

limited. Once the program reached the production phase, opportunities for reducing cost were further limited to substitutions of components and materials, improved manufacturing techniques, and the like.

Today, as the Apollo program moves toward the flight operations phase, all of the hardware is either in being, in advanced stages of production or on procurement for long lead items. I know of no possible plan for completing the missions and achieving program objectives which can be implemented with lower funding than the program presented to the Congress. A program stretch-out would result in a greater overall program cost than will the plans we are now following. In fact, a cutback in our rate of funding in fiscal year 1968 would actually increase our costs substantially in fiscal year 1969 because the rate of decline of people on the program is, as you can see, already perilously fast. To increase the rate would intolerably introduce inefficiencies and dislocations that would force costs up to fiscal year 1969 as well as delaying the program. For example, all of the long lead time items for the last Apollo/Saturn V spacecraft and launch vehicles have already been placed on order and we would have to revise our whole procurement scheduling if our resources were reduced.

SUMMARY

In summary, 1966 has been a period of great activity as we move toward attainment of our program goals.

With respect to the overall Apollo program effort, we plan to maintain the present orderly pace of effort in the many areas of current activity, such as launch vehicles, facilities, ground support software, training, and so forth. Much of our capability to cope with unforeseen difficulties is dependent on maintaining planned rates of progress in all possible facets of the program. This carefully developed planning has enabled us to accommodate previous problems in both the Gemini and Apollo programs, and most importantly, maintains the flexibility that will enable us to schedule our flight operations as necessary to continue our progress in Apollo.

I have reviewed the seven development phases planned to meet the Apollo major milestones. The first major phase—unmanned Apollo flights with the uprated Saturn I launch vehicle—was completed in 1966. The remaining phases planned for 1967, 1968, and 1969 require a series of earth orbital flights followed by a series of lunar-configured flights culminating in the lunar landing mission. These phases include the unmanned flights of the Lunar Module, Apollo/Saturn I manned flights, Apollo/Saturn V unmanned flights, dual mission flights of the manned Apollo/Saturn I and the Lunar Module, Apollo/Saturn V manned flights in earth orbit to simulate the lunar mission, and Apollo/Saturn V open-ended missions leading to lunar operations.

I do believe that we still have a reasonable possibility of meeting the major milestones for the Apollo program which were established in 1963. In particular, although the probability is lowered, I believe we will be able to land men on the moon and return them safely to earth before 1970.

APOLLO APPLICATIONS PROGRAM

INTRODUCTION

I would now like to turn to a major post-Apollo program effort recommended for authorization this year. The Apollo Project is a great endeavor to achieve preeminence in space to be demonstrated by landing men on the moon and returning them safely to earth. In achieving this goal, the United States will have developed a broad base of equipment, trained manpower and industrial support that is capable of carrying out space missions beyond the manned lunar flights. Looking to the future, we have completed the definition of a program to follow Apollo.

The Apollo Applications program conceived is the best means of utilizing this broad-based Apollo capability and represents an effort as important and far-reaching in its implications as the Apollo effort upon which it is based. The program will begin to investigate man's role in the effective exploitation of the environment of space to meet the needs of mankind on the earth and, in the long term, to determine man's contribution to the exploration of the universe.

There are many reasons for undertaking this post-Apollo effort at this time. To cite a few: