ROCKETS AND MISSILES

NASA Gains Listed

➤ THE UNITED STATES will take second place in space if its space efforts are merely a reaction to Soviet achievements, Dr. T. Keith Glennan, former Administrator for the National Aeronautics and Space Administration, warned in Washington.

"If you structure a program on what someone else has done, then you always must be second," he told SCIENCE SERVICE.

The U. S. space "firsts" achieved under NASA are results of its program "entirely made and designed in the U.S.A.," Dr. Glennan emphasized. They were achieved "despite the fact we started out one year after Sputnik I under the tremendous pressure of Congressional and public self-criticism.

"They were achieved under the constant glare of publicity in which often our so-called failures obscured the achievements," Dr. Glennan said. "It also has been overlooked that ours is a research and development organization. In such a program, failures are a prelude to ultimate success."

An example is the recent successful firing and recovery of the Mercury-Redstone I capsule that this year is scheduled to carry a chimp and then a man in a sub-orbital space flight. The "almost perfect success of MR I" could not have been achieved without previous failures, Dr. Glennan said.

Under his administration, NASA has grown into the seventh largest Government agency in point of funds. No other agency, except in time of war, has had such a record growth. And no Government-directed science operation has ever developed with so much public attention.

"None of us had any idea of the complexities of exploration of this new dimension, among these the problem of lack of adequate thrust and the costliness of all space development. The success we have achieved in such a relatively short time reflects to the credit of such persons as Dr. Abe Silverstein (director of Office of Space Flight Development); Dr. Hugh Dryden (deputy administrator of NASA); Ira H. Abbott (director of office of advanced research programs); Air Force Maj. Gen. Don R. Ostrander (director, office of launch vehicle programs); and many others.

During Dr. Glennan's administration, NASA initiated a program of international help and cooperation in space sciences. One of NASA's achievements in this area was the successful launch Jan. 12, 1961, of Italy's first space rocket, a two-stage rocket that reached a height of more than 100 miles.

"It would be helpful for those who now will be responsible for our space programs if the public will understand the long lead time required in experiments in propulsion units and others leading to the development of space vehicles themselves. We are working today on space craft that cannot fly for five years. And this will be the pattern for some time to come," Dr. Glennan said.

He returned Jan. 20 as president of the Case Institute of Technology, Cleveland, Ohio, from which he had been given a leave of absence.

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ENGINEERING

U. S. Army Engineers Test Gas Turbine Tractor

➤ A GAS TURBINE-POWERED TRACTOR, one of the first military applications of turbine-powered earthmoving and construction equipment, is now being tested by U. S. Army engineers at Fort Belvoir, Va.

The tractor is a standard rubber-tired Caterpillar model, modified to house the gas turbine powerplant, which was developed by General Motors Corporation.

Its horsepower is about equal to the original Diesel engine, but the 600-pound gas turbine engine is much lighter in weight.

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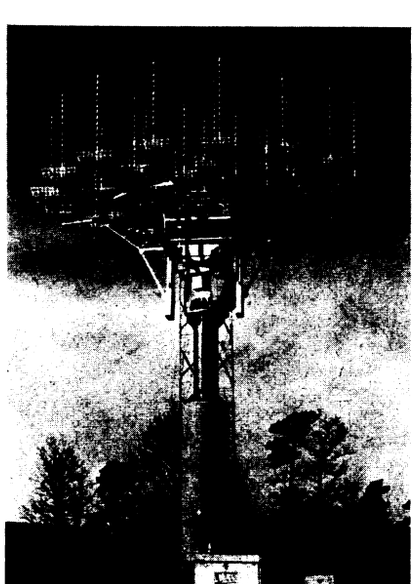

END-FIRE ANTENNA—will record telemetry from rockets tested at NASA's space flight station, Wallops Island, Va. It was built by General Bronze Corp., Garden City, N. Y.

ROCKETS AND MISSILES

Satellites Are Practical

➤ SATELLITES will have such important practical applications as more reliable weather forecasts as well as leading to the "distinct possibility" of discovering life beyond the earth.

These are two of many conclusions concerning space exploration presented before inauguration to President Kennedy by a nine-man scientific task force, headed by Dr. Jerome B. Wiesner of Massachusetts Institute of Technology. (See SNL, 79:34, 1961.)

The nine-man committee made five urgent recommendations for stepping up the United States program of space exploration. It called for a revitalization of the National Aeronautics and Space Council to coordinate military and civilian space activities, with the aid of a "very competent and experienced staff."

The committee urged establishment of a single agency in the Department of Defense responsible for managing the military portion of the space program. The Army, Navy and Air Force each have their own program now.

Many changes should be made in the National Aeronautics and Space Administration to "provide a vigorous, imaginative and technically competent top management," the committee concluded.

To make space activities attractive to a larger group of competent scientists and engineers, it recommended establishment of four technical directors under the NASA administrator and deputy administrator. The technical directors would manage programs in propulsion and vehicles, the scientific program, non-military space applications and aerodynamics and aircraft.

The committee urged that the U.S. national space program be reviewed and its objectives redefined in view of the experience gained during the past two years. Particular attention in the evaluation should be given to the "booster program, manned space flight, the military uses of space, and the applications of space technology to the civilian activities of the country."

Organizational machinery should be set up within the Government to administer an industry-government civilian space program, the committee found.

The committee called for a "vigorous program" to exploit the potentialities of practical space systems, and said the Government should make available the required facilities as well as any extraordinary financial supoprt required to make such undertakings by private industry successful.

Among the practical applications, the committee foresees industrial and Governmental communications satellites for telephone, radio, television and other forms of world-wide communications; navigation satellites; and use of meteorological satellites to provide longer range and more reliable weather predictions.

Exploration of the solar system by instruments on space probes may lead to the discovery of extraterrestrial forms of life, which "clearly would be one of the greatest human achievements of all times."

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