

AERONAUTICS

3,000 Miles in 3 Hours

Supersonic transports that fly 1,000 mph are foreseen. Modifications in fuselage shape will make such speeds possible, Richard Whitcomb tells STS winners.

► **SUPERSONIC TRANSPORTS** that fly 3,000 miles in three hours will be possible within 10 years, Richard Whitcomb, father of the wasp-waisted fuselage design that increased the speed of supersonic warplanes 25%, said in Washington.

Speeds of 1,000 miles per hour will be possible, he told the 40 winners of the Sixteenth Annual Science Talent Search, through modifications in fuselage shape "considerably different than the wasp-waisted modification of the present generation of supersonic airplanes."

"The results of this research should allow the initiation of the design of a supersonic transport in the immediate future. Such an airplane should be able to fly approximately 3,000 miles at about 1,000 miles an hour. Thus, it would be able to fly across the country or the Atlantic Ocean in roughly three hours, and thus should bring most of the important population centers of America and Europe within a short flying time."

In discussing current research in aeronautics, Mr. Whitcomb said that experimental rocket-powered missiles have already flown far beyond 3,000 mph, "and in the future, man-carrying, rocket powered airplanes will fly at these higher speeds."

The big problem, that of aerodynamic heating, he told the young scientists, is being studied through the use of free-flying models similar to the multistage rockets used for ballistic missiles. These rockets, used only for research, he pointed out, have obtained velocities of nearly 7,000 mph. He also said that "an advance research airplane, the X-15, is now under construction by the North American Aviation Corporation," and will fly faster and higher than man has ever ventured before.

Mr. Whitcomb, who is an aeronautical research scientist at Langley Aeronautical Laboratory of the National Advisory Com-

mittee for Aeronautics, Langley Field, Va., also discussed take-off and landing in the low speed range.

One of the promising devices for the solution of this problem, he explained, is a "jet-augmented flap." This device provides stabilization of the boundary layer and also diverts the jet to provide additional vertical thrust. Much work is still needed to perfect this device, Mr. Whitcomb noted, but such a "jet-augmented flap," it has been estimated, would roughly halve the take-off and landing distance for a typical aircraft, and cut the take-off and landing speeds by 30%.

Mr. Whitcomb concluded, "among the future advances resulting from research will probably be the application of means for greatly reducing the take-off and landing distances and speeds for commercial and military aircraft; the achievement of long-range full-time supersonic flight, particularly the development of a supersonic transport; and the achievement of manned flight at supersonic speeds several times those of present maximum speeds."

The father of the wasp-waist in airplane design, a development that has been called the most significant achievement in aeronautics since breaking the sound barrier, disclosed his predictions at a meeting of the Sixteenth Annual Science Talent Institute, conducted by SCIENCE SERVICE, attended by 40 high school seniors who were in Washington to vie for the Westinghouse Science Scholarships. Mr. Whitcomb's talk was followed by a talk on "Research in Physics," by Dr. L. M. Lederman, associate professor of physics at Columbia University, and another on "Research in Mental Health," by Dr. Winfred Overholser, superintendent, St. Elizabeths Hospital, and professor of psychiatry at the George Washington University School of Medicine in Washington.

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at Geneva, Switzerland. They were created in response to that appeal as a memorial to Henry and Edsel Ford. One million dollars was authorized to be used at the rate of \$100,000 a year for 10 years "for the advancement of the science of atomic energy for peaceful purposes. . . ."

Dr. Killian said of Prof. Bohr, "His humanity, his goodness and wisdom—in addition to his outstanding scientific contributions—have inspired the many scholars who have been his students and colleagues to become a nucleus of international understanding and goodwill.

"During the years since World War II, Prof. Bohr has been active, not only in the operation of his distinguished Institute with its international body of scholars, but he has also actively and devotedly urged international cooperation in developing the peaceful uses of atomic energy. Toward this end, he has privately and publicly expressed his 'fervent hope that the progress of science might initiate a new era of harmonious cooperation between nations'."

In addition to the honorarium of \$75,000, Prof. Bohr received a medallion, designed by Sidney Waugh, and cast in gold.

Nominations for the first Atoms for Peace Award numbered 75 from 23 countries around the world.

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● RADIO

Saturday, March 30, 1957, 1:45-2:00 pm, EST. "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. A. R. P. Walker, director, Human Biochemistry Unit, South African Institute for Medical Research, Johannesburg, will discuss "Nutrition of Primitive Bantus."

PHYSICS

Bohr Receives Prize

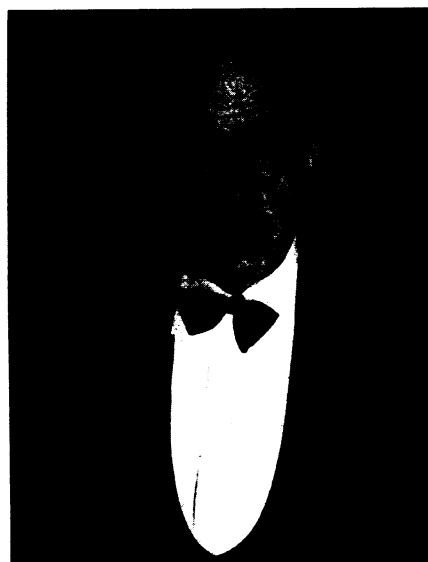
► **PROF. NIELS BOHR**, Danish atomic physicist and teacher, was named recipient of the first \$75,000 Atoms for Peace Award in New York.

Prof. Bohr, who is now 71 years old, opened up a whole new era in the field of atomic physics when, at the age of 28, he presented a basic theoretical work on the structure of the atom and contributed materially to clarification of the basic concepts of quantum physics. For his work,

he was awarded the Nobel Prize in Physics in 1922.

Since 1920, the Danish scholar has been director of the Institute for Theoretical Physics at Copenhagen which was founded on his initiative.

The award was presented by Dr. James R. Killian Jr., chairman of the Board of Trustees of Atoms for Peace Awards. The Awards "grew out of an appeal from President Eisenhower" made on July 20, 1955,



RECEIVES AWARD — Prof. Niels Bohr, Danish atomic physicist and teacher, is the recipient of the first \$75,000 Atoms for Peace Award.