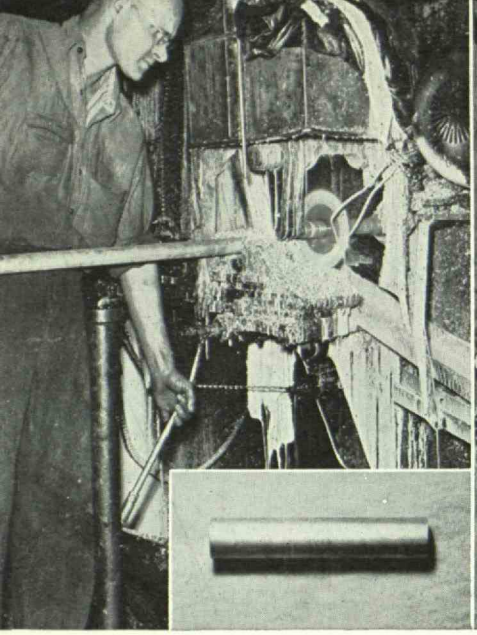
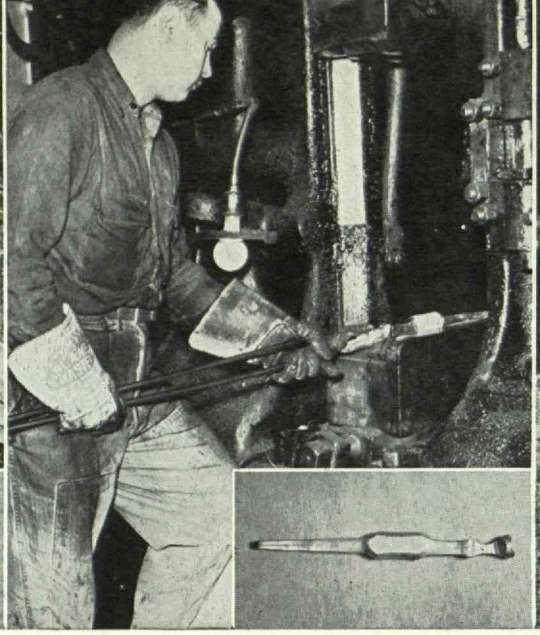
# TECHNOLOGY REVIEW

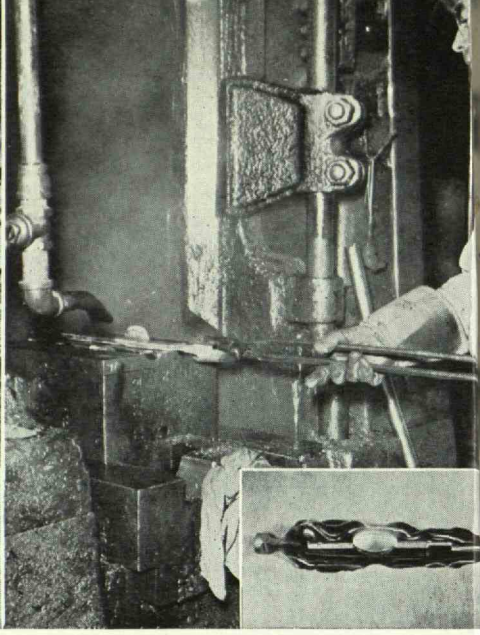
November 1949



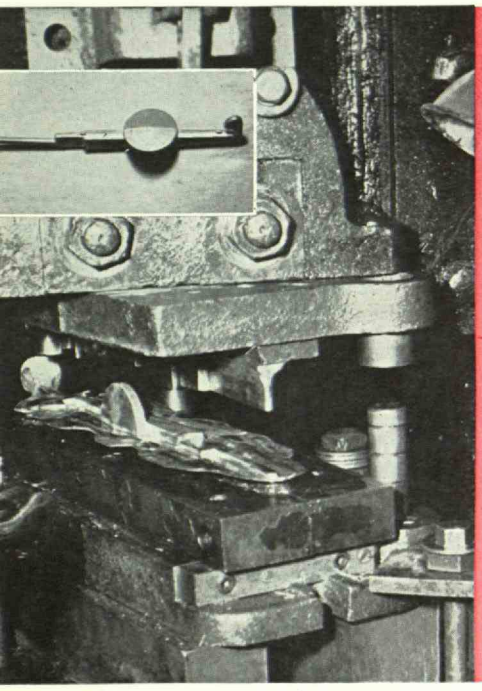
Cutting Bar



Lengthening and Shaping



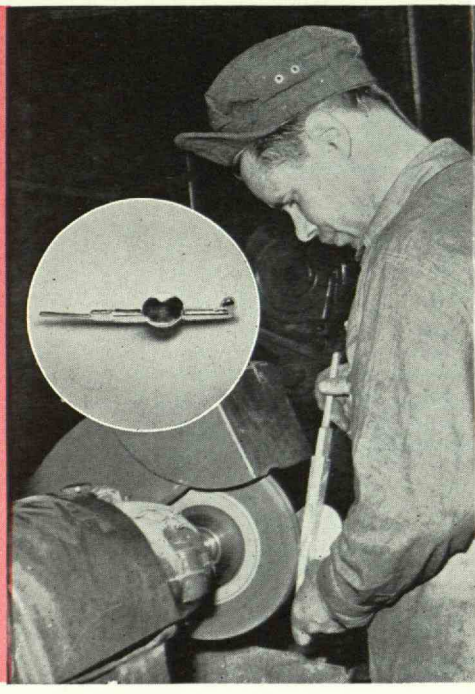
Shaping to the Die



Trimming the Flash

# FORGING ALUMINUM

## into Pressure Cooker Tops



Finishing and Polishing

# The Harvey Metal Corporation

*HAROLD B. HARVEY '05*

## *Engineers and Manufacturers*

74th Street and Ashland Avenue — Chicago 36, Illinois

*FORGINGS IN ALUMINUM — BRASS — BRONZE — COPPER — MAGNESIUM — MONEL — ALLOYS*

*MACHINING FACILITIES*

How Allan Pearson might satisfy the curiosity of his 7-year-old son Ronnie. Allan knows the answers. He has worked at Norton for 15 years. In fact, one out of every two Norton employees has more than 10 years' service.

# GEE, DAD, WHAT MAKES IT GO SO FAST?

"It's power that does it, son. Power from its new jet engines. Engines built with parts made from today's strongest, toughest metals . . . parts that fit within one ten-thousandth of an inch."

"Those tough parts are shaped by tougher tools. Tools sharpened by Norton grinding wheels made from our 32 Alundum abrasive, the fastest, coolest cutting abrasive ever made... and our famous Diamond Wheels, a Norton first in 1930.

"Then those engine parts are shaped smooth and true by Norton grinding wheels. And those parts fit each other just right. That's because of the sure finishing touch of Norton grinding wheels and machines.

"And when that giant lands, it lands safely because Norton engineering created a special grinding machine that helps make the landing gears' odd-shaped parts fit true and tight and strong."

"Yes, Ronnie, Norton helps make airplanes better. Other products, too. In fact, there's hardly anything man makes that doesn't get a lift from Norton somewhere along the line. That's why I'm proud of my job of making better products to make other products better."

NORTON

TRADE MARK REG. U. S. PAT. OFF.

*Making better products to make other products better*


NORTON COMPANY, WORCESTER 6, MASSACHUSETTS

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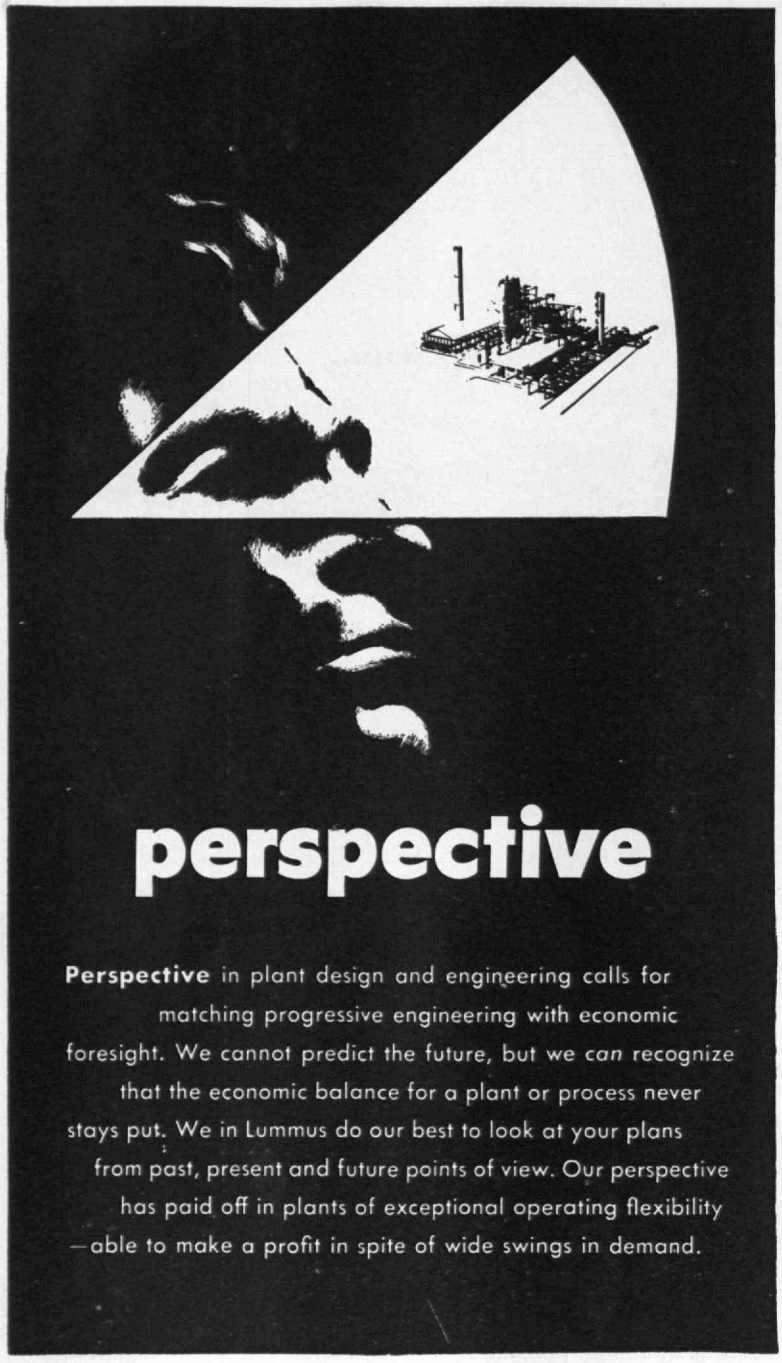


# perspective

**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.

**THE LUMMUS COMPANY**
**420 Lexington Avenue, New York 17, N. Y.**

**LUMMUS**

**CHICAGO**—600 South Michigan Avenue, Chicago 5, Ill.
**HOUSTON**—Mellie Esperson Bldg., Houston 2, Texas
The Lummus Company, Ltd.
525 Oxford St., London, W-1, England
Société Française des Techniques Lummus
39 Rue Cambon, Paris 1er, France
Compañía Anónima Venezolana Lummus
Edificio "Las Gradillas"
Esquina Las Gradillas, Caracas, Venezuela

NATIONAL CONSTRUCTORS ASSOCIATION — OIL STEEL CHEMICAL

**designs and builds with PERSPECTIVE**

**teamwork**
**economy**
**fulfillment**
**resourcefulness**
**technique**

YOU CAN BE **SURE**.. IF IT'S

# Westinghouse

## MOTOR EXCHANGE SERVICE

For Westinghouse
single-phase and three-phase
1 to 20 hp
frame 203 to 326 a-c motors

# *Another Life-Line First!*

## The Broadest Exchange Plan!

Since February, 1949, Life-Line motors have offered you the broadest exchange plan in industry. All 1 to 20-hp, single-phase and three-phase a-c motors in frame 203 to 326 are included. No other manufacturer of motors—large or small—provides exchange service that compares in scope to this new Life-Line Motor Exchange Service.

*120 Westinghouse exchange points* assure you rush motor replacement service anywhere in the United States. Replacement motors, covered by this plan, are in stock, ready to be speeded to you at any time.

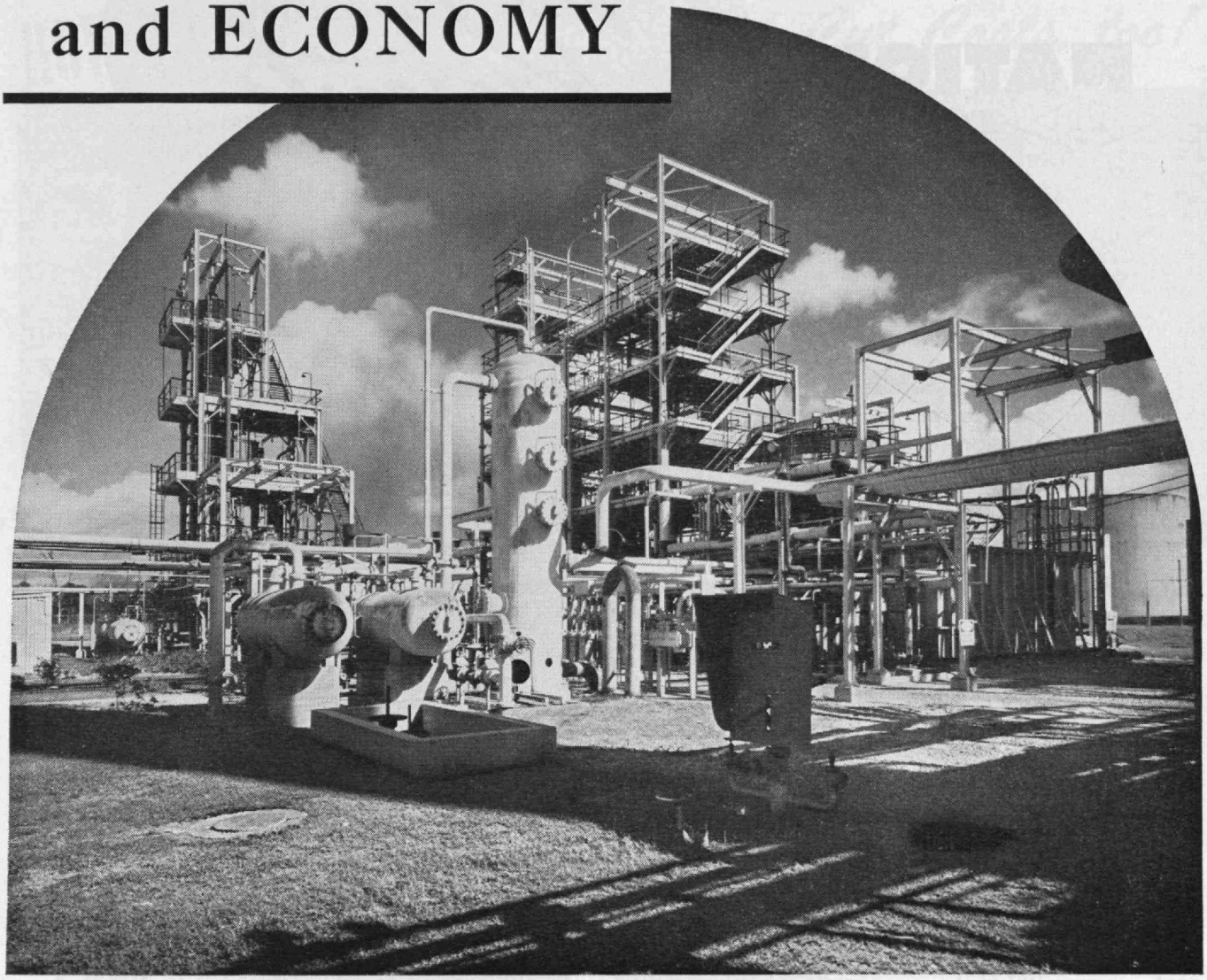
And what's more, if a motor fails during warranty period, it may be exchanged *free* for a motor of identical rating. The *exchange price,* beyond warranty, *is not dependent on the time in service . . . one year, five years or ten years.*

This service is one more advantage you get with Life-Line motors. Add this to all-steel construction . . . pre-lubricated bearings . . . an indicated savings of $750 per year per 100 motors . . . and you'll see why Life-Line has gained leading acceptance in the motor industry.

Complete details on the Life-Line Exchange Service—lists of exchange points and motor ratings covered—are given in the new booklet SM-5243. Get your copy today from your nearby Westinghouse representative or write direct to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna. J-21533

**Westinghouse *Life-Line* Motors**

# EFFICIENCY and ECONOMY



IN the planning and execution of expansion programs, Stone & Webster Engineering Corporation offers to industrial organizations the efficiency and economy resulting from a competent and coordinated engineering and construction staff with broad experience in all phases of design and construction.

## STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INC.

# NATIONAL TELEVISION

# Presents

## 2 ALL-NEW 1950 MODELS

## YOU'LL BE SOLD ON *Sight*

Place these two new 1950 National Television receivers side by side with any other television receiver. Compare the large (12½") screen — compare the chassis — compare the picture quality — compare the cabinet styling. Because National Television is custom assembled — not mass-produced — there just *is* no comparison! Yet it costs no more.

**Model TV-12W**
Striking modern mahogany table model with 12½" tube and 2 six-inch oval speakers.
$269.95

**Model TV-1225**
A 12½" picture tube and a 10" speaker in a handsome mahogany console.
$299.95

● **Model TV-10W**
Genuine mahogany table model with 10" screen and 2 six-inch oval speakers.
$229.95

● **Model TV-7W**
Unbeatable TV dollar value. 7" screen with twin speakers. NC enlarging lens available, $16.95.
$129.95

● **Model TV-7M**
Metal cabinet version of TV-7W. Ideal as "second set" for playroom, den or bedroom.
$119.95

(1) Latest flyback high voltage supply gives clear, bright pictures even in fringe areas. (2) Automatic frequency control locks picture in place. (3) Exceptionally wide video band-width for beautiful clarity of detail. (4) Front-of-panel focus control. (5) Coil switching assures equivalent of separate, high-Q tuned circuits for each channel. (6) Automatic gain control. (7) 3-stage 37 mc IF minimizes picture interference caused by other radio services. (8) Double-tuned RF bandpass circuits improve selectivity and image ratio. (9) Automatic Station Selector and fine tuning control.

*Prices Slightly Higher West of the Rockies*

national

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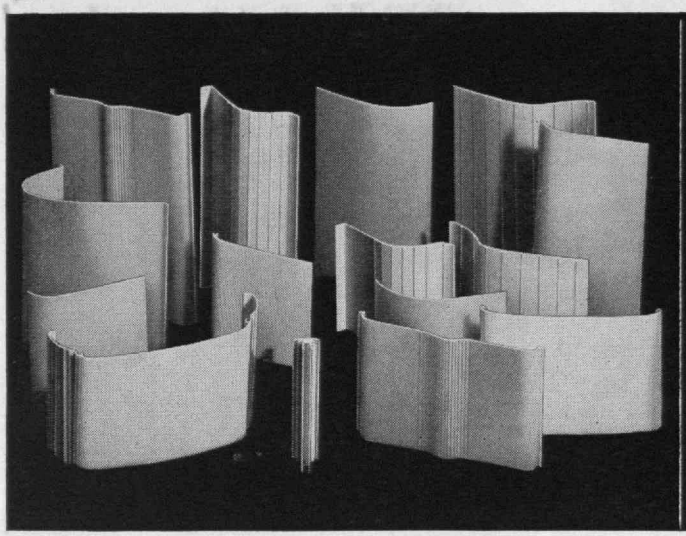
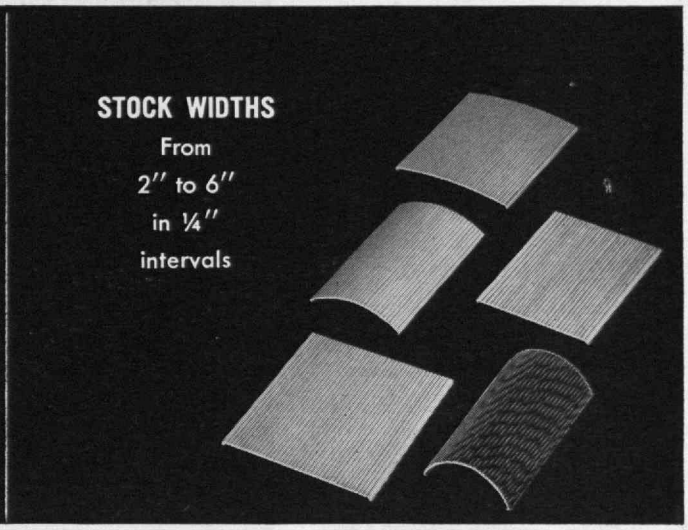
**NATIONAL COMPANY, Inc.**

MALDEN, MASSACHUSETTS

# HOW TO *IMPROVE* FLUORESCENT LIGHTING FIXTURES *and Cut Costs, too!*






## CUSTOM SIDE PANEL SECTIONS

Custom POLY-LITE side and bottom panels or sections in ever increasing sizes and intricacy of shape are made to close tolerance specifications. Widths up to 15 inches have been produced. We can extrude larger sizes successfully in the newly developed light stabilized material and ship in lengths cut to your requirements.

## STOCK SIDE PANEL SECTIONS

Stock POLY-LITE sections of finest quality are now available at surprisingly low cost! Widths from 2 to 6 inches (measured flat) in ¼ inch increments are manufactured without tool charge. They are produced flat or curved to uniform radius in clear or translucent white color.

## Finer Quality at Lower Cost!

POLY-LITE extruded panels are used or specified by manufacturers, contractors and electricians everywhere. You, too, can take advantage of their light weight, safety, easy installation and maintenance. Sandee gives experienced engineering and design counsel, proper material selection and accurate, economical production. Manufacture of panels in the exact specified thickness is essential for proper strength, service durability and light transmittance. It is Sandee's policy to recommend only a section of sufficient weight to satisfactorily do the job required of it. Quotations are based only on blueprint or drawing approved by customers, with guaranteed delivery of full weight section and continuous production according to blueprint and quotation.

Years of extrusion experience, plus our integrity and proven ability are your assurance of top quality, fair price, and successful application of our POLY-LITE panels. Write for additional information on controlled light transmittance, excellent dimensional stability and cost cutting features. Suggestions, ideas, samples, and estimates without cost or obligation.

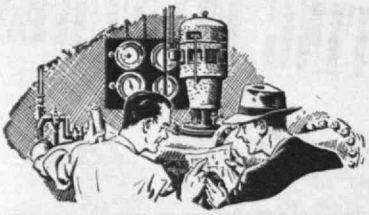
*Sandee Manufacturing Company* **5050 FOSTER AVENUE, CHICAGO 30, ILLINOIS**

*SALES REPRESENTATIVES IN NINETEEN PRINCIPAL CITIES*

"WORLD'S LARGEST CUSTOM EXTRUDERS OF PLASTICS"

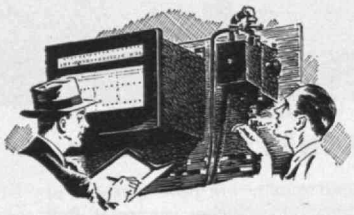
# "POLY-LITE"®

**EXTRUDED POLYSTYRENE SIDE SHIELDS BY SANDEE**



**THE MAIN JOB** *of one entire laboratory at General Electric is to keep guesswork out of G-E products.*

**ITS STAFF** *specializes in giving help on tough measurement problems.*



**TYPICAL SOLUTION** *was development of first "turbidimeter," advancing work on water-purification equipment.*

# 1000 Specialists tell us "When you can measure..."

Lord Kelvin, writing in 1883, summed up once and for all the importance of measurement.

"When you can measure what you are speaking about," he said, "and express it in numbers, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind."

The need for detailed and accurate "numbers" is as great today as it ever was. Recently, for example, General Electric engineers working on water-purification equipment were hindered by the lack of any accurate way to measure water's turbidity. Another group needed data on the vibrations in their equipment.

But at General Electric any group up against tough measurement problems does not have to be stymied for long. It can "appeal" its case, can seek the aid of men who make a specialty of measurement and allied problems—the more than 1000 staff members of the G-E General Engineering and Consulting Laboratory. GE & C serves the entire company, and is also frequently called on by other industries and government agencies.

It solved the two problems above by developing the first "turbidimeter" and a "recording vibrometer" now finding applications throughout industry—two out of thousands of similar problems handled by the laboratory each year.

The work of GE & C illustrates again how General Electric backs up research and creative thinking, implements new projects with the best available facilities, and so remains in the forefront of scientific and engineering development.

*You can put your confidence in—*

**GENERAL ELECTRIC**