When the current Fastrand-user's data transfer is completed, the
Data Channel generates an interrupt on interrupt level 1. The
I-O Processor charges the user program's queue level counter for
the time spent doing the data transfer, sets the user program's
status to "runnable," sets its program counter to the appropriate
return from the Fastrand IOT, and notifies the Swapper that a
user program's status has changed. The interrupt level 1 routine
then generates a level 4 interrupt and debreaks from level 1

The interrupt on level 4, which is generated by code in either
a level 16 or a level 1 routine, activates a portion of the I-O
Processor which determines whether there are any programs wait-
ing for the Data Channel. If there are no programs waiting,
debreaking occurs. If at least one program is waiting, the level
4 routine generates a level 15 interrupt and debreaks.

The interrupt on level 15 activates a queue-sorting routine in the
I-O Processor; this routine examines the Fastrand queue and finds
the best waiting user program, i.e., the user program with the
lowest queue level counter (the queue level counter is described
in Section II of this report). The control words for this user
program are moved to an I-O Processor communication area, the
program's status is set to "IOP wants," a level 17 interrupt is
generated to notify the Swapper, and a level 4 interrupt is
generated.

The level 4 interrupt, generated on level 15, starts a routine
which begins to satisfy the preconditions implied by the user
program's control words. Most of the actual work must be done
by subroutines which link the level 4 routine to routines on
other levels; for example, Table 4 must be written out and