Multiple Channels of Sound Providing sound "layering"

One of the most useful enhancements made to the **Sound Manager** is the ability to have multiple channels of sampled sound produce output on the Macintosh audio hardware concurrently. Previous versions of the **Sound Manager** could play only a single channel of sampled sound at a time. One consequence of this was that if a system alert sound was called while a sampled sound was playing, the alert sound would not be heard (although, if you were lucky, the menu bar might flash). A more important consequence was that it was impossible to provide the layering of sound that can bring a touch of reality to a simulation or presentation. Furthermore, the limitation to one sampled sound at a time made it very difficult for an application to incorporate Macintosh-synthesized voice output with any other kind of Macintosh-generated sound.

Using the enhanced **Sound Manager**, your application can open several channels of sampled sound for concurrent output on the available audio hardware. Similarly, multiple applications can each open channels of sampled sound. The number and quality of concurrent channels of sound are limited only by the abilities of the machine, particularly by the speed of the CPU. Different Macintosh computers have different CPU clock speeds and execute instructions at quite different rates. This means that some machines can manage more channels of sound and produce higher-quality sound than other machines. For example, a Macintosh II may be able to support several channels of high-quality stereo sound without significant impact on other processing, whereas a Macintosh Plus is able to support only a single channel before other processing slows significantly. The newly enhanced **Sound Manager** provides the capability to balance CPU loads for sound-related activity, thereby further insulating the application from the underlying hardware.

The **Sound Manager** currently supports multiple channels of sampled sound only on machines equipped with an Apple Sound Chip. To maintain maximum compatibility between machines for your applications, you should always check the operating environment (using the **Gestalt** function documented in **Compatibility Guidelines**) to make sure that the ability to play multiple channels of sampled sound is present before attempting to do so.