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PREFACE TO THE 15th EDITION

IN the fifteenth edition of THE AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS GUIDE, several innovations have been incorporated by the Guide Publication Committee to aid those individuals who are specializing in heating, ventilating, air conditioning and allied industries. Newly recognized standards of the profession have been carefully reviewed and added to the text section so as to maintain THE GUIDE in its recognized role of presenting authoritative and fundamental data. Recent research developments have been summarized and added to this volume in order to maintain the original conception of THE GUIDE formulated in 1922 of presenting authentic and current investigative results which may be of practical value to designing engineers.

The data for properties of dry and saturated air have been recalculated and tabulated based on the instantaneous specific heats of air. A new table has been added giving the true, mean and instantaneous specific heats of air over a wide range of temperatures.

The chapter has been completely rewritten which deals with the Physical and Physiological Principles of Air Conditioning covering the varied fundamental requirements which must be considered in properly designing a system to provide comfortable environments and thereby satisfy human needs.

Because of the introduction of new building materials and insulators, the tables of heat transmission coefficients have been enlarged and the text material has been rewritten and condensed with revised arrangements of fundamental formulae.

Problems of Humidification, Dehumidification and Water Cooling Equipment are discussed in a new chapter. Design tables and curves are included for estimating the number of natural draft cooling tower sections. Mechanical draft cooling tower design factors are presented with conversion factors corresponding to design wet-bulb temperatures.

New illustrations have been included in the chapter on Unit Heaters, Ventilators, Air Conditioning and Cooling Units and the text has been completely revised to incorporate the newer trends of unitary equipment.

A new chapter on Automatic Control is presented this year which concisely describes the several types of control for residential, commercial and industrial applications.

The new chapter on Sound Control has been prepared to present the subject material in a manner more suitable for interpretation by the heating and air conditioning engineer. A method is outlined for determining the proper amount of sound absorbent material to apply to a duct system based upon an experimental laboratory duct lining factor.

Another new chapter, Air Distribution, gives the latest information on air diffusion technique within enclosed spaces. The important consideration of air outlet noises is discussed in detail with charts and illustrative examples to indicate a method of grille or outlet selection.

The material on Gravity and Mechanical Warm Air Furnace Systems includes the latest results developed in the Research Residence of the National Warm Air Heating and Air Conditioning Association. A systematic approach to the design problems encountered in both summer and winter air conditioning is outlined in detail.