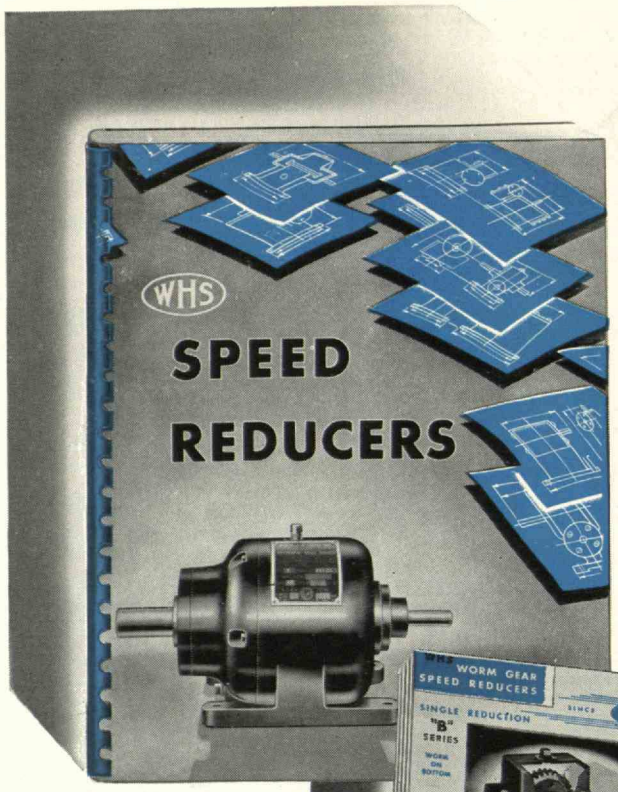
June 1944

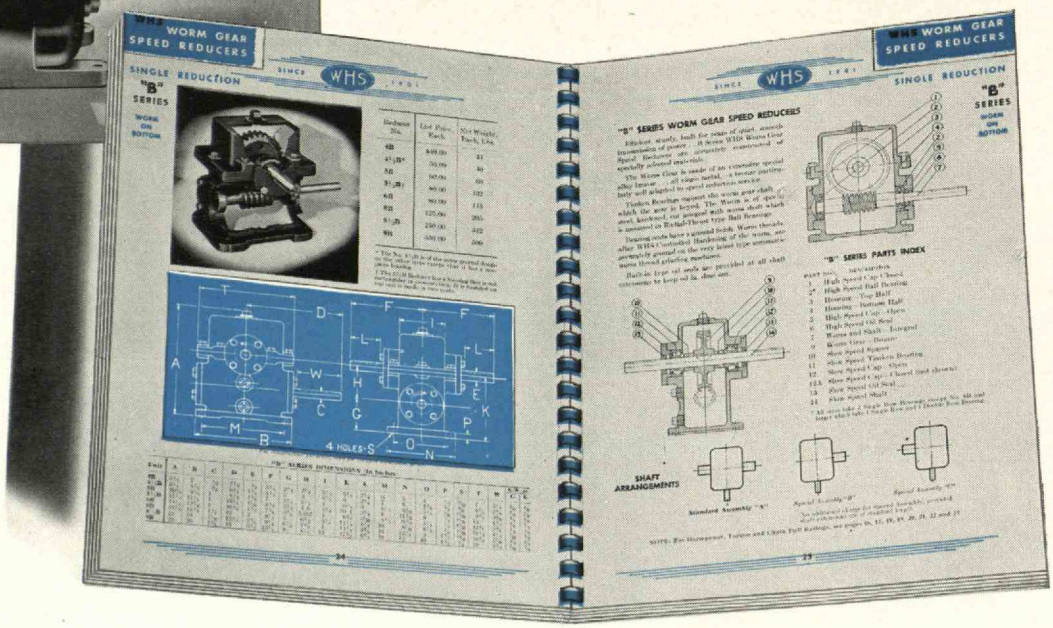
TECHNOLOGY REVIEW



This Book tells you

Many Things You Want to Know About SPEED REDUCERS

. . . with special emphasis on the Completeness and Engineering Excellence of the WHS LINE



"First Speed Reducers in America to be Shipped From Stock"

THE new WHS Engineering Manual and Catalog No. 144 approaches the authority and completeness of a text book. Practically any question you might ask about Speed Reducer design, ratio range, horsepower and torque ratings . . . in the wealth of sizes and styles covered by the WHS line . . . is answered in this book.

It gives helpful information on selecting your reducer . . . construction . . . overhung loads . . . lubrication . . . chain pull factors . . . flexible couplings . . . and includes an especially valuable and complete Engineering Section containing many widely used formulae, tables and charts.

To obtain a copy, simply address us on your business letterhead, stating your position.

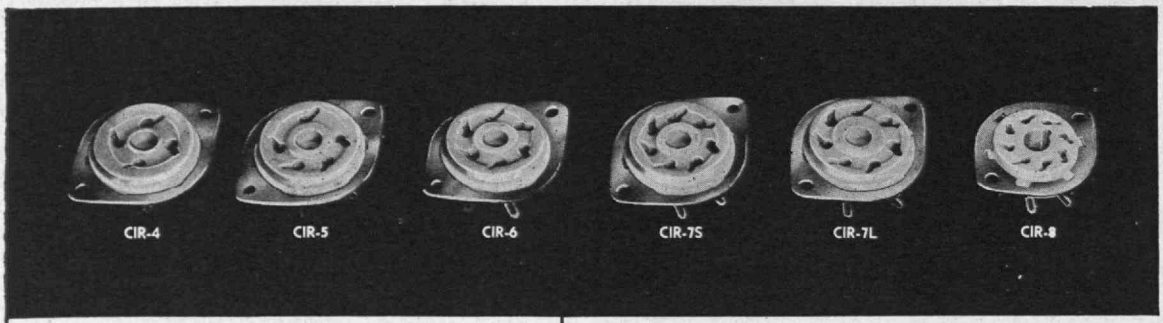
CUTTER P. DAVIS, M.I.T. '19, *President*

WINFIELD H. SMITH, Inc.

55 MAY STREET . . . SPRINGVILLE . . ERIE COUNTY . . NEW YORK

THE TECHNOLOGY REVIEW, June, 1944. Vol. XLVI, No. 8. Published monthly from November to July inclusive at 10 Ferry Street, Concord, N. H. 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 at the Post Office at Concord, N. H., under the Act of March 3, 1879.

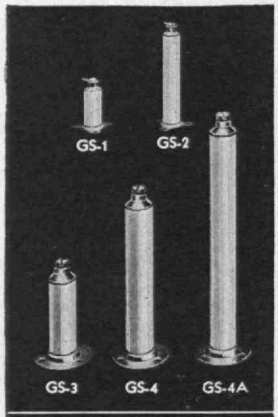
NATIONAL LOW-LOSS SOCKETS AND INSULATORS



CIR Series Sockets

Any Type **List $ .45**

Type CIR Sockets feature low-loss isolantite or steatite insulation, a contact that grips the tube prong for its entire length, and ring for six position mo... supplied with two met...



GS-...

GS-...

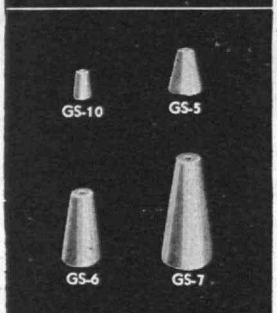
GS-3...

GS-4, ...

GS-4A, ...

Cylindri... standoff ... plated cap...

GSJ, (not i... A special ... top threade... diameter insu... & GS-4A.



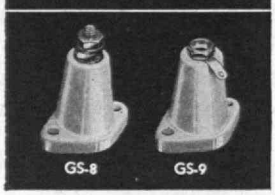
GS-5, 1¼" **List, each $ .40**

GS-6, 2" **List, each $ .70**

GS-7, 3" **List, each $ 1.25**

GS-10, ¾", package of 10 **List $ .12**

These cone type standoff insulators are of low-loss steatite. They have a tapped hole at each end for mounting.



GS-8, with terminal **List $ .90**

GS-9, with Jack **List $ 1.25**

These low-loss steatite standoff insulators are also useful as lead-through bushings.

AA-3 **List $ .60**

A low-loss steatite spreader for 6 inch line spacing. (600 ohms impedance with No. 12 wire.)

List $ .50

...steatite aircraft-...lator.

List $ .90

...ose strain in-...ss steatite.

...st, each $ .20**

...tite bushing

...f ten $ .85**

... Victron.

...zen $ .85**

...ne bush-...93 con-... diam.,

... .55**

... .75**

...n-...n-

XS-1, (1" Hole) **List $ 1.20**

XS-2, (1½" Hole) **List $ 1.35**

Prices listed are per pair, including metal fittings. Insulation steatite.

XS-3, (2¾" Hole) **List $ 6.00**

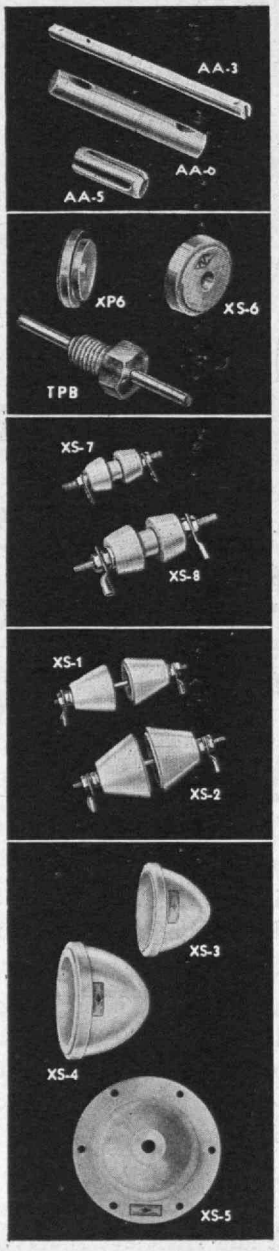
XS-4, (3¾" Hole) **List $ 7.25**

Prices are per pair, including metal fittings. These low-loss steatite bowls are ideal for lead-in purposes at high voltages.

XS-5, Without Fittings **List, each $ 8.25**

XS-5F, With Fittings **List, per pair $17.00**

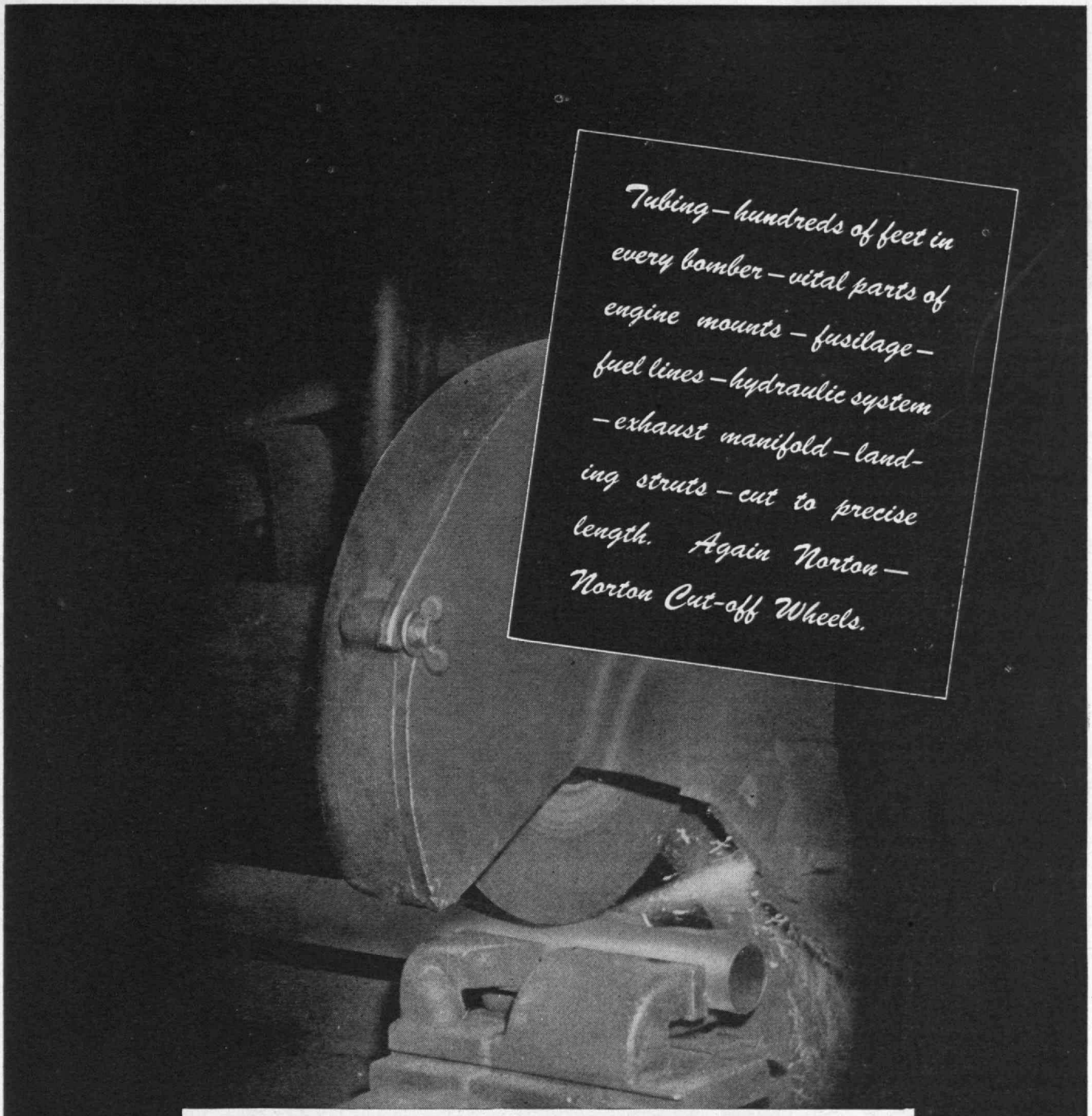
These big low-loss bowls have an extremely long leakage path and a 5¼" flange for bolting in place. Insulation steatite.



MEMO

National is still your best bet for high grade parts for H.F. Communication work. Deliveries are good when orders are covered by suitable priority rating.

NATIONAL COMPANY, INC.
MALDEN, MASS.



Cutting-off with Norton Resinoid Abrasive Wheel

Thousands of sharp abrasive cutting teeth go into action at a surface speed of 16,000 s.f.p.m.—resinoid bonded by special Norton-developed formulas.

Yesterday—cutting-off was hardly more than a tool room or stock room application.

Today—cutting-off is a high speed production on many kinds of materials—steel, brass, aluminum, ceramics, plastics, insulating materials, glass, cemented carbides.

Norton Abrasive cut-off wheels not only cut costs but they save time—and time was never more precious than now.

NORTON COMPANY, WORCESTER 6, MASS.

Photo courtesy North American Aviation, Inc. Behr-Manning, Troy, N. Y., is a Norton Division

NORTON ABRASIVES

"PUT IT ON THE BLANCHARD"

CHECK THESE ADVANTAGES OF BLANCHARD GRINDING

- ★ **Production**
- **Adaptability**
- **Fixture Saving**
- **Operation Saving**
- **Material Saving**
- ★ **Fine Finish**
- ★ **Flatness**
- ★ **Close Limits**

★ . . . . . *Especially valuable on jobs like the one illustrated.*

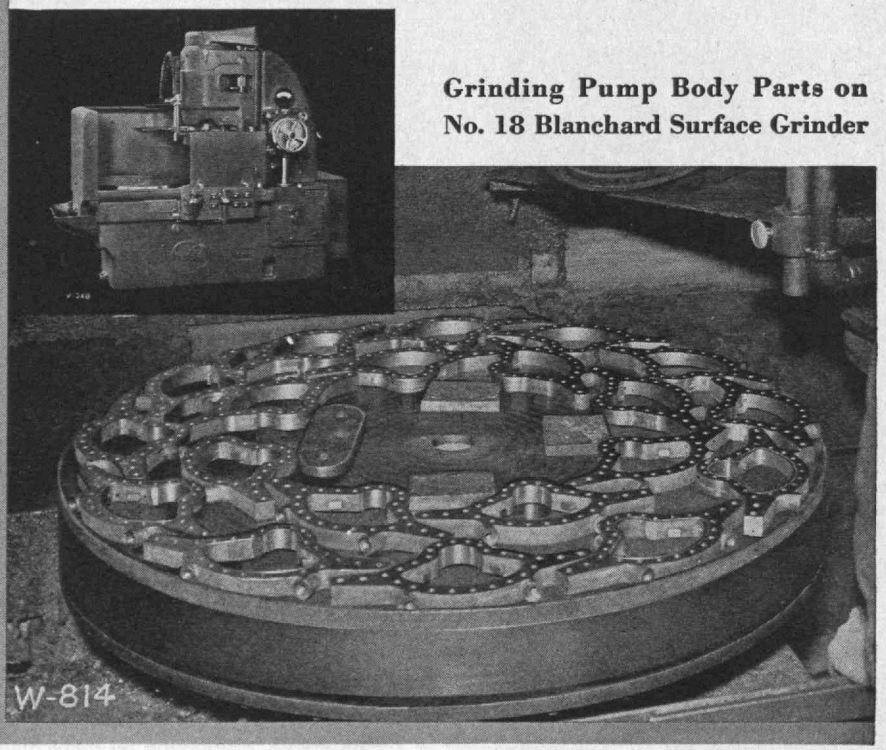
THIS is an excellent example of accurate surface grinding of pump body parts on a No. 18 Blanchard Surface Grinder.

These pump parts are held magnetically on a 36" chuck and work is held to very close limits giving a finish suitable for final lapping operation.

The material is high strength forged steel and .004" is removed from each side, to limits of .0003". Forty pieces 10⅝" long, 5⅛" wide and .756" thick (80 surfaces) are produced per hour.

The BLANCHARD MACHINE COMPANY

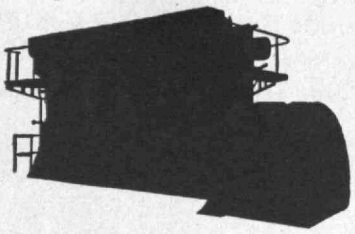
64 STATE STREET, CAMBRIDGE, MASS.



Grinding Pump Body Parts on No. 18 Blanchard Surface Grinder

BLANCHARD

Send for your free copy of "Work Done on the Blanchard." This book shows over 100 actual jobs where the Blanchard Principle is earning profits for Blanchard owners.



Your order now will make for

POST-WAR ORDER IN INDUSTRY

Like any other good American organization, Busch-Sulzer stood by for orders from Washington after December 7, 1941. Since then, we have been working 'round the clock on Diesel engines or war materials for the Army, Navy and Maritime Commission and on engines for high priority. We intend, of course, to continue doing so until Washington says that the "end of the beginning" has turned definitely into the beginning of the end.

When peace comes, it is vital that America keep as many of its workmen busy as is possible. Some industries cannot escape labor layoffs during the period of re-tooling. Not so the Diesel industry if . . .

The "if" means if it has work to do. The work should be there if the plans are well-ordered, because there is a great need for Diesels because of obsolescence, because of interrupted enterprises and enterprises planned. Little can be expected from Europe, some of whose Diesel plants have been bombed out of existence or badly damaged.

Busch-Sulzer has expanded its facilities greatly since 1941 and has increased its carefully trained personnel by 50 percent in the last 20 months. We are anxious to keep these men and machines busy and help to achieve the peacetime stability that all of us yearn for.

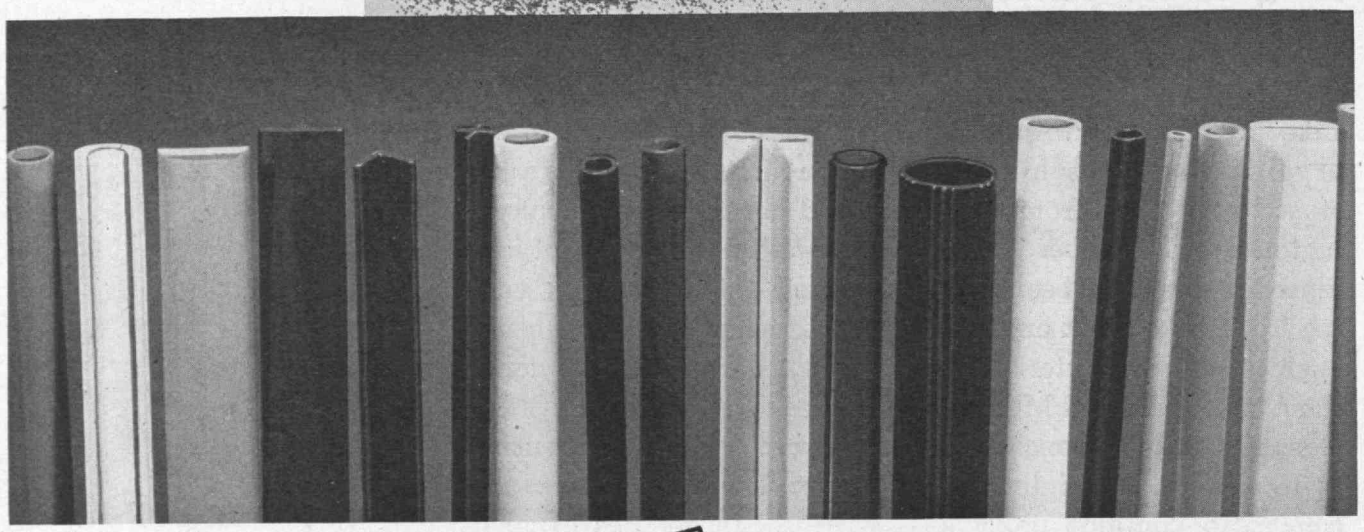
Please send us your inquiry now so that your requirements can be met without further loss of valuable time when capacity becomes available.

BUSCH-SULZER BROS.-DIESEL ENGINE COMPANY

SAINT LOUIS

AMERICA'S OLDEST BUILDER OF DIESEL ENGINES

BUSCH-SULZER
ST. LOUIS



SANDEE EXTRUSION EXPERIENCE Can Help Guide You in Proper Use of Materials

ELMER SZANTAY, M.E. '35, GENERAL MANAGER

IF YOU are not sure whether you are using the best available material for your extruded plastic sections, ask us about it now! Long experienced plastic engineers know all of the many characteristics of every known plastic extrusion material such as polystyrene, cellulose acetate butyrate, ethyl cellulose, polyvinyl chloride, vinyl chloride, vinyl acetate.

Correct recommendations call for information concerning the specific function of the extruded section; what mechanical, electrical, chemical or physical properties are required; and, whether material is to be of rigid or flexible type. The color, lengths and total footage needed, together with a drawing, sketch or model, are also essential information. The consistent success of Sandee Rigid and Flexible Extruded Plastic Sections reflect the skill of our staff in establishing accurate specifications, then producing sections to the very highest standards of quality and uniformity. Write us about your needs, now.

Sandee Manufacturing Company

3945 NORTH WESTERN AVENUE • CHICAGO, ILLINOIS

EXTRUDED PLASTICS AND SPECIAL TOOLS

THE TABULAR VIEW

Encouragement. — From ROBERT E. WILSON, '16, President of the Pan American Petroleum and Transport Company, this Review (page 483) presents a trenchant, hard-thought article well calculated to vitiate many gloomy prognostications about the industrial and technological future of the country. Discussing our situation as regards production and resources in petroleum, Dr. Wilson refers to the past to show convincingly that not so long ago things looked very black but that the blackness was very effectively relieved. His contention is that the same medium of relief can be counted on equally in the future, that the scientific and technological research which multiplied both proved resources and the rate of production from them can still be relied upon. As corollary, he stresses well the fact that for full realization of its potentialities, it must have freedom of action, and therefore that thoughtful people must look with doubt on social moves which may be expected to constrict it.

Era. — In days when the skillful and delicate art of making electrons work in dozens of ways plays a crucial part in the fighting of the greatest of wars, it is worth while to pause for consideration of how short a span the science of electronics has been in operation. We think readily of the first flight in a craft heavier than air; we remember with easy nostalgia the first automobile ride. Looking back in similar fashion, JOHN MILLS, '09, tells in this Review (page 486) the swift story of how electronics has developed since the invention of the audion by Lee deForest in 1906. Director of publication for the Bell Telephone Laboratories since its incorporation in 1925, Mr. Mills the author of a volume, *Electronics, Today and Tomorrow*, soon to appear.

Sandwich. — Steel, alloys, plastics — so the catalogue of much wartime construction automatically runs. Man's most familiar building medium is readily misconceived as usable only in boxes and crates for the materials of Mars. The degree of this error is plainly shown by ALBERT G. H. DIETZ, '32, in an article (page 489) discussing the speedy Mosquito bomber which has given such admirable account of itself over the Continent, and which, with its wooden wings, is fit successor to the wooden walls on which Great Britain in an earlier day depended. Assistant Professor of Structural Engineering at the Institute, Dr. Dietz has been a student of wood and wooden construction ever since his undergraduate days.

Gamut. — The electrical industry of the United States has been prolific in spectacular careers, so that not a few of its characteristic achievements are identified by the names of men. Throughout its course, moreover, the industry has benefited from the devotion and skill of other men whose work, fundamental and essential, has not been marked by drama. In these careers is many a story of human interest and industrial progress. One such is the story of Hermann Lemp, concluded in this issue (page 491) by DAVID O. WOODBURY, '21, biographer of Elihu Thomson and careful student of industrial history.