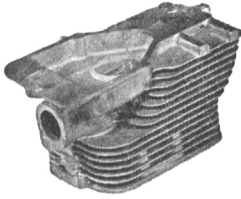


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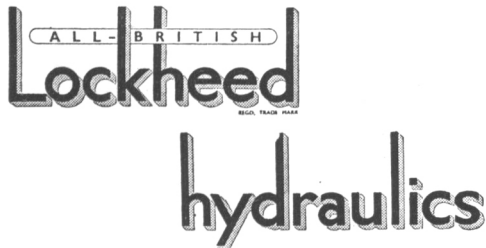


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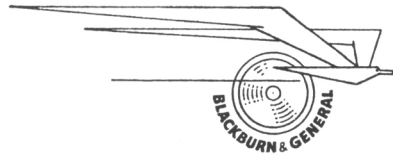


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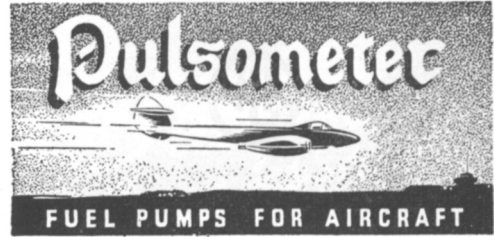


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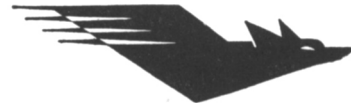
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## SITUATIONS VACANT AND WANTED

From time to time paid advertisements for posts in the Industry and in official establishments have been published in the "Secretary's News Letter" (formerly "Monthly Notices") of the Society, which accompanies the JOURNAL each month. In order to avoid any misunderstanding it has been decided that instead this page of the JOURNAL should be used for advertisements of situations vacant in the Industry, the Ministries, Universities and Colleges, and for situations wanted.

To begin with the charge for such advertisements will be £5 0s. 0d. for each insertion up to 2 in. in depth.

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**The Journal is published monthly at the Offices of the Society, 4 Hamilton Place, Piccadilly, London, W.1.** None of the papers or paragraphs must be taken as expressing the opinion of the Council of The Royal Aeronautical Society unless such is definitely stated to be the case. Subscriptions per annum, £6 3s. 0d., including postage: Single Numbers, 10s., or 10s. 3d. post free. All communications for publication or Advertisements in the Journal should be addressed to The Editor, and on general matters affecting the Society to The Secretary, 4 Hamilton Place, W.1. The Society's Bankers are Messrs. Coutts & Co.  
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# SECRETARY'S NEWS LETTER

FOR JULY 1951

## AUGUST BANK HOLIDAY

The Library and offices of the Society will be closed from 5 p.m. on Friday 3rd August until 9 a.m. on Tuesday 7th August 1951.

## SPECIAL NOTICE TO MEMBERS

Dr. A. M. Ballantyne, *Associate Fellow*, takes over his duties as Secretary of the Society on Monday 2nd July 1951. Dr. Ballantyne was educated at Glasgow University where he took his B.Sc. degree in Engineering, and his Ph.D. He is an Associate Fellow of the Society, and an Associate Member of the Institution of Civil Engineers and of the Institution of Structural Engineers.

Captain J. Laurence Pritchard will be responsible for the organisation of the Anglo-American Aeronautical Conference to be held in Brighton in September.

## THIRD ANGLO-AMERICAN CONFERENCE

The number of Registrations for the Third Anglo-American Conference has greatly exceeded expectations, both from the United States and this country. Many delegates from both countries will be accompanied by their wives. Altogether the number of those attending at Brighton exceeds 500, of whom 400 are delegates.

The number of Registrations at present indicates that no further applications to membership of the Conference can be accepted after Monday, 23rd July 1951.

## SOCIETY STAFF REQUIREMENTS

Applications are invited for the posts of senior technicians to guide and take part in the preparation of the Society's Data Sheets, particularly those on Aerodynamics and Structures.

Applicants should have had experience in the abstraction and use of experimental, test and theoretical information from official and other sources.

Salaries will be on a scale comparable to those for Senior Scientific Officers, £700 × £25 to £900.

Applications must be made in writing to the Secretary and marked *Confidential*.

There is also a vacancy for a draughtswoman-tracer on the Technical Staff of the Society.



**CONTENTS OF THE JULY JOURNAL**

Progress Towards Electrical Serviceability, R. H. Woodall, M.I.E.E., A.F.R.Ae.S., and V. A. Higgs, B.Sc., A.M.I.E.E., A.F.R.Ae.S.

Progress Towards Hydraulic Serviceability, R. H. Bound, F.R.Ae.S., and H. G. Conway, F.R.Ae.S., M.A., M.I.Mech.E.

1951 Garden Party.

Reviews. Correspondence.

**The Council are particularly anxious to encourage members of the Society to support their own Journal by contributions to it of articles and papers on any aspect of Aeronautics. For that purpose they have set aside £250 a year in the form of premium awards to the authors (members or non-members) of such papers as some reimbursement for the work which has been done by the author. These premium awards are not fixed but vary from five to twenty guineas normally. It is hoped therefore that those members who have written papers on their special subjects will consider their own Journal in the first place.**

**The Journal awards for 1950 will be published in the August News Letter.**

**THE AERONAUTICAL QUARTERLY—VOLUME III, PART I**

Copies of Volume III, Part I, of "The Aeronautical Quarterly" are still available from the offices of the Society at 7s. 9d. a copy to members of the Society, post-paid, or 10s. 3d. to non-members, post-paid.

The contents of Part I, Volume III, are:—

|  |                   |
|--|-------------------|
| The Symmetric Vibrations of Aircraft ... ..                                  | R. W. Traill-Nash |
| Aircscrews at Supersonic Forward Speeds ... ..                               | J. C. Burns       |
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| Supersonic Flow Past Bodies of Revolution with Thin Wings                    | P. M. Stocker     |

**Copies of Volume II, Parts I to IV and a few copies of Volume I, Parts I to IV are still available, but members are reminded that a strictly limited edition only of "The Aeronautical Quarterly" is printed and numbers cannot be reprinted in any circumstances. An annual subscription to Volume III therefore is advisable.**

**ADVERTISEMENTS**

From time to time paid advertisements offering technical posts in Government establishments and in the Aircraft Industry have been published in the "Secretary's News Letter" (formerly "Monthly Notices"). In order to avoid any misunderstanding it has been decided that this practice should be discontinued. Instead, the last page of the advertisement section at the back of the JOURNAL has been set aside for such advertisements.

Beginning with the July 1951 JOURNAL this page is available for the advertising of technical posts in the Industry, in official establishments, in Universities and Colleges and for advertisements from members of situations required. The rates for such advertisements are available on application to the Editor.

**ELLIOTT MEMORIAL PRIZE**

The Elliott Memorial Prize has been awarded to Sergeant Aircraft Apprentice D. Allison of the September 1948 Entry at R.A.F., Halton, who has obtained the highest marks in the General Studies Examination. The prize will be presented at the Graduation Prize Giving on 31st July 1951.

### BIRTHDAY HONOURS

The President and Council congratulate the following members whose names were included in the Birthday Honours List:—

#### *C.B.E.*

H. T. Chapman, *Fellow*; G. W. H. Gardner, *Fellow*; W. E. W. Petter, *Fellow*.

#### *O.B.E.*

H. E. Hancocke, *Associate Fellow*.

#### *A.F.C.*

S./Ldr. A. E. Callard, *Associate*; Cdr. (E) P. S. Wilson, *Associate Fellow*.

#### *M.B.E.*

G. Maclaren Humphreys, *Associate Fellow*.

### MEMBERS' NEW APPOINTMENTS

D. C. Allen (*Associate Fellow*)—Engineer, Scientific Services Division, Snowy Mountain Hydro-Electric Authority, Sydney, N.S.W.

C. F. Caunter (*Associate Fellow*)—Assistant Keeper 1st Class, Science Museum, South Kensington.

F. G. Evans (*Fellow*)—Engineering Development Group Manager (Isotopes), Division of Atomic Energy (Production).

Professor A. A. Hall (*Fellow*)—Director, Royal Aircraft Establishment.

P. V. Hoare (*Associate Fellow*)—Assistant to the Managing Director, Westland Aircraft Limited.

G. E. Petty (*Fellow*)—Technical Adviser, Blackburn and General Aircraft Ltd.

### ASSOCIATE FELLOWSHIP EXAMINATION

Home entries for the December 1951 Associate Fellowship Examination should be received by the Secretary not later than the 31st August 1951. The lists for entries outside the United Kingdom have been closed.

### HELICOPTERS IN PEACE AND WAR

Mr. Igor Sikorsky will deliver a lecture on "Helicopters in Peace and War" before the Helicopter Association of Great Britain on Tuesday 17th July 1951, at 5.30 p.m., at the Institution of Civil Engineers, Great George Street, London, S.W.1.

The Helicopter Association have kindly invited members of the Society to attend the lecture.

### ELECTIONS

The following is a list of new members and transfers of membership of the Society:—

#### *Associate Fellows*

Humphrey Chetwood

Geoffrey St. Quinton Crockett  
(from Graduate)

David Jeffrey Goman (from Associate)

John Charles Hamon (from Graduate)

George William Jones

John Alexander Kent  
(from Associate)

George Geoffrey Legg  
(from Graduate)

James Robert MacLachlan

Maurice Edward Maxwell  
(ex-Graduate)

William Farquhar Murray

Leslie William James Newman

Alan Pyke

## SECRETARY'S NEWS LETTER

### *Associates*

Edward Michael Bellamy  
Harold William Boothroyde  
Robert Joseph Evans  
Stephen Frederick Hemsted  
Clifford John Le Couteur  
James Leggat (from Student)  
Robert Ward Leslie

Arnold McArthy  
Harold Josiah Shipp  
Richard Kenneth Slatter  
William Charles George Smith  
Willoughby Sidney Worner  
John Esmond Yates-Earl

### *Graduates*

Peter Phillip Benham (from Student)  
Bryan Robert Alexander Burns  
(from Student)  
Francis Herbert Carr  
John Charles Chicken (from Student)  
John Cyril Fell

Maurice Massey Gates  
David Harris (from Student)  
Robin Edward Keates  
John William Paulsen (from Student)  
Lionel Rossiter Pool (from Student)  
Ian Frederick Watson (from Student)

### *Students*

John Howard Ansley  
Bruce Roy Aubin  
Harry Grant Boyne  
John Robert Burton  
David Charles Lavis Francis  
Robert Angus Gee  
Brian Herbert Guest

Basil Hull  
John Leese  
Ronald Clive Lovett  
Basil Ronald Messenger  
Francis Ian Victor Walker  
Robert Willoughby

### *Companions*

Guillermo Gonzaler Gomez  
Jens Rainer Maria Radok

Charles Frederick Towell

## **JOURNAL BINDING**

The prices of binding of Journals are as follows:—

1950 Volume (including packing and postage), 16s. 0d.

Previous Volumes (including packing and postage), 18s. 0d.

Journals, with a note of the name and address of the sender, should be sent direct to The Lewes Press, Friars Walk, Lewes, Sussex, and the remittance to the Secretary at the offices of the Society.

Cases only for unbound 1950 Volumes are available, price 6s. 6d. each. Requests for cases, with remittances, should be sent to the Secretary at the offices of the Society.

## **CHANGES OF ADDRESS**

To assist in keeping the records of members correct and up to date the Secretary will be glad if all members will notify him as soon as possible of changes of address.

When notifying changes please give the following particulars:—

Name (in block letters).

Grade of membership.

New address (in block letters).

Old address.

Changes of address must be received *before the 15th of the month* in order to be effective for the Journal for the following month.

## **ACKNOWLEDGEMENTS**

The Council acknowledge with thanks the return of back numbers of the JOURNAL from A. M. Desoutter, A.F.R.Ac.S.

## ADDITIONS TO THE LIBRARY

The following have been added to the Library (titles of pamphlets are printed in italics. Books marked \* or \*\* may not be taken out on loan):—

- Bowden, C. E. Diesel Model Engines. 3rd Edition. Percival Marshall. 1951.
- Bureau of Ordnance Handbook of Supersonic Aerodynamics, Navord Report, 1448. Volume 2. U.S.G.P.O. 1950.
- Devons, E. Planning in Practice. C.U.P. 1950.
- Lawrence, W. J. No. 5 Bomber Group: R.A.F. (1939-45). Faber and Faber. 1951.
- Low, A. R. Normal Elliptic Functions. University of Toronto. 1950.
- Massachusetts Institute of Technology Proceedings: Conference on Ground Facilities for Air Transportation. M.I.T. 1950.
- Ministry of Civil Aviation *Aviation Law for Private Pilots*. H.M.S.O. 1951.
- Mond Nickel Co. Ltd. Isothermal Transformation Diagrams for Nickel Steels. 1951.
- Morley, A. W. Performance of a Piston-Type Aero-Engine. Pitman. 1951.
- Morse, P. M., and G. E. Kimball Methods of Operations Research. Chapman Hall. 1951.
- Muskhelishvili, N. I. Singular Integral Equations. Aeronautical Research Laboratories (Melbourne). 1949.
- Nenadovic, M. Osnovi Aerodinamickih Konstrukcija: Aeroprofil. 2 volumes. University of Belgrade. 1948.
- Osnovi Aerodinamickih Konstrukcija: Elise. University of Belgrade. 1949.
- Pope, A. Basic Wing and Airfoil Theory. McGraw-Hill. 1951.
- Rogerson, E. C. The Industrial Gas Turbine. Temple Press. 1951.
- Rowe, N. E. Helicopters Applied to Local Air Service Operation: British Experience and Requirements. (Preprint). S.A.E. 1951.
- Sauer, R. Ecoulements des fluides compressibles. Ch. Béranger, Paris. 1951.
- Streeter, V. L. Fluid Mechanics. McGraw Hill. 1951.
- \*UNESCO Directory of International Scientific Organizations. UNESCO. 1951.
- Welsh, R. J., and G. Waller The Gas Turbine Manual. Temple Press. 1951.
- Whittingham, Sir Harold *Air Transport of Pregnant Women*. "The Practitioner." 1951.
- Aviation Medicine*. B.M.A. Proceedings. 1948.
- Preventive Medicine in the R.A.F.* Journal R.I.P.H. & H. 1944.
- Control of Water and Food Supplies on Air Routes*. "Public Health." 1949.
- Whittingham, Barbour and MacGown *Medical Fitness for Air Travel*. British Medical Journal. 1949.

**A.R.C. Reports and Memoranda**

- 2438—*The efficiency of airscrews on wings of large chord.* E. Ower and R. Warden.
- 2465—*Calculation of the interference on a thin symmetrical aerofoil with hinged flap spanning a closed wind-tunnel.* J. H. Preston and A. R. Manwell.
- 2468—*Pitot-tube readings near shock waves in the N.P.L. and R.A.E. high speed tunnels.* R. G. Fowler.
- 2478—*Distortion of control surface panels.* D. M. A. Leggett and R. G. Chapman.
- 2533—*An experimental investigation of the effect of localised masses on the flutter of a model wing.* N. C. Lambourne and D. Weston.
- 2566—*Calibration of the Royal Aircraft Establishment 24-ft. wind tunnel.* J. E. Allen and K. V. Diprose.
- 2648—*A comparison between plain and stringer-reinforced sheet from the shear lag standpoint.* M. Fine.

**The College of Aeronautics, Cranfield. Reports**

- 43—*Measurements of the pressure distribution on sweptback wings with trailing edge split flaps.* A. W. Babister.
- 44—*The evaluation of matrix elements for the analysis of sweptback wing structures by the method of oblique co-ordinates.* S. R. Lewis.
- 45—*Tests on the general instability of a stiffened metal cylinder under axial compression.* W. R. Heald.

**Aeronautical Research Laboratories, Australia**

- Report SM. 166—*The effect of grain size on the structural changes produced in aluminium by slow deformation.* W. A. Rachinger.
- Engines Note 154—*Static pressures and air flows in the flame tube of a Derwent V combustor.* R. E. Pavia.
- Structures and Materials Note 186—*The characteristic numbers and coefficients of Mathieu's equation.* J. Guest.

**National Research Council of Canada. Reports**

- MA 232—*Ejector theory and its application to induction type wind tunnels.* W. R. Laidlaw.
- ME 186—*Spray nozzles for the simulation of cloud conditions in icing tests of jet engines.* N. Golitzine, C. R. Sharp and L. G. Badham.
- MF 2891—*Literature review on the prevention of ice crystal formation in fuels.* J. M. Lloy.
- MF 2905—*The viscosity-surface tension relation for petroleum fuels.* W. Sacks.
- MM 222—*Report on observations of the behaviour of a family of plastic wing models under dead weight and aerodynamic loads.* A. H. Hall.
- MM 225—*Aircraft ski research in Canada.* G. J. Klein.
- MT 10—*Shock tube theory and applications.* J. Lukasiewicz.
- MT 11—*Flow in a shock tube of non-uniform cross-section.* J. Lukasiewicz.

**Ministère de l'Air. France. Publications scientifiques et techniques**

- N.T.41—*Les aspects fondamentaux de la thermocinétique.* P. Vernotte.
- B.S.T.114—*Contribution a l'étude des avions a ailes déformables.* R. Rouanet.

**O.N.E.R.A. Notes Techniques**

- No. 1—*Appropriation des réacteurs a la propulsion des avions supersoniques.* M. Roy.
- No. 2—*Étude du flutter en régime supersonique; le flutter flexion-torsion (problème-plan).* R. Weber et W. Ruppel.



SECRETARY'S NEWS LETTER

No. 3—*Détermination par le calcul et par essais en soufflerie des vitesses critiques de vibration d'une maquette plane a deux degrés de liberté: rotation de l'aile et rotation de l'aileron.* J. Dorr.

**Nationaal Luchtvaartlaboratorium, Amsterdam**

Report F. 64—*Catalogue of aerodynamic measurements.* J. H. Greidanus and A. C. De Kock.

**Aeronautical Research Institute. Sweden. Reports (in English)**

- 37—*Measurements of the pressure distribution on rectangular wings of different aspect ratios.* O. A. M. Holme.  
38—*Theoretical calculation of the downwash factor for unswept trapezoidal wings with regard to the compressibility for subsonic velocities.* W. Jacobs.

**National Advisory Committee for Aeronautics, U.S.A.**

**Reports**

- 941—*Prediction of the effects of propeller operation on the static longitudinal stability of single-engine tractor monoplanes with flaps retracted.* J. Weil and W. C. Sleeman, Jr.  
942—*Investigation in the Langley 19-foot pressure tunnel of two wings of NACA 65-210 and 64-210 airfoil sections with various type flaps.* J. C. Sivells and S. H. Spooner.  
946—*Plastic buckling of a rectangular plate under edge thrusts.* G. H. Handelman and W. Prager.  
950—*Investigations of a systematic group of NACA 1-series cowlings with and without spinners.* M. R. Nichols and A. L. Keith, Jr.  
955—*Application of radial-equilibrium condition to axial-flow compressor and turbine design.* Chung-Hua Wu and L. Wolfenstein.  
959—*One-dimensional flows of an imperfect diatomic gas.* A. J. Eggers, Jr.  
960—*Determination of plate compressive strengths at elevated temperatures.* G. J. Heimerl and W. M. Roberts.  
963—*Investigation with an interferometer of the turbulent mixing of a free supersonic jet.* P. B. Gooderum, G. P. Wood and M. J. Brevoort.  
964—*The effects of variations in Reynolds number between  $3.0 \times 10^6$  and  $25.0 \times 10^6$  upon the aerodynamic characteristics of a number of NACA 6-series airfoil sections.* L. K. Lofton, Jr. and W. J. Bursnall.  
965—*The longitudinal stability of elastic swept wings at supersonic speed.* C. W. Frick and R. S. Chubb.  
967—*Elastic and plastic buckling of simply supported solid-core sandwich plates in compression.* P. Seide and E. Z. Stowell.  
969—*Some theoretical low-speed span loading characteristics of swept wings in roll and sideslip.* J. D. Bird.  
973—*Flight investigation of the effect of various vertical-tail modifications on the directional stability and control characteristics of a propeller-driven fighter airplane.* H. I. Johnson.  
974—*The supersonic axial-flow compressor.* A. Kantrowitz.  
975—*Small bending and stretching of sandwich-type shells.* E. Reissner.  
977—*Frequency response of linear systems from transient data.* M. E. Laverne and A. S. Boksenbom.  
978—*Method of designing cascade blades with prescribed velocity distributions in compressible potential flows.* G. R. Costello.  
979—*On stability of free laminar boundary layer between parallel streams.* M. Lessen.  
980—*General algebraic method applied to control analysis of complex engine types.* A. S. Boksenbom and R. Hood.

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- 984—*Method for determining the frequency-response characteristics of an element or system from the system transient output response to a known input function*. H. J. Curfman, Jr. and R. A. Gardiner.
- 985—*A radar method of calibrating airspeed installations on airplanes in maneuvers at high altitudes and at transonic and supersonic speeds*. J. A. Zalocik.
- 987—*Equilibrium operating performance of axial-flow turbo-jet engines by means of idealized analysis*. J. C. Sanders and E. C. Chapin.
- 995—*Blockage corrections for three-dimensional-flow closed-throat wind tunnel with consideration of the effect of compressibility*. J. G. Herriot.

**\*Technical Memoranda**

- 1241—*Basic differential equations in general theory of elastic shells*. V. S. Vlasov.
- 1299—*Additional measurements of the drag of surface irregularities in turbulent boundary layers*. W. Tillmann.
- 1262—*Turbulence and heat stratification*. H. Schlichting.

J. LAURENCE PRITCHARD,

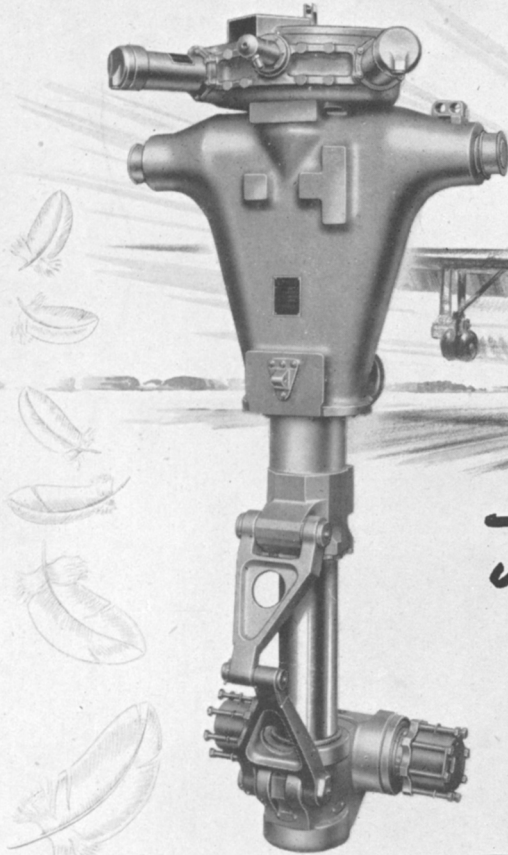
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