

BOOK REVIEWS

W. F. HUGHES, An Introduction to Viscous Incompressible Flow. Hemisphere, (1979). Price \$23.50.

HERE is a book of the kind that lecturers to engineering undergraduates should welcome—short enough to be covered completely in, say, twenty lectures, clearly presented, breezy in style, and providing little for the purist to cavil at. Boundary layers are given the major attention, both in their hydrodynamic and thermal aspects; but lubrication enjoys one chapter; flows in pipes and rectangular ducts are dealt with; and the reader is introduced to non-Newtonian as well as to Newtonian fluids.

There are a few defects. Sometimes the style is too breezy for my taste (“By thinking about it a bit, one can understand...”); a rather misleading account is given of the fully-developed temperature profile in a round pipe with uniform wall temperature (“ T and n are both functions of r alone”); E. Pohlhausen is referred to when K. Pohlhausen is meant; and Schlichting loses his second h as often as not. However, the liveliness of the examples (“Some painters believe that paint is a Bingham plastic...”; “an undimpled, smooth golfball will go only about one-fourth as far as a conventional dimpled golfball”), and the author’s success in preventing the main facts and principles from being obscured by details or refinements, make the deficiencies easy to overlook. Both the foot-pound-second and the SI unit systems are exemplified. The book is agreeable to look at and to handle; but the printing is not quite of top quality.

D. B. SPALDING

A. BALFOUR and D. H. MARWICK, Programming in Standard Fortran 77. Heinemann, London (1979). 388 pp. Price £4.50.

THIS is an opinionated book, but none the worse for that. (After all, the informant of way to the restaurant who adds “But the food’s lousy”, may have done us a good turn.) The authors take the view that Fortran is (like English, they might have said) a language with many deficiencies as a means of communication; but it exists, and can scarcely now be replaced; so we should all try to use good Fortran rather than bad.

They do not invariably give the reasons for their opinions in the detail that I, as an indifferent programmer, would have liked. The ‘assigned GO TO’ they would assign to oblivion, stating that it is “contrary to the principles of structured programming, and also a statement for which it is difficult to envisage where it could be of real benefit”. Well, I use it for the purpose of keeping ‘IFs’, which I take to be expensive, out of ‘DO’ loops; and I want to know how I am to do this other than by way of the ‘assigned GO TO’. I have not found an answer to this question in the book; indeed, computer-time economy receives little attention there.

“Structured programming” is referred to in several places; and I searched for a statement of what its principles actually are, really wanting to know. I did not find such a statement; but this is not to say that, if I digested properly the many useful recommendations on particular topics which are scattered through the text, I would not have absorbed the principles unawares.

Certainly, there is much in this book from which heat-transfer-program writers can benefit; and the authors’ in-

sistence that programming style is important may help to promote that valuable notion, even if the distinctions between good style and bad style are imperfectly classified by them. I would call this a good book which is likely to lead to an excellent second edition, did not the authors begin Chapter 1 with the daunting quotation: “Smile... tomorrow will get worse”. All right then... *this* is an excellent book.

D. B. SPALDING