couraged the writing of these papers, which no doubt if taken all together should give a sound appreciation of the present situation and provide a springboard for a dive into the future

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BOOK REVIEW

Helicopter Dynamics and Aerodynamics

P R Payne, Pitman, London, 1959

442 pp 84s

The increase in knowledge in any field is a slow process and early attempts to present a comprehensive survey are rarely successful In this volume, which is of some interest to those engaged in helicopter design, Mr Payne has tried to cover a very wide field and although he has achieved in some ways a very commendable result, it is doubtful whether he has been too successful

True, the general standard both of writing and production is high, but to be a complete success a book of this kind must be completely reliable No technologist likes to feel that there may be a doubt about the equations he is using or to wonder whether there is a fundamental error somewhere Proof reading of a high quality can eliminate typographical errors (a few still remain here and there in this book) but the author must take responsibility for errors of a general nature Unfortunately, these also exist in this book As an example of this, in the discussion of the blade motion in a gust in forward flight the author, faced with solving an equation with a cyclic damping term blandly averages it out Further, having gone to some lengths to develop the blade stability equation (5 7), he does not use it to study the gust case in forward flight but cites a report which omits some of the terms (5 16)

The performance section of the book is the use to which most readers will refer Here the author has tried to present yet another method of analysis In principle this is a good idea although most technicians have already tended to freeze on one or other of the existing techniques However, the section on presentation of performance curves leaves the reader with the impression of being patently unsatisfactory There is an art in representing data graphically It involves reducing information to the simplest form and avoiding presenting data in any way which is likely to obscure the trends which should be accentuated This is certainly not the case here—a most surprising situation in view of the large number of excellent explanatory diagrams sprinkled throughout the book

To compensate for some of the occasional lapses, it is refreshing to observe the author's careful study of many aspects too often ignored or taken for granted In this respect Mr Payne has really excelled himself

To sum up, this is a book which will provoke much discussion and some interest but is unlikely to find a permanent place among the other established books on helicopters