

delivery of the major Saturn/Apollo/Gemini end items. Hardware shipped to meet these objectives includes Apollo Command Modules, Service Modules, and heat shields; Lunar Module Adapters; Saturn Instrument Units; Lunar Module Test Articles; mockups and simulators; F-1 engines; Gemini spacecraft and launch vehicles (fig. 59, MA66-9713B).

EXPERIMENTS

As with the Gemini program, the accumulation of experimental data in a variety of categories is an objective of Apollo. Experiments can be broken down into three areas of emphasis; in-flight, long-term lunar surface experimentation, and geological (fig. 60, MA66-9770).

During the part of the Apollo program when earth orbital flights are being conducted to qualify systems for the lunar landing mission, some weight and volume capability and crew time will be available for the conduct of experiments. Many of these experiments, particularly in the medical field, will be expanded or improved to carry further the work initiated on the Gemini program. Others will be directed toward improved spacecraft design and operational techniques. A number of new scientifically oriented experiments are being introduced, to conduct astronomical investigations not possible from under the earth's atmosphere or to take advantage of the extended stay times under zero gravity conditions.

The long-term lunar surface study is carried out by the Apollo Lunar Surface Experiments Package (ALSEP). This is a self-contained package of technically advanced scientific instruments which will be placed on the moon by the astronauts in a deployed condition, to make measurements for one year or more after astronaut departure (fig. 61, MA66-9806). Passive and active seismic experiments, lunar heat flow experiments, solar wind and charged particle lunar environment experiments are some of the major items to be performed by this array. Electric power for controlling the experiments and transmitting data to earth will be supplied by a radioisotopic thermoelectric generator.

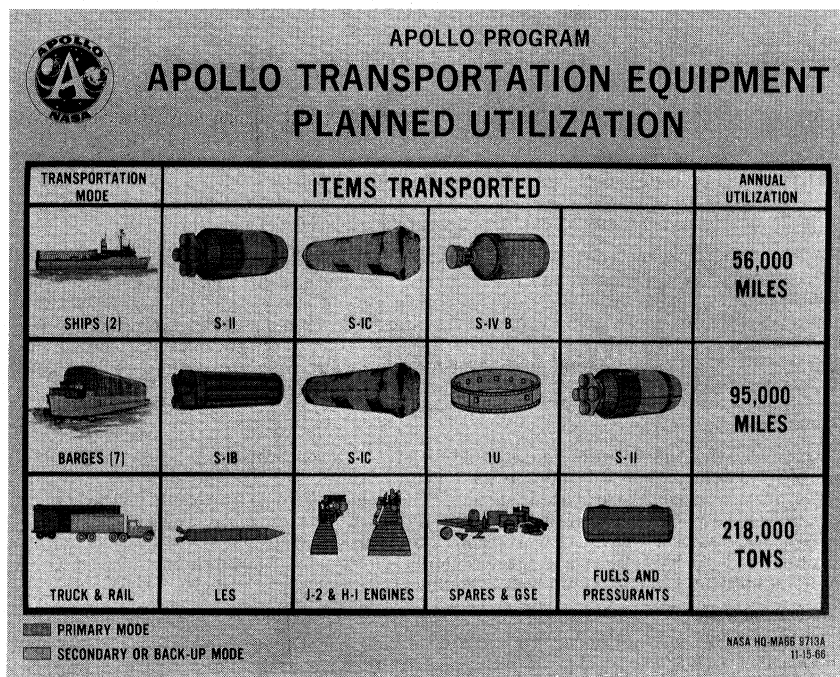


FIGURE 58