AERONAUTICS

Space Simulator Built

A research tool that will help the United States considerably in its development of manned satellites and manned travel to the moon has been built.

➤ A SPACE AGE simulator that duplicates in the laboratory the tremendous heats and stresses any vehicle re-entering the earth's atmosphere at great speeds would have to withstand has been built by the National Advisory Committee for Aeronautics at its Ames Laboratory, Moffett Field, Calif.

The new laboratory device is described in the NACA's annual report. Using it, a model about a third of an inch in diameter, weighing five-thousandths of a pound, can simulate the re-entry flight of a full-scale 4,000-mile range missile of three-foot diameter, weighing 5,000 pounds. The atmosphere entry simulator was designed by Dr. Alfred J. Eggers Jr. of Ames Aeronautical Laboratory.

Such research tools are essential to the nation's urgent problem of being the "first to find answers to the formidable questions that now limit the performance of aircraft and missiles," Dr. James H. Doolittle, NACA's chairman, said in a letter submitting the report to President Eisenhower.

The present U. S. program in space research is far from adequate, Dr. Hugh L. Dryden, NACA's director, charged in a speech before the Institute for the Aeronautical Sciences in New York. He said the rate of progress in solving space flight problems "must be very greatly increased." The speech was delivered for him by John F. Victory, NACA executive secretary.

The program's aim would be development of manned satellites and manned travel to the moon and nearby planets.

Instead of naming a new agency to handle the civilian aspects of space flight, Dr. Dryden urged that NACA facilities and staff be expanded. He said the "extremely important non-military aspects of space technology would be submerged or perhaps even lost if included as a mere adjunct to a military program."

NACA would cooperate with the Department of Defense, the National Academy of Sciences and the National Science Foundation, together with universities, research institutions and industrial companies.

The NACA's 17-man "board of directors" has concluded that an adequate program "must enlist the scientific and engineering resources of the nation." The program should include:

1. "Research in space technology to provide data for the design of useful and efficient vehicles and to insure the success of manned space flight operations.

2. "Design and development of scientific and military space vehicles and their launching, flight and recovery.

3. "Research on the phenomena of the high upper atmosphere and nearby space, such as the character and distribution of matter, cosmic rays, solar radiation, electric, magnetic, and gravitational fields, etc., and scientific studies of the universe made possible by the use of satellites and space platforms as observation sites."

To review the needed research and development, NACA has appointed a Special Committee on Space Technology headed by Dr. H. G. Stever, associate dean of engineering at the Massachusetts Institute of Technology.

Science News Letter, February 15, 1958

PHYSICS

Atmosphere Holds Tons Of Cosmic Dust

➤ THE EARTH'S atmosphere holds more than 28,600,000 tons of suspended dust of cosmic origin below the 60-mile level, Dr. Hans Pettersson of the University of Hawaii reports in *Nature* (Feb. 1).

The dust is extremely fine meteoric particles, which continuously sift slowly earthward.

The entire amount is renewed every two years, which means the earth is picking up at least 14,300,000 tons per year. Added to this is interplanetary dust amounting to about 620,000 tons a year that earth sweeps up in its yearly journey around the sun.

The cosmic dust tonnage is about four times as high as previous estimates, so Dr. Pettersson urges further experiments at other high-altitude observation posts. His samples were obtained by filtering large volumes of air through fine-pored filters at Mauna Loa Observatory on Hawaii at 11,000 feet and from the summit of Mt. Haleakala on Maui, T. H., at 10,000 feet.

The filters were analyzed for iron, nickel and cobalt by Prof. F. Hecht and Dr. E. Tomic of Vienna at the II Chemisches Institut der Universitat, Vienna, Austria. The total cosmic dust weight was estimated from the nickel content.

Science News Letter, February 15, 1958

GENERAL SCIENCE

Sputnik Has Its Effect On Congressional Record

➤ SPUTNIK has had its effect on the *Congressional Record*.

Back in pre-sputnik days, the subject science was treated by the *Record* indexers as a stepchild. Today, thanks to sputnik, it has gained its independence and has become an equal of the arts.

It happened this way:

Before January of this year anyone wanting to look up what had been said or published about science in the *Congressional Record* found under the indexed heading "Science" a little note saying, "see Arts and Science."

Then came sputnik and the space devoted to outer space and other areas of science mushroomed the subject in the *Congressional Record*.

To cope with the new situation, the *Record* indexers at the Government Printing Office decided to divorce "Science" from its role with the "Arts" and make it a separate and distinct heading.

There is still another sign of the times reflected in the index change. Under "Science" is a new note that says, "see also Education."

The old "Arts and Science" is now just "Arts."

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