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BOOK REVIEW

. . . . *from the bookshelf***THE SCIENCE OF FLIGHT: PILOT ORIENTED AERODYNAMICS**

by W.N. Hubin. Iowa State University Press, Ames, Iowa. 362 pages.

As aviation has become increasingly complex, so too have the academic requirements for future professional pilots. Twenty years ago most "formal" aviation education programs were limited to the basic Federal Aviation Administration (FAA) requirements and it was possible to pass most FAA exams with just a few hours of ground school preparation.

When this proved inadequate, ground schools of greater length were required to prepare the applicant for the task. In today's environment, however, the aspiring professional who seeks additional ratings and certificates soon recognizes the need for a more formalized approach to meet the challenge.

W.N. Hubin is the author of an excellent book for addressing the aerodynamics/performance aspects of this challenge. Finally, we have a textbook that is at once basic enough to be intelligible to the student and yet comprehensive enough to provide the essential background against which informed understanding can be developed. This book satisfies a very real need and could become a standard work for use in higher aviation education programs.

Hubin's approach is to provide a concise and clear explanation of requisite physics and mathematics. For those students who might find their formal academic preparation in need of a good review there is an excellent section provided in the appendix for just that purpose. He then uses the math to develop an understanding of the airplane, how it performs, and why it performs the way it does. He guides the reader in a step-by-step fashion through the often confusing maze of aerodynamics and performance calculations and provides a comprehensive set of review questions at the end of each

chapter. As if this were not enough he even throws in a computer program for calculating cruise speeds.

Is it worth the \$? Only if you want a good understanding of the subject. □

review by Thomas J. Connolly, contributing editor

STUDENT PILOT'S FLIGHT MANUAL, 7TH EDITION, 504 pages -and- FLIGHT INSTRUCTOR'S MANUAL, 3RD EDITION, 400 pages by William K. Kershner. Iowa State University Press, Ames, Iowa.

Few can dispute that Bill Kershner may be the longest running author of flight training instructional manuals. The tradition continues with the recent introduction of the 7th edition of *Student Pilot's Flight Manual* and the 3rd edition of *Flight Instructor's Manual*.

Both manuals have been prepared in the usual Kershner mode with lots of clearly explained but very technical diagrams of various flight maneuvers (although this reviewer would like to see updates on several of the *quasi cartoon* illustrations). Included in both manuals are sections on the airspace reclassification, and the student edition has the questions and explanations for the private pilot written examination. The instructor manual has the usual top flight aerobatics section and includes a fine set of 20 turn spin rotation charts (but what else would you expect from someone who has completed 7,000 spins in 29 different aircraft). Additional inclusions in the instructor manual are sections on Loran approaches, flight instructor endorsements, and a copy of the new FAA Form 8710.

The student manual has several new sections or expansions on previous areas. Included is a very insightful review on the Practical (Flight) Test Standards and an expanded overview of engines and systems. However, the inclusion of sections of the Airman's Information Manual and the FARs seems somewhat senseless.

review by Henry R. Lehrer, Editor