To meet the problem of the swapping drum's monopolizing the system, an independent memory scheme was established to divide the *potential* 64K of memory into four 16K *banks*, each composed of four 4K *modules*. The actual memory configuration on the Hospital Computer System is one bank of 16K words (4 modules) for the Executive System and two banks each containing 4K words (1 module) for the user programs. Each of the banks has its own independent memory buffer register and memory address register. Logically, memory is treated very much like a piece of I-O gear; that is, a processor makes a request to memory for a piece of data or transmits a piece of data to memory for storage. The memory control also has priority logic to permit more than one processor to make access to the same memory bank, in the order of the immediacy of the processor's requirements. The swapping drum has the highest priority and therefore can interrupt either of the other two processors (although in actual operation the swapping drum should never need to access a bank being used by another processor). The Data Channel has priority over the central processor.

With this independent memory scheme, one user program may run in one of the 4K banks while another user program is being swapped into the other 4K bank. Hence, swapping and computation may occur simultaneously. Similarly, a user program in one of these banks may be doing a bulk-storage I-O operation (via the Data Channel) while a second program is being swapped into the other 4K bank (see Fig. 1). In any case, however, the central processor always has access to the Executive memory bank and the interrupt-handling routines which reside there. This implies that by allocating some of Executive core memory to small buffers for the Teletype communications lines and other non Data Channel