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HUNTSVILLE, Ala. -- A study to investigate various methods of manned transportation between the earth and the moon has been assigned by the National Aeronautics and Space Administration to the Martin Co. of Baltimore.

Symbolic of the space agency's far-reaching program for the next ten years, the \$75,000 contract is for the study of launch vehicle systems for lunar exploration beyond the initial Project Apollo flights.

Project Apollo is contemplated by NASA as a manned vehicle to carry three men in wide orbit around the moon.

The earth-lunar transport project is under the supervision of the NASA Marshall Space Flight Center here. The study covers transportation systems for these three basic missions:

- 1. A lunar landing and immediate return to earth for three men.
- 2. A 30-day stay on the moon for three men.
- 3. A permanent moon base which would accommodate 10 to 12 men.

The study contract covers a wide variety of problems, including those of boosting the vehicles into space, soft-landing them on the moon and returning them to earth again.

The study also will consider vital provisions for man's extended existence in the space and lunar environments.

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On the moon itself, for example, there must be shelter against violent temperature changes. Each lunar day or night is as long as 14 earth days. During such periods, and due to the absence of measurable atmosphere, temperatures rise as high as 244 degrees F. During the long night they drop as low as 213 degrees below zero.

Man is expected to find no form of life on the moon suitable for nourishment. Therefore, he must take with him the food he eats, the water he drinks, and the air he breathes.