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SCIENCE NEWS LETTER

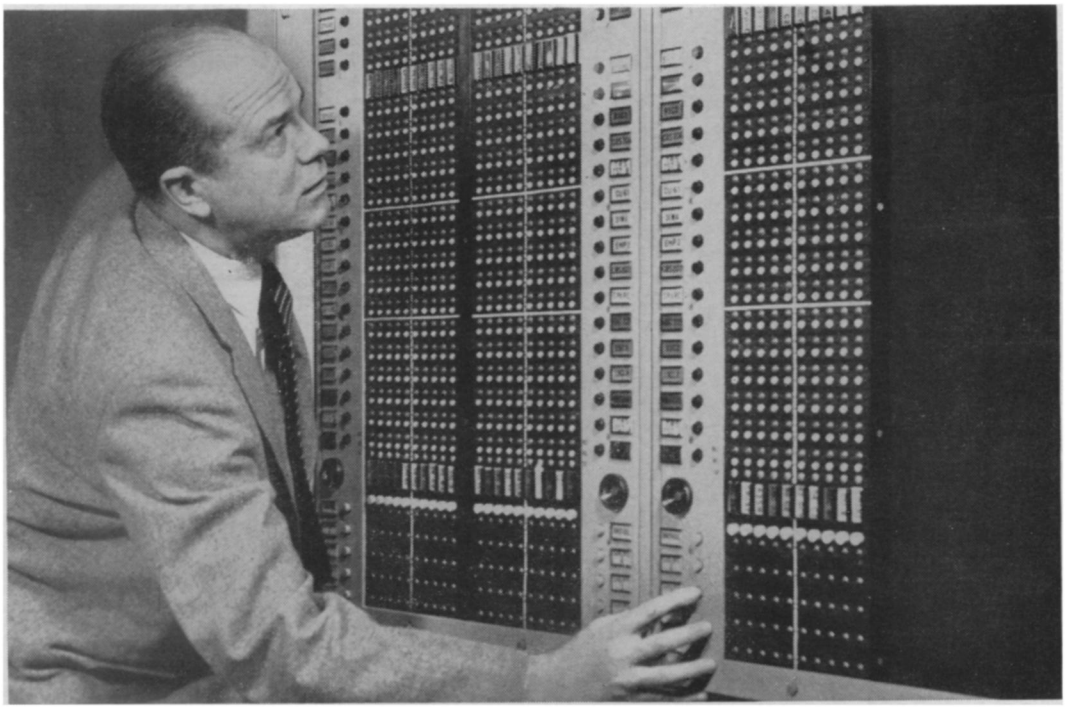
®

THE WEEKLY SUMMARY OF CURRENT SCIENCE

Early Summer Visitor

See Page 286

A SCIENCE SERVICE PUBLICATION



Bell Laboratories engineer Cyril A. Collins, B.S. in EE., University of Washington, demonstrates new TV switching control panel for black and white or color. Complex switching connections are set up in advance; in a split second a master button speeds dozens of programs to their destinations all over the nation. Special constant-impedance technique permits interconnection of any number of broadband circuits without picture impairment.

Telephone science speeds TV enjoyment

Telephone science plays a crucial part in your TV entertainment. An interesting example—one of many—is the latest TV switching center developed at Bell Laboratories.

Switching centers control the transmission of programs which come to your local TV station over Bell System facilities. To be available exactly on cue, programs must be switched at high speed and with very great accuracy.

To create the new switching center Bell Laboratories engineers borrowed from the switching control art which handles your dial telephone calls. They developed a special control panel which puts complex switching patterns within the easy grasp of one man. By pushing buttons, he sets up—and double-checks—forthcoming network changes far ahead of time. On cue he presses a master button which sends the programs racing to their respective destinations around the nation.

To connect the broadband circuits, the Laboratories engineers developed a new video switch which operates on a constant-impedance principle. The new switch permits the interconnection of any number of circuits, without the slightest impairment of transmission quality.

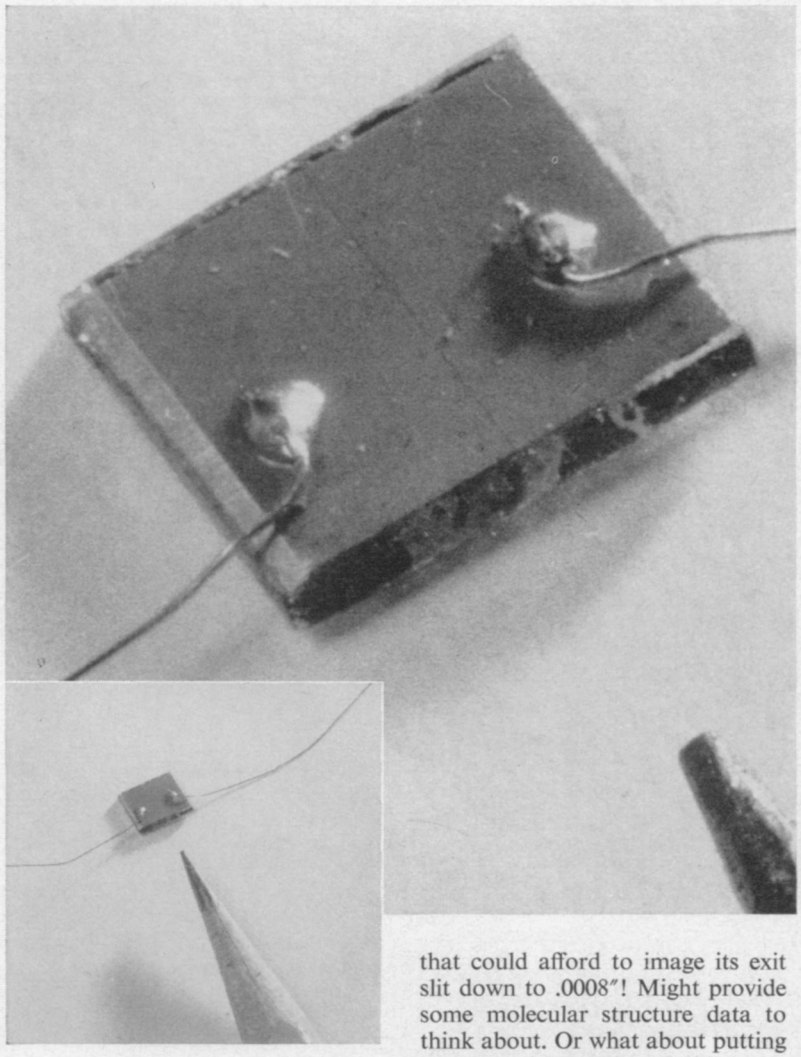
Thus the technology which serves your telephone also works for your TV enjoyment.

BELL TELEPHONE LABORATORIES

World center of communications research and development

Kodak reports to laboratories on:

a photoresistor 20μ wide . . . trouping the colors in competition



Thin receptor

The thin black line is 20μ wide and 2 mm long. In the dark, d-c resistance across the .0008″ of lead sulfide is a few hundred ohms. When radiant energy shines on the line, the resistance drops. A manifestation, obviously, of the celebrated *Kodak Ektron Detector*. The wavelength of the energy can be from 3.5μ in the infrared,* right through the visible and on to at least 250mμ in the ultraviolet. Imagine an infrared spectrometer that could afford to image its exit slit down to .0008″! Might provide some molecular structure data to think about. Or what about putting one in an image plane inside some optical system?

For $23.50, paid to Eastman Kodak Company, Apparatus and Optical Division, Rochester 4, N. Y., anybody can have one. If the eloquence of these words gets us swamped, delivery may be a bit delayed. If you wanted to wait, it's not unlikely the price will drop. But then you might not be first on your block.

*That would make a receptor less than 6 wavelengths wide, wouldn't it?

The dye game

Under "people's capitalism," a social system with a brilliant future still in prospect, analytical chemistry often becomes a competitive weapon. We not only run a stand on the sidelines of the fray where we sell reagents and other *Eastman Organic Chemicals* useful in playing the game, but under a different hat we also play ourselves. It's a happy, invigorating game with many, many winners.

As player, one of our most interesting recent moves has been the launching of nine new dyes for polyester fabrics. They are as much definite chemical entities as 2-(p-di-methylaminostyryl)-1-ethylpyridinium iodide is a definite chemical entity. Such *Chemical Abstracts* nomenclature is quite proper in patents and the Eastman Organic Chemicals catalog, but under the rules by which gentlemen play, on dye-trade label, invoice, and promotional leaflet, names like *Eastman Polyester Yellow 5R* and *Eastman Polyester Navy G* designate the compounds evolved from our long experience in making dyes for synthetic fibers.

In the new group are dyes which excel most predecessors in the fastness they exhibit on polyester fibers despite various combinations of light, laundering, dry cleaning, and other paling influences. Some are new prototype structures from which new lines of descent may stem. Some are not so different from dyes previously successful on other hydrophobic fabrics. Some cost less to make (or develop) than others and are so priced.

Deciding which to use, how, in combination with which others—is another game. (When invited, we coach from dye service laboratories at Lodi, N. J., and Kingsport, Tenn.) Meanwhile, each band of analytical chemists silently reconnoiters the field, so intent they even forget at times who awards the points. It's that lady over there, clutching her purse.

Eastman Polyester Dyes *are sold by Eastman Chemical Products, Inc., Kingsport, Tenn. (Subsidiary of Eastman Kodak Company); exegetically labeled* Eastman Organic Chemicals, *by Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Company).*

Price quoted is subject to change without notice.

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