

centers, and we expect to hold constant during fiscal year 1968 at this level.

Mr. Chairman, I would like to take one example of some of the work we have done in Administrative Operations. Actually, it was at least in part in response to some questioning by Mr. Rumsfeld with respect to our procedures and processes for automatic data processing. If I may read just a few passages from the summary and then enter into the record this document on our "Computer Systems Survey Manned Space Flight, NASA October 1966" I would appreciate it.

In the summary the document states:

Computers are an integral part of the Manned Space Flight (MSF) program and support the missions and functions of each center. General support computers are used by the MSF centers in their day-to-day activities of engineering development and management operations. Other computers are linked together as elements of systems used to train flight personnel, check out launch and space vehicles, and control missions. The number and varieties of computer models used in the MSF program are illustrated in figure 1-1. (Cf. page 1.)

This figure is too complex to project on the screen, but you will see it in the report.

With respect to our management techniques, which is one of the various aspects of this survey, we have developed, in the course of our building up of our Manned Space Flight centers, a carefully implemented set of management techniques which have been applied by our own Manned Space Flight office in Washington and our centers to manage the computer resources. Let me quote from the document:

Automatic Data Processing (ADP) planning documents which project intended ADP usage, are developed by each Center and transmitted to OMSF on a yearly basis with quarterly revisions. Program Operating Plans (POP) and quarterly submissions of revisions of the annual ADP budget are also intensively reviewed in OMSF.

Procedures for the acquisition of computer hardware have been developed that involve both the Centers and NASA Headquarters. Following NASA Headquarters authorization, the Center initiates a procurement based on a firm specification of the required system (cf. page 4).

We have a broad participation by computer manufacturers in the Manned Space Flight program as a result of this process.

In the centralized data processing facilities, a system of workload control procedures is utilized to provide the basis for controlling computer resources. Control is accomplished through user budgets. For operational systems, computer requirements are validated through program-management procedures.

A significant amount of computer resources utilized in MSF is developed, operated, and maintained by contractor personnel. Procedures and management tools for monitoring contractor performance have been developed and are being applied.

The OMSF and its three Field Centers actively promote computer-resource sharing arrangements through the MSF Resources Sharing Panel and through written agreements with the General Services Administration (GSA). Computer programs and machine time worth \$7,000,000 were shared in MSF during calendar year 1965. Resource sharing has been further encouraged in 1966 by management action, such as the establishment of programming standards, standard data formats, and a computer program library at MSC (cf. page 4).

(The following is submitted for the record.)