

The Engineer's Library

COMPRESSED AIR PLANT

REVIEWED BY PROF. R. W. ANGUS
University of Toronto

By Robert Peele, Mining Engineer and Professor of Mining in the School of Mines, Columbia University. Published by John Wiley and Sons, Inc., New York, and Chapman and Hall, Ltd., London. Renouf Publishing Co., Montreal, Canadian sales agents; 485 pages, 6 by 9 ins.; 246 figures; cloth. Price, \$4.25 net.

This very useful book, dealing with compressed air matters, has reached its third edition, and is a deserving book on the subject. The use of compressed air by civil, mining, mechanical and other classes of engineers makes a good book on the subject very desirable, and Professor Peele has supplied the need very well. The work is divided by the author into two parts: I., Production of Compressed Air and II., Transmission and Use of Compressed Air. The first part deals with the different styles of compressors and their details and also the general theory of the compressor. The types of compressors discussed include wet and dry compressors, multi-stage compressors, hydraulic compressors, along with such details as valves of the several types, receivers, regulators, governors, etc. Several chapters are devoted to the performance of compressors, the standards of comparison, calculation of the horse-power required, altitude compression, explosions in cylinders, etc.

In the second part of the book, dealing with the transmission of compressed air, the first chapter treats of the methods of computing the losses in the pipe line due to friction. This is followed by chapters dealing with compressed air engines, effect of clearance, work done, volume of air required, freezing of air, reheating and many kindred matters. Many applications of compressed air are also given and discussed, such as drills, coal cutting machines, channeling machines, pumps using compressed air, air-lift pumps and compressed air haulage.

The book has been written in such a way that it should be easily read by practising engineers, and much of it could be readily understood by the non-technical man. It is well illustrated by 246 figures and has been brought well up-to-date.

ELECTRICAL PHENOMENA IN PARALLEL CONDUCTORS

REVIEWED BY PROF. HAROLD W. PRICE
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By Dr. Frederick Eugene Pernot. Published by John Wiley and Sons, Inc., New York, and Chapman and Hall, Ltd., London. Renouf Publishing Co., Montreal, Canadian sales agents; 332 pages, 6 by 9 ins.; 83 figures; cloth. Price, \$4.00 net.

This book is a plea for rigorous methods of developing formulas for the solution of problems on power transmission over long lines. The argument is that the rigorous formulas in suitable form are often more convenient for calculation than supposedly simpler approximate ones; and, further, that an understanding of exact methods develops ability to devise and use approximate solutions, where necessary because of complexity, with proper judgment as to their limitations.

This first volume on the subject is introductory to future volumes on complicated line systems, and therefore deals with single-line problems. The book is excellently set up for convenience of the reader, and is replete with illustrative diagrams and sample problems completely solved.

In addition to much mathematical explanation regarding methods and formulas, many real problems are considered. For example: Long, leaky, direct-current lines; experimental measurement of line constants of long alternating-current power lines, also telephone circuits; relations between load power-factor and maximum efficiency of long lines for specified constant load, for varying loads as illustrated by a daily load curve, etc.; voltage regulation and control; propagation constants; change of shape of voltage and current wave forms along a line; analysis of motion of oscillograph vibrators to evaluate errors in amplitude and phase of wave records due to inertia of strips and mirror, damping fluid, resonance, etc., at normal and harmonic frequencies; and many other problems.

As previously stated, the reader is not left with formulas alone, but is carried through solutions of practical problems, with curves illustrating the nature of results to be expected between assumed limiting conditions.

The book is well worth consideration by those interested in its field. From an artistic point of view, the printer's work on formulas, diagrams and general style is beautifully done.

PUBLICATIONS RECEIVED

VITAL STATISTICS.—By G. C. Whipple. Published by John Wiley & Sons, Inc., New York City. First edition, 1919; 517 pages and flexible cover; 4½ by 7 ins. Price, \$4 net.

THE CHEMICAL ANALYSIS OF ROCKS.—By Henry S. Washington. Published by John Wiley & Sons, Inc., New York City. Third edition, revised and enlarged; 271 pages and cover; 6 by 9 ins.; cloth. Price, \$2.50 net.

"HYDRO'S" ANNUAL REPORT.—Eleventh annual report (volume 1) of the Hydro-Electric Power Commission of Ontario, for the year ended October 31st, 1918; 320 pages, 6½ by 9½ ins., numerous illustrations, several charts and large map of province, showing generating stations and transmission lines. This report comprises five sections, as follows: Legal proceedings, transmission systems, operation of systems, construction work and general activities.

BRONZE PRODUCTS OF QUALITY FOR ENGINEERING PURPOSES.—Well illustrated catalogue published by American Manganese Bronze Co., of Holmesburg, a suburb of Philadelphia, Pa. Printed in two colors on coated paper, 8½ by 11 ins., 36 pages and cover; illustrating bronze castings, ingots, forgings, sheets, rods, rolls and shapes, both of manganese bronze and of other commercial grades of bronze. Among the many interesting castings illustrated are 72-in. shaft caps for the Catskill aqueduct, centrifugal pump casings, turbine runners, valves and valve stems, worms and worm gears, bridge bearings, marine propellers, valve nozzles, etc.

York Township, Ont., has decided to instal its own systems of water works and sewers instead of waiting further for connections with Toronto's systems. The district will be drained toward the Don River, where a sewage disposal plant will be built. Water will be secured from the Scarboro Township plant which will soon be built.

H. E. T. Haultain, professor of mining engineering at the University of Toronto, was the recipient of a McLaughlin six-cylinder automobile last week upon his retirement as vocational officer for Ontario, Department of Soldiers' Civil Re-establishment. Five hundred members of the staff assembled at the armories to present Prof. Haultain with the car as a tribute to his work. Of the members of the staff, 92% are returned soldiers. D. D. Eppes, head of the "After-Care Department" for Ontario, in presenting the car recalled the fact that the retiring vocational officer had entered the re-establishment movement in its early days, and he paid tribute to the part Prof. Haultain had played in the development of the movement and in the sympathetic handling of the returned men.