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PREFACE TO THE 32nd EDITION

The Heating Ventilating Air Condition Guide, 1954, which has 1128 pages of technical text, exceeds the previous edition by 32 pages. New features include a chapter on residential summer air conditioning, new data on methods of obtaining local relief in hot humid environments, recent developments in industrial air and gas cleaning, and many other changes made necessary by recent developments in the field. Wherever possible, previous text has been condensed; the space saved has been used for additional new material and improvements.

The previous grouping of the chapters in sections has been retained for the benefit of those who have become accustomed to previous section arrangement which is as follows: I—Fundamentals, II—Human Reactions, III—Heating and Cooling Loads, IV—Combustion and Consumption of Fuels, V—Systems and Equipment, VI—Special Systems, and VII—Instruments and Codes.

Some of the important changes will be found in the following chapters:

Chapter 8—Air Contaminants. Tables of maximum allowable concentrations for gases, vapors, toxic dusts, fumes, and mists were reviewed and changed to agree with the latest recommendations of the *American Conference of Governmental Hygienists*.

Chapter 9—Heat Transmission Coefficients of Building Materials. Some new material was added and a large part of the chapter was rearranged to improve the presentation of the data. A table of U-value correction factors for outside wind velocity was added.

Chapter 10—Water Vapor and Condensation in Building Construction. Actual design isotherms were added to the condensation zone map for guidance of owners, builders and architects.

Chapter 11—Infiltration and Ventilation. The section on Garage Ventilation was enlarged and improved. Data on individual car exhaust pipe sizes for repair shops and bibliographical references on garage ventilation were added.

Chapter 12—Heating Load. The procedure for selecting outdoor design temperature was rewritten with greater discussion for sake of clarification. The data on edge heat loss from floor slabs were extended.

Chapter 13—Cooling Load. New data from recent A.S.H.V.E. research were added for effect of shading on instantaneous heat gain through window glass.

Chapter 14—Fuels and Combustion. The section on oil fuels was improved.

Chapter 17—Chimneys and Draft Calculations. New information was added on draft requirements of appliances, operation of low chimneys, induced draft and general considerations for chimneys.

Chapter 24—Panel Heating. Illustrations, descriptions, nomenclature, and installation suggestions were revised on the basis of recent experience with panel systems.

Chapter 27—Pipe, Fittings, Welding. Several sections of the chapter were rewritten to conform to current descriptions and designations of pipe. New enlarged tables of steel pipe and copper tube characteristics were added. The data on pipe threading practice were revised.

Chapter 28—Pipe Insulation. The information on application of insulation to pipe and fittings was enlarged in scope.

Chapter 29—District Heating. The chapter was enlarged by the addition of new information on steam requirements of process equipment and of water heating, as determined by the *National District Heating Association*.

Chapter 31—Air Distribution. This chapter was rewritten and enlarged by the Technical Advisory Committee on Air Distribution in consideration of the recent air flow research at the A.S.H.V.E. Research Laboratory and cooperating institutions. The references and bibliography were revised to give a list of the most significant articles and readily accessible papers, particularly those to be found in A.S.H.V.E. publications.

Chapter 34—Air Cleaning. Part I on Atmospheric Air Cleaners was revised and largely rewritten to cover recent developments and to agree with current industry nomenclature. Part II on Industrial Air and Gas Cleaners was rewritten by the Technical Advisory Committee on Industrial Environment to conform to present practice in selection, installation, and operation of cleaners for industrial processes. New tables have been included to illustrate characteristics of industrial cleaners.

Chapter 39—Automatic Control. The chapter was enlarged, largely rewritten, and rearranged to bring it up to date with recent progress. Several types of control not previously shown were included. A new section on coordination of controls was added.