

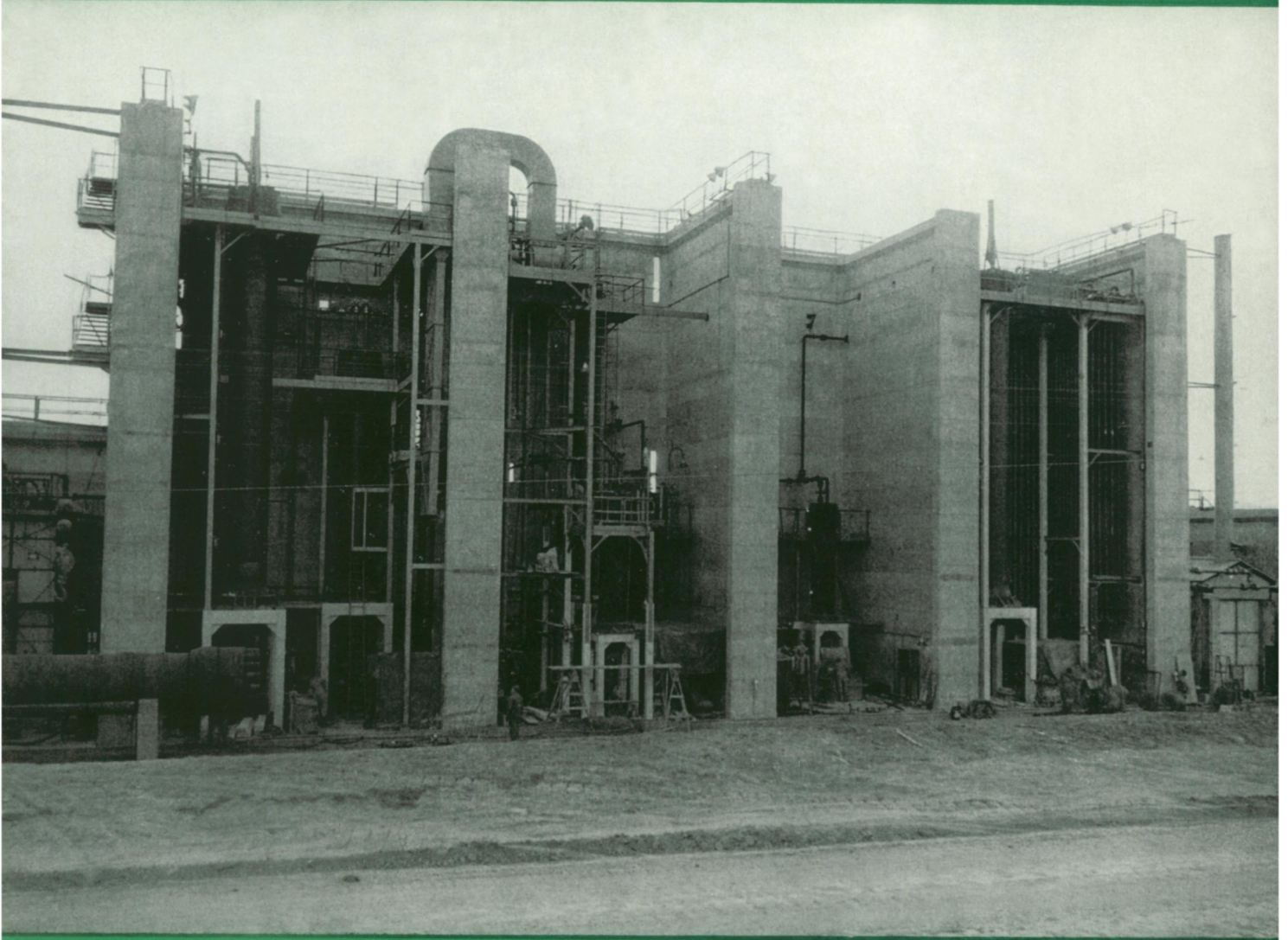
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MAY 7, 1949

SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Coal-to-Oil

See page 293

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What happens when you hear? What happens *inside* your ear when sound waves come in from a telephone conversation?

Bell Telephone Laboratories scientists have developed special apparatus to help answer these questions, for the telephone system is designed to meet the ear's requirements for good listening.

In the test pictured above, the young lady sits before loudspeakers in a soundproofed room with a small hollow tube, reaching just inside the ear canal. Sounds differing slightly in frequency and intensity come from a loudspeaker. The subject seeks to tell one from another, recording her judgment electrically by pressing a switch.

Meanwhile, the same sound waves pass down the hollow tube to a condenser microphone, and a record is made of the exact sound intensities she identified. Results help reveal the sound levels you can hear clearly and without strain — the sounds your telephone must be designed to carry.

Scientists at Bell Telephone Laboratories make hundreds of tests in this manner. It's just one part of the work which goes on year after year at the Laboratories to help keep Bell System telephone service the finest on earth.

BELL TELEPHONE LABORATORIES

Exploring and inventing, devising and perfecting, for continued improvements and economies in telephone service.





Using ammonia and radio waves, RCA scientists have devised a clock more accurate than the stars.

Your future will run on "Atomic Time"

Imagine a clock which will lose or gain only one second in 20,000,000, and which — when further research is carried out — will vary no more than *a second in 30 years!*

Such a timepiece — constructed by the National Bureau of Standards on a principle conceived and demonstrated at RCA Laboratories — is now in operation. More accurate than the stars? Yes, because "star time" will vary when Mother Earth wobbles in her orbit.

The pendulum of RCA's clock is an atom

... at present, the nitrogen atom in an ammonia molecule ... though others may later be used. Vibrating at 23 billion 870 million times a second, it controls a system of radio waves and electrical impulses which operates the clock — locks them in tune with its own unvarying beat!

You will hardly want an "atomic clock" to get to the office promptly, or get your children to school. But scientists and engineers who must split seconds into millions of parts need this more accurate way of *telling time*.

The atomic clock is but *one* of the

many major achievements pioneered at RCA Laboratories. Such leadership in science and engineering adds *value beyond price* to any product or service of RCA and RCA Victor.

* * *

Examples of the newest developments in radio, television, and electronics can be seen in action at RCA Exhibition Hall, 36 West 49th Street, N. Y. Admission is free. Radio Corporation of America, Radio City, N. Y. 20.



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