

and cooling loads and how to heat, cool, ventilate and condition air in any building. Selection of equipment, automatic controls, and the design of air ducts and liquid-piping systems are thoroughly covered. Not only is it an excellent reference book for those actively engaged in air conditioning and refrigeration work but it is also a valuable guide for those entering the field.

#### Heat Power

**THERMODYNAMICS** (second edition—1948). By **Lester C. Lichy**, professor of mechanical engineering, Yale University. 341 pp. 6x9; 26 tables; 12 charts; 148 illus. \$4.50. McGraw-Hill Book Co., 330 W 42nd St., New York 18, N. Y.

This revised edition maintains the original aim of minimizing mathematical manipulations in favor of emphasizing methods of fundamental analysis applied to energy relationships. The text has been largely rewritten to clarify the more difficult subjects.

A feature that students will welcome is the adoption of treating all energy elements as independent, positive quantities, eliminating the expression of energy components as the difference between that entering and leaving. This avoids confusion on the student's part in proper observation of mathematical signs. Tables for problem solution have been substituted for specific-heat equations, and solutions of  $PV^n = C$ .

The chapter on fluid flow includes the items of supersonic flow, Mach number, shock, jet propulsion, compressor and turbine blading, ram-chamber and diffusers.

#### Magnetic Control

**MAGNETIC CONTROL OF INDUSTRIAL MOTORS** (1947). By **Gerhart W. Heumann**, control engineering division, Apparatus Department, General Electric Co. 589 pp. 9x6; illus. cloth. \$7.50. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y.

Whereas the designer concentrates on a device, a circuit, or a mechanical arrangement of parts, the plant or operating engineer must have a knowledge of what control equipment can accomplish. This book answers that need by providing a coverage of electric motor performance, characteristics of control devices, and functions of commonly used control circuits.

#### Jet Propulsion

**JET PROPULSION PROGRESS** (1948). By **Leslie E. Neville**, director, Standard Aeronautical Index, Institute of the Aeronautical Sciences, and **Nathaniel F. Silsbee**, colonel, Air Reserve. 232 pp.; 6x9; illus.; \$3.50. McGraw-Hill Book Co., 330 W 42nd St., New York 18, N. Y.

The development of the aircraft gas turbine is told in this little volume in simple and accurate terms. Known popularly as the turbo-jet and turbo-prop engines, they

have initiated a revolution in airplane design. A detailed account is given of the possibilities and a comprehensive picture of initial experiments and development to date. Various designs produced in the United States, England and Germany are discussed and evaluated, including the ME262, which nearly turned the tide against the Allied air forces. The book includes an interesting 9-page chronology of aircraft gas turbines covering a period from 1917 to Dec 1946.

#### Electrical Troubles

**TROUBLES OF ELECTRICAL EQUIPMENT** (third edition, 1947). By **H. E. Stafford**, electrical engineer, Marathon Paper Mills of Canada, Ltd. 455 pp. 6x9 in. 364 illus. 28 tables, cloth. \$4.50. McGraw-Hill Book Co., 330 W 42nd St., New York 18, N. Y.

To locate and correct electrical troubles quickly is the mark of a good maintenance engineer. Here is material to help attain such proficiency. Several chapters have been rewritten and enlarged to

bring the material up to date. Added are two chapters, two major and several minor tables, and 34 diagrams. Tables of troubles are handled much as a physician diagnoses a case. The symptoms being known, the trouble, cause and remedy are deduced.

Equipment treated includes: ac and dc motors and generators, transformers, circuit break and oil circuit breakers, relays, motor control, lightning arresters, voltage regulators, cables and storage batteries. Other chapters cover method of connecting instrument transformers, pointers in selecting motors for industrial applications, insulation testing, power factor and its control, economical use of power, maintenance and inspection schedules, and surveys and how to make them, and industrial lubrication.

Many valuable tables diagnose troubles of specific equipment, giving symptoms, cause and remedy. A table is provided for practically every class of industrial electrical equipment. The author bases his book on nearly 40 years experience as an industrial plant, operating, electrical engineer.

#### Smoke Prevention

**PROCEEDINGS OF THE 1947 CONFERENCE OF THE SMOKE PREVENTION ASSOCIATION**, 18 pp. 8x11; 17 pp of illustration, \$2.00. John Taylor, publisher, 520 Pleasant St., Joseph, Mich.

Here in one volume are collected the papers and the discussions of each presented before the Smoke Prevention Association of America at its annual meeting in Toronto, July 1947. The association is comprised mostly of smoke inspectors for municipalities.

These papers are valuable for their technical content and for their indication of the scope of today's smoke-prevention program, ranging from locomotives through all industries.

Authors of the papers are for the most part well-recognized leaders in their fields. For instance, Dr. L. C. McCabe, chief of civil div., U. S. Bureau of Mines, has a paper, "Observations Abroad," based on his experience in postwar Germany; C. E. Lecher, Diaco Co., "Recent Progress in Smokestack Fuel Processing;" and E. C. Payne, consulting engineer, Pittsburgh Consolidation Coal Co., "Locomotive Fuel Performance."

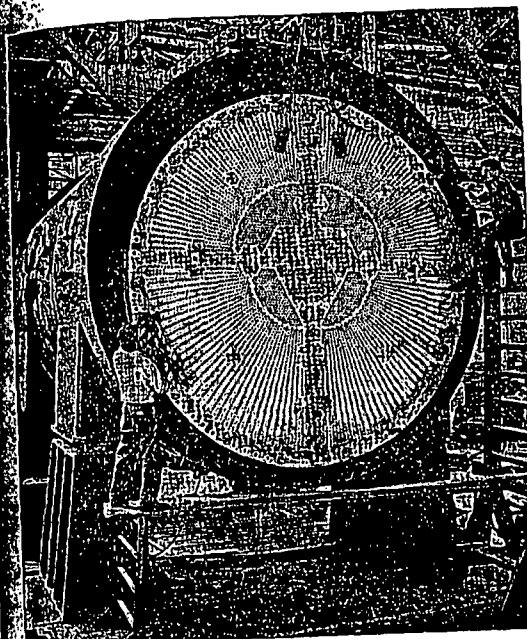
#### Process Engineering

**MANUAL FOR PROCESS ENGINEERING CALCULATIONS** (1947). By **Loyal Clarke**, chemical engineer, Celanese Corp of America. 438 pp.; 6x9; charts, tables, illus.; \$6. McGraw-Hill Book Co., 330 W 42nd St., New York 18, N. Y.

Here are compiled data useful in making quick, preliminary calculations concerning the chemical processes from the research to the final design stage. The book contains self-explanatory tables, charts and equations which are the most used in process engineering. Material covers conversion factors, physical and mechanical properties, equipment performance factors and

(Continued on page 140)

## ★ 16,280 pounds of Anaconda Copper Tube Sheet go into this Westinghouse Condenser



**WORKMEN** are shown installing one of two 8,140 lb. copper tube sheets in a giant condenser being built by the Westinghouse Electric Corporation of Philadelphia, Pa. for the Public Service Company of Oklahoma, Tulsa, Oklahoma. The plates for these tube sheets, measuring 12' 9" high and 13 1/2" thick, were produced at the Detroit Mill of The American Brass Company. The completed condenser will contain 5,200 tubes—and will have a 32,500 sq. ft. capacity.

Anaconda Electrolytic Tough Pitch Copper is desirable because of the high alkaline content of the Tulsa water supply.

Anaconda Rolled Plates and Circles for condenser tube sheets are unsurpassed in soundness and close grain structure. They can be supplied in rectangles, squares, circles, ovals, segments and sectors thereof. Plates are regularly manufactured in widths up to 156" (circles up to 160" diameter) and in weights up to 9,000 lb. and heavier—depending on the alloy and shape.

In determining the most suitable alloys for tubes and tube sheets, equipment manufacturers are invited to consult our Technical Department. Publication B-2 available on request.



**Anaconda**  
COPPER & COPPER ALLOYS

**THE AMERICAN BRASS COMPANY**  
General Office: Waterbury 88, Connecticut  
Subsidiary of Anaconda Copper Mining Company  
In Canada: ANACONDA AMERICAN BRASS LTD.  
New Toronto, Ont.