MEMORANDUM
December 18, 1958

TO: J. G. Gaume

FROM: R. H. Edgerley

SUBJECT: Low Pressure Chamber Facilities at Martin Denver

Two chambers have been built at GPL, one 8 ft. x 8 ft. x 8 ft., and the other 10 ft. x 10 ft. x 8 ft. The latter is being checked out now for purchase and will probably be ready for operation by January 15, 1958. No one is presently able to give a date of availability for the smaller chamber which is built, but not checked out.

Both chambers have flight programmers with manual overrides. It is possible to climb at any rate up to 20,000 ft./min. to an altitude of at least 25,000 ft. Both chambers have 200,000 ft. ceilings. Descent rates can be tailored to individual needs. Both have humidity control from ambient to 100 R.H. and a very wide range of temperature control, exceeding the range limits of human tolerance. Temperatures and humidity can be programmed. It is estimated that in emergencies, one could get out of the chamber from 15,000 ft. in less than 1 minute.

Administrative details of chamber use by Space Medicine or National Jewish Hospital require approval of E. W. Harker (Ext. 3164), among others. For additional information on technical details of the chamber or for scheduling, see J. Osmanski (Ext. 3181) or Roy Gregory (Ext. 3182).

The only drawbacks for limited use with personnel inside the chamber are:

1. A ventilation valve will have to be put in the chamber at a cost of about $20 total per chamber.

2. Portable oxygen equipment would need to be used, depending on the altitude reached.

3. Control panel/ operator cannot see inside chamber. An outside observer could relay signals observed through the windows to the operator, however.

4. There are no communication facilities for personnel inside the chamber.

5. Rental of chamber will include a skilled operator and will be charged to National Jewish Hospital or Space Medicine depending on the details of the contract.

6. The absence of locks will necessitate the whole chamber "coming down" if one of a group must come out.

7. The legal department will need to make some kind of contract to protect the Martin Company in case of injury to experimental personnel and to arrange for defrayment of operating costs.

8. The Titan program has priority over all other uses. If a project were using the chamber at a temperature extreme, 12 hours would be needed to prepare for a room temperature experiment and vice versa. For these 2 reasons, it may be difficult to maintain a definite schedule over a very long period.

Robert H. Edgerley, Ph.D.
Space Medicine Section

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