Space Travel Faces 'No Real Problem'

By CORNELIA FOGLE
Emerald Reporter

"There is no real unsolved problem in space travel," says E. G. Ebbighausen, associate professor of physics. The only thing which must be ascertained in how human beings will act under conditions when they feel weightless.

On a trip to the moon, the rocket must leave the surface of the earth; pass through the earth's atmosphere, which is about 150 miles; and pass through the 240,000 miles to the moon which is nearly a perfect vacuum.

Then the rocket would have to land on the moon successfully. As the moon has no atmosphere, people leaving the plane would have to wear space suits. After an examination the rocket would have to come back through the vacuum, penetrate the atmosphere, and land on the earth. The rocket would have a difficult time boring through the earth's atmosphere due to the frictional force of a body at high speed.

Ebbighausen went on to say that a rocket going through this vacuum would have to take every thing which it would need—fuel, food, water, oxygen, and a device to remove carbon dioxide from the air in the rocket. All of these things have weight, and a rocket contemplating such a trip would have to be larger than any which have been constructed previously.

During the Second World War the Germans used V-2 rockets. These rockets were 30 feet long and about 6 feet in diameter. They carried 16 tons of fuel, and completely loaded the ship weighed 20 tons. This fuel was used up in 60 seconds and by this time the rocket was going a mile a second.

Consider the hypothetical case of a trip to the moon. It would be about a three-day trip, with the round trip taking about a week. The main difficulty would be landing the rocket when it returned to earth. Its speed would be limited by the fact that excess speed could cause two things—the burning of the plane due to friction, or the break-up of the ship due to the high rate of speed at which it would strike the atmosphere.

When hitting the outer atmospher at high speeds, the same thing would happen as would have if the rocket had hit a thick wall of concrete. The rocket would need a reserve supply of fuel which would be used to slow it down so that it could land safely.

The rocket capable of traveling to the moon would be from three thousand to five thousand feet long and 80 to 100 feet in diameter, says Ebbighausen. The vast size would be needed mainly to carry fuel.

The rocket would have to be a "multi-stage" rocket in order to have enough power to travel through the atmosphere of the earth. This is the kind of rocket which has subsidiary rockets which are propelled from the larger rocket, and make them capable of attaining greater height.

But suppose instead of the moon, one wanted to take a trip to Mars. This small planet is only about 4000 miles in diameter and is never closer to the earth than 30 million miles. Fine detail on this planet is elusive, and scientists are anxious to find out more about it.

A trip to Mars would take a year for a one-way trip, traveling at a mile a second, and another year to return to Earth. This would call for more fuel and a bigger ship. In order to increase the speed of the rocket, still more fuel would b needed. The project would be expensive enough so that only the federal government would be capable of financing it.

Another problem which had to be considered was the possibility of a meteor striking the rocket. The damage done would depend on the size of the meteor—most of them are tiny, about the size of a grain of sand. Meteors the size of a tennis ball are rare, so that possible damage has been somewhat overestimated. There would be less danger from meteors in a trip to the moon than the chances for an automobile accident on earth during the same time.

The major problem which confronts those interested in space ships is the way which human beings would behave in the rockets. As one travels through space, he gets the impression that all objects are weightless. Every object in the rocket must be tied down, states Ebbighausen, and the travelers must be specially trained not to forget. Sleeping will be simplified, as objects and people are able to float in the air.

Some people, through an injury to their ears, lose the ability to stand up straight. The person traveling in a rocket ship has the same feeling—there is no sense of direction as there is no gravity. The person may become disturbed when he can't find "down," and in case of long periods of this, scientists are fearful of what might happen. The problem of space medicine concerns people more than the technical aspects of the flight do.

A possible solution to this problem is to have a spinning rocket which will give a motion of centrifugal force. All objects will be thrown to the outside of the ship to give the person a sense of direction.

Ebbighausen believes that if a concentrated effort were made to put all knowledge to use immediately, a rocket capable of traveling to the moon could be built in about five years.

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