hand, all programs in queue 1 are allocated their time before any other program is given time; similarly, programs in queue 2 are all allocated time quanta before programs in queues 3-12, and so on. Programs which spend a large amount of time computing move lower and lower in the queue structure; at each downward jump, they receive more time quanta, but wait longer to get it. On the other hand, demands for interaction with the "outside world" cause the program to be placed in a high queue; for example, if a user's Teletype input buffer is almost full, his program will be placed in queue 1.

In addition to considering the queue position of a program, the Swapper also considers two other parameters, *location* and *status*. Program status is a device for temporarily disregarding the queue structure; classification by location allows the Swapper to determine which programs may be accessed without delay.

There are four possible locations for programs in the system: in one of the two user cores, on one of the 32 swapping-drum fields, on the swapping area of the Fastrand drum, and "in limbo." The in-limbo location applies to programs which have been requested, either by a Teletype user or by another program, but have not yet been started. (These programs do not need to be swapped into core but will be read in by a special Executive "startup" routine.)

Program location is used to determine whether programs are "accessible" or "inaccessible." Programs stored on the swapping drum are accessible if the swapping drum is not being used. Programs on the Fastrand are accessible when the Fastrand is not already being used for swapping. In-limbo programs are accessible when