```

Figure D-5 *This avian jukebox was created with sound links.*

Uploading Sound Files

Don't forget that any sound files you reference in your document must be uploaded to your Web server along with the HTML document. Be sure to use the exact same spelling and capitalization for the uploaded filenames that you used in the tags. Pathnames represent a common pitfall for new Webmasters. When developing a page, you sometimes use files in other folders and include the pathname in the tag like this:

```
<EMBED SRC="c:\media\mywavs\bgwav.wav" WIDTH=300
HEIGHT100>
```

When you're working with your local drive, you need the pathname to test the page. Otherwise the browser can't find the file and it seems that your tag doesn't work. But when you upload files to your Web server, they are on a different computer with a different folder structure. It probably doesn't have a folder called c:\media\mywavs — in fact, I guarantee it doesn't. Your sound files are probably stored in the same folder as your document and no pathnames are needed. You must remember to remove the pathnames before you upload the document.

Tip

Tip #141 to avoid premature aging: Never use pathnames in HTML tags. When you're developing the document, copy all necessary files into the same folder as the HTML source document on your hard drive. That way, all tags work without pathnames, both on your local drive and on the remote Web server.

Some Web publishers, including Netscape Composer, remove pathnames automatically when they upload a source document. This is a wonderful feature . . . most of the time. But it causes complications if your page references your Web server's /cgi-bin/ directory, perhaps for a hit counter, as the publisher automatically removes the /cgi-bin/ pathname. Netscape provides a NOSAVE option that you can insert in tags with pathnames that should not be altered.