- AN APPRECIATION —

The Council of the Royal Aeronautical Society wish to thank those Companies who, by their generous co-operation, have done so much to help in the production of the Journal

ACCLES & POLLOCK LIMITED

AIRWORK LIMITED





AEROPLANE & MOTOR ALUMINIUM CASTINGS LTD.



ALUMINIUM GRAVITY DIE CAST CYLINDER HEAD

ARMSTRONG SIDDELEY MOTORS LTD.



AIRCRAFT MATERIALS LIMITED



SIR W. G. ARMSTRONG WHITWORTH AIRCRAFT LTD.



AIRSPEED LIMITED



AUSTER AIRCRAFT LIMITED



AUTOMOTIVE PRODUCTS COMPANY LTD. BLACKBURN AIRCRAFT LTD.





AVIMO LIMITED



JAMES BOOTH & COMPANY LTD.



BAKELITE LIMITED



BOULTON PAUL AIRCRAFT LTD.



T. M. BIRKETT & SONS LTD.



NON-FERROUS CASTINGS AND MACHINED PARTS HANLEY STAFFS

BRAKE LININGS LIMITED



BIRMETALS LTD.



THE BRISTOL AEROPLANE CO., LTD.



THE BRITISH ALUMINIUM CO., LTD



BROOM & WADE LTD.



THE BRITISH AVIATION INSURANCE CO. LTD BROWN BROTHERS (AIRCRAFT) LTD.



BRITISH AVIATION SERVICES LTD.



BRITISH INSULATED CALLENDER'S CABLES LTD.





BRITISH THOMSON-HOUSTON CO. LIMITED (THE)



AUTOMOBILE, AIRCRAFT AND MARITIME LIMPS SEARCHLIGHTS AND MOTOR ACCESSORIES



Magnetos and Electrical Equipment

THE CHLORIDE ELECTRICAL STORAGE CO. LTD.



BRITISH WIRE PRODUCTS LTD.



THE DE HAVILLAND AIRCRAFT COMPANY LTD.



xxi

DELCO-REMY & HYATT LTD.



DOWLY EQUIPMENT LIMITED



DUNFORD & ELLIOTT (SHEFFIELD) LTD.



DUNLOP RUBBER CO., LTD.



ENGLISH STEEL CORPORATION LTD.



THE FAIREY AVIATION COMPANY LTD.



FIRTH-VICKERS STAINLESS STEELS LTD.



FOLLAND AIRCRAFT LIMITED



GENERAL AIRCRAFT LIMITED



GLOSTER AIRCRAFT CO., LTD.



xxii

HANDLEY PAGE LIMITED

H. M. HOBSON LTD.





HAWKER AIRCRAFT LIMITED

F. A. HUGHES & CO., LIMITED





HELLIWELLS LIMITED

HENRY HUGHES & SON LTD





THE HESTON AIRCRAFT CO., LTD.

THE HUGHES-JOHNSON STAMPINGS LTD.





xxiii





IMPERIAL CHEMICAL INDUSTRIES LTD.



LIGHT-METAL FORGINGS LTD



INTEGRAL LIMITED



LODGE PLUGS LIMITED



IRVING AIR CHUTE OF GREAT BRITAIN LTD



MARSTON EXCELSIOR LIMITED







xxiv



NORMALAIR

MOLLART ENGINEERING COMPANY LTD. THE PALMER TYRE LIMITED





THE MOND NICKEL COMPANY LTD



PERCIVAL AIRCRAFT LIMITED



D NAPIER & SON LIMITED



PETO & RADFORD



PORTSMOUTH AVIATION LIMITED

R.F.D. COMPANY LTD.





PRESSED STEEL CO., LIMITED

A. V. ROE & COMPANY LIMITED





THE PULSOMETER ENGINEERING CO. LTD.

ROLLS-ROYCE LIMITED





QANTAS EMPIRE AIRWAYS

ROTAX LIMITED





xxvi

ROTOL LIMITED

SHORT BROTHERS (ROCHESTER & BEDFORD) LIMITED





THE FIRST MANUFACTURERS OF AIRCRAFT IN THE WORLD

SANGAMO WESTON LTD.







SAUNDERS-ROE LIMITED

SMITHS AIRCRAFT INSTRUMENTS LTD.





SERCK RADIATORS LIMITED

THE SPERRY GYROSCOPE COMPANY LTD





xxvii

THE TECHNOLOGICAL INSTITUTE OF GREAT BRITAIN

A. C. WICKMAN LIMITED





TOOLS & SMALL TOOLS FOR THE AIRCRAFT INDUSTRY

THE UNITED STEEL COMPANIES LIMITED HENRY WIGGIN & COMPANY LTD



For High Quality

VOKES LIMITED



WILLIAMSON MANUFACTURING CO., LTD



WESTLAND AIRCRAFT LIMITED



WESTLAND AIRCRAFT LIMITED Yeovil, Somerset

YORKSHIRE ENGINEERING SUPPLIES LTD.



xxviii

DIRECTORY OF ADVERTISERS

| Accles & Pollock Ltd Aeroplane & Motor Aluminium Castings | Paddock Works, Oldbury, Birmingham Broadwell 1500 Wood Lane, Erdington, Birmingham Erdington 2207-9 |
|---|--|
| AIRCRAFT MATERIALS LTD AIRSPEED LTD | Midland Road, London, N.W.1 Euston 6151 The Airport, Portsmouth Portsmouth 74631 15 Chesterfield Street, W.1 Grosvenor 4841 49 Park Lane, W.1. Works: Oldbury and Widnes. Parkside, Coventry Coventry 4061 |
| G., L.TD | Whitley, Coventry Coventry 61061-4 Britannia Works, Thurmaston, Leicester Syston 86106-8 |
| EQUIPMENT CO. LTD AUTOMOTIVE PRODUCTS CO. LTD AVIMO LTD | Winder House, Douglas Street, S.W.1 Victoria 3404-8 Tachbrook Road, Leamington Spa Leamington Spa 1700 Taunton, Somerset Taunton 3634 |
| BAKELITE LTD | 18 Grosvenor Gardens, S.W.1 Sloane 9911 Thomas Street, Hanley, Stoke-on-Trent Stoke-on-Trent 2184 Woodgate Works, Quinton, Birmingham, 32 Brough, E. Yorks Brough 121 Argyle Street Works, Nechells, Birmingham, 7 Birmingham E 1221 Wolverhampton, Staffs Brough 121 Buxton, Derbyshire Buxton, Derbyshire Buxton 776 Filton House, Bristol Clerkenwell 3494 3-4 Lime Street, E.C.3 Mansion House 0444 1 Great Cumberland Place, W1 Paddington 7040 |
| BRITISH ALUMINIUM CO. LTD BRITISH AVIATION INSURANCE CO. LTD BRITISH AVIATION SERVICES LTD BRITISH BELTING AND ASSESTOS LTD BRITISH EUROPEAN AIRWAYS CORPORATION BRITISH INSULATED CALLENDER'S CASLES | Salisbury House, London Wall, E.C.2 Clerkenwell 3494 3-4 Lime Street, E.C.3 Mansion House 0444 1 Great Cumberland Place, W.1 Paddington 7040 Cleckheaton, Yorks Cleckheaton 800 59 Southwark Street, S.E.1 Hop 0192 Headquarters: Northolt Airport, Middlesex Ruislip 6061 Mansion Works: Erith, Helsby, Leigh, Lancs. and |
| BRITISH THOMSON-HOUSTON CO. LTD. BRITISH WIRE PRODUCTS LTD. BROOM & WADE LTD. BROWN BROTHERS (AIRCRAPT) LTD. BUTLERS LTD | Prescot |
| CHLORIDE ELECTRICAL STORAGE CO. LTD., | |
| Cossor, A. C. LTD | Exide Works, Clifton Junction, near Manchester Swinton 2011 Highbury Grove, N.5 Canonbury 1234 |
| COSSOR, A. C. LTD DE HAVILLAND AIRCRAFT CO. LTD., THE DECCA NAVIGATOR CO. LTD DELCO-RENY & HYATI LTD DOWTY EQUIPMENT LTD DUNFORD & ELLIOTT (SHEFFIELD) LTD DUNLOP RUBBER CO. LTD | |
| DE HAVILLAND AIRCRAPT CO. LTD., THE DECCA NAVIGATOR CO. LTD DELCO-RENY & HYATT LTD DOWTY EQUIPMENT LTD DUNFORD & ELLIOTT (SHEFFIELD) LTD | Hatfield Aerodreme, Herts Hatfield 2345 1-3 Brixton Road, S.W.9 Victoria 6242 Cheltenham, Gloucester Cheltenham 53471 Attercliffe Wharf Works, Sheffield, 9 Sheffield 41121-4 Fort Dunlop, Erdington, Birmingham, 24 Sheffield 41071 Vickers Works, Sheffield Sheffield 41071 |
| DE HAVILLAND AIRCRAPT CO. LTD., THE DECCA NAVIGATOR CO. LTD DELCO-REMY & HYATT LTD DOWTY EQUIPMENT LTD DUNFORD & ELLIOTT (SHEFFIELD) LTD DUNLOP RUBBER CO. LTD | Hatfield Aerodrome, Herts Hatfield 2345 |
| DE HAVILLAND AIRCRAFT CO. LTD., THE DECCA NAVIGATOR CO. LTD | Hatfield Aerodreme, Herts Hatfield 2345 1-3 Brixton Road, S.W.9 Victoria 6242 Cheltenham, Gloucester Cheltenham 53471 Attercliffe Wharf Works, Sheffield, 9 Sheffield 41121-4 Fort Dunlop, Erdington, Birmingham, 24 Sheffield 41071 Vickers Works, Sheffield Sheffield 41071 |
| DE HAVILLAND AIRCRAFT CO. LTD., THE DECCA NAVIGATOR CO. LTD | Hatfield Aerodreme, Herts Hatfield 2345 |

DIRECTORY OF ADVERTISERS

| K.L.G. SPARKING PLUGS LTD KELVIN, BOTTOMLEY & BAIRD LTD | Putney Vale, S.W.15 | Putney 2671 Halfway 3331 Basingstoke 690 |
|--|--|--|
| LIGHT-METAL FORGINGS LTD LODGE PLUGS LTD | Oldbury, Birmingham Rugby | Broadwell 1152 Rugby 2076 |
| MARSTON EXCELSION LTD MILES AIRCRAFT LIMITED MOLLART ENGINEERING CO. LTD MOND NICKEL CO. LTD., THE | Wolverhampton | Wolverhampton 21481 Armley 38081-5 Reading 60811 Elmbridge 3352-4 Grosvenor 4131 |
| NAPIER, D., & SON LTD NORMALAIR LTD | Acton, W.3 | Shepherds Bush 1220 Yeovil 1100 |
| PALMER TYRE LTD., THE | Herga House, Vincent Square, S.W.1 Luton Airport, Luton, Beds Chequers Lane, Dagenham, Essex Parker Street, Kingsway, W.C.2 The Airport, Portsmouth Cowley, Oxford Nine Ems Iron Works, Reading; 39 Victoria Street, S.W.1 | Victoria 8323 Luton 2960 Rainham 34 Holborn 9791 Portsmouth 74374 Oxford 77701 Tilehurst 67182-4 |
| QANTAS EMPIRE AIRWAYS | c/o British Overseas Airways Corporation, Airways Terminal, Buckingham Palace Road, S.W.1 | Victoria 3126 |
| R.F.D. COMPANY LTD | Stoke Road, Guildferd, Surrey | Guildford 3232 Failsworth 2020 Derby 2424 Elgar 7777 Gloucester 4431 |
| SANGAMO WESTON LTD | Great Cambridge Road, Enfield, Middlesex 49 Parliament Street, Westminster, S.W.1 Warwick Road, Birmingham, 11 Rochester, Kent | Enfield 3434 & 1242 Whitehall 7271 Victoria 0531 Chatham 2261 |
| LID. SIMMONDS AEROCESSORIES LTD. SKYHI LTD. SKYHI LTD. SMITHS AIRCRAFT INSTRUMENTS LTD. SPERRY GYROSCOPE CO. LTD., THE | Rochester, Kent | Temple Bar 2373 Hounslow 2211 Gladstone 3333 Ealing 6771 |
| TECHNOLOGICAL INSTITUTE OF GREAT BRITAIN LTD., THE TEMPLE PRESS LTD | 39 Temple Bar House, Fleet Street, E.C.4 Bowling Green Lane, E.C.1 | Central 5940 Terminus 3636 |
| United Steel Companies Ltd., The | 17 Westbourne Road, Sheffield, 10 | Sheffield 60081 |
| Vickers-Armstrongs Ltd Vokes Ltd | Vickers House, Broadway, Westminster, S.W.1 Weybridge Works, Weybridge, Surrey Hentey Park, nr. Guildford, Surrey | Abbey 7777 Byfleet 240-243 Guildford 62861 |
| WESTLAND AIRCRAFT LTD WICKMAN, A. C., LTD WIGGIN, HENRY, & CO. LTD WILLIAMSON MANUFACTURING CO. LTD | Yeovil | Yeovil 1100 Tile Hill 66271 Edgbaston 2246 Willesden 0073-0075 |
| YORKSHIRE ENGINEERING SUPPLIES LTD. | Bronze Foundries, Upper Wortley Road, Leeds, 12 | Leeds 38234 & 38291 |

THE ROYAL AERONAUTICAL SOCIETY

4 HAMILTON PLACE, PICCADILLY, LONDON, W.1

SEPTEMBER

NOTICES

1947

JOURNAL PREMIUM AWARDS

The Council have set aside an annual sum of £250 for the award of premiums for papers published in the *Journal* and the Council hope that members (or non-members) will contribute papers on their own special subjects.

GARDEN PARTY

Members are reminded that the Garden Party on 14th September 1947, at the Handley Page Aerodrome, Radlett, will begin at 2.30 p.m. and will end at 7 p.m.

Car parks will not be open, nor will members be admitted to the aerodrome, before 1.45 p.m. Members and their guests are requested to wear their badges to help the staff organisation.

CONTENTS OF THE SEPTEMBER JOURNAL

The Behaviour of Structures Under Repeated Loads, by A. G. Pugsley, O.B.E., D.Sc., F.R.Ae.S.

Gusts, by Walter Tye, B.Sc., F.R.Ae.S.

High Speed Aircraft Flying Limitations and Handling Problems, by F. W. Morgan, B.Sc., A.R.Ae.S.

The General Theory of Cylindrical and Conical Tubes under Torsion and Bending Loads, Part V, by J. Hadji-Argyris, D.E., A.F.R.Ae.S., and P. C. Dunne, B.Sc., A.F.R.Ae.S.

S.B.A.C. SCHOLARSHIPS

The following have been awarded scholarships by the Selection Committee of the Society of British Aircraft Constructors and the Royal Aeronautical Society:—

- D. Fletcher—S.B.A.C. Educational Grant, apprenticeship at Saunders-Roe, Isle of Wight;
- D. I. Powell—S.B.A.C. Educational Grant, apprenticeship at the Fairey Aviation Co. Ltd., Hayes;
- R. H. Hayward—John de Havilland Scholarship, apprenticeship at The de Havilland Aircraft Co. Ltd., Hatfield.

HONOURS

Dr. H. Roxbee Cox, President-Elect, has been presented with the American Medal of Honour with Silver Palm at a ceremony at the American Embassy. The presentation was made by Major-General Clayton L. Bissell. The citation states that Dr. Roxbee Cox rendered exceptionally meritorious service to the Government of the United States, from September 1941 to September 1945, in connection with the development of turbo-jet and turbine aircraft engines.

SYMPOSIUM ON INTERNAL STRESSES IN METALS

A Symposium on internal stresses in metals and alloys has been arranged by the Institute of Metals in association with the Faraday Society, the Institute of Physics, the Institution

of Mechanical Engineers, the Iron and Steel Institute, the Physical Society and the Royal Aeronautical Society.

The Symposium will be held on Wednesday and Thursday, 15th and 16th October 1947, at the Institution of Mechanical Engineers. Thirty-six papers have been received and a limited number of advance copies of the papers will be available at a charge of 5s. (post free). Because of the shortage of paper it is particularly requested that those who are not able to take part in the meeting will await publication of the final report.

The Symposium will be divided into three main sections. The first, under the chairmanship of Dr. C. Sykes, F.R.S., on The Measurement of Internal Stresses; the second on The Origin, Control and Removal of Internal Stresses, under the chairmanship of Professor L. Aitchison, D.Met., B.Sc., F.R.Ae.S.; and the third on Effects Associated with Internal Stresses, under the chairmanship of Dr. Maurice Cook and Dr. H. J. Gough, C.B., M.B.E., F.R.S.

The first part begins at 10 a.m. on 15th October 1947, and ends at 12.45; the second at 2.30 and ends at 5.0 p.m., and the third at 10 a.m. on 16th October and ends at 5.0 p.m.

Further particulars can be obtained from The Secretary, Institute of Metals, 4 Grosvenor Gardens, S.W.1.

BIRTHDAY HONOURS

Lt. E. Grocock (A) R.N., Associate, was awarded the M.B.E. (Military Division) in the Birthday Honours.

LECTURE PROGRAMME—AUTUMN SESSION 1947

The Lectures will be held at 6 p.m. in the Lecture Hall of the Institution of Civil Engineers, Great George Street, S.W.1 (by permission of the Council of the Institution). Tea will be served at 5.30 p.m.

Visitors are welcome, but should obtain tickets through a member of the Society.

Thursday, 9th October 1947—Pressurisation of Aircraft, by W. M. Widgery, F.R.Ae.S.

Thursday, 23rd October 1947—The Problem of High Temperature Alloys for Gas Turbines, by Sir William T. Griffiths, D.Sc., F.R.I.C., F.Inst.P., F.I.M.

Thursday, 30th October 1947—The Third British Commonwealth and Empire Lecture, by James Bain of Trans-Canada Airlines.

Thursday, 6th November 1947—Some recent Developments in the Landing Gear Field, by Captain R. Lucien, A.F.R.Ae.S.

Thursday, 20th November 1947—The Development of the A.S. Type Gas Turbine, by W. H. Lindsey, M.A., A.F.R.Ae.S.

Thursday, 4th December 1947—Problems Facing Civil Airline Operations, by N. E. Rowe, C.B.E., B.Sc., D.I.C., F.R.Ae.S.

Thursday, 18th December 1947—The Work of the High-Speed Tunnel, by Professor A. Thom, M.A., D.Sc., and W. G. A. Perring, F.R.Ae.S.

GLASGOW BRANCH

Mr. A. Wauchope Fraser, A.R.Ae.S., has been appointed Secretary of the Glasgow Branch in succession to Mr. D. R. Briant. Mr. Fraser's address is: 39 West Crescent, Muirhead, Troon, Ayrshire.

PORTSMOUTH BRANCH

26th September 1947—Model Section Display, at the Cosham Civic Centre at 7 p.m.

GRADUATES' AND STUDENTS' SECTION

Meetings

Tuesday, 23rd September 1947—Discussion on the Design of Wings, introduced by Mr. F. Tyson, Assistant Chief Stressman, Handley Page Ltd.

Tuesday, 21st October 1947—Lecture on Rocket Propulsion and Interplanetary Flight, by Mr. A. V. Cleaver, A.R.Ae.S., Special Projects Engineer, The de Havilland Engine Company Ltd.

Meetings will be held in the Library, 4 Hamilton Place, W.1, at 7.30 p.m.

Visit

17th September 1947 (Wednesday)—A visit has been arranged to the works of the de Havilland Aircraft Co. Ltd. at 10.30 a.m. Application to attend should be made to the Hon. Secretary, J. G. Roxburgh, 62 Fitzjohns Avenue, London, N.W.3.

Dance

The Annual Dance, open to members and their friends, will be held on Friday, 17th October 1947 at the Royal Hotel, Woburn Place, W.C.1 (nearest Tube Station, Russel Square—Piccadilly Line). Tickets, price 5/- each, may be obtained from the Honorary Secretary, J. G. Roxburgh, 62 Fitzjohns Avenue, London, N.W.3, or from the Section's representatives at firms and colleges.

SPECIAL GENERAL MEETINGS

The new Statutes and Rules of the Society were passed at the Special General Meeting held on 23rd January 1947, and the adjourned meeting of 25th April 1947.

The following are the rules then passed for joining the Society as a Fellow, Associate Fellow, Associate, Graduate, Student or Companion:—

4. Fellows shall comprise every person who was on the register on January 23rd 1947 as a Fellow of the Society; and every person thereafter awarded the honour of Fellowship.

Awards of Fellowship will be made annually by the Council and will be announced at the Annual General Meeting of the Society. Selections will be initiated by the Council normally only from among those who have been for at least five years members of the Society. It is the duty of the Council to see that the honour is awarded only to persons who have attained a considerable degree of technical eminence in the profession of aeronautics.

5. Associate Fellows shall comprise every person who was on the register on January 23rd 1947 as an Associate Fellow of the Society and every person thereafter elected or transferred into the class of Associate Fellow.

Every candidate for election into the class of Associate Fellow shall possess the following qualifications:—

- (a) He shall be twenty-five years of age or over.
- (b) He shall be actually engaged at the time of his application for election in the profession of aeronautics.
- (c) He shall have passed the Associate Fellowship Examination of the Society. The Council may exempt a candidate therefrom to the extent to which he has passed other examinations recognised by them.

- (d) (Alternative to (c).) He shall have had at least fifteen years' practical experience in the profession of aeronautics, shall be forty years of age or over, and have had a record of distinguished service. His nomination must be approved by four Fellows of the Society.
- (e) He shall have had in addition to his period of training five years' experience in the profession of aeronautics.
- 6. Associates shall comprise every person who was on the Register on January 23rd 1947 as an Associate of the Society and every person thereafter elected or transferred into the class of Associate.

Every candidate for election into the class of Associate shall possess the following qualifications:—

- (a) He shall be twenty-five years of age or over.
- (b) He shall be actually engaged at the time of his application for election in the profession of aeronautics.
- (c) He shall produce satisfactory evidence of his technical knowledge in the profession of aeronautics.
- (d) He shall have had in addition to his period of training five years' experience in the profession of aeronautics.
- 7. Graduates shall comprise every person who was on the Register on January 23rd 1947 as a Graduate of the Society and every person thereafter elected or transferred into the class of Graduate provided that they shall cease to remain on the Register as a Graduate of the Society when they cease to qualify under section (a) as follows.

Every candidate for election into the class of Graduate shall possess the following qualifications:—

- (a) He shall be twenty-one years of age or over, but shall be not more than twenty-eight years of age (except in such cases as the Council may determine).
- (b) He shall satisfy the Council that he is engaged in or receiving training in the profession of aeronautics.
- (c) He shall have passed the Associate Fellowship Examination of the Society. The Council may exempt a candidate therefrom to the extent to which he has passed other examinations recognised by them.
- 8. Students shall comprise every person who was on the Register on January 23rd 1947 as a Student of the Society and every person thereafter elected into the class of Student provided that they shall cease to remain on the Register as a Student of the Society when they cease to qualify under section (a) below.

Every candidate for election into the class of Student shall possess the following qualifications:—

- (a) He shall be eighteen years of age or over, but shall be not more than twenty-five years of age (except in such cases as the Council may determine).
- (b) He shall satisfy the Council that he has the object or intention of becoming engaged in the profession of aeronautics.
- (c) He shall have passed the Common Preliminary or an exempting examination.
- 9. Companions shall comprise every person who was on the Register on January 23rd 1947 as a Companion of the Society and every person thereafter elected or transferred into the class of Companion.

Companions shall be those persons who being ineligible for the technical grades, have contributed or are likely to contribute, to the development of aeronautical science and engineering and to the furtherance of the objects of the Society.

On 7th August 1947, a Special General Meeting was called to enable the President and Vice-Presidents, elected in May and June 1947 under the rules then operative, to remain in office until the May meeting of the Council in 1949. The resolution to this effect was carried unanimously.

A second resolution to alter the present rates of the Annual Subscriptions of members was not carried by the necessary two-thirds majority.

ASSOCIATE FELLOWSHIP EXAMINATION DECEMBER 1947

Candidates for the Associate Fellowship Examination are reminded that entries for the December examination should be received by the Secretary by 30th September 1947.

THE NEW SYLLABUS FOR ASSOCIATE FELLOWSHIP EXAMINATIONS

The new syllabus for the Associate Fellowship Examinations will come into force on 1st January 1948. The syllabus is now in the press and is expected to be available by 1st October 1947.

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.

ELECTION OF MEMBERS

The following new members have been elected: -

Fellow

Archibald Buchanan Barbour (from Associate Fellow).

Associate Fellows

Edgar Parsons Bridgland (from Graduate), Alexander Pearse Johnstone, Harold Murphy (ex-Student), Salem Gopalaswamy Rangaswamy, William Robert Oliver Sellick.

Associates

Ulryk Breier, Benjamin Revett Cant, Charles John Edwin Carter, William Cunniffe, Jack Hardy, Munir Helmi, Clifford George Hollowell.

Graduates

Robert Frank Brown (from Student), Ian Wedderburn Clunie Robertson, Frederick Danesbury Raper, Patrick James Sibley (from Student).

Students

John Russell Baxter, Dennis Leslie Campion, Leslie Vincent Chapman, Francis Farrell Heaton, Henry Trevor Howard, John W. Jones, James Antony Rowland, Robert James Skillen.

ACKNOWLEDGMENTS

The Council acknowledge with grateful thanks the following gifts: A film of a Dornier Do.X flying boat being inspected by H.R.H. The Prince of Wales in 1930, from Mr. G. F. Webb, A.F.R.Ae.S., of the Medway Branch; and back numbers of the Journal from W. A. J. Wall, A.F.R.Ae.S., and E. E. H. Evans, A.F.R.Ae.S.

The Council also acknowledge the gift of photographs of Wilbur Wright and his aeroplane at Pau in 1909, from Dame Katherine Furse.

ADDITIONS TO THE LIBRARY

Pamphlets in italics with location reference following in brackets. Books marked * or ** may not be taken out on loan.

- B.b.27—Pioneering the Helicopter. Charles Lester Morris. McGraw Hill. 1945.
- B.e.74—Gliding and Power Flying. "Stringbag." Oxford University Press. 1947.
- BB.b.129—Experimental Study of Structures. A. J. S. Pippard. Arnold. 1947.
- D.a.95—Wings over the world. Annual Report 1946. Pan American World Airlines. 1947.
- D.b.271—International Air Transport. Lord Sempill (Ed.). Todd.
- D.c.116—Airports: Design, Construction and Management. H. K. Glidden, H. F. Law and J. E. Cowles. McGraw Hill. 1946.
- E.d.32—Aircraft Layout and Detail Design. N. H. Anderson. McGraw Hill. 1946.
- EE.a.126—Handbook for the Siddeley "Puma" 240 B.H.P. aircraft engine. October 1917. Palethorpe.
- EE.a.127—Report on the 260 h.p. Mercedes aero-engine. July 1917. Technical Information Section, Air Board. (Y.7.)
- G.a.78-Metallurgy. R. A. Beamont. Pitman. 1946.
- K.c.29—Rockets. Robert H. Goddard. American Rocket Society. 1946.
- L.d.116—Notices to Airmen. Nos. 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 213, 214, 215, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228.
- L.d.120—Manual of Celestial Navigation. A. A. Ageton. van Nostrand, New York. 1947.
- L.j.97—Manual of Photogrammetry. P. G. McCurdy and others (Ed.). Pitman. 1944.
- L.k.64—Biology of Flight. F. L. Fitzpatrick and K. A. Styles. Allen & Unwin. 1944.
- M.b.55—Reference Data for Radio Engineers. W. L. McPherson. Standard Telephones and Cables Ltd.
- *Q.a.175—Supplementary Bibliography on Powder Metallurgy. August 1946-July 1947. Institute of Metals.
- *Q.b.75a—Supplement to catalogue of Lewis' Medical, Scientific and Technical Lending Library.
- R.d.41—A historical summary of the Royal Aircraft Factory and its antecedents. 1878-1918. S. Child and C. F. Caunter. R.A.E. 1947.
- S.b.153—The R.C.A.F. Overseas. Fifth Year. Colin Gibson (Ed.): Oxford University Press, Toronto. 1945.
- T.b.103—Transocean Flight Attempts. Arthur Flury (comp.). Published by the author, Bern. 1947.
- UE.5/35—C.S.I.R. Division of Aeronautics. Report S.M.78. An introduction to relaxation methods, approximate methods of numerical computation. F. S. Shaw.

- X.c.158—Aeronautical Dictionary. T. A. Dickenson. Pitman. 1946.
- X.e.67—Soaring Society of America Inc. Roster. January 1947.

A.R.C. Reports and Memoranda

- 2111—The design of suction aerofoils with a very large C1-range. M. B. Glauert.
- 2078—The disturbed longitudinal motion of an uncontrolled aircraft and of an aircraft with automatic control. F/Lt. S. Neumark.
- 2094—The theory of thin plates under transverse pressure. A. G. Pugsley and D. M. A. Leggett.
- 2138—High-speed tunnel measurement of fin-tailplane interference between EC 1040 and EC 1240 sections. W. F. Hilton, S. J. Moore and R. F. Sargent.
- 2107—The effect of the boundary layer and wake on the flow past a symmetrical aerofoil at zero incidence. Part I: The velocity distribution at the edge of, and outside the boundary layer and wake. J. H. Preston.
- 2088—Determination of the optimum twist of an airscrew blade by the "Calculus of Variations." C. N. H. Lock, R. C. Pankhurst and R. G. Fowler.
- 2137—Note on wind-tunnel contractions. F. Cheers.
- 2084—Interference velocity for a close pair of contra-rotating airscrews. C. N. H. Lock.
- 2142—Theoretical air-load and derivative coefficients for rectangular wings. W. Prichard Jones.
- 2145—Theoretical determination of the pressure distribution on a finite wing in steady motion. W. Prichard Jones.

N.A.C.A. Technical Notes

- 1113—Collection and analysis of hinge-moment data on control-surface tabs. Paul E. Purser and Charles B. Cook.
- 1122—Sideslip angles and vertical-tail loads in rolling pull-out manœuvers. Maurice D. White Harvard Lomax and H. L. Turner.
- 1161—Effect of catalysts and pH on strength of resin-bonded plywood. G. M. Kline, F. W. Reinhardt, R. C. Rinker and N. J. de Hollis.
- 1166—Variation of hydrodynamic impact loads with flight-path angle for a prismatic float at 0 degrees and -3 degrees trim and with a $22\frac{1}{2}$ degrees angle of dead rise. Sidney A. Batterson.
- 1168—Some recent contributions to the study of transition and turbulent boundary layer. Hugh L. Dryden.
- 1171—On subsonic compressible flows by a method of correspondence. II—Application of methods to studies of flow with circulation about a circular cylinder. Shepherd Bartnoff and Abe Gelhardt.
- 1174—The application of high-temperature strain gauges to the measurement of vibratory stresses in gas-turbine buckets. R. H. Kemp, W. C. Morgan and S. S. Manson.
- 1178—A flight investigation of the thermal performance of an air-heated propeller. John F. Darsow and James Selna.
- 1196—Investigation of effects of surface temperature and single roughness elements on boundary-layer transition. Hans W. Leipmann and Gertrude H. Fila.
- 1235—An investigation of a thermal ice-prevention system for a cargo airplane. VIII— Metallurgical examination of the wing-leading-edge structure after 255 hours of flight operation of the thermal system. Maxwell Harris and Bernard A. Schlaff.
- 1274—Compressive-strength comparisons of panels having aluminium-alloy sheet and stiffeners with panels having magnesium-alloy sheet and aluminium-alloy stiffeners. Norris F. Dow, W. A. Hickman and H. L. McCracken.

- 1271—Axial-flow fan and compressor blade design data at 52 degrees stagger and further verification of cascade data by rotor tests. S. M. Bogdonoff and Eugene E. Hess.
- 1269—Method for calculating wing characteristics by lifting-line theory using non-linear section lift data. James C. Sivells and R. H. Neely.
- 1267—Flight tests of a helicopter in autorotation including a comparison with theory.

 Alfred Gassow and Garry C. Myers, Jr.
- 1266—Flight measurements of helicopter blade motion with a comparison between theoretical and experimental results. Garry C. Myers, Jr.
- 1253—Comparison of design specifications with the actual static transverse stability of 25 seaplanes. Arthur W. Carter.
- 1251—An analysis of the compressive strength of honeycomb cores for sandwich constructions. Charles B. Norris.
- 1250—Effect of blade stalling on the efficiency of a helicopter rotor as measured in flight. F. B. Gustafsson and Alfred Gassow.
- 1248—Wind-tunnel investigation of control-surface characteristics of plain and balanced flaps with several trailing-edge angles of an N.A.C.A.0009 tapered semispan wing. H. Page Hoggard and E. G. McKinney.
- 1246—Wind-tunnel investigation of icing of an engine cooling-fan installation. James P. Lewis.
- 1239—Wind-tunnel investigation of the effect of power and flaps on the static longitudinal stability characteristics of a single engine low-wing airplane model. Arthur R. Wallace, Peter F. Rossi and E. G. Wells.
- 1236—Drag tests of an N.A.C.A.65 (215)-114, a=1.0 practical-construction airfoil section equipped with a 0.295-airfoil-chord slotted flap. John H. Quinn.

The following reports have also been received:

British Intelligence Objectives Sub-Committee

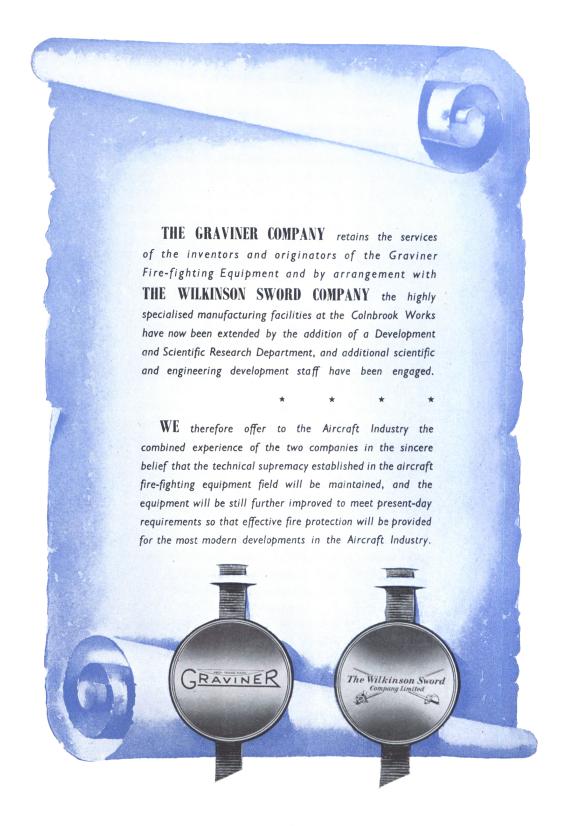
B.I.O.S. Final Reports No. 1259, 1337 item Nos. 25 and 29, 1322 item No. 9, 1345 item No. 9, 301 item Nos. 19, 21, 26, 1360 item No. 19.

F.I.A.T. Final Report Nos. 1087 and 629.

B.I.O.S./J.A.P./P.R. Nos. 1479, 1480, 1481, 1483, 1487, 1471, 1492, 833.

J. LAURENCE PRITCHARD,

Secretary.



For aximum power



The plug that always keeps abreast of modern engine design

Lodge Plugs Ltd., Rugby.

ODGE