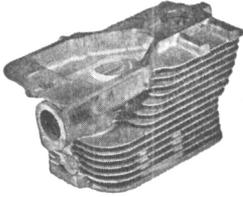


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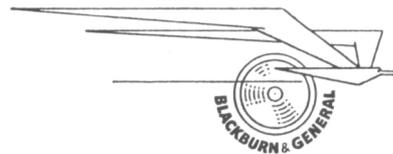
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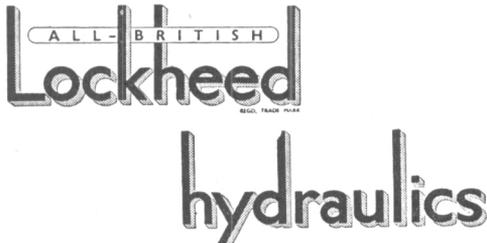
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It is regretted that because of the increasing costs of production it has been found necessary to increase the price of the Journal. From January 1951 (Volume 55, Number 481) the price of a single copy has been increased to 10s. (10s. 3d. including postage), and annual subscriptions to £6 3s. 0d., including postage.

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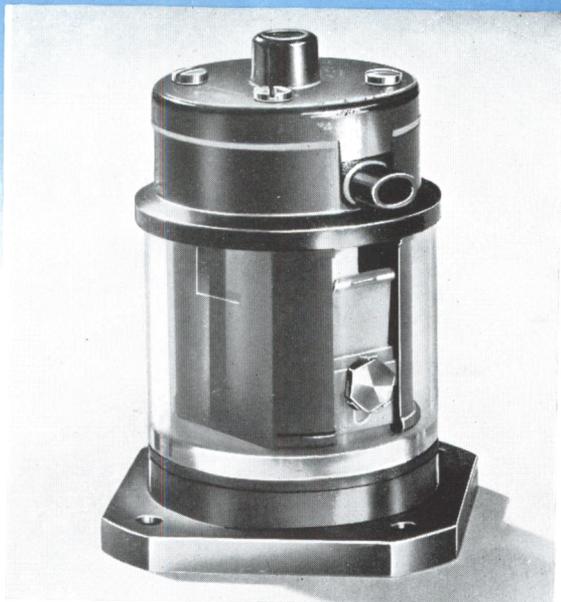
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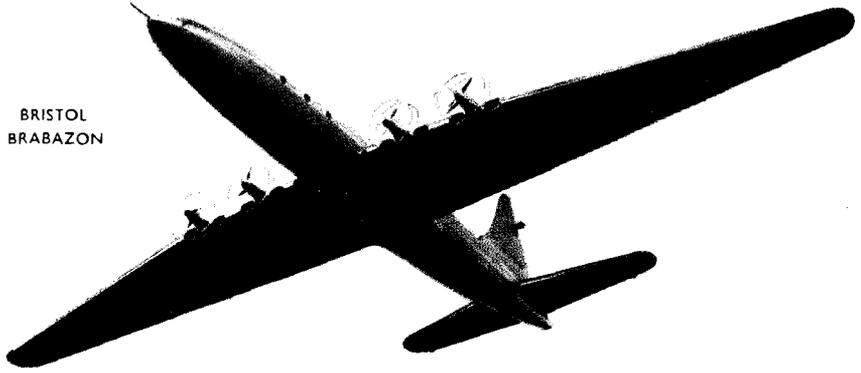


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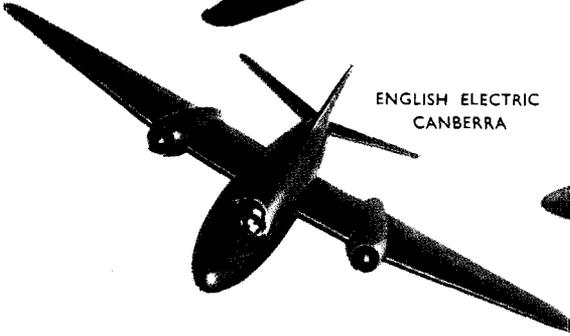
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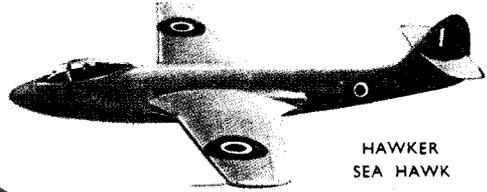
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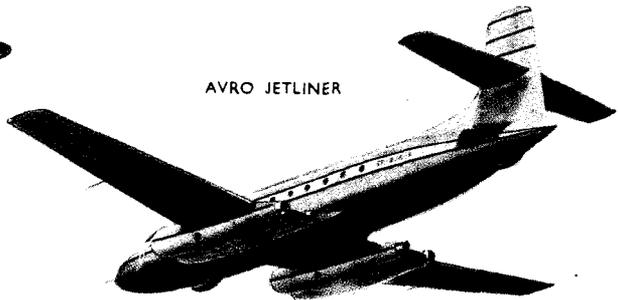
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# SECRETARY'S NEWS LETTER

## FOR MARCH 1951

### APPOINTMENT OF THE NEW SECRETARY

The Council at their meeting of 22nd February 1951 appointed Dr. Archibald Morton Ballantyne, *Associate Fellow*, to succeed Captain J. Laurence Pritchard as Secretary of the Society.

Dr. Ballantyne (who is 42 years of age) is the Senior Lecturer in the Civil and Municipal Engineering Department of University College, London.

He was educated at Glasgow University where he took his B.Sc. degree in Engineering, and in addition to being an Associate Fellow of the Society he is an Associate Member of the Institution of Civil Engineers and an Associate Member of the Institution of Structural Engineers and a Ph.D. of Glasgow University.

Dr. Ballantyne will take over his duties as Secretary on Monday 2nd July 1951.

### EASTER HOLIDAYS

The Offices and Library of the Society will be closed from 5 p.m. on Thursday 22nd March until 9 a.m. on Tuesday 27th March 1951.

### GARDEN PARTY 6th MAY 1951

The Society's Annual Garden Party will be held on Sunday 6th May 1951 at White Waltham Aerodrome, near Maidenhead, by kind permission of the Ministry of Supply and the Fairey Aviation Co. Ltd. An application form for tickets, price 10s. including tea, is enclosed with this JOURNAL.

### THIRD ANGLO-AMERICAN CONFERENCE

With this issue of the JOURNAL and the News Letter is given a leaflet containing particulars of the preliminary arrangements for the Conference and an enrolment form.

The Secretary, on his ten-day visit to New York to discuss the arrangements for the Third Anglo-American Aeronautical Conference, received the greatest co-operation from the Director, S. Paul Johnston, and the officials of the Institute of the Aeronautical Sciences. This co-operation extended far beyond the Secretary's suggestions on behalf of the Council of the Society, and ensures the success of the Third Anglo-American Conference. There is no doubt that these Conferences are rapidly building up a structure of Anglo-American aeronautical understanding and friendship which will stand four-square in technical endeavour against any shocks which it may have to face.

Of that friendship the Secretary has only one thing to say. It is so deep already that he has found it possible to say just those things friends can and should say without hurting. Of understanding there is this to say. Paul Johnston and his team were vividly aware of the detailed difficulties of running this third Conference in view of the general international situation, and cleared these difficulties away by their quick response to the suggestions made to them.

The Secretary had the great honour of attending the Council Dinner of the Institute, of being a guest at their Honours Night Dinner, when over 1,000 members of the Institute and their friends were present, and of being asked to explain on both occasions the arrangements being made for the September meeting.

The Secretary was invited to attend the meeting of the Council of the Institute on 31st January when the following resolution was passed:—

“RESOLVED, that the Officers and Council of the Institute of the Aeronautical Sciences send greetings to the Officers and Council of The Royal Aeronautical Society and express their great appreciation for the visit of your Secretary, Captain J. Laurence Pritchard, to discuss plans for the Third International Conference of the two societies. Our members are looking forward to renewing friendships with the members of The Royal Aeronautical Society and continuing the discussion of mutual aeronautical problems. We feel that the closest possible collaboration between the two societies is essential in this critical period of World history.”

To this resolution the President replied, on behalf of the Council, as follows:—

“The great pleasure with which I received your letter of 1st February informing me of the resolution passed by the Council of the Institute of the Aeronautical Sciences on 31st January will be shared by all members of the Council of The Royal Aeronautical Society when I report its receipt to them at its next meeting on 22nd February.

“Captain Pritchard, safely returned, has given me a very full account of his conversation with you and your Council and I would be grateful if you would accept yourself, and also convey to Mr. Paul Johnston and all his staff, my deep appreciation of the many courtesies and kindnesses extended to our Secretary.

“Your discussions with him concerning the conference between our two organisations in Brighton next September encourage me to feel that that event will be in all respects successful not only in the quality and extent of our technical discussions and inter-change of thought but in its opportunity for so many old friends to re-enjoy the pleasure of each other's company.

“We shall all do our utmost to make the visit of yourself and your colleagues to this country enjoyable and satisfying. We are deeply grateful for the kind suggestion made to Captain Pritchard that you and your colleagues should act as hosts on some occasions during the period of the conference, thus further emphasising the deep friendship and understanding between us and the reality of our collaboration, which is more than ever essential, as you record, in this critical period of world history.”

### **HONOURS AWARDED TO MEMBERS**

Sir Henry Tizard, *Fellow*, has been awarded the Honorary Fellowship of the Institute of the Aeronautical Sciences. Only one such award is made in the year to a non-American. Sir Henry Tizard is Chairman of the Advisory Council on Scientific Policy and Chairman of the Defence Research Policy Committee.

Dr. Hugh L. Dryden, *Fellow*, Director of the National Advisory Committee for Aeronautics, has been awarded the 1950 Guggenheim Medal for his outstanding leadership in aeronautical research and fundamental contributions to aeronautical sciences.

### **NOMINATION OF CANDIDATES FOR COUNCIL**

The following is an extract from the By-laws:—

“The Twenty-one ordinary members (of the Council) shall be nominated and elected from among the members of the Society. At the date of their election at least ten shall be Fellows, and one at least shall be in each of the following classes: Associate Fellow, Associate and Graduate.

“Of the ordinary members of the Council, that number necessary to create seven vacancies shall retire annually. The retiring members shall be those with the longest service since their last election but they shall be eligible for re-election.

"Nominations of candidates for election to the Council must be received by the Secretary not later than 10th April in each year and shall include statements in writing by the candidates that they are willing to serve. The nomination forms shall be signed by one proposer and two seconders, all of whom shall be Voters."

Nomination forms may be obtained on application to the Secretary.

**ELECTION OF FELLOWS**

The attention of members is drawn to the following extract from the By-Laws:—

"Elections to Fellowship will be made annually by the Council and will be announced at the Annual General Meeting of the Society. Nominations will be initiated by the members of the Council or by any four Fellows 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."

Nominations initiated by any four Fellows of the Society should be received by the Secretary on or before 15th April 1951 to give sufficient time for the Council to consider them in time for announcement at the Annual General Meeting in May.

**CONTENTS OF MARCH JOURNAL**

The Relative Merits of Centrifugal and Axial Compressors for Aircraft Gas Turbines, E. S. Moulton, B.Sc., Ph.D., F.R.Ae.S., M.I.Mech.E. and H. Pearson, B.A., A.F.R.Ae.S.

Metal Adhesive Processes, F. H. Parker.

Method for Designing Wind Tunnel Contractions, R. Harrop.

A Note on the Buckling of Struts, Harold Lurie, Ph.D.

**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 AERONAUTICAL QUARTERLY VOLUME II, PART IV**

Part IV, Volume II of "The Aeronautical Quarterly" is now 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 IV are:—*

Supersonic Flow Investigations with a "Hydraulic Analogy" Water Channel	... ..	Joseph Black and O. P. Mediratta
Contracting Ducts of Finite Length	... ..	L. G. Whitehead, L. Y. Wu and M. H. L. Waters
The Properties of Crossed Flexure Pivots and the Influence of the Point at which the strips cross	... ..	W. H. Wittrick
An Analysis of the Lift on Straight, Yawed and Swept-back Wings	... ..	J. Lockwood Taylor
Index to Volume II.		

**Copies of the rest of Volume II, Parts I, II and III 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.**

**MEMBERS' NEW APPOINTMENTS**

- W. H. Cooper (*Assoc. Fellow*)—Apprenticeship Supervisor, D. Napier & Son Ltd.  
 G. F. P. Fox (*Assoc. Fellow*)—Supplies Development Engineer, Rolls-Royce Ltd. (Derby).  
 Tibor Haas (*Assoc. Fellow*)—Project Engineer with the Israel Air Force.  
 Air Commodore H. W. Heslop, C.B., O.B.E. (*Assoc. Fellow*)—Senior Technical Staff Officer, Bomber Command Headquarters.  
 Rear Admiral Casper John (*Companion*)—Flag Officer Commanding, Third Aircraft Carrier Squadron.  
 The Viscount Knollys (*Companion*)—British Representative, Raw Materials Central Group, Washington.  
 S. W. D. Lockwood (*Assoc. Fellow*)—Works Director, Sir W. G. Armstrong Whitworth Aircraft Ltd.  
 H. Povey (*Assoc. Fellow*)—Director of the de Havilland Aircraft Co. Ltd.  
 Air Commodore J. F. Titmas, C.B., C.B.E. (*Assoc. Fellow*)—Director, Aeronautical Inspection Services at the Air Ministry.  
 D. N. Walker (*Assoc. Fellow*)—Chief Mechanical Engineer to the National Coal Board.

**NEWS OF BRANCHES**

The President attended the Inaugural Meeting of the Chester Branch of the Society on 7th February 1951 and also a lecture at the Brough Branch on 14th February 1951.

The President and Secretary also attended the Main Society Lecture held at the Coventry Branch on Thursday 15th February 1951.

**INVITATION TO ATTEND LECTURES BEFORE OTHER BODIES**

Members of the Society are cordially invited to attend the following Lectures:

**Helicopter Association:**—On Saturday 17th March 1951, "Convertible Aircraft," by Captain R. N. Liptrot, C.B.E., B.A., at 4 Hamilton Place, W.1, at 2.30 p.m.

**The Institution of Electrical Engineers:**—On Thursday 5th April 1951, "The Development of the Electrical System on the Bristol Brabazon Mark I Aircraft," by Mr. M. J. J. Cronin, at the Institution of Electrical Engineers, Savoy Place, W.C.2, at 5.30 p.m. (Tea at 5 p.m.).

**LECTURES—SPRING 1951**

**MAIN LECTURES**

(At 6 p.m. in the Lecture Hall of the Institution of Civil Engineers, Great George Street, London, S.W.1, unless otherwise stated. Tea will be served at 5.30 p.m.)

**Thursday, 15th March 1951**—Progress Towards Hydraulic Serviceability, H. G. Conway, M.A., M.I.Mech.E., F.R.Ae.S., and R. H. Bound, F.R.Ae.S.

**Thursday, 29th March 1951**—Some Aspects of Modern Naval Aircraft Design, D. L. Hollis Williams, B.Sc., F.R.Ae.S.

**Thursday, 12th April 1951**—Planning and Production Methods as Applied to the Comet, H. Povey, A.F.R.Ae.S.

**Thursday, 26th April 1951**—A DISCUSSION. Air Travel from the Passenger's Point of View.

**SECTION LECTURE**

(At 7 p.m. in the Library of the Royal Aeronautical Society, 4 Hamilton Place, London, W.1, unless otherwise stated.)

**Tuesday, 10th April 1951**—Simulators, W. R. Thomas, B.Sc., A.M.I.E.E.

GRADUATES' AND STUDENTS' LECTURE

*(At 7.30 p.m. in the Library of the Royal Aeronautical Society, 4 Hamilton Place, W.1, unless otherwise stated. Visitors are welcome to attend.)*

**Thursday, 5th April 1951**—Model Tests in the R.A.E. Spinning Tunnel and the Prediction of Full Scale Spin Characteristics, D. J. Harper, B.Sc.(Eng.), A.F.R.Ae.S.

**Thursday, 19th April 1951**—Boundary Layer Control, E. D. Poppleton, M.Sc.

**BRANCH LECTURES AND NOTICES**

Notices of Branch Lectures and Meetings for inclusion in the Monthly Notices of the Society must be received by the 20th of the preceding month. The Honorary Secretaries of all Branches are asked to inform the Society of their arrangements for meetings so that a complete list of Branch meetings may be given.

**BELFAST BRANCH**

**Tuesday, 13th March 1951**—Radar—How it Works, B. W. Hodlin, B.Sc.(Hons.).

**Tuesday, 3rd April 1951**—Annual General Meeting.

In the Central Hall, College of Technology, Belfast, at 7 p.m.

**BIRMINGHAM BRANCH**

**Friday, 30th March 1951**—Flying the Brabazon, A. J. Pegg, O.B.E. At the Chamber of Commerce, Birmingham, 7.30 p.m.

**Friday, 27th April 1951**—Annual General Meeting. At the White Horse Hotel, Birmingham.

**BRISTOL BRANCH**

**Monday, 12th March 1951**—Junior Members' Papers Competition.

**Wednesday, 4th April 1951**—Power Plant Requirements for Future Aircraft. F. M. Owner, C.B.E., M.Sc., F.R.Ae.S., M.S.A.E.

**Tuesday, 17th April 1951**—Some Notes on Overhaul and Maintenance, C. H. Jackson, B.Sc., A.C.G.I., A.F.R.Ae.S., A.M.I.Mech.E.

**Monday, 30th April 1951**—Annual General Meeting and Film Show.

In the Conference Room, Filton House, The Bristol Aeroplane Co. Ltd. at 6 p.m., unless otherwise stated.

**BROUGH BRANCH**

**Wednesday, 14th March 1951**—Aircraft Structures, P. B. Walker, M.A., Ph.D., F.R.Ae.S.

In the Lecture Hall, Electricity Showrooms, Ferensway, Hull, at 7.30 p.m. Admission is by ticket only.

**COVENTRY BRANCH**

**Wednesday, 18th April 1951**—Annual General Meeting and Films. In the Wine Lodge Hotel, The Burges, Coventry, at 7.30 p.m.

**DERBY BRANCH**

**Monday, 12th March 1951**—The Cierva Air Horse, J. S. Shapiro, Dipl. Ing., A.F.R.Ae.S.

**Monday, 2nd April 1951**—The Evolution of the Design of a Jet Engine, A. A. Lombard, A.F.R.Ae.S.

**Monday, 7th May 1951**—Long Range Turbo-Jet Transport, A. E. Russell, B.Sc., F.R.Ae.S.

In the Rolls-Royce Welfare Hall, Nightingale Road, Derby, at 6.15 p.m.

GLASGOW BRANCH

**Thursday, 22nd March 1951**—Gas Turbines, L. Haworth, B.Sc., A.M.I.Mech.E.  
At Rolls-Royce Factory, Hillington, Glasgow.  
Meetings will begin at 7.30 p.m.

HALTON BRANCH

**Monday, 12th March 1951**—Aircraft Icing Problems, Corporal Apprentice F. L. Maitland-Titterton and Corporal Apprentice E. Davies.  
**Monday, 19th March 1951**—Brains Trust.  
At Branch Headquarters, Halton, at 6.45 p.m., unless otherwise stated.

ISLE OF WIGHT BRANCH

**Thursday, 8th March 1951**—Methods of Time Keeping, Dr. R. d'E. Atkinson.  
**Thursday, 22nd March 1951**—Junior Branch Prize Lecture.  
In the Saunders-Roe Sports and Social Club, at 6 p.m.

LEICESTER BRANCH

**Friday, 13th April 1951**—Rockets and Space Travel, J. Humphries, B.Sc., A.M.I.Mech.E., A.I.R.Ae.S.  
In Room 104, College of Technology, The Newarke, Leicester, at 7.15 p.m.

LUTON BRANCH

**Wednesday, 2nd May 1951**—Plastics in Aircraft, J. Byers.  
**Wednesday, 23rd May 1951**—Film Show and Discussion Evening.  
At the George Hotel, Luton, at 7.30 p.m.

MANCHESTER BRANCH

**Thursday, 29th March 1951**—Cabin Air Conditioning, W. M. Widgery, F.R.Ae.S.  
In the Reynolds Hall, College of Technology, Manchester, at 7.30 p.m.

PRESTON BRANCH

**Wednesday, 28th March 1951**—Lecturettes.  
**Wednesday, 25th April 1951**—Annual General Meeting.  
In the Assembly Hall, Technical College, Corporation Street, Preston, at 7.30 p.m.

PORTSMOUTH BRANCH—FILM PROGRAMME

**Thursday, 15th March 1951**—Casting and Forging Light Alloys (High Duty Alloys).  
**Thursday, 29th March 1951**—Annual General Meeting.  
At the Apprentices' School, Airspeed Ltd., The Airport, Portsmouth, at 6 p.m.

SOUTHAMPTON BRANCH

**Wednesday, 21st March 1951**—The Further Development of the Brabazon Type, G. P. Hebden, B.Sc., A.F.R.Ae.S.  
**Wednesday, 11th April 1951**—Instrumentation for Testing Aircraft and Aero-Engines, C. N. Jaques, B.Sc., A.F.R.Ae.S. (Joint meeting with Southern Branches of Institution of Mechanical Engineers and Institution of Electrical Engineers).  
In the Physics Lecture Theatre, University College, at 7 p.m.

WEYBRIDGE BRANCH

**Wednesday, 14th March 1951**—Turbine-Engined Aircraft, G. R. Edwards, M.B.E., B.Sc., F.R.Ae.S., A.M.I.Struct.E.

SECRETARY'S NEWS LETTER

**Wednesday, 4th April 1951**—Gas Turbines, S. G. Hooker, O.B.E., A.R.C.Sc., B.Sc., D.I.C., D.Phil., F.R.Ae.S., F.R.S.A.

**Wednesday, 18th April 1951**—Junior Prize Lecture, Branch Members.

**Wednesday, 2nd May 1951**—Annual General Meeting and Smoking Concert. At Vickers-Armstrongs Ltd., Weybridge, at 6 p.m.

**ASSOCIATE FELLOWSHIP EXAMINATION RESULTS—DECEMBER 1950**

The following were successful in the Associate Fellowship Examination (New Syllabus) held in December 1950:—

**PART I**

H. A. Buchholdt, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Theory of Machines.

D. W. Cocking, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Theory of Machines.

R. S. Dabbs, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines; D. A. Drane, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines.

G. H. Fenton, Properties of Matter, Heat, Light and Sound; V. N. Ferriman, Pure Mathematics, Magnetism, Electricity and Electronics, Strength of Aircraft Materials and Theory of Structures I.

D. R. Henbest, Applied Mathematics, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines; R. L. Holmes, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Aerodynamics I, Theory of Machines.

E. Mowforth, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines; C. L. Munro, Applied Mathematics, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines.

W. A. Page, Applied Mathematics, Magnetism, Electricity and Electronics, Theory of Prime Movers and Fuels; G. S. Pool, Aerodynamics I.

C. R. Raynham, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines.

B. Shergill, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines; I. H. Smart, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines.

K. Thein, Strength of Aircraft Materials and Theory of Structures I.

F. I. V. Walker, Applied Mathematics, Properties of Matter, Heat, Light and Sound, Strength of Aircraft Materials and Theory of Structures I, Theory of Machines.

**ABROAD**

A. F. El-Kerdani, Properties of Matter, Heat, Light and Sound.

Krishna Iyer, Applied Mathematics, Strength of Aircraft Materials and Theory of Structures I, Theory of Prime Movers and Fuels.

**PART II**

B. M. Laven, Aerodynamics II.

**ANNUAL SUBSCRIPTIONS**

Members are reminded that their annual subscriptions became due on 1st January 1951. The rates are:—

	HOME			ABROAD		
	£	s.	d.	£	s.	d.
Fellows ... ..	5	5	0	4	4	0
Associate Fellows ... ..	4	4	0	3	3	0

## SECRETARY'S NEWS LETTER

*Associates	...	...	...	3	3	0	3	3	0
Graduates (aged under 26)	...	...	...	2	2	0	2	2	0
Graduates (aged 26 and over)	...	...	...	2	12	6	2	12	6
Students (aged under 21)	...	...	...	1	1	0	1	1	0
Students (aged 21 and over)	...	...	...	1	11	6	1	11	6
Companions	...	...	...	3	3	0	3	3	0
Founder Members	...	...	...	2	2	0	2	2	0

\* Any Associate elected before 1st October 1947 may, if he wishes, elect not to receive the JOURNAL, and in this case his subscription will be reduced by £1 1s. 0d. to £2 2s. 0d.

It will avoid delay and confusion if members, when sending remittances for subscriptions, will state their names clearly and give their addresses and grades of membership.

Remittances should be made payable to the Royal Aeronautical Society.

### ELECTIONS

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

#### *Associate Fellows*

Stanley Thomas Alvey, Kenneth Nairn Beatts (from Graduate), Walter Gordon Bradfield (from Graduate), Ronald Peart Cauthery, Kenneth Sydney Robert Child (from Graduate), William Stevenson Cunningham (from Graduate), John Derek Davis (from Student), John Reginald Gardiner (from Associate), Kenneth William Kimber (from Graduate), Herbert Richard Leather (from Graduate), Cecil James Olaf Moorhouse (from Graduate), Alfred Webb Lindley, Maxwell Edmund Massy Perkins, Douglas Edgar Sidders, Robert Henry Warde.

#### *Associates*

John Bezzant, Frederick Walter Brightwell, Walter Alfred Bunce, Thomas George Evans, Edward Henry Holder, Brian Peter Hough, David Johnson, Harold Douglas Judkins, Frederick Alfred Laker, John Laver, Bernard John Stephens, Stanley Williams, Ronald James Wybrow.

#### *Graduates*

Richard Francis Beresford (from Student), David Brown (from Student), Peter John Chance (from Student), John James Cripps, Edmundo Gomes Ferreira Da Silva (from Student), Roy William Edwards, Frank Gowens, Brian John Griffin (from Student), Edwin Mosey Harris (from Student), David Hobson Hughes, Abraham Mendel Geoffrey Olsen (from Student), Ralph Parker, Robert Charles Pennicott (from Student), Denis John Powell (from Student), Gordon Reynard, Ronald Lion Samuels (from Student), David Kenshett Saunders (from Student), David Shellard (from Student), Phillip Reginald Simons, I. Elefterios Vezyrianidis; Robert Charles Wallin (from Student), Charles Ronald John Whitfield, Ivan Ray Yates.

#### *Students*

Malcolm Hesketh Barratt, Nigel Kenneth Benson, Ian Kendrick Blaen, Harry Bonney, David Philip Bowker, David John Bown, Peter Cambridge, Thomas Leon Dalzell, Victor Cecil Doggrell, Clive Ayrton Fleming, Sydney Oliver Frith, Allan Stuart Gilfile, John Harris, Arthur Thomas Hills, Harold Melville Kent, Surinder Bahadur Mathur, Ian Douglas Neilson, John Eric Nelson, Peter Chukuyenum Fielding Obi, Peter Robert Stokes, Derek Wardle Pickston, Anthony Willis, Garnet Wojna, Ernest Martin Woodhams.

**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.

**ACKNOWLEDGMENTS**

The Council acknowledge with grateful thanks the return of back numbers of the Journal from T. H. Turner, Esq., *Associate*; F. Holoubek, Esq., *Assoc. Fellow*; S. P. Prauss, Esq., *Assoc. Fellow*; and Dr. K. G. Bergin, *Assoc. Fellow*.

**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):—

- |                                    |   |
|------------------------------------|---|
| Bartlett, Sir F. & H. N. Mackworth | Planned Seeing (A.P.3139B). H.M.S.O. (Air Ministry). 1950.  |
| Haus, F.                           | Etude théorique du pilotage automatique des avions. Soc. Royale Belge des Ing. et des Ind. 1950.  |
| Knight, R. A. G.                   | Requirements and Properties of Adhesives for Wood (Forest Products Research Bulletin No. 20). H.M.S.O. (D.S.I.R.). 1950.                |
| Kuethe, A. M. & J. D. Schetzer     | Foundations of Aerodynamics. Wiley (Chapman and Hall). 1950.  |
| Pollitt, C. A. H.                  | Air Systems for Aircraft. Pitman. 1950.   |
| Rambo, W. R., <i>et al.</i>        | Final Report on Evaluation of Omni-Bearing-Distance System of Air Navigation. 2 volumes. Airborne Instruments Lab., Mineola, N.Y. 1950. |

**A.R.C. Current Papers.**

- 27—*Stability tests on a large scale model of the Shetland hull bottom.* H. G. White and A. G. Smith.
- 28—*Camber derivatives and two-dimensional tunnel interference at maximum lift.* R. C. Pankhurst and H. H. Pearcey.
- 29—*The low speed performance of related aerofoils in cascades.* A. D. S. Carter.
- 31—*Some improvements in the design of thick suction aerofoils.* J. Williams.
- 32—*Air bags as flexible supports in ground resonance testing of aircraft.* R. L. Moffat and D. R. Gaukroger.
- 34—*Torsional vibration investigations on the Musketeer engine.* E. Downham, Winifred Davidson and M. O. Wolfe.

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

- 2391—*The determination of the fixed root frequencies of propeller blades using scale models and the results compared with calculations.* G. A. Luck and Miss W. Lowes.
- 2398—*A suggested method of increasing the damping of aircraft structures.* D. H. D. Cooper.
- 2434—*The effect of flange stiffness on the stresses in a plate web spar under shear.* D. M. A. Leggett and H. G. Hopkins.
- 2439—*Note on wing-nacelle-airscrew interference.* E. Ower, R. Warden and R. C. Pankhurst.
- 2452—*Wind tunnel tests on lateral control with high-lift flaps made on the S.24/37.* R. Hills, R. E. W. Harland and R. H. Whitby.
- 2477—*Measurement of thrust and torque grading on high-pitch model airscrews.* C. N. H. Lock, H. Bateman and H. L. Nixon.
- 2491—*Flight tests on a Falcon with spoiler lateral control.* C. E. Kerr.
- 2569—*Spar depth and weight.* W. Tye and R. G. Thorne.

**Aeronautical Research Laboratories, Australia. Report.**

- A.72—*The measurement of the Reynolds stresses in a circular pipe as means of testing a hot wire anemometer.* B. G. Newman and B. G. Leary.

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

- 238 *Nouvelles recherches sur la sommation pratique des séries divergentes: aperçus théoriques nouveaux.* P. Vernotte.
- 244—*L'allumage électrostatique des moteurs a explosion.* M. Point.
- 245—*Etude et réalisation d'un équipement électronique pour la mesure et l'enregistrement de faibles variations de capacité: application aux mesures aérodynamiques et hydrodynamiques.* P. Sauvage.

**Nationaal Luchtvaartlaboratorium. Holland. Report in English.**

- S.368—*A "solid-guide fixture" for determining the properties of thin sheet material in compression.* J. H. Rondeel and G. C. Duyn.

**Civil Aeronautics Administration, U.S.A., Technical Development Report.**

- 116—*The development of techniques for the utilization of VHF radio in light aircraft.* F. Gehres, E. C. Gregory and James O. Martin.

**\*National Advisory Committee for Aeronautics, U.S.A. Technical Notes.**

- 2136—*Theory of helicopter damping in pitch or roll and a comparison with flight measurements.* K. B. Amer.
- 2189—*The development and performance of two small tunnels capable of intermittent operation at Mach numbers between 0.4 and 4.0.* W. F. Lindsey and W. L. Chew.
- 2191—*Theoretical investigation and application of transonic similarity law for two dimensional flow.* W. Perl and M. M. Klein.
- 2193—*Effect of heat-capacity lag on a variety of turbine-nozzle flow processes.* R. B. Spooner.
- 2194—*The NACA oil-damped V-G recorder.* I. Taback.
- 2195—*A flight investigation and analysis of the lateral-oscillation characteristics of an airplane.* C. J. Stough and W. M. Kauffman.
- 2196—*Effect of heat-capacity lag on the flow through oblique shock waves.* H. R. Ivey and C. W. Cline.
- 2197—*Pressure distribution and damping in steady pitch at supersonic Mach numbers of flat swept-back wings having all edges subsonic.* H. J. Walker and Mary B. Ballantyne.

- 2198—*Sintering mechanism between zirconium carbide and columbium.* H. J. Hamjian and W. G. Lidman.
- 2199—*Wind-tunnel investigation at low speed of the lateral control characteristics of an unswept untapered semispan wing of aspect ratio 3.13 equipped with various 25-per cent.-chord plain ailerons.* H. S. Johnson and J. R. Hagerman.
- 2201—*Measurement of the moments of inertia of an airplane by a simplified method.* H. L. Turner.
- 2202—*Effect of heat and power extraction on turbojet-engine performance: III—analytical determination of effects of shaft-power extraction.* S. L. Koutz, R. V. Hensley and F. E. Rom.
- 2203—*Boundary-layer measurements in 3.84 by 10-inch supersonic channel* P. F. Brinich.
- 2204—*Gust-tunnel investigation of a wing model with semichord line swept back 60°.* H. B. Pierce.
- 2205—*Theoretical supersonic characteristics of inboard trailing-edge flaps having arbitrary sweep and taper Mach lines behind flap leading and trailing edges.* J. H. Kainer and J. E. Marte.
- 2206—*Graphical method for obtaining flow field in two-dimensional supersonic stream to which heat is added.* I. I. Pinkel and J. S. Serafini.
- 2207—*Analysis of turbulent free-convection boundary layer on flat plate.* E. R. G. Eckert and T. W. Jackson.
- 2208—*Analysis of shear strength of honeycomb cores for sandwich constructions.* F. Werren and C. B. Norris.
- 2209—*Free oscillations of an atmosphere in which temperature increases linearly with height.* C. L. Pekeris.
- 2210—*Impact-pressure interpretation in a rarefied gas at supersonic speeds.* E. D. Kane and G. J. Maslach.
- 2211—*An approximate method of calculating pressures in the tip region of a rectangular wing of circular-arc section at supersonic speeds.* K. R. Czarnecki and J. N. Mueller.
- 2212—*The effect of ice formations on propeller performance.* C. B. Neel and L. G. Bright.
- 2213—*Aerodynamic coefficients for an oscillating airfoil with hinged flap, with tables for a Mach number of 0.7.* M. J. Turner and S. Rabinowitz.
- 2214—*Formulas and tables of coefficients for numerical differentiation with function values given at unequally spaced points and application to solution of partial differential equations.* Chung-Hua Wu.
- 2219—*The dynamic lateral control characteristics of airplane models having unswept wings with round- and sharp-leading-edge sections.* J. L. Hassell and C. V. Bennett.
- 2220—*A balsa-dust technique for air-flow visualization and its application to flow through model helicopter rotors in static thrust.* Marion K. Taylor.
- 2221—*Equations and charts for the rapid estimation of hinge-moment and effectiveness parameters for trailing-edge controls having leading and trailing edges swept ahead of the Mach lines.* K. L. Goin.

J. LAURENCE PRITCHARD,

*Secretary,*

THE ROYAL AERONAUTICAL SOCIETY

4 Hamilton Place, Piccadilly, London, W.1. Tel.: Grosvenor 3515-19

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THIRD ANGLO-AMERICAN  
**Aeronautical Conference**  
**BRIGHTON**

3rd — 7th SEPTEMBER 1951

The preliminary arrangements for the Third Anglo-American Aeronautical Conference, convened by the Royal Aeronautical Society and the Institute of the Aeronautical Sciences, have now been made.

The Conference will be held at Brighton, Sussex, from Monday 3rd to Friday 7th September 1951. The headquarters of the Conference will be at the Grand Hotel, Brighton. Only members of the Royal Aeronautical Society and/or the Institute of the Aeronautical Sciences will be admitted as delegates of the Conference.

The provisional list of lectures is given overleaf. The lectures will be delivered in the mornings and afternoons of Tuesday 4th September to Friday 7th September inclusive, starting at 9 a.m. each morning. As planned at present an assembly function will be arranged for delegates to meet one another on Monday evening 3rd September in Brighton.

In addition to the Technical sessions, arrangements will be made for delegates who would like to visit places of interest, and the 1951 Exhibition in London, and to attend special evening functions during the period of the Conference. Following the Conference opportunities will be given to the American delegates to visit aircraft firms and to attend the Society of British Aircraft Constructors' Flying Display at Farnborough.

Those delegates who require accommodation at Brighton should make application to the Society as early as possible in view of the probable difficulty of obtaining hotel accommodation. Delegates who arrange accommodation direct are asked to notify the Secretary.

A registration fee will be charged to each delegate taking part in the Conference. This registration fee, of £2 2s. 0d., will include copies of all the papers read before the Conference, all Conference information, a Conference badge and other incidental items. It will not include copies of the discussions and authors' replies, for which a charge of £1 1s. 0d. will be made.

Because of the severe shortage of paper, the rising costs and difficulties of binding and printing, it has been decided that no bound volume of the Conference proceedings will be printed.

The Conference volume will be produced in loose leaf form in such a way that copies of the discussions can be inserted immediately following each paper. Binding cases will be provided free of charge.

The attendance of ladies will be welcomed on visits and at certain functions and delegates should notify the Society if they are bringing a lady with them.

Attached is an application form for enrolment.

*March 1951*

# PROVISIONAL LIST OF PAPERS TO BE READ

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## AMERICAN PAPERS

- Linear and Non Linear Aerodynamics of Low Aspect Wing-Body Combinations at Sub and Supersonic Speeds—A. H. FLAX and H. LAWRENCE, *Cornell Aeronautical Laboratory*.
- Structural Problems of Future Aircraft—NICHOLAS J. HOFF, *Polytechnic Institute of Brooklyn*.
- Aeroelasticity and Flutter—I. E. GARRICK, *Aeronautical Research Scientist, Langley Aeronautical Laboratory, N.A.C.A.*
- Transonic Aerodynamics—JOHN STACK, *Assistant Chief of Research, Langley Aeronautical Laboratory, N.A.C.A.*
- Dynamic Stability and Control—W. F. MILLIKEN, JR., *Manager Flight Research, Cornell Aeronautical Laboratory*.
- Propellers for High Speed Aircraft—GEORGY BRADY, *Curtiss-Wright Corporation*.
- Flight Safety—J. LEDERER, *Daniel and Florence Guggenheim Aviation Safety Centre at Cornell University*.
- Jet and Rocket Propulsion—L. DUNN, *California Institute of Technology*.
- High Speed Hydrodynamic Development—E. G. STOUT, *Consolidated Vultee Aircraft Corp.*
- Jet Efficiencies—GEORGE SCHAIRER, *Boeing Airplane Company*.

## BRITISH PAPERS

- Advances in Aircraft Structural Design—G. T. R. HILL, *Sometime Professor of Mechanical Engineering, University College, University of London*.
- The Reduction of Drag by Distributed Suction—Professor Sir BENNETT MELVILL JONES, *Francis Mond Professor of Aeronautical Engineering*, and Squadron Leader HEAD, *Royal New Zealand Air Force*.
- The Influence of Size on the Performance of Jet Engines and Some Estimates of the Resultant Effects on Aircraft Performance—S. J. MOYES and W. A. PENNINGTON, *of the National Gas Turbine Establishment*.
- Flight Development of Thick Suction Wings—L. P. COOMBES, *Chief of the Division of Aeronautics, Council for Scientific and Industrial Research, Australia*.
- Some Aerodynamic Advances—A. FAGE, *Superintendent of the Aerodynamics Division, The National Physical Laboratory*.
- Engineering Problems of Aircraft Operation—B. S. SHENSTONE, *Chief Engineer, British European Airways*.
- Aircraft Structures—A. H. HALL, *Research Officer, Structures Laboratory, National Research Council, Canada*.
- Some Problems of Turbine Transport Operations in Europe—K. G. WILKINSON, *Project and Development Branch, British European Airways*.
- Plastics and Plastic Structures—J. E. GORDON, *Principal Scientific Officer, Chemistry Department, Royal Aircraft Establishment, Farnborough*.
- Material Properties for High Altitude Operation—Dr. T. P. HUGHES, *Senior Principal Scientific Officer, Head of Chemistry Department, Royal Aircraft Establishment, Farnborough*.

# ENROLMENT FORM

## THIRD ANGLO-AMERICAN AERONAUTICAL CONFERENCE BRIGHTON

*3rd September—7th September 1951*

*Date* .....

TO THE SECRETARY,  
THE ROYAL AERONAUTICAL SOCIETY,  
4 HAMILTON PLACE,  
LONDON, W.1.

Please enrol me as a delegate to the Third Anglo-American Aeronautical Conference. I enclose a remittance\* of two guineas as registration fee.

BLOCK LETTERS PLEASE

*Name* .....

*Grade* .....

*Address* .....

.....

\*Remittance must be for the Conference Registration Fee only and should be made payable to The Royal Aeronautical Society.

### NOTE:

All delegates will automatically receive copies of all papers read before the Conference together with a binding case.

Copies of the discussion on the papers and authors' replies will be printed following the Conference and delegates will have the opportunity of ordering these for insertion in their Conference Binders. The additional charge will be one guinea. A special order form will be sent to all delegates in due course and remittances for the printed discussion should not be sent at this time.

*March 1951*

THE ROYAL AERONAUTICAL SOCIETY

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# GARDEN PARTY

SUNDAY 6th MAY 1951

(2.30 p.m.—6.30 p.m.)

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The Society will hold its Annual Garden Party at the White Waltham (near Maidenhead) Aerodrome on Sunday 6th May 1951.

Tickets for the Garden Party are only available to members of the Society and their guests. The total number of tickets will be strictly limited. In previous years it has not been possible to supply members with tickets at the last minute and therefore it is advisable to apply as early as possible.

No one will be admitted without a ticket except children under five years of age who will be admitted free.

Admission Badges, which will be sent with tickets, **MUST BE WORN.**

Members arriving by car will be supplied with special windscreen labels which must be fixed to all cars entering the car park, which is free. A map of the route to the Aerodrome will be sent with your tickets.

Members driven by uniformed chauffeurs must have a chauffeur's ticket (5/- including tea).

For those coming by car the car park gates will be opened at 1.30 p.m. to allow members to park their cars in ample time. Members cannot be admitted to the Aerodrome before 1.30 p.m.

HAVE YOU READ PAGES 1 and 2?

Tickets are 10/- each, including tea and Car Park (excluding uniformed chauffeurs' tickets at 5/- each, including tea). Tickets for the coach are 7/- each, return fare.

# Garden Party

## 6th MAY 1951

To the Secretary  
The Royal Aeronautical Society  
4 Hamilton Place  
London, W1

Please forward to me

Tickets—for the Garden Party for myself and guests.

\*  Tickets for the Coach.

\*  Tickets for a chauffeur in uniform.

\* I shall require  windscreen labels.

\* I shall arrive by air (see note on page 2).

I enclose a remittance for  £ : : Remittance must be for Garden Party tickets and coach fares only and should be payable to the Royal Aeronautical Society.

### BLOCK LETTERS PLEASE

NAME.....

GRADE.....

ADDRESS.....

\* Cross out where not applicable.

A route map and details of road and air travel will be sent with all tickets.

**P.T.O.**

Special coaches will leave Leicester Square at 12.15 p.m. at a fare of 7/- return. These special coaches will leave White Waltham at 6.30 p.m. for London, arriving at Leicester Square about 8 p.m.

Tickets for the coaches must be obtained, and paid for, in advance from the Society.

Members who wish to arrive by air must inform Air Control at the Aerodrome, so that members will know the latest time of landing. All arriving by air must also notify the Society beforehand so that they can be supplied with the necessary admission tickets. Without a notification from the Society to Air Control that these tickets have been issued, aircraft may not be given permission to land.

Dogs will not be allowed on the Aerodrome in any circumstances.

Cameras may be carried and used.

A Souvenir Programme of the Garden Party will be available at the Aerodrome.

These programmes have rapidly become collectors' pieces. Only a limited number can be printed so it is advisable to buy your copy on arrival.