

for full use by The Massachusetts General Hospital an average of 100 hours per week and had an over-all up-time average of 97 per cent.

This report is divided into five sections. The first describes the hardware environment of the Executive System. No attempt has been made in Section I to specify the machine completely; only those elements that were designed specifically for time-sharing operation have been treated at length. The other sections describe the software routines that comprise the Executive System.

The second section describes the multiprogramming software, the "Swapper," in great detail. It is felt that the detail contained in this Section will enable others to learn from the problems encountered during this project.

The third section describes the method of linkage from user programs to user-oriented subroutines in Executive core memory. This linkage is accomplished through a routine, activated by privileged-instruction trap logic, which dispatches the privileged instruction to the appropriate subroutine — and therefore is called the "Dispatcher."

The fourth and fifth sections describe the various system I-O facilities. The fourth section covers the bulk-storage I-O routines, collectively known as the "I-O Processor." These routines must deal with the problem of interleaving many users' requests for a single device. The fifth section describes the I-O routines for devices such as the Teletypes and paper-tape reader/punch which are used by only one user at a time. Magnetic-tape I-O, however, is described in the fourth section because of the close