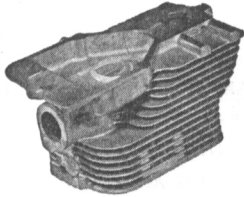


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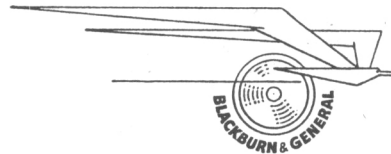
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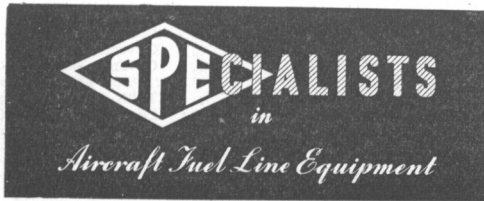
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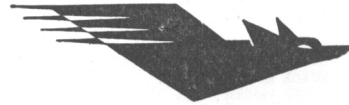


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Structural Engineer (Ref. 845) as assistant on structural research and design on supersonic project. H.N.C. or recognised diploma in appropriate subjects. Practical experience in design and stressing of aircraft structures an advantage.

Applications stating age, technical qualifications and experience to Central Personnel Services, 24 Gillingham Street, London, S.W.1, quoting appropriate reference.

ASSISTANT CHIEF DESIGNER required, age 30-40, salary £1,000-£1,500 according to qualifications. Applicant should have First or Second Class Honours Degree in Mechanical Engineering and have practical experience to A.M.I.Mech.E. standard. Experience should cover organisation and administration of an aircraft equipment design office. Preliminary interview London.—Apply Box 186.

STRESS ENGINEERS required by aircraft firm in the Midlands for the stress analysis of new rocket aircraft projects. The positions offer exceptional opportunities of entering a new and expanding branch of aviation having good prospects. Applicants should have experience of stressing either of aircraft or engines and a degree in engineering or Associate Fellowship of the Royal Aeronautical Society would be preferred qualifications. Good salaries will be offered for these posts in accordance with qualifications and experience.—Apply stating age, experience, etc., to Box 195.

MATHEMATICIANS are invited by the **MINISTRY OF SUPPLY** to apply for appointment in the **SCIENTIFIC OFFICER** Class at an Experimental Establishment near Salisbury, for the study of theoretical problems of stability and control, and the application of statistics to aircraft testing requirements. Candidates should have a 1st or 2nd class honours degree in Mathematics or equivalent qualification. A sound basic knowledge of aerodynamics is essential and experience in the analysis of experimental results is desirable. For the senior grade candidates must be at least 26 years of age with a minimum of 3 years post-graduate research experience. Salary will be determined on age, qualifications and experience within the ranges: Senior Scientific Officer, £720 to £910; Scientific Officer, £380 to £620. Rates for women somewhat lower. Posts are unestablished but carry benefits under F.S.S.U. Application forms obtainable from Ministry of Labour & National Service, Technical and Scientific Register (K), York House, Kingsway, London, W.C.2, quoting A 273/51/A. Closing date 22nd November 1951.

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.

Telephone: Grosvenor 3515 (5 lines). Telegraphic Address: Didaskalos, Audley, London.

Royal Aeronautical Society

Notes for the guidance of those wishing to join the Society in any of its classes

This note has been prepared to assist those wishing to join the Society.

It is emphasised that the Council does not necessarily accept a definition given by an applicant of the position he holds, as definitions vary considerably throughout the Industry.

Throughout this note, wherever reference is made to aircraft or aero engines it can be assumed that this includes Guided Weapons, Unmanned Aircraft, Helicopters and their power plants.

There are seven classes of membership of the Royal Aeronautical Society and for each of these, special conditions are laid down. The classes of membership cover all types of Aeronautical experience and qualifications.

Application can be made for all classes of membership except those of Fellow and Founder Member. All applications for membership of the Society are scrutinised by the Grading Committee which is appointed by the Council to advise on membership.

All applications are made on a standard form, obtainable from the Secretary, and on this form applicants are required to give details of the examinations they have passed and full details of their training and experience. In order to assist the Grading Committee and Council in reaching a decision, applicants must give details of the positions they have held and specific details, with dates, of the work they have done. All forms must be signed by a proposer. Application forms, when completed, should be sent to the Secretary of the Society.

2. FELLOWSHIP

The highest class of membership in the Society is that of Fellow and it is the duty of the Council to see that the honour of Fellowship is awarded only to persons who have attained a high degree of technical eminence in the profession of aeronautics. A nomination for Fellowship can be initiated by a member of the Council or by any four Fellows of the Society. In this case, one of the nominating Fellows can complete an application form in the name of his nominee and this application form can then be signed by three other nominating Fellows, or any four Fellows can separately write to the Secretary nominating any person for Fellowship.

3. ASSOCIATE FELLOWSHIP

There are two ways of becoming eligible for Associate Fellowship.

Firstly, a candidate must have passed, or have obtained exemption from, the Associate Fellowship Examination. In addition he shall have had eight years experience satisfactory to the Council in the profession of aeronautics.

Full details of the examination requirements are contained in the published syllabus of the Associate Fellowship Examination.

No list of experience which would automatically be accepted is published by the Council, but applicants with experience of a type similar to that outlined below should submit their case for consideration of the Grading Committee.

- (a) Technician engaged on research in a firm concerned with the design and development of aircraft, aero engines, their important accessories, instruments, or of fuels and lubricants for use in aircraft.
- (b) Experimental Officer, or Scientific Officer, or equivalent, in an aircraft or aero engine research establishment.
- (c) Flight Research Engineer responsible for experimental flight testing of aircraft or aero engines.
- (d) Draughtsmen responsible for work in the design or project office of a firm concerned with the design and development of aircraft or aero engines.
- (e) Technical Assistant responsible for work in the Performance, Stress, Aerodynamic or other Technical Section of a firm concerned with the design of aircraft or aero engines, their accessories or instruments.
- (f) Senior Design Draughtsman in the Jig and Tool or Layout Office of a factory concerned with the design or production of aircraft or aero engines.
- (g) Senior Production or Planning Engineer responsible for work of a technical nature in the production office of a factory concerned with the design of aircraft or aero engines, or their major accessories.
- (h) Senior Inspector responsible for the accuracy of aircraft materials, aircraft assemblies, aero engines or their major accessories, provided that the candidate is applying technical knowledge to his work.
- (i) Senior Commercial Pilot holding the necessary licences.
- (j) Test Pilot in an aircraft or aero engine factory or research establishment concerned with prototype testing.
- (k) Surveyor to the Air Registration Board.
- (l) University Lecturer in Aeronautics, Lecturer in Aeronautics to a Technical College or Institute.

The By-laws do not exclude periods of training from the list of acceptable experience, although the allowance for any period of training does not cover the whole training period.

For candidates who have taken a degree in aeronautics some allowance is made, but Post-graduate work on an aeronautical subject is normally counted as experience in the profession of aeronautics.

For the second way of becoming eligible for Associate Fellowship, candidates must have fifteen years practical experience in the profession of aeronautics of a type satisfactory to the Council and must have held a position of technical responsibility for a period satisfactory to the Council. They may also be required to take Part III of the Associate Fellowship Examination.

No list of acceptable experience is published by the Council. The type of experience satisfactory to the Council under this section of the By-laws is higher than that required under the normal applications with the examination qualifications.

4. ASSOCIATESHIP

The class of Associate covers those who have experience approaching that of the Associate Fellowship standard under the examination case but who have not the full examination qualifications for Associate Fellowship. The By-laws state that Associates shall produce satisfactory evidence of their technical knowledge in the profession of aeronautics and shall have had eight years experience satisfactory to the Council in the profession of aeronautics.

The evidence of technical knowledge required by the Council varies with the experience of the candidate but the general standard is that of an apprenticeship for those working in aircraft or aero engine firms, the necessary licences for aircraft inspectors, or pilots and navigators. The purpose of this condition is to ensure that the candidate has the appropriate training for the work he is doing.

The experience required for an Associate is slightly lower than that required for an Associate Fellow in a number of cases. No list of acceptable experience is published by the Council but applicants with experience of a type similar to that outlined below should submit their case for consideration of the Grading Committee.

- (a) Technical Assistant in the research section of a firm concerned with the design and development of aircraft or aero engines, of important materials, accessories, instruments, or of fuels and lubricants for use in aircraft.
- (b) Draughtsman in the design or project office of a firm concerned with the design and development of aircraft or aero engines, of important materials, accessories, instruments, or of fuels and lubricants for use in aircraft.
- (c) Technical Assistant in the Performance, Stress, Aerodynamic or other technical section of a factory concerned with the design of aircraft or aero engines, their accessories or instruments.
- (d) Design Draughtsman in the jig and tool or layout office of a factory concerned with the design of aircraft and aero engines.
- (e) Planning or Production engineer in the production office of a factory concerned with the design of aircraft or aero engines or their major accessories.
- (f) Inspector responsible for the accuracy of aircraft materials, aircraft assemblies, aero engines or their major accessories, provided that the candidate is applying technical knowledge to his work.
- (g) Foreman responsible for the production or testing of experimental aircraft or aero engines, provided that the candidate is applying technical knowledge to his work.
- (h) Test Pilot in an aircraft or aero engine factory or research establishment.

- (i) Senior N.C.O. in Flying Services responsible for major repairs, inspection and maintenance.
- (j) Qualified Radio Officer in civil airline, or Signals Officer in Flying Services working in airborne or ground aircraft radio or detection.
- (k) Instructor in navigation aircraft radio, meteorology and aeronautical engineering up to the standards required for the appropriate licences. Applicants are required to provide evidence of being qualified to perform the duties connected with their positions.

5. GRADUATES

The class of Graduate is restricted to those who are between the ages of 21 and 30 inclusive, who are engaged, or are receiving training, in the profession of aeronautics and have passed, or obtained exemption from, Parts I and II of the Associate Fellowship Examination of the Society.

6. STUDENTS

The class of Student is restricted to candidates between the ages of 18 and 28 inclusive, who are engaged in, or who intend to be engaged in, the profession of aeronautics and have passed such examinations as are accepted by the Council. The standard of the examination qualification which is required is that of an Ordinary National Certificate, School Certificate or some corresponding examination.

7. COMPANIONS

The class of Companions is restricted to those, who being ineligible for the technical grades have contributed, or are likely to contribute, to the development of aeronautical science or engineering and to the furtherance of the objects of the Society. This class contains senior executives of aeronautical firms and airlines as well as a number of people who join the Society in this class in order to keep in touch with the latest developments and to join with other members in lectures and the other facilities of the Society.

It will be seen that under the By-laws of the Society, any person interested in aeronautics can join in an appropriate class and for those who do not wish to join the main Society but are interested in aeronautics, Branches exist in many centres in this country and in the Commonwealth. Any person can join one of the Branches for a small subscription.



SECRETARY'S NEWS LETTER

NOVEMBER 1951

IT WAS UNFORTUNATE that Sir Leonard Isitt was unable to make the journey from New Zealand to give the Seventh British Commonwealth and Empire Lecture on 4th October, but we were fortunate in that Mr. T. A. Barrow was able to read the paper for him. Following the lecture the Council gave a dinner at 4 Hamilton Place to Mr. Barrow and other guests from various branches of civil aviation in this country and the Empire.

On 16th October I visited Hawkers, at the invitation of Mr. Sidney Camm, the Chief Designer and a Vice-President of the Society. I spent an interesting time in the works and also had an opportunity of seeing the impressive array of photographs of aircraft designed by the Hawker Siddeley Group of companies. These are arranged in the corridor outside Mr. Camm's room and range from the Sopwith Tabloid of 1914 to the Hawker P-1067 of 1951. In spite of such a galaxy of aeroplanes, to me HAWKER always spells HURRICANE.

The Halton Branch of the Society held its Annual General Meeting, under the chairmanship of Air Commodore Elton, the Station Commander, on Saturday 6th October; and I attended with Mr. D. C. Smith. This is a very active branch, although one of the youngest. It is fortunate in having had a large hall on the station placed at its disposal for meetings and at the A.G.M. it was decided to name it the "Lawrence Deane Hall," in memory of the first chairman and founder of the branch, Wing Commander L. A. Deane, whose tragic death this summer I mentioned last month. In addition, there is a proposal to found a Laurence Deane Memorial Prize, details of which have yet to be decided. The new chairman is Group Captain Rapley and Mr. J. N. Angless is the energetic honorary secretary.

Following the Annual General Meeting the branch held a debate on "Landplanes *versus* Flying Boats," with Mr. A. E. Russell, of Bristols, supporting landplanes and Mr. D. Keith-Lucas, of Shorts, arguing for flying boats. Each was supported by a cadet and the referee was Air Vice-Marshal R. O. Jones. Although flying boats won this round, the discussion proved that as always there are strong supporters for both these types. It was an amusing and interesting debate.

The Halton Branch and the bay tree have much in common.

Another enjoyable occasion was the Royal Aero Club Jubilee Ball at Londonderry House, which my wife and I attended. This function was graced by the presence of Her Royal Highness Princess Margaret, and the Secretary-General of the Royal Aero Club and his staff are to be warmly congratulated on a highly successful affair.

Mr. Peter Masefield was the Question Master at a Brains Trust organised by the Luton Branch on 29th October, with Air Marshal Sir Conrad Collier, President of the Branch, in the chair. The team consisted of Mr. F. M. Owner, of de Havillands, Sir Victor Goddard, Principal of the College of Aeronautics, Mr. D. Keith-Lucas, of Shorts, and Mr. J. Quill, of Vickers Supermarine. The series of questions, which

were mostly serious and technical, were dealt with in an interesting manner and with some humour—both subtle and obvious.

Before the meeting the branch held a small dinner at which were present the members of the Brains Trust, a few other guests, the President of the Branch, Air Marshal Sir Conrad Collier, the Chairman, Mr. F. S. Lester, the Honorary Secretary, Mr. P. A. Drillien and past and present members of the Committee.

The Branches Conference was held on Saturday 20th October under the chairmanship of Mr. N. E. Rowe. Sixteen branches were represented, including Belfast and Glasgow; everyone appeared very keen and a number of points were debated with vigour. At one time three Scots and a Welshman were arguing, but the Chairman, an Englishman, settled the issue in one sentence—much to the amusement of the Conference.

Enclosed with the November JOURNAL, or with these Notices, will be found a leaflet entitled, "Notes for the Guidance of Those Wishing to Join the Society." These have been prepared by the Grading Committee of the Council and I think that they will answer many of the queries of those who wish to become Associate Fellows and members in other grades.

Several members of Council are having a particularly busy time just now. Mr. G. R. Edwards has just returned from a six weeks visit to the United States and Mr. Walter Tye left shortly after giving his lecture on 18th October, on a visit to Australia. Mr. S. Scott Hall is leaving almost immediately for the same destination. "Bon Voyage" and "Safe Home" are our two wishes.

I am very pleased to be able to say that the progress of the President continues to give satisfaction. Let it continue!



Secretary

NOTICES

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The Third Anglo-American Aeronautical Conference.

Seventh British Commonwealth and Empire Lecture—Air Transport in New Zealand and the South Pacific, Sir Leonard Isitt, K.B.E.

Recent Development in Methods of Strength Testing Pressurised Fuselages, A. W. Hotson, B.Sc., A.M.I.Mech.E.

The Accidental Carriage of Insects on Board Aircraft, Marshall Laird, M.Sc., Ph.D.

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 their work. These premium awards are not fixed but vary from five to twenty guineas normally. It is hoped that those members who have written papers on their special subjects will consider their own Journal in the first place.

THE AERONAUTICAL QUARTERLY—Part II, Volume III

Part II, Volume III of the Aeronautical Quarterly is still available. The Contents of Part II are:—

The Construction and Testing of a Xylonite Model of a Delta Aircraft	...	...	...	...	S. C. Redshaw and P. J. Palmer
A Note on the Stressing of Oleo-Pneumatic Shock Absorbers	...	...	...	...	D. M. A. Leggett
The Anti-Symmetric Vibrations of Aircraft	...	...	...	...	R. W. Traill-Nash
The Flow of an Incompressible Fluid through an Axial Turbo-Machine with any Number of Rows	...	...	...	...	J. W. Raily

Copies of Part I, Volume III, 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
Air screws at Supersonic Forward Speeds	...	...	...	J. C. Burns
Polhausen's Method for Three - Dimensional Laminar Boundary Layers	...	...	...	J. C. Cooke
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 limited edition only of "The Aeronautical Quarterly" is printed.

COMMITTEE MEETINGS HELD IN OCTOBER

A meeting of the Council was held on 25th October. Among the items discussed were the Wilbur Wright Memorial Lecture for 1952; the Report of the Scholarship Committee; the Report of the Grading Committee; the Branches Conference; and attendance at lectures.

During October seven meetings were held by Committees of the Society. Outside bodies engaged in aircraft engineering and research held 20 meetings in the offices of the Society.

MEMBERS' NEW APPOINTMENTS

SIR ALEC CORYTON, K.C.B., K.B.E., M.V.O., D.F.C. (*Associate Fellow*) has been appointed Managing Director of the Engine Division of the Bristol Aeroplane Company. Sir Alec will take up his appointment on his retirement from his present post of Chief Executive, Guided Weapons, at the Ministry of Supply.

PROFESSOR W. S. HEMP, M.A. (*Associate Fellow*) has been appointed Head of the Department of Aircraft Design at the College of Aeronautics, Cranfield, but will also retain his title of Professor of Aircraft Structures and Aero-Elasticity.

P. J. PALMER (*Associate Fellow*), formerly of Boulton Paul Aircraft Ltd., has been appointed Lecturer in Civil Engineering at the University of Birmingham.

T. SIMPSON (*Associate Fellow*), formerly Chief Designer, has been appointed Assistant Managing Director of H. M. Hobson Ltd. He has been with the company since 1926.

P. H. STOKES (*Associate Fellow*) has been appointed Technical Director of H. M. Hobson Ltd. He was formerly Chief Development Engineer and joined the company in 1939.

ASSOCIATE FELLOWSHIP EXAMINATION

The next Associate Fellowship Examinations will be held in the offices of the Society on Tuesday, Wednesday and Thursday, 18th, 19th and 20th December. Particulars of time-tables and general arrangements have been sent direct to all candidates.

CAPTAIN J. LAURENCE PRITCHARD

In response to a number of enquiries from members, the following is the home address of Captain Pritchard:—

The Woodpeckers,
Preston Park,
Brighton, Sussex.

LEVERHULME RESEARCH FELLOWSHIPS 1952

Applications are invited for Fellowships and Grants in aid for research. The Fellowships are limited to British-born subjects and are intended for senior workers who are prevented by routine duties or pressure of other work from carrying out research. Application forms may be obtained from the Secretary, Leverhulme Research Fellowships, 3/5 Salisbury Square, London, E.C.4. Applications must be received by 31st December; awards are announced in May and will date from 1st September 1952.

UNIVERSITY COLLEGE SOUTHAMPTON—SCHOLARSHIPS

A number of scholarships at University College, Southampton, will be awarded to candidates with Industrial experience for a course of study from Matriculation, or preferably Intermediate standard, to the B.Sc. Engineering Degree. The Scholarships will be tenable for three or four years.

The value of each Spitfire Mitchell Scholarship is £60 per annum and of each Open Industrial Scholarship, £40 per annum. Candidates must have attained the age of 17 years by 1st March in the year of the examination but there is no upper age limit. Application forms, which must be returned by 20th December 1951, may be obtained from the Academic Registrar, University College, Southampton.

MAIN LECTURES—AUTUMN SESSION 1951

(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, 22nd November 1951—AT CHELTENHAM—Problems of Transonic Flight, A. N. Clifton, F.R.Ae.S. **At St. Mary's College, at 7.30 p.m.**

Thursday, 29th November 1951—Structural Problems in Advanced Aircraft, H. H. Gardner, F.R.Ae.S.

Thursday, 6th December 1951—Air Intakes for Gas Turbines, J. Seddon, A.F.R.Ae.S.

Thursday, 20th December 1951—Control Surface Flutter, E. G. Broadbent, A.F.R.Ae.S., and W. T. Kirkby, A.F.R.Ae.S.

SECTION LECTURE

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

Tuesday, 27th November 1951—Is It Possible to Simplify Aircraft and Still Maintain their Efficiency? W. S. Farren, F.R.Ae.S.

GRADUATES' AND STUDENTS' SECTION

LECTURE

(At 7.30 p.m. in the Library of the Royal Aeronautical Society, 4 Hamilton Place, London, W.1)

Tuesday, 11th December 1951—Naval Aircraft, D. L. Hollis Williams, F.R.Ae.S.

BRANCH NOTICES

BRISTOL BRANCH

Monday, 3rd December 1951—Some Problems in the Development of Future Fighter Aircraft, P. W. Wreford-Bush, A.F.R.Ae.S.

Tuesday, 18th December 1951—Aeronautical Brains Trust. Question Master: N. E. Rowe, C.B.E., D.I.C., B.Sc., A.C.G.I., F.R.Ae.S.

In the Conference Room, Filton House, Bristol Aeroplane Co., at 6 p.m.

BROUGH BRANCH

Wednesday, 21st November 1951—The Probable Role and Influence of Aircraft in Future Warfare, Air Marshal Sir Robert H. M. Saundby, K.B.E., C.B., M.C., D.F.C., A.F.C., R.A.F.(Retired).

Wednesday, 12th December 1951—Thirty Years of Naval Aircraft Development, G. E. Petty, F.R.Ae.S., M.I.Mech.E.

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

CHESTER BRANCH

Tuesday, 4th December 1951—Some Metallurgical Aspects of Engineering Design, L. Marshall, A.F.R.Ae.S., A.I.Mech.E., A.I.M.

At the Grosvenor Hotel, Chester, at 7.30 p.m.

COVENTRY BRANCH

Wednesday, 21st November 1951—The Problems of Integrally Stiffened Wing Structures, A. F. Newall, A.F.R.Ae.S.

Wednesday, 19th December 1951—FILM Evening.

In the Wine Lodge (Corner of Corporation Street and The Burges) at 7.30 p.m.

DERBY BRANCH

Monday, 3rd December 1951—The Aviation Engine, Air Commodore F. R. Banks, C.B., O.B.E., F.R.Ae.S.—A joint meeting with the Derby Branch of the Institution of Mechanical Engineers.

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

GLOUCESTER AND CHELTENHAM

Thursday, 22nd November 1951 (*Cheltenham*)—Problems of Transonic Flight (Main Society Lecture), A. N. Clifton, B.Sc., F.R.Ae.S.

Wednesday, 12th December 1951 (*Gloucester*)—The Effect of Jet Engines on Aircraft Design, H. W. V. Steventon, M.I.Mech.E., A.F.R.Ae.S.

Gloucester Meetings are held in the Wheatstone Hall, City Library, Brunswick Road, at 7.30 p.m.

Cheltenham Meetings are held in the Assembly Hall, St. Mary's College, at 7.30 p.m.

MANCHESTER BRANCH

Thursday, 13th December 1951—The Dart Engine, A. D. Jackson, A.F.R.Ae.S.,
In the Reynolds Hall, College of Technology, Manchester, at 7.30 p.m.

PORTSMOUTH BRANCH

Thursday, 22nd November 1951—FILMS: Buried Treasure, It comes from Coal, Radar goes to Sea, and Airscrew.

Thursday, 6th December 1951—Branch Dinner and Brains Trust—at *Royal Beach Hotel, Southsea, at 7.30 p.m.*

Question Master: The Lord Mayor of Portsmouth, Alderman Albert Johnson, J.P.
Brains Trust: A. Hessel-Tiltman, F.R.Ae.S., Professor E. J. Richards, F.R.Ae.S., and Thurston James.

Thursday, 20th December 1951—FILMS: Flight Six, West Wind, The Gates of Power, New Town, and Contribution to Victory.

At Airspeed Ltd., The Airport, Portsmouth, at 6 p.m.

SOUTHAMPTON BRANCH

Wednesday, 28th November 1951—Developments in Aircraft Production and Engineering, Professor J. V. Connolly, B.E., F.R.Ae.S.

In the Physics Lecture Theatre, University College, Southampton, at 7 p.m.

WEYBRIDGE BRANCH

Wednesday, 28th November 1951—Principles of Space Flight, A. C. Clarke, B.Sc., F.R.Ae.S.

Wednesday, 12th December 1951—Brains Trust: Air Vice-Marshal G. W. Tuttle, C.B., O.B.E., D.F.C., A. A. Hall, M.A., F.R.Ae.S., Charles Gardner, O.B.E., A.R.Ae.S., G. R. Edwards, M.B.E., B.Sc., F.R.Ae.S., A.M.I.Struct.E.

Friday, 28th December 1951—ANNUAL DANCE—*St. George's Hill Tennis Club.*
At Vickers-Armstrongs Ltd., Weybridge, at 6 p.m.

ELECTIONS

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

Associate Fellows

Harry Derrick; Miroslav Nenadovich.

Associate

Sydney Highfield Edwards.

Graduates

Kenneth John Lelliott; David Edgar Thomas Nichols.

ACKNOWLEDGMENTS

The President and Council wish to acknowledge a most valuable gift from Wing Commander R. H. Stocken, *Associate Fellow*, of a complete file of "Inter Avia." This file will form a valuable addition to the Society's archives as it represents the story of international aviation over some twenty years.

The Council also acknowledge with grateful thanks the return of back numbers of the Journal from: W. Tye, Esq., *Fellow*; Group Captain E. G. M. Neville, *Associate Fellow*; and the Bristol Aeroplane Co.

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.

ANNUAL SUBSCRIPTIONS

Members are reminded that their annual subscriptions become due on 1st January 1952. The rates are:—

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

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):—

Brickhill, P.	The Dam Busters. Evans Bros. 1951.
Brown, W. D.	Parachutes. Pitman. 1951.
Cohen, H. and G. F. C. Rogers	Gas Turbine Theory. Longmans Green. 1951.
Dommasch, D. O., S. S. Sherby and T. F. Connolly	Airplane Aerodynamics. Pitman (N.Y.). 1951.
Fisher, C. H.	Carburation, Vol. I. Chapman & Hall. 1951.
Ghaffari, A. G.	Hodograph Method in Gas Dynamics. Tehran University. 1950.
Goldstein, H.	Classical Mechanics. Addison-Wesley. 1951.
*Gowers, Sir Ernest	A.B.C. of Plain Words. H.M. Stationery Office. 1951.
Gross, R. E.	<i>What Price Air Power—Are We Getting Our Money's Worth?</i> Lockheed Aircraft Corporation. 1951.
Jackson, C. H.	<i>Industrial Design in B.O.A.C. Council of Industrial Design.</i> 1951.
Kloucek, C. V.	<i>Structural Analysis by Distribution of Deformation. Reprint from the Quarterly of Applied Mechanics.</i> 1951.
Lockspeiser, Sir Ben	<i>Aviation: Scientific and Technical Developments (Historical).</i> British Association. 1951.
Lewis, B. and G. von Elbe	Combustion, Flames and Explosions of Gases. Academic Press. 1951.
Macmillan, R. H.	The Theory of Control in Mechanical Engineering. Cambridge University Press. 1951.
Mond Nickel Co.	Nickel Cast Iron. Mond Nickel Co. 1951.

- Murray, W. M. (editor) Proceedings of the Society for Experimental Stress Analysis, Vol. VIII, Parts 1 and 2. 1950/1.
- Murray, G. L. American (3rd angle) and British (1st angle) Projection. Toledo Woodhead Springs Ltd. 1951.
- Oldenburger, R. Mathematical Engineering Analysis. Macmillan (N.Y.). 1950.
- Plesman, Dr. A. *Industrial Design in Dutch Aviation. Council of Industrial Design. 1951.*
- Proell, W. and N. J. Bowman Handbook of Space Flight. Perastadion Press. 1950.
- Samaras, D. G. Fluid Dynamics of Energy Release. Office of Air Research. 1951.
- Samaras, D. G. Heat Propagation, Past and Future. Office of Air Research. 1951.
- Scanlan, R. H. and R. Rosenbaum Aircraft Vibration and Flutter. Macmillan (N.Y.). 1951.
- U.S. Air Force—Navy—Commerce Sandwich Construction for Aircraft, Part I. U.S.G.P.O. 1951.
- Vaeth, J. G. 200 Miles Up. Ronald Press. 1951.
- Wade, T. L. The Algebra of Vectors and Matrices. Addison-Wesley. 1951.

A.R.C. Current Papers

- 47—*Dynamic stability of the helicopter; the equations of motion.* A. H. Yates.
- 48—*Data on flight loads obtained with Miller recording equipment with particular reference to test flights in Lancaster PD.119.* Anne Burns.
- 49—*Notes on definitions of and nomenclature for "Air Speeds."* A.A.E.E. staff.
- 50—*List of current papers published by the A.R.C. Nos. 1-50.*
- 51—*Calculation of the damping for rolling oscillations of a swept wing.* Doris E. Lehrian.
- 52—*The measurement of the derivative z_w for an oscillating aerofoil.* A. L. Buchan, K. D. Harris and P. M. Somervail.
- 53—*Observations of the interaction between the shock waves and boundary layers at the trailing edges of aerofoils in supersonic flow.* D. W. Holder and R. J. North.

A.R.C. Reports and Memoranda

- 2364—*Low-speed model tests on two "V" wings.* J. Trouncer and D. Kettle.
- 2420—*The boundary-layer cooling of a flat plate: a contribution to a discussion on the cooling of gas turbine blades.* R. E. Meyer.
- 2423—*The effect of internal pressure on the initial buckling of thin-walled circular cylinders under torsion.* H. G. Hopkins and E. H. Brown.
- 2445—*Some observations on diffusion flames at low pressures.* F. H. Holderness.
- 2466—*Sandwich construction—a practical approach for the use of designers.* D. Williams.
- 2467—*Sandwich construction and core materials, Part IV. Notes on some methods of testing core materials.* F. T. Barwell.
- 2472—*Strain gauge investigation of propeller flutter.* L. H. G. Sterne, H. G. Ewing and J. Kettlewell.
- 2490—*The relative strength and stiffness properties required for strut materials.* A. G. Pugsley.
- 2521—*An investigation in flight of the induced velocity distribution under a helicopter rotor when hovering.* P. Brotherhood.

- 2530—*An experimental investigation into the suitability of a corrugated construction wing for a laminar-flow aerofoil.* J. C. King.
- 2532—*Photo-elastic examination of a cylindrical strut intended for recording compressive loads.* W. A. P. Fisher.
- 2538—*Note on the effect of boundary-layer suction on separation.* E. J. Watson.
- 2595—*Tests of model propellers in the high speed tunnel: thrust and torque measurements on a 2-blade, 6 per cent. thick, Clark Y section propeller.* G. S. Hislop and J. Caldwell.
- 2598—*The behaviour in compression of aluminium alloy panels having a flat skin with corrugated reinforcement.* E. A. Brook.
- 2618—*Stress diffusion adjacent to gaps in the inter-spar skin of a stressed-skin wing.* M. Fine and H. G. Hopkins.
- 2643—*Notes on the design of converging channels.* S. Goldstein.
- 2674—*A note on a rotating bending-fatigue machine for tests at 200°C* C. E. Phillips and R. C. A. Thurston.
- 2676—*Notes on the tail-first aeroplane.* S. B. Gates.
- 2677—*Proposal for an elevator manoeuvrability criterion.* S. B. Gates.

Aeronautical Research Laboratories, Australia

- Aerodynamics Note 101—*The effect of excrescences on transition; some observations in the boundary layer on Williams Glas II profile.* T. S. Keeble and P. B. Atkins.
- Structures and Materials Note 187—*Approximating functions for the buckling modes of flat oblique plates.* J. J. Thompson.

National Research Council of Canada, Reports

- AR-8—*Calculation of manoeuvring tail loads by the inverse method.* B. Etkin and F. A. Woodward.
- MA-240—*The streamline pattern in the vicinity of a certain Joukowski aerofoil, with and without yaw.* M. M. Callan.
- MT-20—*An experimental investigation of protection achieved by sweat cooling on porous surfaces adjacent to non-porous surfaces.* E. Duncombe.
- Note 6—*Method for measuring the size of water droplets in clouds, fogs and sprays.* N. Golitzine.

O.N.E.R.A., France

- Publication No. 48—*Statique de l'aile en flèche. 2ème partie. Influence de la variation longitudinale des efforts intérieurs sur la répartition des contraintes.* W. Flügge.

Mitteilungen aus dem Max-Planck-Institut für Stromungsforschung, Göttingen

- Nr. 4—*Experimentelle Untersuchung der kompressiblen Strömung an und in der Nähe einer gewölbten Wand.* W. Frössel.

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

***Technical Memorandum**

- 1058—*The theory of a free jet of a compressible gas.* G. N. Abramovich.

***Technical Notes**

- 1950—*Damping-in-roll calculations for slender swept-back wings and slender wing-body combinations.* H. Lomax and M. A. Heaslet.
- 1968—*Flight tests of the hydrodynamic characteristics of a Japanese "Emily" flying boat.* J. A. Ferguson, R. E. Seibels, Jr., and R. J. Corber.
- 1995—*Influence of wing flexibility on force-time relation in shock strut following vertical landing impact.* A. E. McPherson, J. Evans, Jr. and S. Levy.

- 2222—*A method for the determination of the spanwise load distribution of a flexible swept wing at subsonic speeds.* R. B. Skoog and H. H. Brown.
- 2311—*Flight investigation of the variation of static-pressure error of a static-pressure tube with distance ahead of a wing and a fuselage.* W. Gracey and E. F. Scheithauer.
- 2323—*Theoretical investigation of submerged inlets at low speeds.* A. H. Sacks and J. R. Spreiter.
- 2468—*Vaporization rates and heat-transfer coefficients for pure liquid drops.* R. D. Ingebo.
- 2377—*Effect of fuel immersion on laminated plastics.* W. A. Crouse, Margie Carickhov and Margaret A. Fisher.
- 2379—*An investigation of the effects of jet-outlet cut-off angle on thrust direction and body pitching moment.* J. R. Blackaby.
- 2380—*Effectiveness of ceramic coatings in reducing corrosion of five heat-resistant alloys by lead-bromide vapors.* D. G. Moore and Mary A. Mason.
- 2381—*Effect of horizontal-tail location on low-speed static longitudinal stability and damping in pitch of a model having 45° sweptback wing and tail surfaces.* J. H. Lichtenstein.
- 2382—*Effect of horizontal-tail size and tail length on low-speed static longitudinal stability and damping in pitch of a model having 45° sweptback wing and tail surfaces.* J. H. Lichtenstein.
- 2384—*Preliminary investigation of wear and friction properties under sliding conditions of materials suitable for cages of rolling contact bearings.* R. L. Johnson, M. A. Swikert and E. E. Bisson.
- 2385—*Fundamental aging effects influencing high-temperature properties of solution-treated Inconel X.* D. N. Frey, J. W. Freeman and A. E. White.
- 2387—*Three-dimensional unsteady lift problems in high-speed flight—the triangular wing.* H. Lomax, M. A. Heaslet and F. B. Fuller.
- 2388—*Axisymmetric supersonic flow in rotating impellers.* A. W. Goldstein.
- 2389—*Fatigue strengths of aircraft materials. Axial-load fatigue tests on notched sheet specimens of 24S-T3 and 75S-T6 aluminum alloys and of SAE 4130 steel with stress-concentration factors of 4.0.* H. J. Grover, S. M. Bishop and L. R. Jackson.
- 2390—*Fatigue strengths of aircraft materials. Axial-load fatigue tests on notched sheet specimens of 24S-T3 and 75S-T6 aluminum alloys and of SAE 4130 steel with stress-concentration factor of 5.0.* H. J. Grover, S. M. Bishop and L. R. Jackson.
- 2391—*Further comparisons of theoretical and experimental lift and pressure distributions on airfoils in cascade at low-subsonic speed.* S. Katzoff and Margery E. Hannah.
- 2392—*Charts giving critical compressive stress of continuous flat sheet divided into parallelogram-shaped panels.* R. A. Anderson.
- 2393—*Flow through cascades in tandem.* W. E. Spraglin.
- 2394—*Effects of design detail on the fatigue strength of 355-T6 sand-cast aluminum alloy.* M. Holt and I. D. Eaton.
- 2395—*Bench-test investigation of the transient-response characteristics of several simulated airplanes incorporating an autopilot sensitive to yawing accelerations.* D. A. Howard.
- 2396—*Single-degree-of-freedom-flutter calculations for a wing in subsonic potential flow and comparison with an experiment.* H. L. Runyan.
- 2397—*Influence of tensile strength and ductility on strengths of rotating disks in presence of material and fabrication defects of several types.* A. G. Holmes, J. E. Jenkins and A. J. Repko.
- 2398—*Synthesis of cyclopropane hydrocarbons from methylcyclopropyl ketone III—2-cyclopropyl-1-butene, cis and trans 2-cyclopropyl-2-butene, and 2-cyclopropylbutane.* V. A. Slabey and P. H. Wise.

- 2399—*Applicability of the hypersonic similarity rule to pressure distributions which include the effects of rotation for bodies of revolution at zero angle of attack.* V. J. Rossow.
- 2400—*Evaluation of the reduced-mass method of representing wing-lift effects in free-fall drop tests of landing gears.* B. Milwitzky and D. C. Lindquist.
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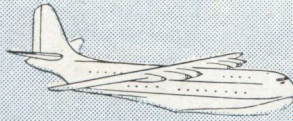
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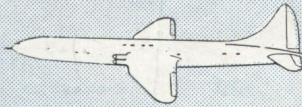
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