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# BOOK REVIEW

## Gas Turbine Combustion

A. H. Lefebvre

This book should be compulsory reading for those interested in combustion processes. It is directed particularly at gas-turbine combustion and brings together a wealth of personal knowledge and experience within a framework which is sensible and helpful to the reader. The approach to the various aspects of the subject is a mixture of phenomenological and empirical.

Of the 11 chapters, two describe basic principles of combustors and combustion, two are concerned with the aerodynamic characteristics of the flow in diffusers and combustors, three with the combustion topics of efficiency, stability and injection, one with heat transfer, two with fuels and their injection and one with pollution. Consistent with the author's main interests, approximately half of the book is devoted to the chapters dealing with aerodynamics, heat transfer, fuels and their injection. Since the basis for the book has been provided by a lecture course given and developed at the Cranfield Institute of Technology and elsewhere over a period of years, it is not surprising that the material is based largely on papers and reports which are more than 10 years old. An important exception is the material on emissions which, necessarily, is more recent.

The lack of emphasis on more recent material means that development arising from numerical methods and optical diagnostic techniques tend to be ignored. It can be argued, and the author would probably subscribe to this view, that these developments have so far done little to improve design methods. It is a little odd, nevertheless, to end the chapter on aerodynamics with the advice that the major aerodynamic problem is one of stability, and that the cure may lie in the compressor.

The text is clear and displays an enthusiasm for the subject. As a result, reading is a pleasure and gleaned new information an easy matter. There are few books on combustion and very few which deal with gas-turbine combustion. It is a pleasure to recommend this one to all with an interest in the subject.

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### Forthcoming articles

Pool boiling performance of finned surfaces in R-113  
*N. Abauf, S. H. Black and F. W. Staub*

Natural convection in an inclined enclosure containing internal energy sources and cooled from below  
*S. Acharya*

Numerical simulation of transient response of heat transfer from a hot-wire anemometer transducer  
*K. J. Bullock, M. A. Ledwich and J. C. S. Lai*

A technique for obtaining approximate solutions for a class of integral equations which arise in radiative heat transfer  
*B. C. Choi and S. W. Churchill*

Determination of principal characteristics of turbulent swirling flow along annuli - Part 2: Measurement of turbulence components  
*B. R. Clayton and Y. S. M. Morsi*

Effect of blade profile on the performance of the Wells self rectifying airturbine  
*S. Raghunathan and C. P. Tan*

Effect of frequency of air flow on the performance of the Wells turbine  
*S. Raghunathan and O. O. Ombaka*

Colour-coding schlieren techniques for the optical study of heat and fluid flow  
*G. Settles*

Fundamental sloshing frequencies of stratified two-fluid systems in closed prismatic tanks  
*Y. L. Sinai*

Prediction of turbulent source flow between stationary and rotating discs  
*C. R. Truman and D. F. Jankowski*

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These articles, listed in alphabetical order of first-named author, will appear in forthcoming issues of the *International Journal of Heat and Fluid Flow*.