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SCIENCE NEWS LETTER



THE WEEKLY SUMMARY OF CURRENT SCIENCE • JULY 8, 1944



Cotton in Colors

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A SCIENCE SERVICE PUBLICATION

KEEPING UP WITH
Electricity

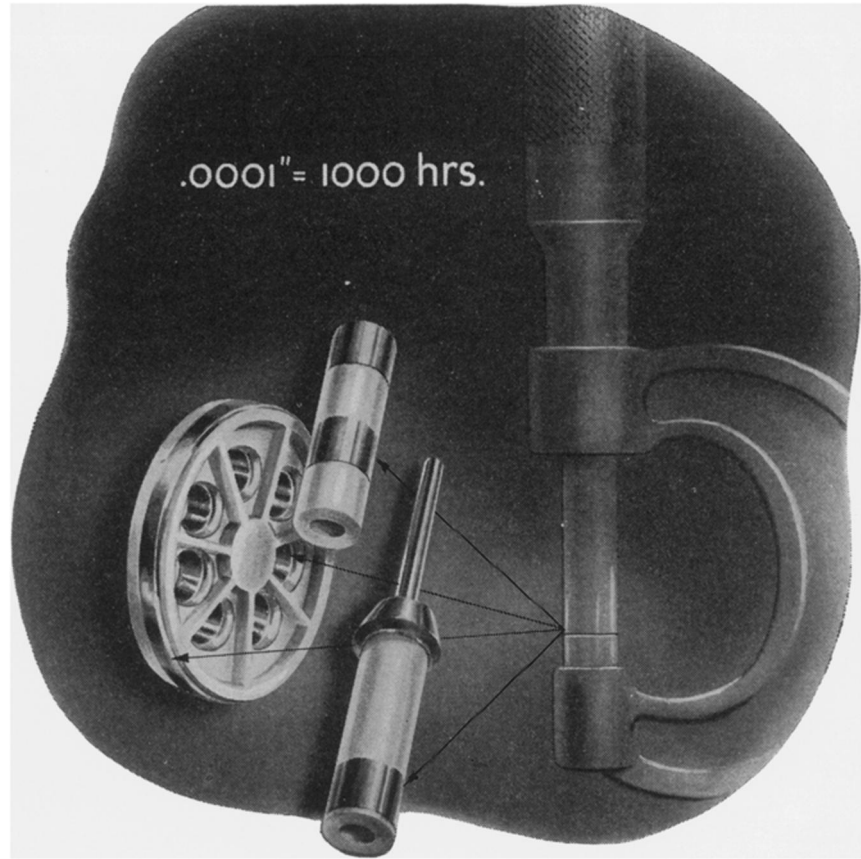
ORDNANCE SPELLS IT F-U-Z-E, when referring to the mechanical device that keeps bombs safe to handle, but sets them to detonate on impact. If bombs are to be both safe and effective, fuze-timing must be accurate to a split second. To test them, Westinghouse engineers designed a new miniature wind tunnel, in which a blast of compressed air simulates speeds up to 800 miles an hour. A photoelectric cell device checks the timing to one one-hundred-twentieth of a second.

NEW FLUORESCENT DEVELOPMENTS include a *cold cathode* tube that lights up instantly; a new type of starter that eliminates blinking of fluorescent lamps; and a bulb so tiny that it can operate for several weeks on power from a single dry cell.

TOO GOOD. A short time after a large non-condensing turbine was placed in service by a large industrial company, the designer was called back to do further work in it. Reason: it was *too* efficient! Temperature of the exhaust steam was too low for plant process work. Machine is now operating with a satisfactory degree of *inefficiency*.

HEIGHT BY LIGHT is the basis of a device that is making flying safer. A beam of light from a 16-inch searchlight locates cloud layers; using an alidade (similar to a sextant) an observer sights the bright spot made by the beam. By triangulation, the height of the clouds can be calculated exactly in a matter of seconds, and this ceiling height is then radioed to the planes in the vicinity.

NEW HURRICANE is now in service with Boeing Aircraft Company. Westinghouse has just installed an 18,000 horsepower electric motor to drive the multi-bladed fan in Boeing's new wind tunnel. One of the largest operated by a private aircraft manufacturer, the new tunnel will be able to test airfoils, etc., at speeds up to 700 miles an hour.



When .0001 inch = 1000 hours

Problem: To provide an air-tight joint where the insulated connectors of an airplane radio vibrator project through the metal shell. (Vibrator contacts disintegrated in *ten hours* at high altitudes, when shells were not air-tight.)

Westinghouse research engineers were ready with the answer—a method of *soldering* metal to porcelain.

The porcelain piece is painted with a solution of gold and platinum and is then fired. This reduces the metal to a firmly adhering glaze, which is coated with a flux and tinned for soldering.

This gold-platinum film—barely one ten-thousandth of an inch thick—is the reason radio vibrators today last as long as the plane.

Solder Seal is the only known method of completely and permanently hermetically sealing a porcelain-to-metal joint. It is another example of Westinghouse leadership in every phase of electrical development.

Westinghouse Electric & Manufacturing Company, Pittsburgh 30, Pa.

WESTINGHOUSE PRESENTS: *John Charles Thomas, Sunday 2:30, EWT, NBC.*
"Top of the Evening," Mon. Wed. Fri. 10:15, EWT, Blue Network

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For many years, RCA Laboratories have had a constant interest in the technical development of FM. Research in this field continues, but most of

it is related to the war effort and is of a military nature . . . Prior to the war RCA manufactured and sold FM broadcast transmitters. After the war RCA will manufacture and sell a complete line of FM transmitters as well as high-quality super-FM receivers, utilizing a new type of circuit.

When peace comes RCA will use its background of experience and engineering facilities in the broadcast transmitter and receiver fields, to build the type of apparatus broadcasters will need and receiving sets which will reproduce all broadcast programs with utmost realism and tonal quality.



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