

## SPACE

# Monkey Shot Called Off

► THE UNITED STATES was prepared to orbit a monkey 17 times in space and recover him alive more than a year before the successful 17-orbital ride of Soviet Cosmonaut Titov.

Planned for launch from Vandenberg Air Force Base, Calif., in an Air Force Discoverer satellite with all systems "Go" in the spring of 1960, the monkey space shot was suddenly cancelled without explanation. The flight could have pushed the United States well ahead of the Russians in the space race.

The cancellation came after the monkey had been selected from a group of simian space candidates specially trained at the University of Texas Balcones Research Laboratory, Austin, Tex., by Dr. W. Lynn Brown, professor of psychology.

The space monkey chosen passed his test for gravity stress on the same centrifuge used to test the chimpanzees and astronauts prior to the Project Mercury sub-orbital flights. The monkeys, like the Mercury astronauts, also were tested for resistance to sound, vibration, zero-G and for endurance after going without food for prolonged periods, Dr. Brown told SCIENCE SERVICE.

The life support system for the monkey, built by General Electric, had passed a quality check. An automatic feeder, designed by Dr. Hans G. Clamman of the Air Force School of Aerospace Medicine, Brooks Air Force Base, Texas, was built to feed the monkey during his ride in space at four hours intervals for a 48-hour period.

All this preparation took three years and several million dollars worth of scientific and technological talent. Why then was

the flight cancelled?

Among the reasons given for the cancellation are that other experiments to be carried in the Discoverer satellites had greater priority and that since a manned orbital flight was planned for Project Mercury, there was no urgency for monkey flight.

While these may, in fact, be the reasons that led to the elimination of the monkey orbit in the Discoverer, it appears more likely that the explanation may be more political than scientific. Had the flight gone as scheduled and been successful, it might have put the then concurrent multimillion-dollar civilian suborbital space efforts with chimpanzees and astronauts in a poor light.

All means are still on hand for a 17-orbit space try with a monkey in a Discoverer satellite. But it is unlikely that such a try will be made before the 18-orbit launch of a Mercury astronaut still several months away because of modifications required in the present Mercury life support system.

Dr. Brown said that he could have an animal prepared and ready to go, "starting from zero," in a maximum time of four months.

The use of monkeys as trail blazers for longer flights in space is strongly advocated by Dr. Brown because of "the animal's demonstrated high tolerance levels to stress."

Certainly from a scientific standpoint, it might be wise now to expose a monkey to the stress imposed by 17 orbits. The effect of prolonged weightlessness that might be observed could suggest improved protection for the astronaut who would follow.

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**TIRED AFTER DAY AT SPACE SCHOOL.**

first scheduled stop at Davis Monthan Air Force Base in Arizona.

In the seven years of operation, the Aero-medical Transport Division has had an accident-free record. Col. Cook credits the remarkable safety record to the stringent regulations and high standards of operation maintained.

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## U.S. Scientists Urge Joint Space Efforts

► TWENTY-NINE of the nation's most distinguished scientists have urged President Kennedy to cooperate with the Russians in future space explorations.

They asked that the Soviet offer for cooperation in space be given "most sympathetic and imaginative consideration," pointing out that the offer was "an encouraging response to earlier United States proposals."

The Soviet response should be exploited for the benefit of mankind, they said, expressing a hope for "successful international cooperation in space science" as a result.

The telegram was made public in the Bulletin of the Atomic Scientists, April, 1962. Its editor, Dr. Eugene Rabinowitch of the University of Illinois, one of the signers, noted that both the U.S. and the Soviet Union are finding space exploration more and more costly as the distance from earth increases. Manned lunar flights, Dr. Rabinowitch said, may be the limit of what an economy even as rich as that of the U.S. may reasonably undertake.

Among the 29 signers were Dr. Hans A. Bethe, head of the President's committee to evaluate Soviet progress from their fall nuclear test series; Dr. Detlev W. Bronk, president of the National Academy of Sciences; Dr. J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton, N. J., and Dr. Harold Urey, Nobel Prize winner now at the California Institute of Technology.

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## MEDICINE

# Flying Air Force Hospital

► THE U.S. Air Force operates a 400-bed flying hospital that cares for an average of 30,000 patients annually in the continental United States.

The hospital consists of 18 twin-engine C-131 "wards," each staffed by a three-man flying crew and a medical team consisting of an Air Force flight nurse and two medical technicians. Personnel and facilities are attached to the 1st Aeromedical Transport Division, Kelly Air Force Base, Tex., and operate under the command of Col. Walter V. Cook.

"We operate a bona fide hospital in the air," Col. Cook told SCIENCE SERVICE. "It is not an ambulance service. Our patients receive full hospital care during flight, including surgery when necessary."

The flying hospital is seven years old. During this time it has transported and treated patients with a variety of ailments including leprosy, cancer, polio, schizophrenia, skull fractures, burns, and flat feet. More than 600 military medical installations in the United States use its facilities. Patients flown in the hospital range from babies to

104-year-olds. A flight surgeon is generally aboard when there are patients who are very seriously ill. However, the flight nurses are trained to perform emergency surgery, such as tracheotomies.

Severe crash and burn victims in a flying ward get blood plasma, intravenous feedings and full medical treatment in the air just as they would in the finest earth-based hospital.

A special portable iron lung developed at the School of Aerospace Medicine at Brooks Air Force Base, Texas, is used for polio victims.

Typical of the forethought given to patients by the crew are the radio arrangements prepared for a medical flight that took off from Travis Air Force Base, Calif., shortly after Astronaut John H. Glenn Jr. went into orbit. A speaker arrangement was set up so that the flight as recorded on radio could be heard "loud and clear" by all the patients.

By the time Glenn had made his three orbits and returned to earth, the plane had traveled from Travis Air Force Base to the