

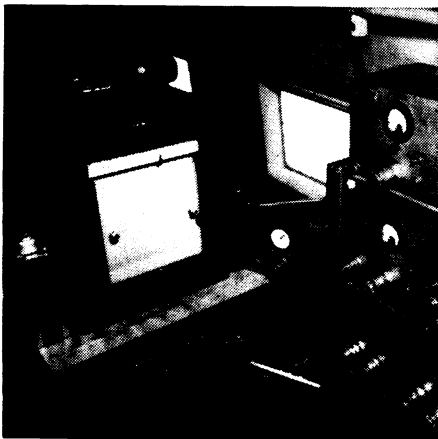
## Do You Know?

A family of five needs about 3,000 pounds of fruit and vegetables a year.

The *artesian* well takes its name from Artois, France, the ancient Artesium; the name actually refers to the method by which the well is bored, not to whether it runs water or not.

Some 3,200 *fire towers* and lookout stations of the U. S. Forest Service are to serve aviators in the future; they are being marked as a safety aid to the visual flyers by the Civil Aeronautics Administration.

The mixture of *chemicals* known as 3-amino-phthalhydrazide and sodium perborate is quite stable when dry but when dropped in water it gives a visible glow; wartime seaplane pilots used the mixture to estimate their height above the water.



Speedomax instrument in an airplane, recording variations in the earth's magnetic field.

### High-Speed Recording by SPEEDOMAX Helps Solve Testing Problems

Exceptional speed and sensitivity enable the Speedomax Recorder pictured above to chart the output of a magnetometer during oil-surveying operations. These same qualities make the instrument highly useful in spectroscopy, X-ray diffraction studies, measurement of sun-spot activity, recording weather data from radiosondes and other tests.

For details on Speedomax Recorders, see Catalog ND46(1), sent on request.



Jr. Ad. N-420 (1b)

shaw of Griffith Observatory, Los Angeles. The average width of the path from which totality may be seen is about 100 miles.

The last total eclipse of the sun visible in this country was that of July 9, 1945.

Since the turn of the century, for people in a few choice regions of the United States the moon has completely hidden the sun on the following dates: May 28, 1900; June 8, 1918; Sept. 10, 1923; Jan. 24, 1925; Aug. 31, 1932.

*Science News Letter, May 15, 1948*

#### ACOUSTICS

### Moth Chewing Through Fabric Is Recorded

➤ THE sound of a "moth chewing through a fabric" has been preserved on a phonograph record by Cornell University scientists.

The scientists last year produced an album of 72 bird songs. Their latest is an album of eight sides featuring the calls of 26 varieties of frogs and toads. But the moth record was made on special request—from an advertising agency with a client selling mothballs.

Getting a moth to chew at the right time and place proved to be the greatest difficulty. This was overcome by sewing the larva in a tiny cloth sack. It had to chew its way out.

And what does a moth chewing cloth sound like? "Someone eating corn flakes," reports one of the scientists, Prof. Paul Kellogg.

*Science News Letter, May 15, 1948*

#### ENGINEERING

### Single-Sideband Receiver Applied to Communication

➤ A NEW communication system employing recently developed radio single-sideband techniques offers simplified apparatus and improved performance, Donald E. Norgaard, General Electric Co., Schenectady, N. Y., told the joint meeting of the International Scientific Radio Union and the Institute of Radio Engineers meeting in Washington.

The sideband is a radio wave traveling side by side with the so-called carrier, or principal wave, the steady signal which is radiated by conventional transmitters. The sideband is caused by the carrier wave. This carrier signal changes in strength with the speech or music being sent. In radio language it has amplitude modulation. This modulation sets up the additional waves which are immediately adjacent to the carrier wave. They are ordinarily so close that they

cannot be distinguished from it.

The new development covers both transmission and receiving equipment, Mr. Norgaard stated. When the single-sideband receiver alone is employed on conventional transmission, distortion caused by selective fading is eliminated.

Optional choice of the sideband to be received allows reduction or elimination of interference. For this reason, the single-sideband receiver should find immediate public acceptance whenever reception over moderate or long distances is required with a minimum of interference.

Complete single-sideband operation permits exactly twice the number of transmission channels over present practice, he continued, with a system improvement in each channel. Transmitter efficiency under these circumstances is higher than that of any other system of voice communication by radio.

These factors have resulted in a communication program by the U. S. armed services and United Nations of virtually exclusively single-sideband operation.

*Science News Letter, May 15, 1948*

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