

additional facilities, personnel and systems are required, they are being identified and implementation started. The initial AAP experiments will be supported by existing capability.

*Question 14. If the AAP program uncovered information concerning another country that is or may be of military significance, how does NASA propose to handle such information?*

Answer 14. The scientific results of the NASA flight programs are openly available to all nations, either directly or through the publication of research results. Any Government agency including the Defense Department has complete access to such data from our flight experiments. The Apollo Applications program experiments now planned and foreseen will produce information of great value to the scientific and engineering community on the role that man can best play in space systems, on solar and stellar astronomy, and on many techniques and approaches for the utilization of space systems for furthering the welfare of this Nation and of mankind. Such information, while of potential significance to the defense capabilities of the United States, is intended to provide tests of crews and instrumentation in Earth orbit and at the Moon.

*Question 15. The Department of Defense is using a mixture of oxygen and helium in the MOL program whereas NASA indicates that it will use a mixture of oxygen and nitrogen in the AAP program. Would you discuss the reason for the oxygen-nitrogen selection?*

*Question 15(a). Will it be used operationally on the first AAP flight or will NASA rely on a pure oxygen environment?*

Answer 15. The Apollo Applications program presently plans to use a 5 pound per square inch absolute, two-gas atmosphere of 69-percent oxygen, 31-percent nitrogen in the airlock module and S-IVB spent stage workshop for planned mission durations in excess of 30 days. The 5 PSIA pressure level selected for this mission was dictated by present Apollo pressure vessel capability and system compatibility considerations.

The primary consideration in utilization of the two-gas system for long-duration missions is a desire to avoid physiological uncertainties and the possibility of atelectasis or collapse of the alveoli of lungs from ready absorption of oxygen and concomitant lack of inert gas. Nitrogen is not metabolized by the tissues of the body and the addition of a small percentage of the gas appears to prevent the clinical effects attributed to the absorption of oxygen.

The oxygen-nitrogen atmospheric composition was selected as being physiologically equivalent to the Earth environment in most essential aspects.

The orbital workshop concept permits Apollo astronauts to work and perform experiments and enables us to investigate the feasibility of using a launch vehicle spent stage in orbit as a large habitable space structure. It provides an early capability for a large, controlled environment to evaluate human performance in long-term zero gravity.

Man's evolution on Earth in an atmosphere consisting primarily of oxygen and nitrogen provides us with a massive amount of baseline data for comparison with biomedical observations to be made in the AAP Workshop. The baseline data on man's behavior in atmospheres