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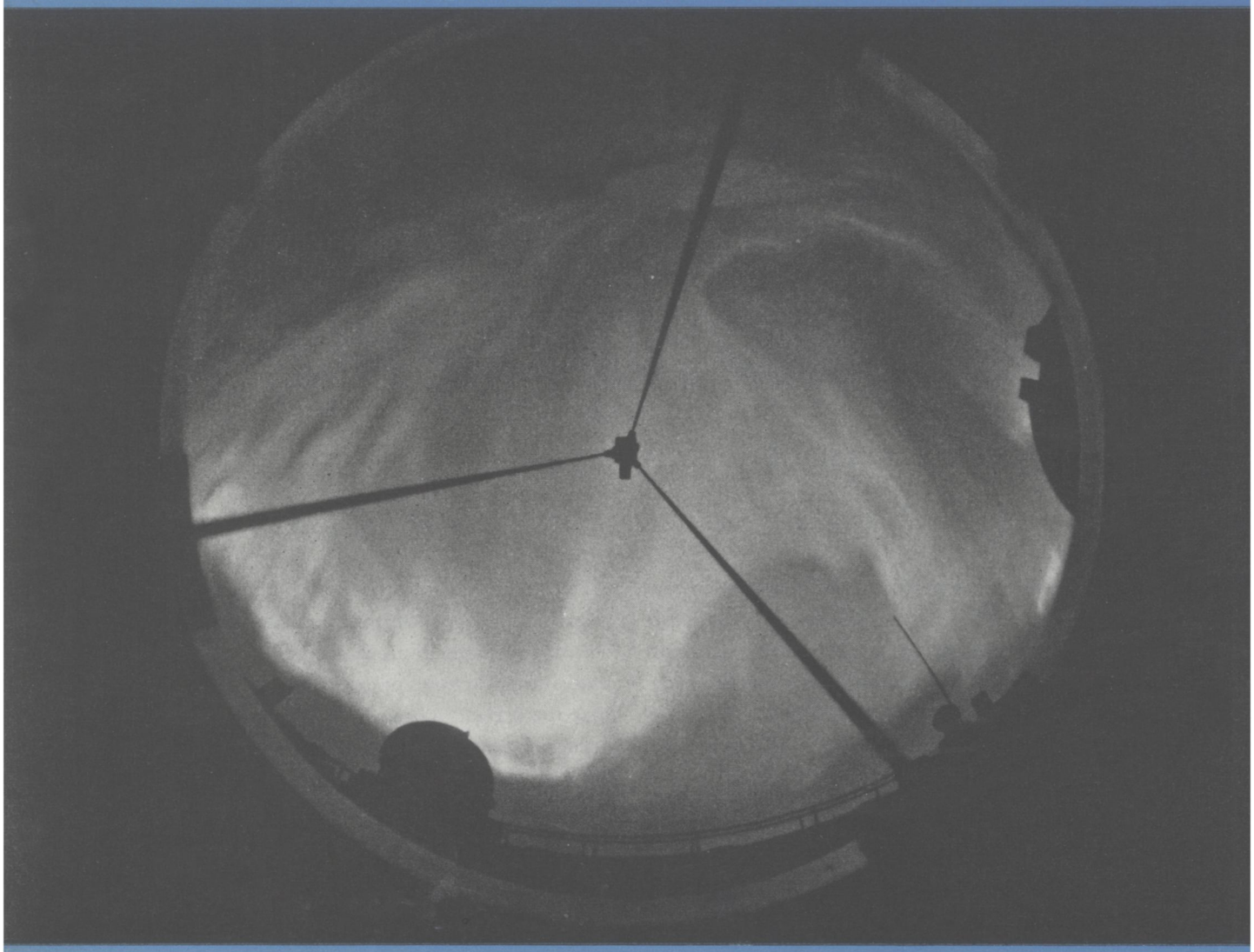
SEPTEMBER 9, 1950

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Hydrogen Spectacle

See Page 166

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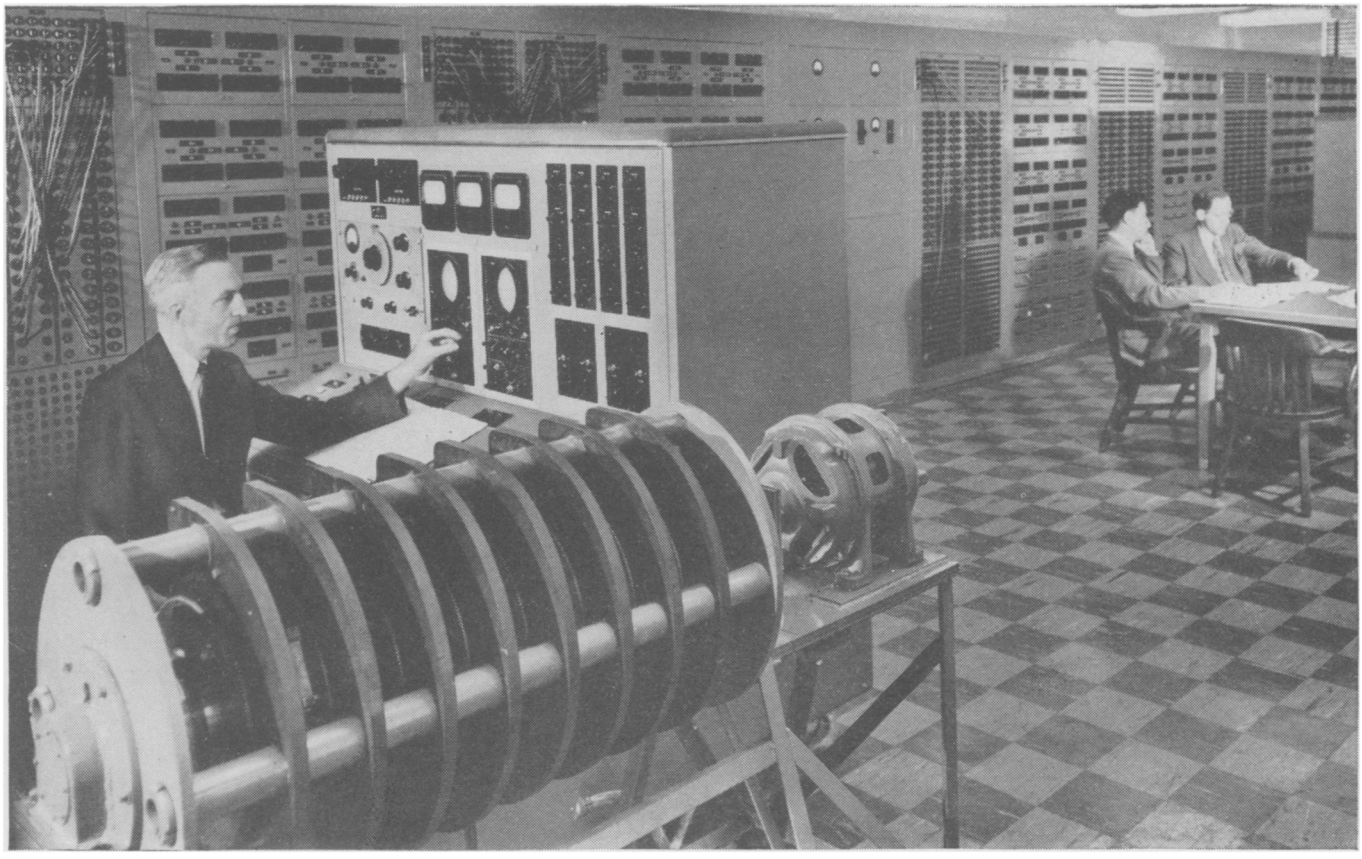


New Type Computer

Solves Problems without Arithmetic

What will be the performance of a jet plane in flight when subjected to various disturbances? That's a problem to tax the most brilliant mathematician. Yet here comes a machine . . . that does the work of a "brain cell" . . . that's ready, willing and able to solve the problem, quickly . . . accurately.

This newly developed "brain cell", called the "Anacom", substitutes voltages and currents for numbers that are fed into digital-type computers . . . has solved 43 various types of engineering problems in addition to mathematical problems not arising directly from physical systems.

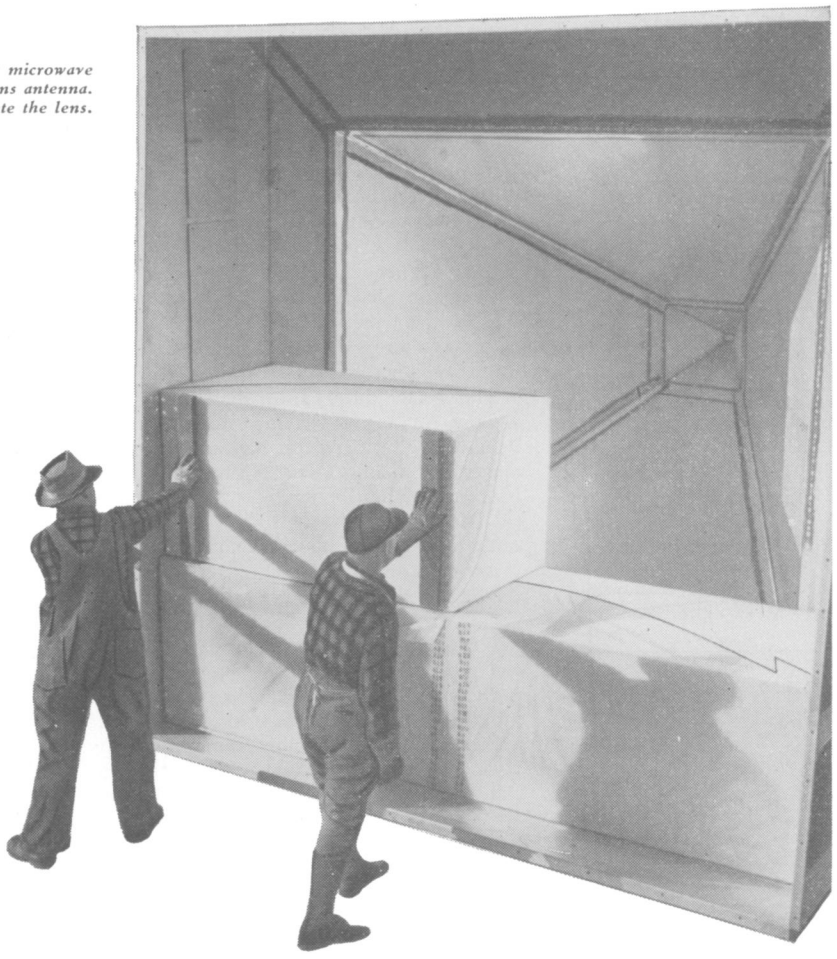
In operation, the "Anacom" produces an electrical "imitation" of mechanical forces. Resulting voltages representing stress, motion and similar factors appear as lines on an oscilloscope screen. These lines can be measured accurately and translated to terms of the product under study.

The "Anacom" is one of the more complex developments of Westinghouse to facilitate research, product developments and quality control. Its development is typical of the depth to which Westinghouse will probe in its constant endeavor to look ahead . . . to keep ahead . . . to live up to its promise . . .

YOU CAN BE SURE..IF IT'S Westinghouse

G-10099

Mounting Bell's new microwave lens in a horn-lens antenna. Other blocks will complete the lens.



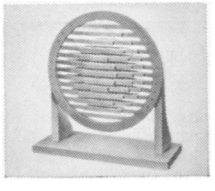
A focus on better, low-cost telephone service

In the new microwave radio relay system between New York and Chicago, giant lenses shape and aim the wave energy as a searchlight aims a light beam.

Reasoning from the action of molecules in a glass lens which focuses light waves, Bell Laboratories scientists focus a broad band of microwaves by means of an array of metal strips. To support the strips these scientists embedded them in foam plastic which is rigid, light in weight, and virtually transparent to microwaves.

This unique lens receives waves from a wave guide at the back of the horn. As they pass across the strips, the waves are bent inward, or focused, to form a beam like a spotlight. A similar antenna at the next relay station receives the waves and directs them into a wave guide for transmission to amplifiers.

This new lens will help to carry still more television and telephone service over longer distances by microwaves. It's another example of the Bell Telephone Laboratories research which makes your telephone service grow bigger in value while the cost stays low.



Laboratory model of the new lens. A similar arrangement of metal strips is concealed in the foam plastic blocks in the large picture.

BELL TELEPHONE LABORATORIES

Working continually to keep your telephone service big in value and low in cost.