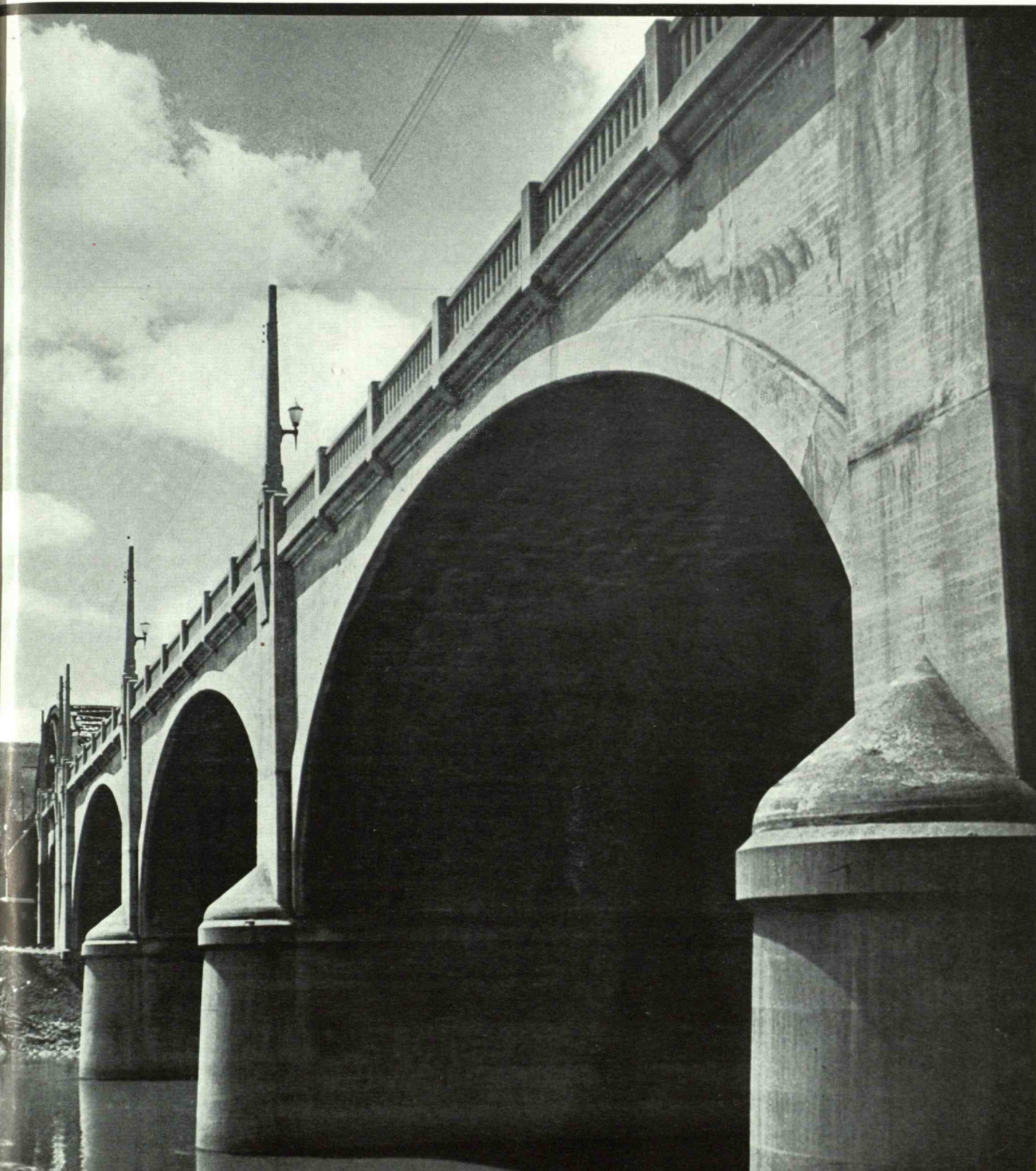
TECHNOLOGY REVIEW

February 1950



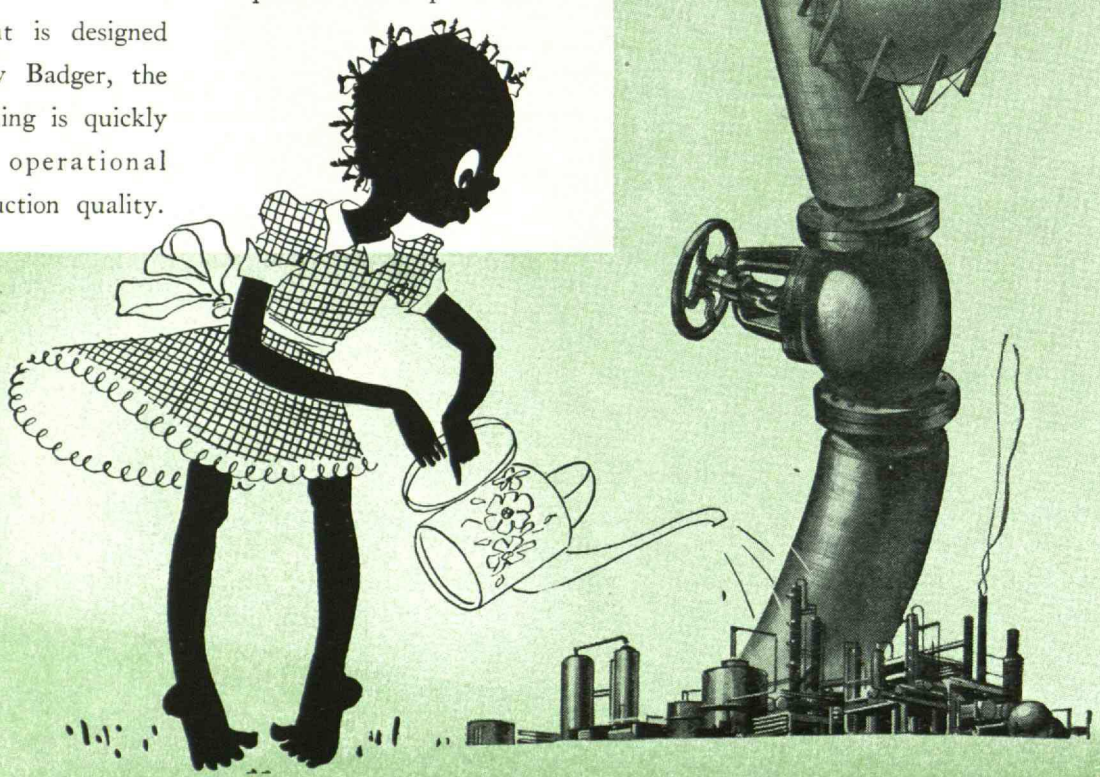
Do your Plants grow like Topsy?

A Badger plant is not like Topsy — it doesn't just grow. A Badger built plant is thoroughly planned and planned with imagination and experience.

This planning is apparent in orderly layout of all component parts for easy operation and efficient control. It is apparent in the location of equipment for ready access when maintenance or replacement is required.

Less apparent, but of equal importance, is the attention paid to longer range factors such as the need for future expansion and the effect of reasonably foreseeable technical developments and improvements.

When your plant is designed and constructed by Badger, the value of this planning is quickly demonstrated by operational economy and production quality.



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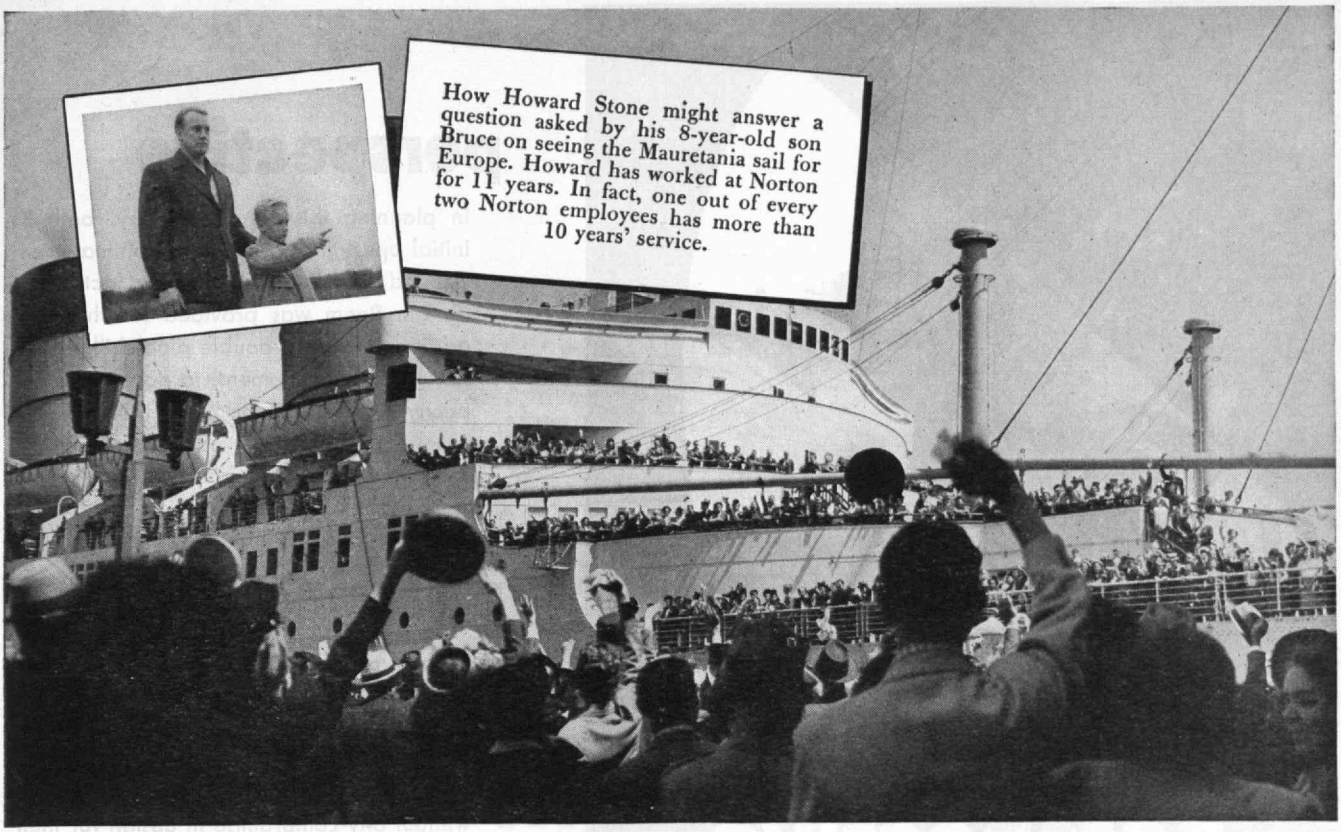
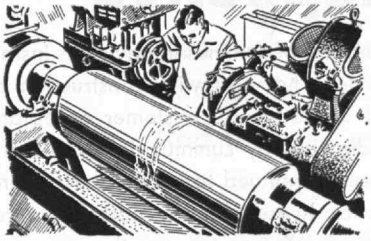
Process Engineers and Constructors for the Petroleum, Chemical and Petro-Chemical Industries



"HOW BIG DO THEY MAKE SHIPS, DAD?"

"Almost no limit, son, as long as the men who design and build them continue to take advantage of scientific progress in all the things that make ships strong, fast and safe.



"Things like the ship's steel plates. They must be just right. That's why the powerful rolls that form them in steel mills are kept smooth and true with big Norton roll grinders and fast-cutting Norton grinding wheels.

"To give today's floating cities extra speed and smoother sailing, propellers must have perfect surfaces... the kind that come from rough-grinding with Norton cup-shaped wheels and finishing with Behr-Manning abrasive discs.

"Yes, and attention to fine details is the sign of the wise ship designer. That's why the terrazzo floors in galleys of ships like the 'Queen Mary' get lasting, non-slip safety from a Norton product called Alundum aggregate."

"So, you see, Bruce, in these ways and many more Norton has a hand in making modern ships bigger and better... another proof that I'm not boasting when I say 'Norton makes better products to make other products better'."

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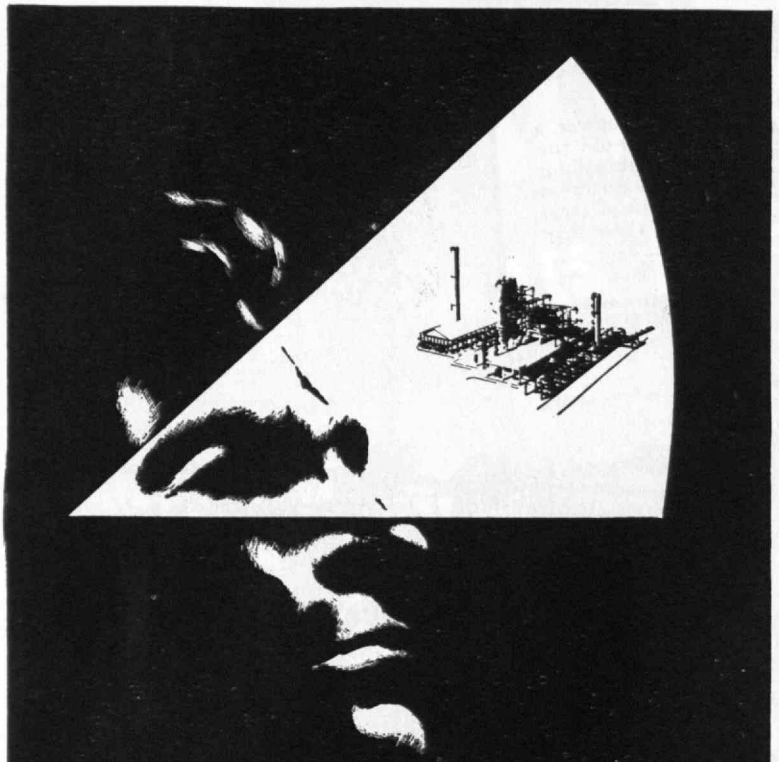

perspective

Perspective in plant design and engineering calls for matching progressive engineering with economic foresight. We cannot predict the future, but we can recognize that the economic balance for a plant or process never stays put. We in Lummus do our best to look at your plans from past, present and future points of view. Our perspective has paid off in plants of exceptional operating flexibility—able to make a profit in spite of wide swings in demand.

perspective

In planning this French refinery, both its initial operating level and its ultimate, expanded capacity were guiding factors for design. Room was provided for the easy addition of filters, double pipe chillers and refrigeration equipment, to double the capacity of the unit in this respect. An efficient plant today, it will be equally efficient tomorrow, because expansion need never be "makeshift."

perspective

Lummus catalytic cracking plants, war-built for 100-octane gasoline, are being operated to produce motor gasoline of lower octane rating on a consistent low-cost basis. Their suitability for this latter service was attained without any compromise in design for their original purpose. Rather, the Lummus-engineered design had the flexibility to meet requirements for the efficient production of either fuel.

perspective

The interest of Lummus in any of its installations does not end with construction and initial operation for customer acceptance. Periodic visits by Lummus field representatives are continued to review performance. In a recent case where a radical change in product requirements arose, these operating checkups furnished valuable aid in arriving at a prompt and practical plant modification to meet the new demands.

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designs and builds with PERSPECTIVE
economy
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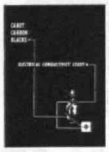
technique



Cabot Publications Offer Carbon Black Answers

CABOT

Cabot books and pamphlets, available upon request, have been especially prepared by Cabot technicians to help users of carbon black to meet numerous requirements for quality in specific industries.

Read about the performance and behavior of carbon black in its many applications, and you may find that a Cabot Carbon Black in your product can make it better.

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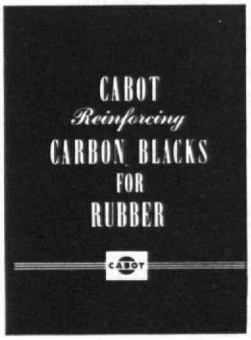
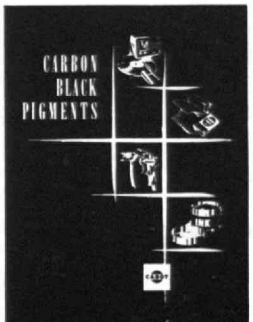


CABOT REINFORCING CARBON BLACKS FOR RUBBER

Rubber chemists and compounders like this 60-page book, because it contains graphs and tabulation data of analytical tests in Natural Rubber, GR-S, and Neoprene. The specific sets of properties are given for each type of carbon black at various loadings.

The Cabot staff is ready to talk with you about your problems at any time. Ask about other Cabot Publications which may be useful to you.

Write for



CARBON BLACK PIGMENTS

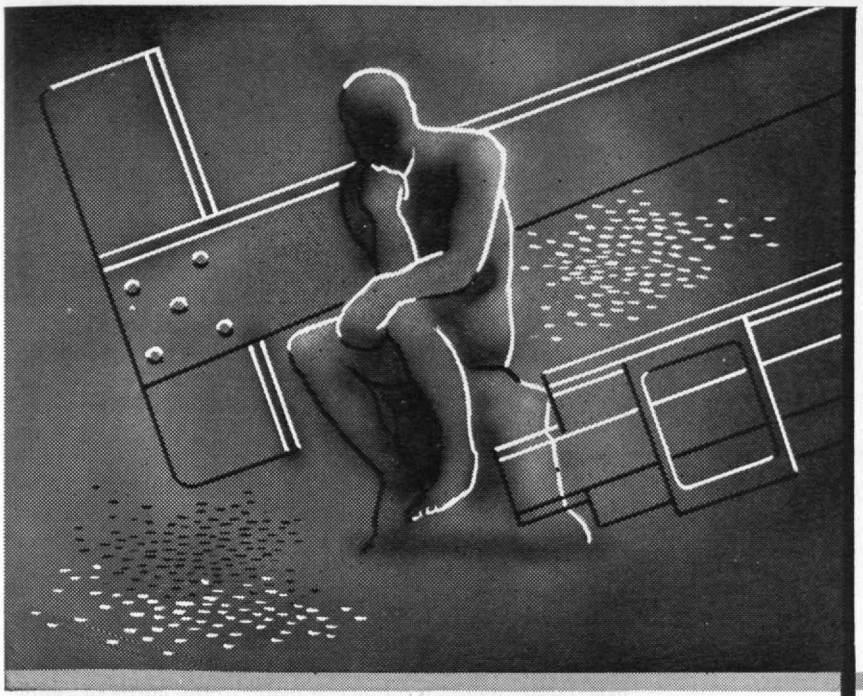
Here is a 16-page, spiral-bound book containing a list of Cabot carbon black pigments; packing information; descriptions of special blacks for paint, ink, plastics and paper; electrical properties; testing procedures; technical data; and a list of agents selling Cabot products

THE TABULAR VIEW

War's Weapons. — In the flush of forthcoming victory, during the early half of 1945, enthusiasm ran high that the end of World War II would bring about conditions propitious to the formation of a truly unified "one" world. The need for international unity was dramatically foreshadowed before a small group of scientists on the white sands of Los Alamos in July, 1945, and the public was initiated into the need for a new kind of international thinking by subsequent events in Nagasaki and Hiroshima. As the Iron Curtain descended and divided the world into two antagonistic camps in a cold war, new reasons were found for pursuing the search for world unity and responsible international agreements. The search is still going on and many able minds make their contribution toward this desirable objective. One such attempt is contained (page 203) in "The Weapon of the Next War" by M. H. WILLIAMS who prefers to be known merely as a "student of geopolitics, teacher, writer, and veteran of World War II." The first of this two-part article discusses the characteristics of some modern instruments of war. The second part, to appear in the March issue, examines the probable nature of a future war.

Wholesome World. — The search for the wholesome world is likewise sought by M. F. ASHLEY MONTAGU, Head of the Department of Anthropology at Rutgers University, and formerly a member of the faculty of the Hahnemann Medical College and Hospital of Philadelphia. His article in this issue, "Living in an Atom-Bomb World" (page 205), is primarily a plea for unified and responsible world government, which Dr. Montagu sees as the only solution to the world's present ills. Although addressed primarily to members of our Western civilization — because they are within range of a free press — Dr. Montagu's admonitions apply with equal force to the "democracies" of force, concentration camps, and police states. A keen student of mankind and his ethics, or lack of ethics, Dr. Montagu is particularly well qualified to deal with the topic in this issue. His past achievements include the making of the film *One World or None* for the National Committee on Atomic Information which has been described as the "most effective documentary ever made."

Watery Wharf. — "The Delayed Invention" by WILLY LEY (page 207) is a rather unusual story which brings into sharp focus the turn of events which may be expected to come about occasionally in a rapidly growing field of technology. Underlying Mr. Ley's story is a valuable lesson in economics as related to technological progress, for the transoceanic islands originally proposed to facilitate long-distance flying were made obsolete by rapid progress in aeronautics. As one of its editorial associates, Mr. Ley is a frequent contributor to The Review. In the general area of New York City, he is also in demand as a lecturer on rockets and related problems. Of several books to his credit, the latest is *The Conquest of Space*.



Thinking of improving

"Improving" any machine really means increasing its productive capacity. That means tinkering with speeds and weights and strength—ending up with alloy steels.

Which alloy steel?—the one that meets physical requirements at the lowest cost. Molybdenum steels fill that bill. Good hardenability, plus freedom from temper brittleness, plus reasonable price enable them to do it.

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MAIL RETURNS

Mathematical Myopia

FROM GEORGE D. ATWOOD, '00:

While reading an interesting article on the conservation of minerals in the January, 1950, issue of The Review, I was surprised at the statement that the year 1950 was the beginning of the sixth decade of the Twentieth Century. Had this been written by a Harvard man, I might understand his mental confusion, but appearing in an official publication of M.I.T., it is, to say the least, discouraging.

Perhaps we should have fifth-grade arithmetic as a requirement for entrance examinations, or possibly some of your editorial staff should be informed that the first year of a decade is one and the last year of a decade is 10. Of course, I am too old to know — perhaps you have a new numerical system since my last days at M.I.T. in 1900.
Brooklyn, N.Y.

[*Mr. Atwood undoubtedly refers to the opening sentence on page 156 in the article "The Twentieth Century Mid-Point" where reference is made to the earth swinging "into the orbit that will mark the first year of the sixth decade of the Twentieth Century . . ." We wish we had made a qualifying statement (as did some other publications) that the end of 1950, rather than the beginning, marks the mid-point of our century, and the beginning of the sixth decade. We should like to be able to pass off this slip onto our printer, The Hildreth Press, Inc., who has just gone through the pains of moving from Brattleboro, Vt., to Bristol, Conn. But honesty compels us, with a red face, to embrace this oversight as our very own. — Ed.*]

Congratulations for Camerists

FROM CLINTON C. KEMP, '43:

I find the articles in The Review very interesting indeed, and also feel like commending you frequently on the photographs included with them. However, I think you deserve very special congratulations for the three pictures illustrating the article on gossip in the December, 1949, issue. They are first rate!
Hamilton, Ohio

Fingers of flame that pierce solid rock

YES, through a dramatic new process known as *jet-piercing* . . . holes can now be *burned* straight and true through solid rock! The harder the rock the more efficient the operation! A special combination of oxygen, fuel, and water does the job . . . and in a fraction of the time required by the old drill attack.

This process is of particular significance to the steel industry today. Why? Because government surveys show that America's reserves of top-grade iron ore—source of steel—are fast being reduced. But there remain almost inexhaustible beds of the once scorned low-grade iron ore called *taconite.*

The extremely hard and dense nature of taconite makes usual mining methods too costly and impractical. But the jet-piercing process—*with 1/10 the equipment and at a reasonable cost*—will burn holes straight into the solid taconite so that it can be blasted into lumps of usable size.

Also, destructive abrasion from the sharp-edged rock on loading and crushing equipment is being better controlled by machine parts made from extra-hard alloy steels. And to concentrate the iron content of the ore, new chemical processes can flush away much of the "waste" matter—thus leaving an ore 30% richer, for more efficient smelting.

The people of Union Carbide created the jet-piercing flame process as well as many of the alloys, chemicals, and other materials essential to today's mining efficiency. And UCC stands ready to help solve problems in other fields of American enterprise . . . wherever better basic materials and better processes are needed.

FREE: *If you would like to know more about many of the things you use every day, send for the illustrated booklet "Products and Processes." It tells how science and industry use UCC's Alloys, Chemicals, Carbons, Gases, and Plastics. Write for free Booklet J.*

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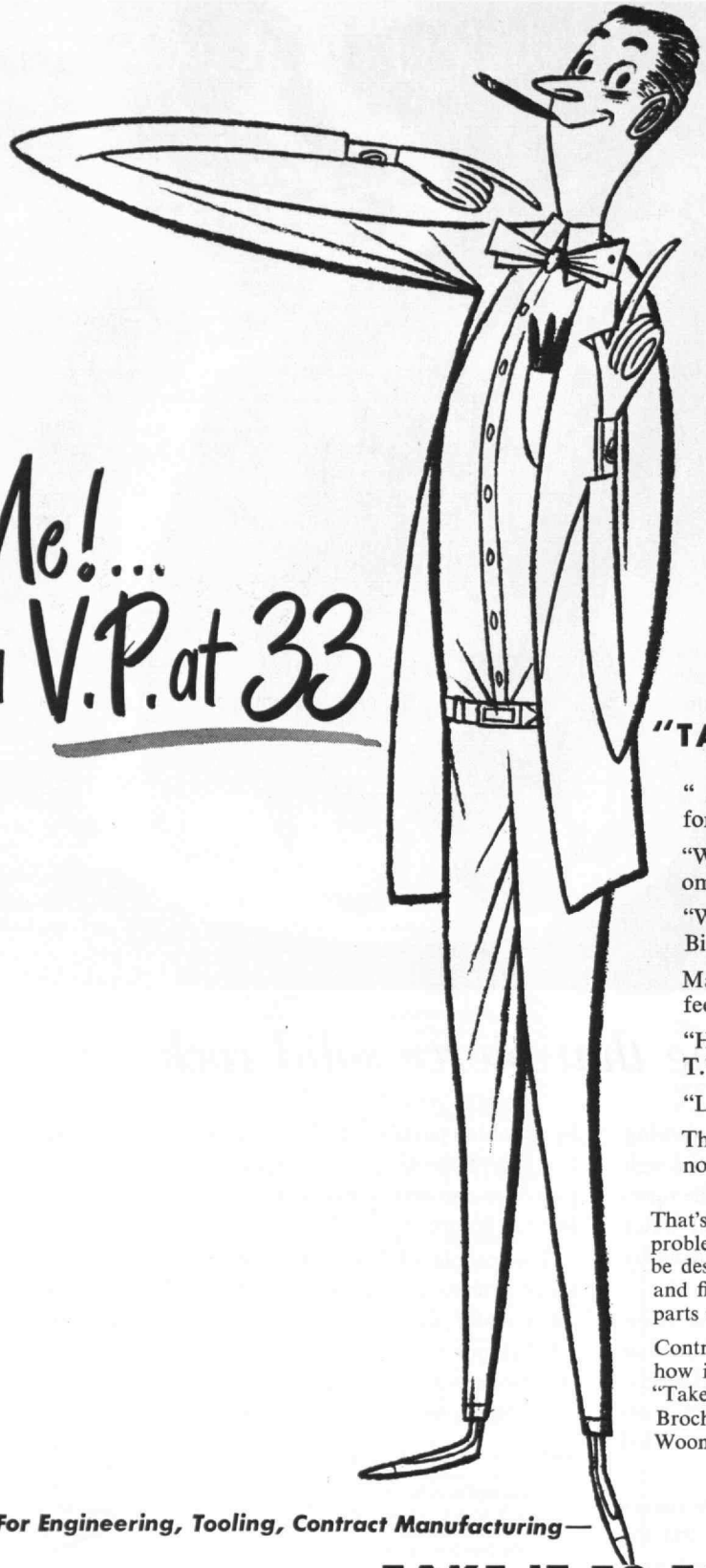

Me!... a V.P. at 33

because I said "TAKE IT TO TAFT-PEIRCE"

" . . . but I can't touch that retooling for six months," I said.

"Why not?" The Old Man's tone was ominously silky.

"Well . . . there's the Charlesville project, Bill Newton's job and . . . "

Majestically the Boss started to rear all five feet of him into Napoleonic stance number one.

"Here it comes," I thought. "Trouble with a capital T." Then, just in time, I had an inspiration.

"Let's Take It To Taft-Peirce," I almost shouted.

That did it. He stopped . . . beamed. And now I'm a V. P.

That's a good answer whenever a manufacturer has a problem. Here at Taft-Peirce your product or equipment can be designed or redesigned . . . the necessary tools and fixtures produced from idea to shipment . . . machined parts or assemblies built either in pilot or carload lots.

Contract work is our specialty. We'd like to show you how it will *save money for you.* Write today for "Take It To Taft-Peirce" . . . our 82-page Contract Service Brochure. Address The Taft-Peirce Manufacturing Co., Woonsocket, R. I.

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