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PREFACE TO THE 20th EDITION

IN the preparation of this 20th edition, the HEATING, VENTILATING, AIR CONDITIONING GUIDE 1942, the objective of the Guide Publication Committee has been to present the latest available authoritative information on the various subjects covered in the 47 Chapters. In accordance with the policy established by its founders, approximately one-half of the GUIDE chapters have been reviewed. Of these nine were completely rewritten and minor revisions were made to nine others.

A new chapter entitled Fundamentals of Heat Transfer has been added which includes the basic equations for conduction, convection and radiation. A detailed solution is given for a problem involving all three mechanisms of heat transfer. This new Chapter 3 in Section I Principles, should prove very helpful to many GUIDE readers. Except for the insertion of this new chapter, there has been no change in the order of subject presentation.

Some revisions have been made in the text of the chapter on Thermodynamics of Air and Water Mixtures. The Mollier Diagram for Moist Air, which first appeared in the GUIDE 1941 has been redrawn, and a new Volume Diagram for Moist Air has been added. Both will be found in the pocket on the inside of the back cover.

Material in the chapter on Physiological Principles has been revised to include current knowledge on the thermal interchanges taking place between the body and the environment, which has been prepared from results observed at the A.S.H.V.E. Research Laboratory and in co-operative institutions.

The chapter on Central Systems for Comfort Air Conditioning has been completely rewritten and the revision of the chapters on Air Distribution, Air Duct Design, Sound Control and Fans provides new data on the design of air handling systems. The new air friction chart developed at the A.S.H.V.E. Research Laboratory is included in the Air Duct Design chapter. The material on Sound Control contains additional information on machinery isolation and detailed information has been included for calculating the attenuation in a duct system with various sound absorbing treatments.

The chapter on Radiant Heating has undergone major revisions, and now contains the essential data necessary for the design of radiant heating systems. A new chart has been added to the chapter on Pipe and Duct Heat Losses for determining the heat gain or loss from an insulated duct. A group of refrigerating graphical symbols for drawings have been added to the chapter on Terminology.