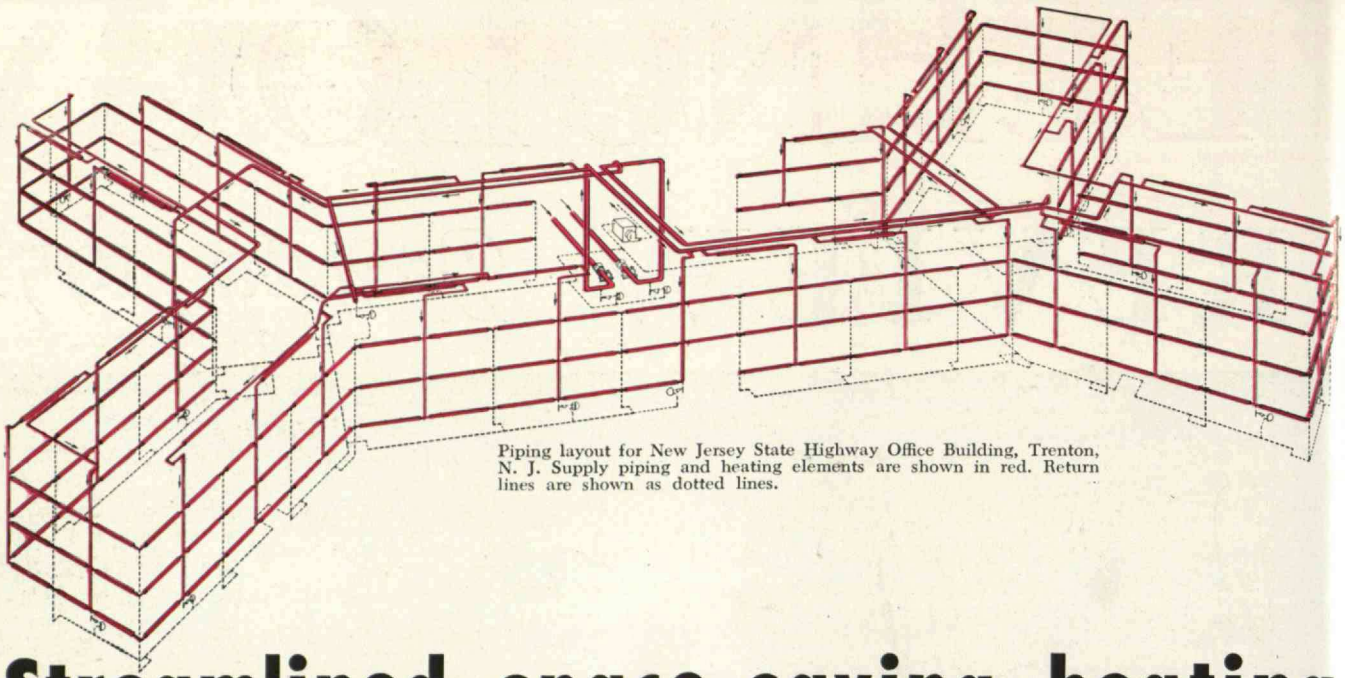
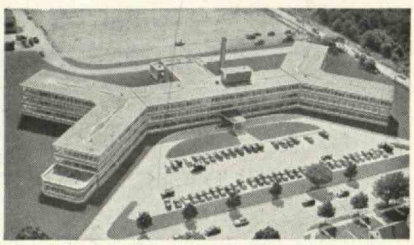
TECHNOLOGY REVIEW

December 1951

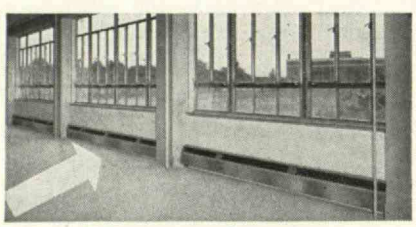


Piping layout for New Jersey State Highway Office Building, Trenton, N. J. Supply piping and heating elements are shown in red. Return lines are shown as dotted lines.

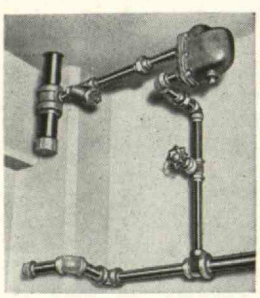
Streamlined space-saving heating



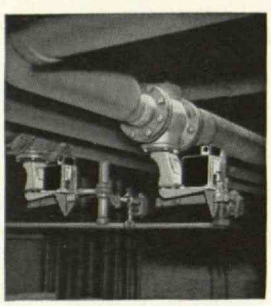
Aerial view of New Jersey State Highway Office Building. Micklewright & Mountford, Trenton, Architects. Runyon and Carey, Newark, Consulting engineers. Philip S. Slack & Co., Trenton, Heating Contractors.



Webster Walvector spreads the heat . . . no cold spots. Note supply and return risers; location of Walvector trim piece connections below window mullions facilitating installation of office partitions.



Typical Drip Connection.



Moderator Control Valve.

The new $1,700,000 headquarters and office building for the New Jersey State Highway Department, sponsored by Governor Alfred E. Driscoll, is marked by three innovations: (1) for economy, streamlined modern design in place of usual monumental architecture; (2) for efficiency and parking ease, location outside of city; (3) streamlined, space-saving heating with Webster Walvectors. The alert cooperation of contractor Philip S. Slack in working out details of the new developments with the architects and engineers, contributed much to the success of the installation.

A Webster Moderator System provides "Controlled-by-the-Weather" heating for this modern building with Webster Walvectors equipped with integral tube orifices to spread the heat along exposed walls. Webster Convectors are used in stairways and Webster-Nesbitt Unit Heaters provide supplemental heating in corridors.

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TR-12

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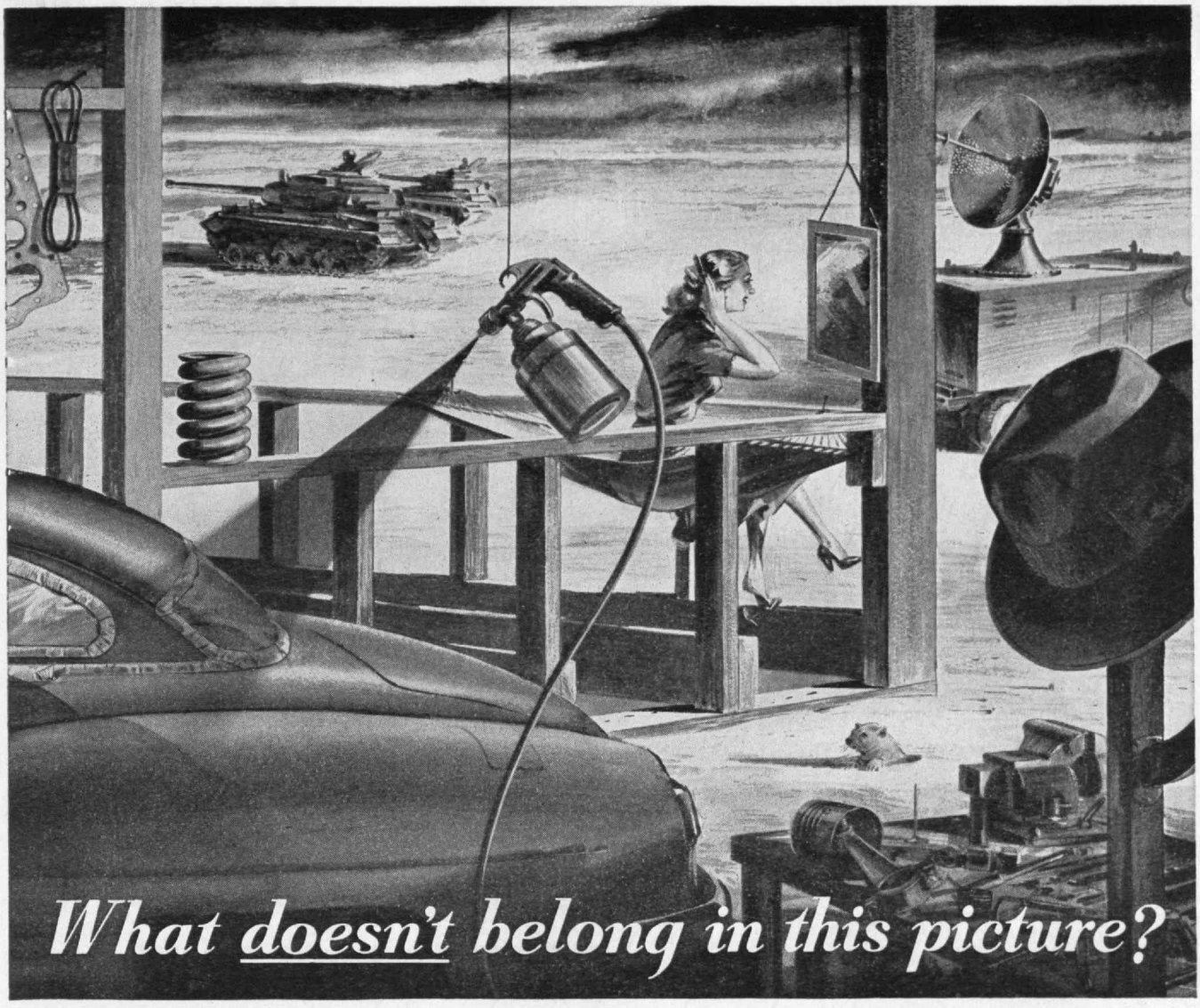
SYSTEM

OF STEAM HEATING

"Controlled by the weather"



All but one of the objects in this picture have something in common. They were affected directly or indirectly by the kind of products Norton and Behr-Manning make. *Can you find the stranger?*

The Car? No! Automobile production depends directly on Norton and Behr-Manning abrasive products. In fact, their use is essential in automobile maintenance as well as in production. A new Behr-Manning product, Behr-cat Masking Tape, performs an indispensable service on repaint jobs.

The Woman? No! She, too, depends on Norton or Behr-Manning abrasive products to help produce her shoes, dress, cosmetics, jewelry — everything she wears or uses.

The Felt Hat? No! Most felt hats get a rub-down from Pouncing Paper, a Behr-Manning coated abrasive.

Neither Is It the Army tank, the radar unit, the wooden building, nor the metal spring.

The stranger in the picture is the gopher . . . who does not rely on man-made products. Remember, any man-made product . . . whether of metal, wood, paper, cloth, leather, ceramics, or plastics . . . depends on abrasives, abrasive products, refractories, or grinding machines that bear such well-known trade-marks as Norton and Behr-Manning . . . world's largest manufacturers of abrasives and abrasive products.

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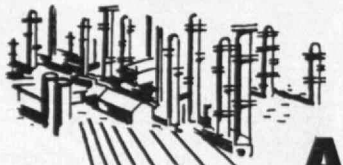
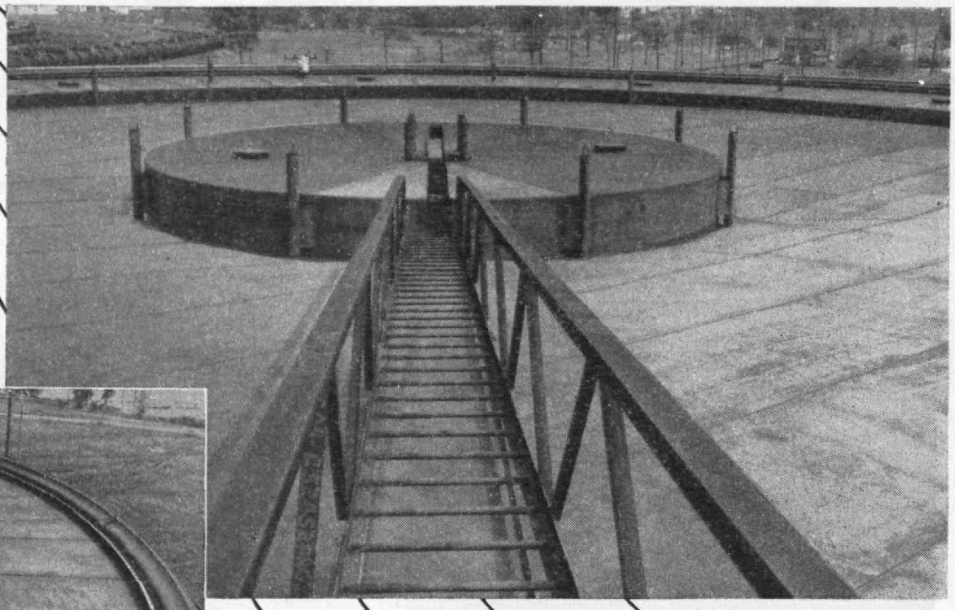
BEHR-CAT BRAND PRESSURE-SENSITIVE TAPES

THE TECHNOLOGY REVIEW, December, 1951. Vol. LIV, No. 2. Published monthly from November to July inclusive at Emmett Street, Bristol, Conn. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription $3.50; Canadian and Foreign subscription, $4.00. Entered as second-class matter December 23, 1949, at the Post Office at Bristol, Conn., under the Act of March 3, 1879.



A GRAVER EXCLUSIVE



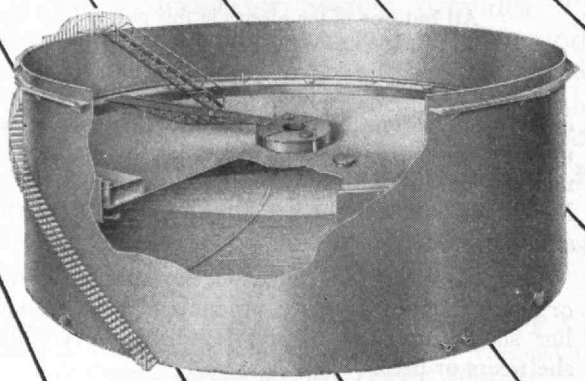
GRAVER CENTER-WEIGHTED FLOATING ROOF TANK

A PROVED DESIGN FOR 3-WAY ECONOMY

- No Corrosion — No Filling Losses
- Takes Less Steel To Build
- Lower Maintenance Cost

Built for the storage of crudes or finished petroleum products, the patented design of the Graver Center-Weighted Floating Roof combines the stability, the vapor-savings and the corrosion resistance of the Double Deck Floating Roof with the more economical aspects of the conventional pan-type roof.

Announced in November, 1950, after several years on the drawing board and a full year of exhaustive tests . . . this new design already has been widely accepted by the petroleum industry. New tanks with Graver's single deck floating roofs have been completed in six states with similar installations scheduled for nine more, covering all sections of the nation. Capacities of the tanks built and on order range from 20,000 to 150,000 bbls.; diameters from 60' to 150'.



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DIEFENDORF GEARS

THE TABULAR VIEW

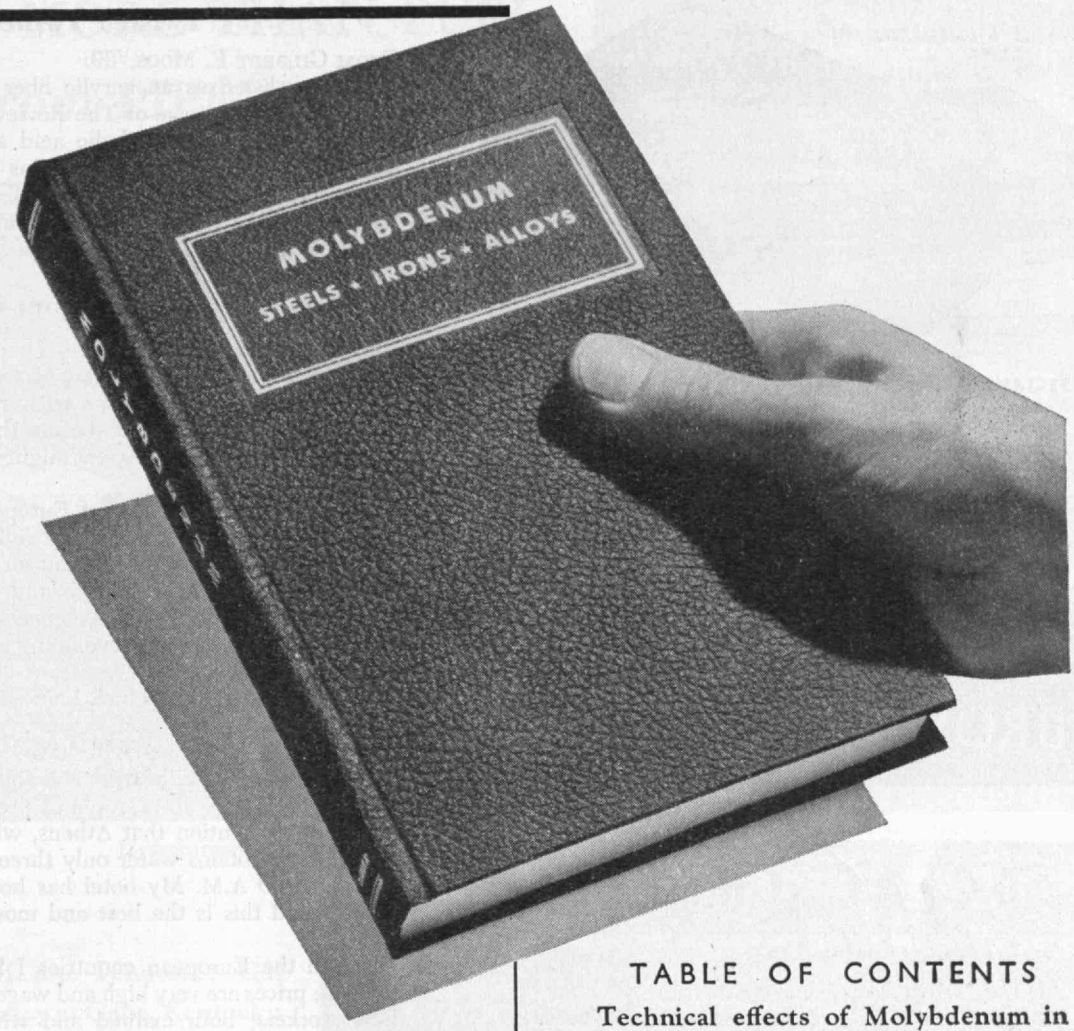
Motivation. — The incentives which bring to the surface the best of human efforts are examined (page 80) by CRAWFORD H. GREENEWALT, '22, who concludes that monetary rewards are the most impelling, and that lack of suitable incentives for personal achievement retards progress. In "What Kind of Incentives?" (adapted for The Review from an address given before the Illinois State Chamber of Commerce on October 19), Dr. Greenewalt then goes on to examine the effects of wealth distribution and high income taxes on the management of the nation's industries. As president of E. I. du Pont de Nemours and Company, Inc. since 1948, Dr. Greenewalt speaks authoritatively on industrial problems. He received his bachelor's degree in Chemical Engineering from M.I.T. in 1922, and the honorary degree of doctor of science from the University of Delaware in 1940. Since 1922 he has held important research and administrative positions in the Du Pont organization.

Medication. — While international diplomats are engaged in saving face for our enemies in Korea, members of the Army's Medical Corps are busy saving the lives of United Nations soldiers. The success of the medical program in Korea is outlined (page 83) by JAMES A. TOBEY, '15, who reports that the figures of 80 fatalities per 1,000 casualties in World War I, and 45 in World War II have been reduced to 25 per 1,000 during the Korean "police action." From M.I.T. Dr. Tobey received the S.B. and Dr.P.H. degrees in 1916 and 1927, respectively. Colonel Tobey is now serving on active duty with the Army Medical Service.

Education. — For more than a century, adult education in New England has been profoundly influenced by the remarkable will and benefactions of the farsighted John Lowell, Jr. Educational activities both at Harvard and at M.I.T. have been influenced by the Lowell lectures, as ARTHUR L. TOWNSEND, '13, Associate Professor of Mechanical Engineering at M.I.T., reminds us (page 85) in his article, "The Lowell Institute School," which was originally presented at the October meeting of the American Society for Engineering Education, held in Kingston, R.I. Following his graduation from the Institute, Professor Townsend spent a few years in industry, returning to M.I.T. in 1919 as an instructor in Mechanical Engineering, became assistant professor in 1929, and associate professor in 1937. Professor Townsend has been affiliated with the Lowell Institute School since 1919 and in 1944 became its director.

Emulation. — For a quarter of a century the oil that has flowed out of the Middle East to the world's industrial markets has benefited exporter and importer alike. The educational and technological facilities which have enabled Saudi Arabia to emulate more industrialized nations are recounted in "American Technology in Arabian Oil Lands" (page 89) by RICHARD FINNIE. Mr. Finnie has served as historical consultant to the Corps of Engineers. At present he is in the Middle East in connection with construction work for Bechtel International Corporation.

For metallurgist and engineer . . .



This 400pp. book describes the varied applications of Molybdenum as an alloying element in a wide range of materials. It presents the fundamentals which must guide the selection of the most suitable alloys for specific applications.

Much recent information is included, some of it hard to find elsewhere. About 500 references to technical literature facilitate further reading, and there are 187 diagrams and 91 tables.

The book is available free on request by metallurgical and engineering students.

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Technical effects of Molybdenum in Steel, Cast Steel, Cast Iron.
Fundamental Effects of Heat Treatment on Microstructure.
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Wrought Corrosion Resistant Steels.
Wrought Steels for Elevated Temperature Service.
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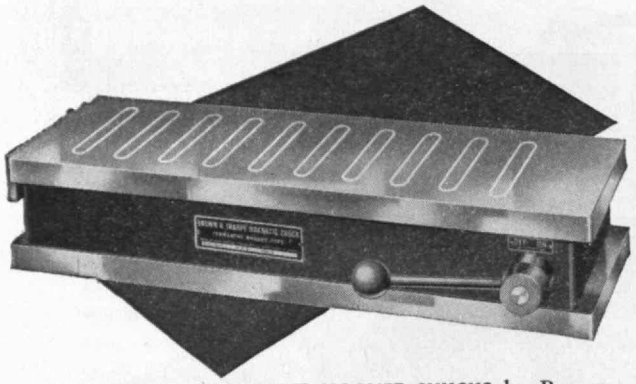

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Permanent Magnet Chucks cost nothing to operate, hold as long as desired, have no wires to connect. Available in 6 sizes from 2-7/16" x 5¼" to 12⅛" x 36". Rotary models also available. For sale only in the United States and its territories. Write for catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

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A model for every use — 60 and 400 cycles Single pole and double pole — Make-before-break contacts — Contacts in air or in liquid

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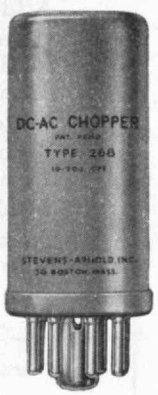

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MAIL RETURNS

Twisted Twines

FROM GILBERT E. MOOS, '39:

Dacron, listed as an acrylic fiber on page 13 of the November, 1951, issue of The Review, is actually a polyester made from terephthalic acid and ethylene glycol, rather than an acrylic fiber. It was originally known as Tereylene (England) and Fiber V (U.S.A.). Dynel, Orlon, and Saran are acrylics, however, as mentioned.
Cumberland, Md.

Appreciation from Greece

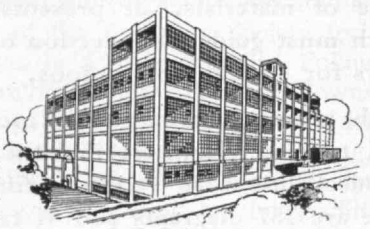
FROM DAVID E. MORGAN, '39:

Some of my classmates know of my frequent travels all over the world, in connection with my mining work, and since there are a few hours before the plane takes off for Africa, I thought The Review might be interested in this note.

Greece is the focal spot of European politics, and the United States has poured many millions of dollars into this country. It is most gratifying for an American citizen to be here; the Greeks realize and appreciate what we have done. Our money, our engineers, and our equipment are now in full swing of developing two very large lignite deposits, and building five steam electric power plants which will use lignite as fuel. I am working on one portion of the lignite mine development. When these projects are completed, Greece will have adequate and cheap power, and other industries will follow, if war does not interrupt. To give an example of present conditions, it is sufficient to mention that Athens, with almost 2,000,000 inhabitants, obtains water only three times a week, from 6:00 to 9:00 A.M. My hotel has hot water only once a week — and this is the best and most expensive hotel in Greece.

Of all the European countries I know, Greece is the poorest; prices are very high and wages very low. I wonder how workers, both manual and white collar, can live.

I leave here for North Africa, Spain, France, Italy, Switzerland, Germany, and England.
Athens, Greece



Here's what Avon Products, Inc. said of our service during the last war emergency:

E. H. Faile, Engineer

"We were all greatly pleased with the workmanship, speed and efficiency shown by your organization."

If you need a new factory or an addition to your plant, we'll be glad to tell you its cost and how quickly it can be completed.

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101 PARK AVENUE, NEW YORK
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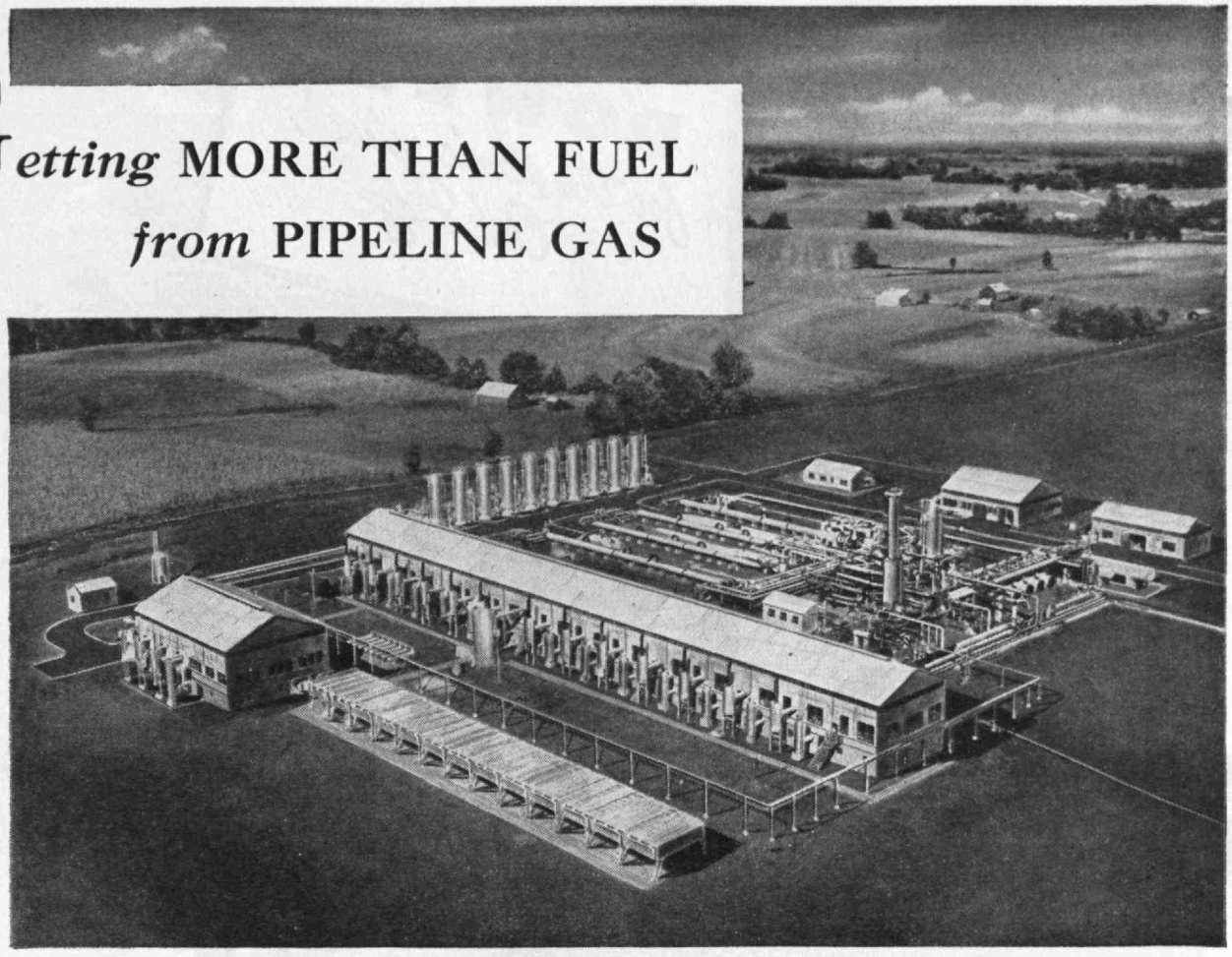
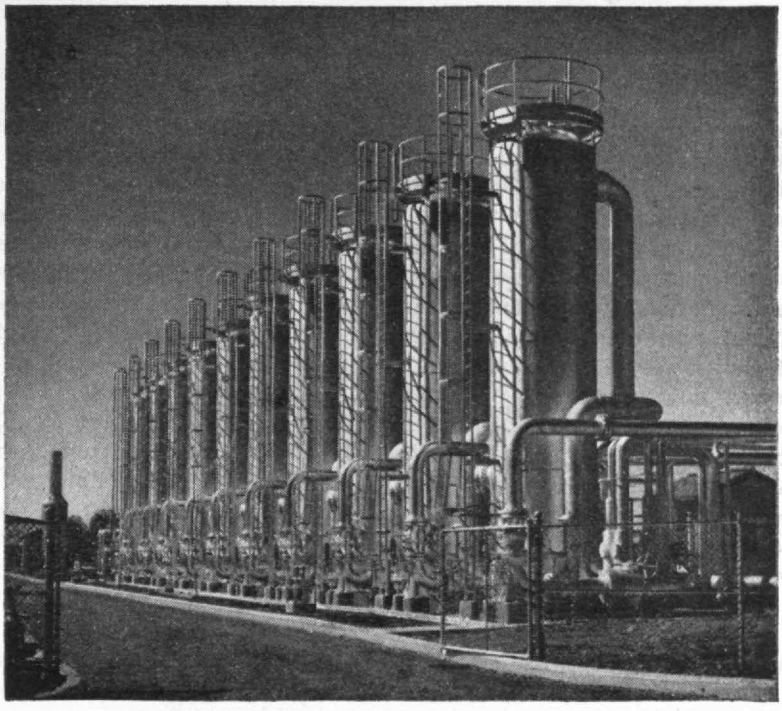
Getting MORE THAN FUEL *from* PIPELINE GAS



Hydrocarbon Extraction Plant, Tennessee Gas Transmission Company

This plant of the Tennessee Gas Transmission Company at Gabe, Kentucky, is the first of its kind to be constructed adjacent to a major natural gas transmission line, for the further extraction of bottled gas and aviation and motor gasoline components from "dry" pipe line gas.

Stone & Webster Engineering Corporation made a report and appraisal of the economics, feasibility and best location for the project and was employed for the design and construction of the plant.



Battery of Dehydrators

STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INC.

Seven years ago this month, Combustion completed building the giant boilers for the Oak Ridge power station.

Today, on the banks of the Ohio, near Joppa, Illinois, another huge power station is under construction. This station will supply a large part of the power requirements of the new atomic production plant now being built at Paducah, Kentucky for the Atomic Energy Commission. And again, the boilers—four of them—are being supplied by C-E. These boilers will rank with the largest ever built and at full capacity will consume 7500 tons of coal per day.

In addition to the major role it will play in our defense program, Joppa Station marks another milestone in the history of power generation. It will be the first station in the world to go into service with an initial capacity as high as 650,000 kilowatts. Joppa Station is being built by Ebasco Services, Inc., Consulting Engineers, for Electric Energy, Inc.,* a new company formed by five major electric utility companies to operate this station.

Joppa is another example of the long identification of Combustion equipment with notable power stations, as well as with history-making advances in power generation. It also exemplifies the design leadership that makes it worth your while to consider C-E Boilers for your steam requirements . . . whether large or small . . . utility or industrial . . . power or process.

***Electric Energy, Inc. is comprised of these utility companies:**

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Illinois Power Company
Kentucky Utilities Company
Middle South Utilities, Inc.
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