**Book Reviews**


**REVIEWED BY H. AREF**

As in many other fields of physical science, current modes of analysis in fluid mechanics range from qualitative, heuristic arguments to quantitative, mathematical theories. Linear and nonlinear stability theory and the statistical theory of turbulence, for example, definitely belong to the latter, thoroughly mathematized category. Vortex dominated flows, both laminar and turbulent, on the other hand, frequently (not to say typically) lend themselves to physical arguments sometimes defying current mathematical formalisms. In turn, an explanation of modes or mechanisms within a given flow in terms of vortex dynamic processes is often very gratifying. Such explanations have a noble history in the field of fluid mechanics, although one might criticize the present era for focusing too much on formal procedures and allowing this art of qualitative mechanical reasoning to wither.

The text by Lugt, a comprehensive revision and expansion of a briefer precursor in German, represents a welcome and valuable addition to the literature on qualitative and vortex dynamics in particular what these books have achieved for fluid mechanics in general and vortex dynamics in particular what these books have achieved for their respective disciplines and subjects. And that I find is a most pleasing prospect.


**REVIEWED BY J. D. ACHENBACH**

Quantitative nondestructive evaluation (QNDE) has enjoyed a surge of interest in recent years. QNDE methods based on the propagation of mechanical and/or thermal disturbances fall within the areas of research activity of many workers in applied mechanics. Volume V in the series on fluids with particular emphasis on motion in the atmosphere and oceans. Much of the development in the book is original so far as the arguments are concerned (the results, of course, are generally known by other means) and proceeds aided by a multitude of well-chosen illustrations (many of them from the author’s own work). There is considerable emphasis on the results of computer calculations. In fact, p. 47 may contain one of the strongest credos for “numerical experiments" currently in print! There are numerous thought-provoking analogies as well as juxtapositions of natural and technological flow situations which add a special flavor to the book. The discussion is of a uniformly high standard, the layout is pleasing and easy to work with (although I wish that the “Remarks” to each chapter had been worked into the text), the illustrations clear and carefully integrated into the general train of thought, the list of references comprehensive and interesting, and the number of misprints very small indeed (I found less than 10). This is obviously a book by an author who is very well informed on a multitude of topics and, I would guess, to a large extent, is the fruits of a labor of love. It is sure to be of great value to anyone interested in science and in particular to students, teachers, and researchers of applied mechanics.

The book is in a format rather different from common textbooks or traditional treatises with its large pages and many illustrations. It invites comparison with other recent "instant classics" such as Mandelbrot's *Fractals, Form, Chance and Dimension* (Freeman & Co., 1977) or Hofstadter's *Gödel, Escher, Bach* (Vintage Books, 1979). It seems to me likely that Lugt’s text will achieve for fluid mechanics in general and vortex dynamics in particular what these books have achieved for their respective disciplines and subjects. And that I find is a most pleasing prospect.

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In the section on ultrasonic testing there is for the first time a clear verdict on the health hazard in ultrasonic testing which the author declares is perfectly harmless to human beings. Destructive Testing is a software assessment technique used to find points of failure in a software program. In this tutorial, you will learn:

What is Destructive Testing?

Destructive Testing is defined as a software testing type to find points of failure in a software program. It is a testing method where an application is intentionally made to fail to check the robustness of the application and identify the point of failure. Unlike other testing methods which check the function of an application, this technique will check the unpredictable user behavior within the application.

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