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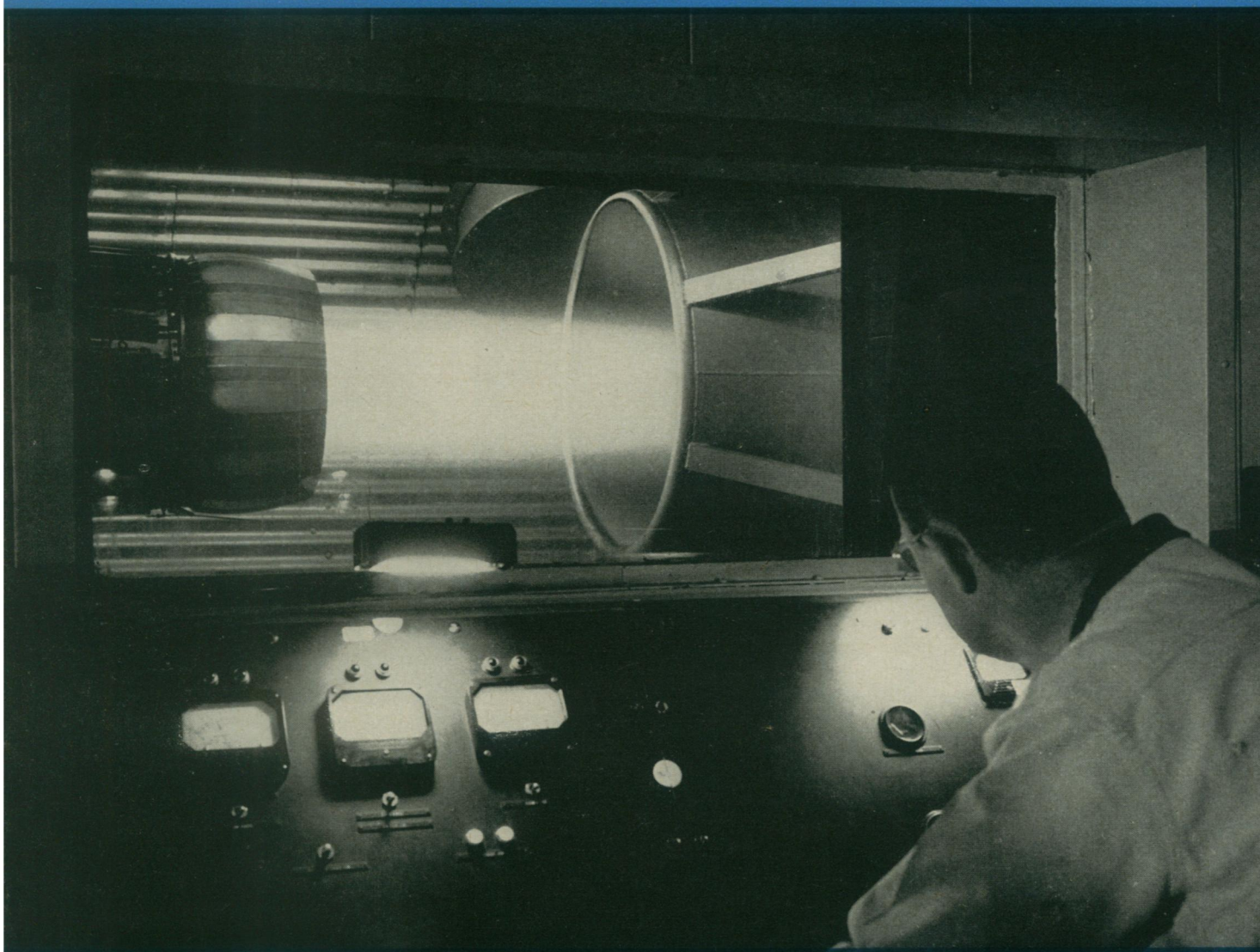
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SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Get's Pre-Flight Test

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A SCIENCE SERVICE PUBLICATION

Kodak reports to laboratories on:

a new optical element . . . processing line copy of transitory interest

Axicons

The axicon has been invented. To the lens, the prism, and the mirror—the basic elements of optical design—there has been added the axicon. It could have been invented in 15th-century Florence, or in Restoration England for presentation at an early session of the Royal Society, but it wasn't. It was invented in no garret, but in this bright and shining factory overlooking the Genesee River in Rochester, N. Y., by John H. McLeod, a Kodak opti-



cal engineer. This is incredible. Our times seem far too complex, our science and technology far too advanced for a man to invent anything as simple as the axicon in the sixth decade of the 20th century.

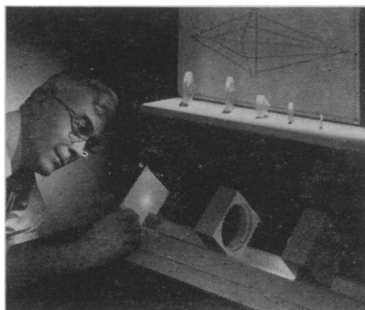
But listen to Doctor McLeod:

"A search for a universal focus lens has led to a new class of optical elements. Probably the most important of them is a glass cone. This class has the common property that a point source on the axis of revolution is imaged to a range of points along the axis. Such elements do not, therefore, have a definite focal length. The word 'axicon,' meaning axis image, has been coined to cover this type of element. [Note: He had to coin a word. There just wasn't any existing word to serve the purpose.] Axicons form images only of small, bright objects.

"One application is in a telescope. The usual spherical objective is replaced by a cone. This axicon telescope has no focusing movement

but is in focus for targets from a foot or so to infinity. It can simultaneously view two or more targets placed along a line.

"If a light source is added to the telescope with a suitable beam splitter, it becomes an autocollimator. It can do more than an ordinary autocollimator, however, for, in addition to checking the perpendicularity of a mirror, it can simultaneously view one or more targets along the line of sight. [He means more than "view." At a distance of 100 feet, the position of a target can be determined to .001", and even a non-technical executive has done it. In angle, this means an accuracy of 1/5 second.]



"A useful form of axicon is a reflecting cone. It will return an image of a point source back to the source over a range of distances depending on the cone design. This form may be used for the precision checking of lathe beds and the like, or for checking the flatness of surface plates."

If you would like to use a line of light in space as a tool, get in touch with Eastman Kodak Company, Special Products Sales Division, Rochester 4, N. Y.

No fix

We draw your attention to a minor chemical invention called "stabilization." It takes the place of the traditional fixation and washing in processing line copy of transitory

interest. "Stabilized" images on photographic paper can remain recognizable and legible for some time, but we make no intimations of immortality. The decision to "stabilize" is not an irrevocable death warrant for the image; if, before visible deterioration sets in, the decision turns out to have been rash, one may still fix and wash conventionally before committing it to the archives.

The general idea in stabilization is to convert the undeveloped silver halide into colorless silver complexes which remain in the print. With this may be combined the idea of "hot processing," so that one gives a sheet of photographic paper the works something like this: 1) develop in Kodak Developer PS-451 at 100 F for no more than 10 seconds; 2) squeegee; 3) whisk into Kodak Stop Bath PS-451 at 100 F for two seconds; 4) squeegee again; 5) hold for no more than 10 seconds in Kodak Stabilizer PS-451 warmed to 100 F; 6) squeegee for the last time; 7) dry between blotters.

The rapid sequence and the omission of washing suggest the possibility of a small, portable machine into which one could put, say, a roll of *Kodak Linagraph Paper* exposed to oscillograph traces and read the dry, finished record as it comes out the other end. No mess, yet no sacrifice of the sensitivity of photographic recording. Several manufacturers are now offering such processors, and we shall be happy to send you their names.

To try this stabilization processing, write Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y., for more specific directions, the name of the nearest dealer who sells "PS-451" chemicals, and a little warning about the possibility of staining other papers or clothing by contact with stabilized prints. It would help if you told us what you propose to stabilize.

This is one of a series of reports on the many products and services with which the Eastman Kodak Company and its divisions are . . . serving laboratories everywhere

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