MONTHLY PROGRESS REPORT

3 January 1966

Development of Space Flight Devices to Diminish or Prevent the Deconditioning Effects of Weightlessness and Other Environmental Factors.

AF 41(609)-2800 Project-Task Number 6770 PB

PROGRESS REPORT - 23 November 1965 THROUGH 23 December 1965

The initial version of the Ergometer/LBNP was delivered to AMD 3 December and checkout was performed by LMSC and David Clark personnel. The briefing report and progress review prepared by Major K. H. Cooper was discussed and agreement reached on solutions to design problems concerned with noise level, pedal rotation speed, and pressure regulation on the lower body pressure system.

The advanced version of the ergometer/LBNP system has been designed and drawings released to manufacturing. Approximately 50% have been fabricated. Procurement of purchased items has been initiated and all items are scheduled for delivery well in advance of final assembly period.

The advanced version of the ergometer consists of a generator, bicycle-type pedal assembly and step-up gear train for generator drive. Associated electronics will consist of a tachometer, wattmeter, feedback control amplifier for generator field and power dissipation resistors, with additional leads to an external means of recording the tachometer and watts.

The following design features are incorporated in the ergometer:

- The speed increaser will consist of poly V belts
- Three belts will be employed to provide a speed increase of 90 to 1
- A switch will be provided to prevent any electrical load from being applied by the alternator until it is manually turned on.

- o A removable flywheel will be provided on the alternator shaft to increase and/or vary the momentum of the system.
- o A cam clutch will be included that provides a "coaster brake" action.
- o Electrical loads of 25 to 300 watts will be provided.

CURRENT PROBLEMS

No design problems are evident. Some changes in the delivery schedule of the advanced and final versions have been necessitated due to delays in the design approval for the advanced version. A request for change in delivery schedule has been forwarded to Sgt. A. B. Hawkins/AMSKR on 22 December. Essentially this request asks that delivery of the advanced version and final version be moved to 3 February 1966 and 3 April 1966 respectively. This schedule change will not affect program costs.

EFFORT FOR THE FOURTH MONTH

The advanced version will be fabricated, assembled and tested during the next period. A detail test schedule will be forwarded early enough for your planned participation. In this respect, it is understood that a technical representative from AMD will be in attendance during the calibration test for the advanced version.