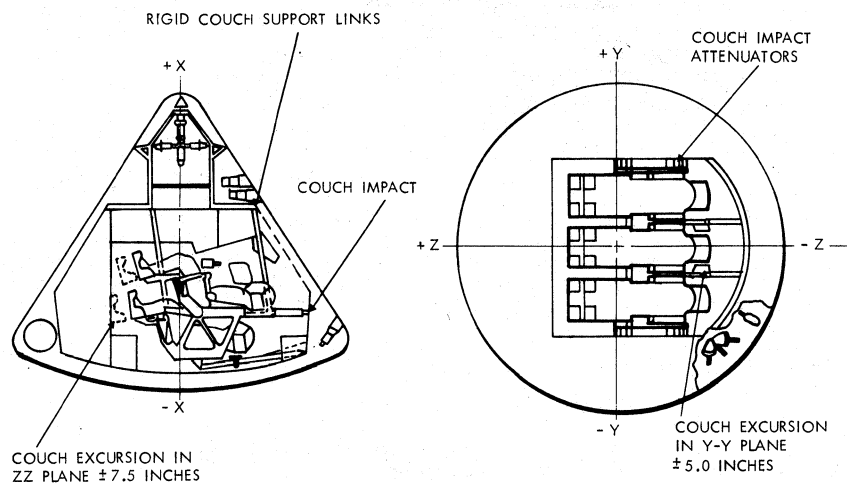


APOLLO APPLICATIONS CONCEPT FOR 6 MAN COMMAND MODULE



NASA HQ ML67-6005

FIGURE 86

these experiments measurements would be made to monitor adequately the long term effects of weightlessness.

Various means of counteracting the zero gravity effects of space will be investigated in Apollo Applications. Conditioning exercises may be used. In addition, the creation of an artificial gravity environment such as a centrifuge or rotating spacecraft may also be needed. These needs would have extensive effects on plans for longer duration missions and for follow-on planetary missions.

Earth-oriented applications

In the whole broad area of the Space Applications program, follow-on Apollo Applications missions afford an excellent opportunity to conduct those Space Applications experiments for which concepts have been developed under the Supporting Research and Technology program of NASA but which must have these concepts verified in orbital flight before they are ready to be applied to long-life automated satellites for operational applications use.

Thus, in general we expect to fly on the Applications follow-on Apollo Applications flights, advanced instruments which would still require several years of additional development if we were to go directly to the automated spacecraft. While the basic rationale of the NASA Space Applications program, as well as its description and justification, is obviously under the purview of Dr. Homer Newell and the Office of Space Science and Applications, certain of the implications of these possibilities are covered in my ensuing discussion as a function of the potential of the follow-on Apollo Applications missions.

Meteorology

In Apollo Applications, we will ultimately have the capability for manned synchronous and high inclination earth orbital operations beginning in 1969-1970. Emphasis can be placed on manned operations but some experiments may be directed toward ultimate unmanned or intermittently manned systems. In these cases, man would be utilized to optimize measurement techniques and sensors, to evaluate, calibrate and checkout equipment in the space environment. By this means, highly reliable equipment could eventually be placed in auto-