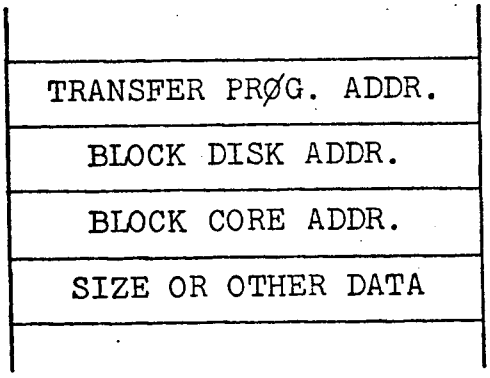
516-26
CC
3/20/69

DISK-DMA QUEUE

The DISK-DMA QUEUE contains an entry (consisting of four words) for each requested core-to-disk or disk-to-core block transfer. Each entry contains the complete specification of the requested transfer. This allows the disk I/O to proceed at its own pace under interrupt control. Each time a block transfer is complete an interrupt occurs and the disk interrupt handler can then pick from the queue, the best block transfer to do next, on the basis of the disk position relative to the heads at that instant.

The DISK-DMA QUEUE also prevents a thread from tying up the computer while waiting for a disk transfer. A thread can request a block transfer by adding a request to the queue and then roadblock itself. Other threads would then use the time required to transfer the block. When the block was transferred the requesting thread would be unroadblocked and would proceed the next time its turn came. The first word in a DISK-DMA QUEUE entry is a pointer to the disk transfer program, which is to set up the specific disk-core transfer requested. This program gets control when the disk interrupt handler decides to service this request. The second word is the disk address of the start of the block. It is the basis of the decision to service this request. The third word is the core address of the block. The fourth word might be the size of the block or some other data about the transfer depending upon what type of transfer was requested, i.e., what address was placed in the first word.



DISK-DMA QUEUE POINTERS

.DDSRT - pointer to the first word of the first entry.

.DDEND - pointer to the first word of the (last+1) entry.