Deferring User Interrupt Handling

During the time that the Macintosh is handling a page fault, it is critical that no other page faults occur. Since no other work is explicitly done by the system while it is handling a page fault, the only code that can cause this to occur is code that runs as a result of an interrupt. Consequently, the **HoldMemory** function must be called on buffers or code that are to be referenced by any interrupt service routine. You must call this function at non-interrupt level because the MemoryDispatch calls may cause movement of memory and possible I/O.

The use of procedure pointers (ProcPtrs) in specifying I/O completion routines, socket listeners, and so forth makes it impossible for drivers to know the exact location and size of all code or buffers that might be referenced when invoking these routines. However, these routines must still be called only at a safe time, when paging is not currently in progress. Because the locations of all needed pages cannot be known, an alternate strategy is used to prevent a fatal double page-fault condition.

The **DeferUserFn** routine is provided to allow interrupt service routines to defer, until a safe time, code that might cause page faults. **DeferUserFn** determines whether the call can be made immediately and, if it is safe, makes the call. If a page fault is in progress, the address of the service routine and its parameter are saved, and the routine is deferred until page faults are again permitted.