



TESTS PLANES—Cutaway view of the giant new wind tunnel soon to be in operation at Buffalo which is capable of testing model airplanes at the lightening speed of jet propulsion at pressure conditions simulating 35,000 feet altitude. The tunnel contains an air volume of 210,000 cubic feet, equal to the cubic air volume of 16 six-room houses.

of Standards, Dr. F. R. Moulton, well-known astronomer, and Dr. Gano Dunn, electrical engineer, coordinated the development of the tunnel. A model tunnel was built at California Institute of Technology and this model was used for the basic design of the present tunnels. Construction took about one year. The wind tunnel laboratory is under the direction of Dr. Edwin P. Hubble, noted astronomer of the Mt. Wilson Observatory, on loan to the War Department for the duration. Research is supervised by Col. George G. Eddy, Director of the Ordnance Research and Development Center, who works directly with Maj. Gen. G. M. Barnes, Chief of the Research and Development Service of the Ordnance Department.

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PHYSICS

Wind-Tunnel Tests Speeds Up to 740 Miles an Hour

➤ A NEW \$2,500,000 variable-density wind tunnel, capable of testing model airplanes at the 740-mile-an-hour speed known as "speed-of-sound" range, has been revealed by G. W. Vaughan, president of the Curtiss-Wright Corporation. The wind tunnel, largest of its kind in

the nation, can be used to test jet-propelled airplane models with wing-spans up to 10 feet under atmospheric pressure conditions comparable to those found at 35,000 feet above the earth, about four pounds to the square inch.

Designed with the cooperation of the California Institute of Technology, the new Curtiss-Wright wind tunnel will enable engineers to test models of all types of planes, thus accomplishing in one place work which previously has been performed in three or four tunnels. This is made possible by the mammoth tunnel's extreme flexibility of testing range.

The operation of the tunnel is fundamentally simple. When engineers are ready to gather data on a plane, a model of the plane, exact to one thousandth of an inch, is installed on a test platform in the 8½ by 12 foot test chamber and air is set in motion by two 16-bladed, 22-foot diameter fans working in tandem. Wind may be blown to stimulate winds up to many times tornado speeds. Thus aerodynamic forces created are like those experienced by an actual plane in flight. By using a nozzle in front of the test chamber, air at high speed can be compressed further, creating a stronger blast.

At the control panel, an operator records the air load forces simultaneously by punching a button which causes the

measured forces to be computed on perforated cards. Data on the punched cards later are appraised to determine full-scale airplane characteristics, thus eliminating possible errors in design long before the actual construction of the plane.

The overall length of the tunnel is 178 feet. Its overall width is 81 feet. It stands 36 feet from the ground at its maximum height. A 115,000-volt power supply is needed for the tunnel for use with the 14,000 horsepower drive motors that turn the big fans. Employing four special compressors, air in the tunnel may be pumped to four times atmospheric pressure, or 60 pounds to the square inch. Three-quarter inch steel used in the building of the shell of the tunnel is similar to that used in the construction of a heavy U. S. destroyer.

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CHEMISTRY

Chemical From Mushrooms For Treating Poison Ivy

➤ A CHEMICAL from mushrooms may in future become a remedy for ivy poisoning, Prof. Irwin W. Sizer and Clemens E. Prokesch, of Massachusetts Institute of Technology, report in *Science*.

The chemical is tyrosinase, an enzyme found not only in mushrooms but other plant and animal tissues. It is the one responsible for darkening of potatoes and bananas when left exposed to air.

One of the better methods of treating skin poison ivy, the scientists point out, involves oxidation of the poison with strong oxidants such as ferric chloride and potassium permanganate. Believing that the same results might be obtained with innocuous agents such as enzymes, the scientists tested the effects of tyrosinase.

In four of their numerous experiments, they put poison ivy plus tyrosinase on the skin of human volunteers for four hours. Another part of the skin was treated in the same way except that the tyrosinase had first been inactivated by boiling. The area treated with the active enzyme showed much less skin irritation than the control area treated with the inactivated tyrosinase.

"If successful results can be obtained in the future by applying the enzyme some time after the toxicant (poison ivy irritant) has reacted with the skin, even after erythema (reddening) has been produced," the scientists state, "then a new method of treating poison ivy dermatitis will be available."

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