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PREFACE TO THE 18th EDITION

IN presenting this eighteenth edition of the HEATING, VENTILATING, AIR CONDITIONING GUIDE for 1940, the AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS recognizes the broad distribution and use which prior editions have attained and, in answer to a popular request, has made a serious attempt to reduce the size and weight of the volume without curtailing the amount of information contained therein. Since the first edition in 1922 there has been a great growth in both the Technical and Catalog Sections, due to a persisting desire of the Society to publish a book of ever-expanding value to the field which it covers. Almost every year there have appeared new chapters on new subjects, and additional tabular, graphical, and textual data on old subjects due largely to the rapid development and progress of the industry.

To reverse the trend toward constantly increasing bulk it has been necessary not only to reduce the amount of repetitious material, but also to make use of somewhat thinner paper, after a careful study in which the advantages of lesser weight were balanced against possible disadvantages. For the same reason a number of the Problems in Practice, which have appeared at the end of each chapter for several years, have been omitted, but factual material not already included in the text has been transferred.

The sole change in the chapter numbering comes from the division of last year's Chapter 22 into a new No. 22 covering Unit Heaters, Unit Ventilators and Unit Humidifiers and a new No. 23 for Unit Air Conditioners, Cooling Units and Attic Fans. Other chapters which have been rewritten or at least restudied particularly for this year complete the list as follows: Physical and Physiological Principles, Heat Transmission Coefficients and Tables, Heating Load, Heating Boilers, Steam Heating Systems, Piping for Steam Heating Systems, Hot Water Heating Systems and Piping, Central Systems for Comfort Air Conditioning, Cooling and Dehumidification Methods, Heat Transfer Surface Coils, Spray Equipment, Air Cleaning Devices, Air Distribution, Air Duct Design, Air Conditioning in the Treatment of Disease, Pipe and Duct Insulation, Electrical Heating, Radiant Heating, Test Methods and Instruments, and Terminology.

The chapter dealing with Heat Transmission Coefficients and Tables has been checked to eliminate obsolete products and to include newly developed ones, where authoritative data are available. In Chapter 46 the conversion equations have been recomputed from bases selected from the International Critical Tables.

In the envelope attached to the inside back cover will be found a Revised Bulkeley Psychrometric Chart with instructions printed thereon. The revised chart has been replotted making it consistent with the Table of Properties of Saturated Water Vapor with Air in Chapter 1. The new chart will be found easier to read and can be used with greater simplicity