

The MSFC, KSC, and MSC workload control systems were implemented as of July 1964. The MSFC Customer Dollar Allocation was operational July 1965. The MSC Carrier Account was effective July 1966.

Further action will be taken to improve workload control by expanding its coverage, and disseminating information to other interested parties. One area that will have to be studied closely is the effect of third-generation time-sharing computers on budget allocation methods and cost determination.

5.3.2 Workload Control in Operation Systems

The task of controlling the expenditure of computer resources in operational systems, such as real-time systems for the support of a mission, checkout, and training, is somewhat different than resource control in the computational facilities. Each such system has a significant role to play in overall mission accomplishment and puts extensive demands on the computer within the system. In some instances, computer requirements cannot be completely defined at the inception of a program and must be increased during the course of system development. Basically, this increase results from one of two causes: (1) the requirements for the system become better defined as time progresses; (2) the users of the system may impose requirements with a factor of redundancy to assure accomplishment of that element of the entire mission profile. In the case of the former, there is little to say; the requirements must be met if the mission is to be successful. The latter is a problem that is handled in various ways in MSF. Procedures for requirements control are set by the organizational element responsible for the development of the overall system. New requirements are evaluated to determine their necessity, their impact on existing contracts, their effect on interfaces with other systems, and so forth. The methods for evaluating such requirements must, by necessity, vary from project to project. In the Apollo spacecraft program, for example, systems are under the control of the Apollo Configuration Management System described in detail in NASA Document NPC 500-1, "The Apollo Configuration Management Manual." Configuration management procedures have thus been developed to control changes to all elements in a system, including those that utilize computers.

5.4 CONTRACT MONITORING

A significant amount of the computer resources utilized in MSF is either developed, operated, or maintained by contractor personnel. The use of contractors in this manner is in keeping with NASA policy to