

AERONAUTICS

Flying Platforms Tested

► MEN WITH NO previous flying experience are able to pilot simple, fan-driven "flying platforms" after practicing only a few minutes, tests conducted at Langley Research Center, Langley Field, Va., show.

The small, one-man "stand-on helicopters" can be controlled successfully with either an airplane-type stick or with the motion of the pilot's body alone.

Somewhat resembling king-size bird cages, the vehicles are powered by a pair of counter-rotating fans, installed under the platform on which the pilot stands or sits. Additional thrust is supplied by four air jets.

The military application is added mo-

bility for ground troops, who would have a simple means of short-range transportation to take them over the roughest terrain.

For the tests, National Aeronautics and Space Administration researchers used ten men, including five with little or no previous flight training and three with extensive experience in fighter aircraft. All the men could "control the vehicle satisfactorily with either system," NASA reported.

Tests consisted of hovering flights and "mild maneuvers" inside a building. An overhead safety cable kept the 130-pound craft from crashing if the pilot trainee lost control. An operator on the ground controlled the platform's thrust and heading.

Generally, flights were smoother when the pilot was seated and used a mounted stick to control pitch and roll. But no one had any major difficulties with control by the simple shifting of body weight, called kinesthetic control and described by NASA as "nearly the ultimate in mechanical simplicity."

Two types of kinesthetic control were tried. In one, the standing pilot gripped a hand bar. In the other, only the pilot's feet touched any part of the machine. The men were more at ease when allowed to grasp the bar.

• Science News Letter, 80:53 July 22, 1961

ASTRONOMY

"Cold" Stars to Be Sought From Infrared Radiation

► "COLD" STARS may be tracked by an infrared photometer to be built by the Eastman Kodak Company, Rochester, N. Y. Some astrophysicists believe cool stars invisible to the eye may be detected by infrared radiation. Kodak is also preparing a star atlas that shows infrared radiation of known stars and could be handy in space navigation.

To this purpose, infrared-sensing equipment was attached to the 69-inch reflecting telescope at Ohio State University and the first information about the middle wavelength portion of the infrared spectrum was obtained.

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SPACE

Space Oxygen System

► THE PROBLEM of supplying oxygen to human space travelers is nearly solved. Evidence that the long-sought goal is at hand came in the form of a white mouse that set a new record in space medicine by surviving 66 days in a closed environment where oxygen was supplied entirely by algae. It might have gone on longer, but it drank all the water in the chamber and had to be released.

Various animals, including monkeys, have been maintained on algae for short periods, and previously a mouse stuck it out for 28 days.

The new system was tested by Drs. Russel O. Bowman and Fred W. Thomae of the Chance Vought Research Center in Dallas, Texas.

They sealed a one-year-old, white male mouse weighing 1.37 ounces in a chamber at high noon. In the chamber were a pad of mouse bedding, food and water. A four-quart culture of algae, *Chlorella pyrenoidosa*, was linked to the chamber.

During the 66 days, the percentage of oxygen in the closed atmosphere went from 21% to 63%, carbon dioxide from 0.4% to 0.13% and for some unknown reason, the nitrogen percentage, about 80% in normal air, dropped steadily as the oxygen went up.

Gas analysis showed no accumulation of carbon monoxide, methane or ethane, toxic gases which have caused trouble in previous experiments.

When the mouse was taken from the chamber on Aug. 12, 1960, it weighed 1.53 ounces, a gain of .16 of an ounce, which is a significant amount to a mouse. The high oxygen content of the chamber and the return to normal 21% oxygen apparently caused no ill effects, for the mouse remained healthy for nine months after the experiment ended.

The algae culture also gained weight. The culture was about half a pint larger at the 66th day.

Although the cage was not cleaned, the odor from accumulated wastes "was con-

siderably less than that of an uncleaned cage after one week" in open air, the scientists report in *Science*, 134:55, 1961.

Calculating for the requirements of an averaged-sized man, 100 gallons one percent packed cell volume of algae should support one person. Relatively long-term safety and reliability, the scientists said, have been shown for this system.

• Science News Letter, 80:53 July 22, 1961



CHEMICAL OXYGEN SUPPORTS MOUSE—A house mouse was supported for 80 hours in a cell where its only source of oxygen at a simulated 75,000 feet altitude was *potassium superoxide*. Stan Hall and C. C. Simms examine the mouse at Lockheed Missiles and Space Company, Sunnyvale, Calif., where the experiment was performed.