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NASA

LYNDON B. JOHNSON SPACE CENTER MEMORANDUM

REFER TO

DE4/3-76/12

INITIATOR:

DE4:JDLem:cd1:3/29/76

DATE

APR 01 1976

TO: DB/Chief, Biomedical Research Division
DD/Chief, Health Services Division
✓ DF/Chief, Life Sciences Astronaut Office

CC: DB6/J. A. Rummel, Ph.D.
DA/L. F. Dietlein, M.D.

ENCL:

FROM: DE/Chief, Bioengineering Systems Division

SIGNATURE

John C. Stonesifer

SUBJ:

Space Shuttle Crew Exerciser Requirement

One, as yet undefined, medical requirement for the Space Shuttle Orbiter is for the crew exerciser. In the current RTOP's, this is listed as a piece of operational equipment. Guidelines from the Space Shuttle Program Office limit operational equipment to that necessary to support four men for 7 days plus a 96 hour contingency. Any equipment not meeting this criteria would require funding from sources other than the Program Office and the associated weight and power would not be chargeable to the Orbiter but to payloads. It is not clear that the exerciser requirement can be justified based on this definition. In the proposed document "Functional and Clinical Exercise Response Criteria and Exercise Training Requirements for Shuttle Crews" generated by DB, it is stated that there would be no required personal exercise on missions shorter than 14 days. If this is indeed true, it is unlikely that we will be able to secure funding from the Program Office or even be able to incorporate exerciser provisions into the Orbiter. Your comments regarding this situation are requested.

If we are going to pursue an exercise device for Orbiter, it will be necessary to establish a more positive requirement for presentation to the Program Office. In order to gain official recognition of the requirement and to obtain Shuttle funding, we must prepare a "Program Requirements Document" and conduct a Preliminary Requirements Review (PRR). The outcome of this review is a hardware baseline including general performance requirements, control interfaces such as maximum weight and power, and a development schedule. To support a PRR, the things we need immediately are rationale for the exerciser on the 7 day (plus 96 hour contingency) missions and overall medical performance requirements. If this information cannot be provided, we consider it only appropriate to withdraw the exerciser from the listing of Orbiter operational hardware.