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ENGINEERING ABSTRACTS

\$900,000 WIND TUNNEL

Full-sized airplanes could be tested without flying them, in a \$900,000 wind tunnel proposed in a bill recently reported by the House Appropriations Committee at Washington, D. C. The project calls for a tube of enormous size. Before this only the action of the propeller and fuselage have been observed with full-scale parts, while test of a whole plane required the construction of a miniature model.

Since Orville and Wilbur Wright gave aviation the wind tunnel a quarter of a century ago—an invention largely responsible for the airplane's invention and its subsequent improvement—these tubes, through which rush man-made gales, have saved lives and dollars while they have revolutionized plane design. For perhaps as small a cost as \$100 a satisfactory model of an untried type of plane may be built and placed in a tunnel, where it reveals exactly how the finished plane will behave. No pilot need risk his life to take it into the air. The artificial hurricane that surges around the model from a powerful blower is sure to detect hidden flaws and suggest advantageous changes.

The U. S. Bureau of Standards, at Washington, D. C., owns three such tunnels, of three, four and a half, and ten feet diameter. In the smallest a blast of air moving at 150 miles an hour may be attained. At Langley Field, Virginia, the National Advisory Committee for Aeronautics has just completed a great tunnel twenty feet in diameter, whose 110-mile-an-hour air blast will test propellers and model wings of large size.

—*Popular Science Monthly.*

BRITAIN'S "QUESTION MARK"

Impressed by the recent six-day flight of the American plane Question Mark, refueled from the air, Britain is going to try for a few endurance records with her own "Question Mark" plane. A giant Fairey monoplane, just completed, will attempt first to break the world's nonrefueling record of sixty-five hours in the air; then it will be flown to Cape Town, South Africa, where it will attempt a nonstop return trip of some 8,000 miles—a third of the distance around the earth—to London.

The silver ship on which England pins her hopes is a streamlined monster that measures eighty-two feet from wing tip to wing tip. Its extraordinary fuel capacity of 1,000 gallons in tanks concealed in the thick wings is expected to permit a flight of three days and nights without refueling, since the 450-horsepower Napier motors and the slim fuselage are designed especially for economy of gasoline. A novel feature is a "hooter" that automatically utters a warning signal when the pilot deviates from his set course.

Two daring American proposals to fly nonstop around the world have followed the pioneer flight of the Question Mark. An eastward flight, starting from Paris and returning via India, China, Siberia, and the United States or Canada, is the project of the Fokker aviation firm with next June the month suggested. Tank plans stationed over

various cities would refuel the globe-circler on the way.

Meanwhile Col. Arthur C. Goebel, American winner of the Dole flight from California to Hawaii, plans a flight from west to east around the world, starting and ending at Wichita, Kansas. He hopes to make the attempt in August or September.—*Popular Science Monthly.*

FIVE YEARS' WORK TO QUARRY ONE BLOCK OF MARBLE

Three thousand feet above sea level in the Italian Alps, workmen in the famous Carrara quarries drilled and cut for five years to carve from a mountain what is believed to be the world's largest monolith of marble. This white stone block, nearly ten feet square and sixty feet long, has been presented to Mussolini for erection as a monument in Rome.

The problem of transporting the heavy monolith—weighting 250 tons, as much as a powerful freight engine—to the sea, where it was loaded on a ship for Rome, was solved in a peculiar way. Those in charge, instead of consulting engineers, searched into history. A similar monolith of stone was known to have been brought to Italy from Egypt in the days of the old Romans. By scanning ancient records the method that had been used then was discovered and it was applied in lowering the Carrara block.

The shaft was incased in a fifty-ton covering of wood to protect it on the journey. In fastening and bolting in place the several layers of boards and timbers that clothed the monolith more than 10,000 nails and bolts were used.

Special steel cables of 160 strands each, made in Vienna, Austria, encircled the case and increased its strength. Cables of the same material also were used to steady the block. They were played out a little at a time as it slid down to the shore along a special roadway which, it is said, required more than a year to construct. With the web of taut steel cables steadying it, and guided by an army of laborers, the monolith descended by easy stages to the waiting vessel.

—*Popular Science Monthly.*

PINPOINT DEVICE REGISTERS HEAT FROM FAR SUNS

An instrument so small it would take a thousand to equal the size of a drop of water was used recently by Dr. Edison Pettit and Dr. Seth Nicholson, at Mt. Wilson Observatory, to measure the heat of stars billions of miles away. This device was constructed under a microscope.

It is a thermocouple and will register variations in heat as light as one hundred-thousandth of a degree.

Used in connection with the 100-inch Hooper telescope at the Mt. Wilson Observatory, the sensitive instrument recorded the heat coming from 124 stars. Betelgeuse, a flaming sun 27,000,000 times the size of our sun, raised the temperature of the receiving instrument only one sixtieth of a degree centigrade, so far away is it.

(Continued on Page 24)

ABSTRACTS

(Continued from Page 16)

The heat radiations measured by the thermocouple showed certain stars to be larger than indicated by the Michelson interferometer, previously used for such measurements.

—*Popular Science Monthly.*

In a current monthly magazine there recently ran a serial which rivaled the renowned S. S. Van Dine's mysteries. It was the "Disappearance of Mary Young" and the reader was kept guessing, in the most approved Van Dine style, who the real murderer was.

"Bushwhacking" by Sir Hugh Clifford has recently been published by Harper & Bros. and is a narrative of his adventures in the Malayan Peninsula. The book tells of his many startling experiences while in the service of the British government in that part of Asia.

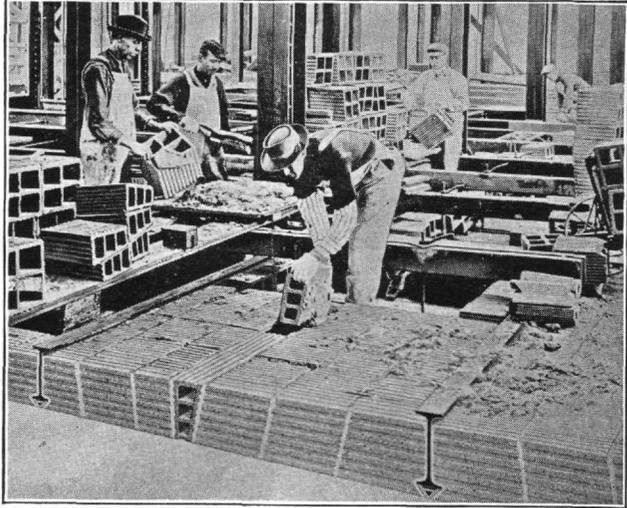
"You are the most beautiful girl I've ever seen! I long to hold you in my arms, to caress you, to kiss your eyes, your hair, your lips—to whisper in your ear, "I love you!"

"Well, I guess it can be arranged."

—*Tawney Kat.*

MAY, 1929

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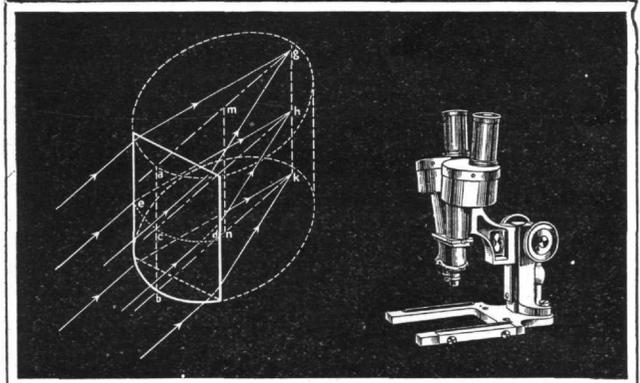
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