

The last two chapters describe helicopter design requirements, configurations and details of components. The reader will follow easily the author's explanations by studying the profuse illustrations. About one hundred references are listed at the end of the book in a bibliography which should satisfy those readers whose appetite has been whetted by a rare mixture of penmanship and philosophy.

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### **"Rotorcraft"**

by CAPTAIN R N LIPROT and J D WOODS (Butterworths Scientific Publications, London, W C 2, 1955)

Most people engaged in helicopter activities will have seen Captain Liprot's fascinating films of early helicopters. The book under review opens with photographs of a score of these types and, in parallel, a brief chronological summary of outstanding helicopter events to the present day. It closes with photographs, drawings and specifications of most designs of importance since the war. Between these items an attempt is made to cover the whole field of helicopter theory, design and flying qualities in 77 pages. It is not surprising, therefore, that the treatment is rather cursory.

Considered as a reference book the classifications, definitions and nomenclature are useful. Symbol conventions in helicopter work are notorious for their lack of uniformity, and perhaps it is insular to regret the use of American conventions when the output of British literature is not inconsiderable. With space so limited the inclusion of general conversion tables from English to metric units is puzzling.

The chapter on the description and operation of a 'typical' helicopter is not sufficiently illustrated to be of great use to the uninitiated. The information on performance estimation is useful but again it is probably not sufficiently informative for the learner and not detailed enough for the practising project estimator. Similar remarks apply to the very brief chapter on design study procedure.

The chapter dealing with the geometry of the articulated rotor is a useful contribution to clearing up a confused subject. The discussion on some control systems is likewise valuable, but the brevity of the section on stability prevents it being as useful as it might be. One wonders whether the designers of tandem rotor helicopters would agree with the statement, "the tandem type of multi rotor helicopter presents a simpler (stability) problem being much more like a fixed wing type longitudinally."

While the choice of contents of this book is open to criticism much of what is contained is not conveniently accessible elsewhere. It is a useful reference book including, in addition to what has been outlined, references to technical papers and a manufacturers' directory. The general standard of printing and layout is excellent.

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