

During FY 1968, six guidance and navigation units for manned Apollo Command Modules will be delivered. Six Lunar Module units will also be delivered. By the end of the fiscal year, all but three guidance and navigation units will be in assembly or checkout.

Integration, reliability, and checkout

The fiscal year 1968 requirements for integration, reliability, and checkout, amounting to \$23.2 million, provide for two basic areas. The first category includes engineering support to the Manned Spacecraft Center for activities such as maintenance and review of the Apollo spacecraft specifications, systems performance analyses, reliability and quality assurance, trend analysis of failure reports, mission planning and analysis, and interface control. Consistent with the increasing rate of hardware deliveries and flight missions, the FY 1968 activity will focus on spacecraft hardware verification, mission planning and analysis, and post-flight documentation.

The second category is the funding for the 12 Automatic Checkout Stations (ACE stations), which are located at the key Apollo spacecraft sites across the country. Three spacecraft ACE stations operate at North American's Downey plant; three at the Grumman plant; two at the Manned Spacecraft Center's Space Environmental Simulation Lab; and four at the Kennedy Space Center. These stations are required for rapid and reliable checkout of the separate and combined spacecraft systems in the process from fabrication and test to launch. Fiscal year 1968 funds cover the operation, maintenance, and updating of the ACE stations to meet mission requirements.

Spacecraft support

Apollo Spacecraft Support activities include the funding for test operations at contractor, NASA, and other government installations; crew equipment—including space suits; logistics; and instrumentation and scientific equipment. The \$90.6 million requested for these activities in FY 1968 includes support of the various spacecraft test programs. Typical examples are the spacecraft and equipment environmental tests in Houston's vacuum chambers, spacecraft propulsion tests at the White Sands Test Facility in New Mexico, reaction control system testing at the Arnold Engineering Development Center in Tullahoma, Tennessee, and altitude chamber tests at the Kennedy Space Center.

The FY 1968 funds also provide for development and procurement of Apollo space suits and related crew equipment, EVA umbilicals, survival equipment, personal hygiene systems, and bioinstrumentation. Major effort will be devoted to manufacture and test of a space suit and portable life support system for lunar surface activities. Logistic funds are included for transportation of spacecraft hardware between locations, reimbursement to the Department of Defense for inspection services, and procurement of spacecraft fuels and propellants used in the test programs that I mentioned earlier. In addition, these support funds cover development and procurement of specialized flight research and test instrumentation for spacecraft development, such as signal conditioners, sensors, transmitters, ground support equipment, cameras, and radiation-measuring devices.

Upated Saturn I

Moving on to the Saturn-class launch vehicles, the next chart (fig. 130, MP67-5437) identifies our fiscal year 1968 funding requirements for the uprated version of the Saturn I. As you are well aware, our record to date with the original and the uprated versions of the Saturn I vehicle has been excellent: 13 successes in 13 launches. Our FY 1968 request for the uprated Saturn I is \$156.2 million—a decrease of \$80.4 million from the FY 1967 level. The evolution from hardware production and delivery to operational use explains this decrease. Half of the vehicles in the currently approved program of 12 uprated Saturn I's have already been delivered to the Kennedy Space Center. Four additional launch vehicles are scheduled for delivery before the end of 1967, and the remaining two uprated Saturn I's are in fabrication, leading to delivery to Kennedy during 1968. Follow-on procurement of uprated Saturn I vehicles, which represent a major addition to our Nation's inventory of large launch vehicles and offer a versatile means for conducting a variety of earth orbital missions, will be discussed under Apollo Applications.

Each line item within the uprated Saturn I project, as you can see, is decreasing from the FY 1967 level.