

BOOK REVIEWS

Heat Transfer in Fires—Thermophysics, Social Aspects, Economic Impact. International Centre for Heat and Mass Transfer, Trogir.

THIS is a publication of the International Centre for Heat and Mass Transfer and covers papers delivered at a Summer School organized by the Centre in 1973 at Trogir, in Yugoslavia.

The coverage of the book is accurately indicated by its sub-titling—thermophysics, social aspects, economic impact—and the individual authors are acknowledged authorities on various aspects of fire technology in U.S.A., France, Canada, Federal Republic of Germany and U.K.

Their papers range from accounts of the social aspects and economic consequences of fire and fire protection through studies of full-scale solid and liquid fires to detailed and sophisticated treatments of various mechanisms of heat transfer, including ignition, fire spread and the chemical kinetics of pyrolysis—though the emphasis of treatment is mathematical and physical rather than chemical.

All this augurs for a comprehensive, satisfying and useful book; but the utility of the actual volume is rather marred by the discursive and uneven style of many of the papers.

The printing of the book has been by a photo-litho process directly from the original papers presented at Trogir, with the very minimum of editorial intervention and with less than perfect proof-reading. What may well have been very fine and proper at an “idyllic site”—quoting from the Preface—and the relaxed atmosphere of a Summer School, does not read so well in the more un hospitable environment of, say, an English winter.

It is, for example, somewhat disconcerting to find an overall paper on the vast fire problem in the United States, going into details of elevator call buttons which brought elevators to the floor of a building where a fire was burning, and into the problems of firemen’s clothing. Also, in a general paper on forest fires, giving amongst other things a useful mathematical treatment of fire propagation, to find a verse of a South African native song.

Irritations also occur through discrepancies between papers. The introduction to a paper on condensed-phase mass and energy balances says that the annual US fire losses average five billion dollars and cause more than ten thousand deaths; but elsewhere the value of direct property losses in US is reported as twenty-seven billion dollars and life losses as exceeding twelve thousand.

The content of the thermodynamic papers is generally of a high standard, particularly on the various aspects of heat-transfer mechanisms; and they form useful source documents for the subjects they cover. It has to be remembered, however, that the papers are essentially reviews of appropriate states of the art as they were four years ago with, obviously, no indication of the considerable progress made since then in a number of areas.

In summary, the book will probably prove useful to those who wish to acquire an initial, overall understanding of Fire Technology and are prepared to bear with a wide variety of writing styles and different parameter nomenclatures; but an established worker in the field is not likely to find much which is new to him.

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D. A. REAY, Industrial Energy Conservation—A Handbook for Engineers and Managers. Pergamon Press, Oxford (1977) 370 pp. Price \$12.50 (£6.95) flexicover; \$20.00 (£11.00) hard-bound.

THE technologies involved in energy conservation are complex and diverse, but, as the cost of energy increases the implementation of energy-saving techniques become more necessary for industry. This book presents practical and immediately applicable information for industrial energy consumers. A comprehensive review of energy usage patterns within the various sectors of industry highlights profligate areas for closer study. Appropriate techniques are illustrated for specific adoption by particular activities. Much relevant data is provided in S.I. units, and a great range of schemes is described. These include total energy systems, control strategies, waste heat recovery operations and energy storage arrangements. The uses and limitations of various novel devices, including heat pipes, heat pumps, Rankine cycles, thermal wheels and fluidised beds, are discussed. Many examples and case histories of successful applications are documented, together with economic details. This is a useful and timely publication, which should prove to be invaluable as a handbook for industrial energy managers.

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