PROGRAMMING STAFF NOTE 66

TO: CTSS Maintenance Staff

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SUBJ: The Final (2.) Solution to FIB Implementation Problems

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1. Six and twelve bit output during FIB runs.

All printed output created during a FIB run will be written into the line-marked disk file "$$$FIB OUTPUT" by the "WRFL" module in A-core. To prevent the creation of a file in mixed 6-bit and 12-bit output, the "WRFL" module writes all output onto the disk in 12-bit (full) mode. This is accomplished by expanding 6-bit output characters to 12-bit characters within the "WRFL" module.

"$$$FIB OUTPUT" may be printed using the print command with the "(FULL)" option. If off-line printing of the file is desired, several "saved" commands exist which can re-format the file in a manner suitable for disk editor processing.

2. Simulation of calls to "WRFLXA".

Whenever a FIB job makes a call to "WRFLX" or "WRFLXA", the output line and its associated line-mark are immediately written onto the disk. In the case of "WRFLXA" calls, however, the line-mark (and its "relloc" in the disk file) are retained, and a switch is set inside the "WRFL" module indicating that a call to "WRFLXA" has just taken place. At the next call to either "WRFLX" or "WRFLXA", a new line-mark will not be written. Instead, the new output line will be appended to the file, and the line-mark from the previous call to "WRFLXA" will be re-written with a count which reflects the combined length of the two or more output lines.

3. FIB usage privilege.

The "FIB" command has been designed so that users must have a shift 5 time quota in order to initiate a fib job. The "FIB" command does not check to see if this quota has been exhausted; it merely checks for the existence of a non-zero quota.

4. FIB Time-accounting.

When a FIB job is logged in, a location in A-core called "ESTTIM" is set to the estimated running time (in 60'ths of a second) of the FIB job. If "ESTTIM" is exceeded during a FIB run, an automatic logout will take place.

The "SCDC" time-accounting module in A-core was originally designed to let a FIB user run if his shift 5 time quota had been exhausted. This was done by a "shift-skipping" algorithm which caused time to be charged to the highest shift number which had time left on it. This algorithm has been removed. When a FIB job runs out of shift 5 time, it will be automatically logged out.

5. Prohibited supervisor subroutine calls.

Calls to DORMNT or DEAD will result in an automatic logout. Calls to the following subroutines will result in a Protection Mode Violation followed by an automatic logout: RDFLXA, REDLIN, SNDLIN, SNDLNA, ATTCON, RELEAS, SLAVE, SET6, SET12, ALLOW, FORBID, WRMESS, RDMESS, and SLEEP.

Contrary to CTSS manual specifications, COMFIL calls may be issued (if, of course, the user has common file privileges). This restriction has been removed from the "COMCHK" module in A-core.

6. FIB's "UNITID".

If a call is made to "WHOAMI" during a FIB run, the console identification code ("UNITID") returned will be "(FIB)" left-justified with a trailing blank. Programs which check "UNITID" (such as the ASCII escape subroutine) should be modified to recognize this code.