

ADDITIONS TO THE ASSOCIATION'S LIBRARY

BOOKS

- "Aerodynamics of the Helicopter" By Alfred Gessow & Garry C Myers, Jr (The MacMillan Company, New York)
- "The Complete Book of Helicopters" By D N Ahnstrom (The World Publishing Co, U S A)

PAPERS

- "Heliports for Commercial Transportation" J P W Vest
"Helicopter Landing Areas" Sikorsky Aircraft
- "The Heliport—A Blueprint of Change in Airport Planning Standards" Pogue & Aldrich
"Commercial Helicopter Operations" G H Aldrich
"The Helicopter—A Blueprint for Progress" L Welch Pogue

Tenth Annual Forum—American Helicopter Society Inc, May, 1954

- Containing the following papers
- "Accelerometer Control" By Bartram Kelley
- "The Technical Aspects of the Transfer of a Fuel to a Tip Mounted Ramjet Engine Combustion Chamber" By H K Holm
"Automatic Control of Helicopters" By Delvin E Kendall, Jr
- "Theory of Rotor Blade Uncoupled Flap Bending Aero-Elastic Vibrations" By Peter F Leone
"Summary of Discussion for Gas Turbine Panel" By F L Doblhoff
- "Advantages of Centrifugal Compressors in Helicopter Gas-Turbine Engines" By S D Hage
- "Control Aspects of the Free Turbine Helicopter Engine" By R F Owens
- "A Practical Approach to the Metal Blade Spar Problem" By F L Stulen and A J Belfour
- "Design and Flight Test of a Two-Speed Helicopter Transmission" By Lt Paul L Munter
- "Design and Development of the Hydro-Mechanical Clutch" By A Koup & Miller Wachs
- "A Column-Spring Blade Retention Giving Speed-Governing Characteristics" By William H Raser, Jr
- "Optimum Design of Transport Helicopters for Maximum Net Profit" By F David Schnebly and Richard M Carlson
- "Operational and Economic Experience of Helicopter Air Service, Inc" By C W Moore
- "Some Observations on Military Transport Helicopter Economics and Availability" By Major J J Strok
- "Some Interesting Experiences in Developing Helicopter Transmission Lubrication Systems" By N C Taylor

Western Forum, Los Angeles, November, 1954 American Helicopter Society Inc

- The following papers have been received
- "Selection of Power Plant for the Army Helicopter" By J Wallace McDonald
- "U S A F Experiences in Rotor Blade Development" By H Velkoff
- "Development of a Whirlstand for Testing Jet Helicopter Power Plant" By R W McJones
- "Development of Helicopter Components for Fatigue Resistance" By R F Breyer

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| “ Characteristics and Applications of a Monofuel ” | By E B Zwick |
| “ Ramjet Boost for Helicopters ” | By R T DeVault |
| “ Local Service Air Line Helicopter Operations ” | By D E Postle |
| “ A second Look at Helicopter Propulsion Problems ” | By J B Nichols |
| “ Sound and Noise Considerations in Helicopter Transport Design ” | By M Miller |
| “ Influence of Rotor Blade Twist and Mass Distribution on Blade Loadings ” | By H Hirsch |
| “ Description of Seven Years of Helicopter Operation in a Wide Variety of Industries and Geographical Locations ” | By H S Ricklefs |
| “ Operating Characteristics of a Typical Pressure Jet Power Plant ” | By W Wayman |
| “ Application of System Analysis Methods to Helicopter Preliminary Design ” | By J A De Torre & E L Brown |
| “ Selected Deficiencies Affecting the Helicopter Accident Picture ” | By Capt W F Johnson |

Book Reviews

‘ Aerodynamics of the Helicopter ’ By Alfred Gessow and Garry C Myers Jr

This attractive little textbook of 343 pages was first published in the United States in 1952 by The MacMillan Company, New York. The two authors, having had a background of experience in helicopter work at Langley Field, are well qualified to present an abridged version of N A C A literature on the subject. The physical principles are discussed with the utmost clarity, lengthy mathematical derivations being omitted. The reader is referred to a bibliography of N A C A papers, listed in an appendix, and to selected material from other sources which, though far from complete, gives the reader a good idea of the technical work that has been done in the rotary-wing field. The reviewer chose the textbook as an appropriate one for both under-graduate and post-graduate students in courses conducted at Stanford University, Calif during 1953 and 1954.

After a short historical introduction, general helicopter features are discussed. Hovering and vertical flight is studied before the chapter on blade motion and rotor control because, contrary to forward flight, at a given blade element there is no periodic change with azimuth position. The classic notation to the no-feathering axis rather than the no-flapping axis of reference is chosen because it is used in the early N A C A rotary-wing literature. This may confuse readers who are used to thinking of the axis of the tip-path plane as the reference axis but familiarity with both systems is necessary for appreciation of the literature. Conversion from one system to the other should be an easy matter for British readers who are used to ‘ irrational ’ systems of one kind or another, $e g$, non-decimals, foolscap and right-hand drives¹.

The periodic features of forward flight are presented with the usual simplifying assumptions, after which a review of the assumptions is given and the elements of validity of the theory are discussed. A separate chapter is devoted to the prediction and effects of periodic blade-tip stall.

The last two chapters introduce the reader to the problems of helicopter stability and vibration, but self-excited oscillations such as ‘ ground resonance ’ and ‘ weaving ’ are not discussed in detail. As analyses of these subjects are of a mathematical nature, the interested reader is referred to the bibliography.

The textbook is a great contribution to helicopter literature and is recommended to all who are interested in the physical principles of rotary-wing aircraft and in the fundamentals of helicopter aerodynamics.

J A J B