## ATLANTIC AERONAUTICAL CONFERENCE

## "Advancing Technology for the Future"

## 25th-28th March 1979

## Williamsburg, USA

Jointly sponsored by the RAeS, AIAA, CASI and AAAF, with participation by the DGLR

The registration desk will be open from 16.00 hrs-19.00 hrs on Sunday, 25th March.

#### Monday, 26th March

The opening address will be given by Dr. George E. Mueller, President AIAA at 09.00 hrs and the keynote speaker will be The Hon. William Perry, Under Secretary of Defence for Research and Engineering.

Session I : Civil Aviation (Technology). Session II : Civil Aviation (Airplane Definition).

#### Tuesday, 27th March

Session III : Military Aviation. Session IV : V/STOL Aircraft and Helicopters.

#### Wednesday, 28th March

Session V : Advanced Aeronautical Testing.

### Social Programme

Monday, 26th March: Cocktail Party at 18.30 hrs. Tuesday, 27th March: Conference Dinner at 19.00 hrs. Wednesday, 28th March: Tour of NASA Langley Research Center.

Registration fee for the conference—\$85.00 for participating society members (AIAA, RAeS, CASI, AAAF), and \$120 for non-members.

Application forms were incorporated in the January issue of *Aerospace*, but may be obtained from the Lectures Secretary, RAeS, 4 Hamilton Place, London W1V 0BQ.

## The latest evaluated design data from **Engineering Sciences Data Unit....**

# Can you afford <u>not</u> to use them?

Engineering Sciences Data Unit (ESDU) is a unique organisation that provides authoritative evaluated data for designers working in aeronautical, chemical, mechanical, structural and other engineering fields.

These data are produced as Data Items, each of which is the result of a critical evaluation of the

Data Item No.	Title
76001	The response of flexible structures to atmospheric turbulence.
76003 76004	Geometric properties of cranked and straight tapered wing planforms. Vapour pressures and critical points of liquids. VII : halogenated ethanes' and ethylenes.
76005 76006	Kinematic and dynamic data for crank-rocker and slider-crank linkages. Vapour pressures and critical points of liquids. VIII : additional halogenated ethanes and ethylenes.
76007	Fatigue strength of longitudinal fillet weld attachments and joints in steels under axial loading.
76008	Drag of transverse rows of spherically-headed rivets immersed in a turbulent boundary layer at subsonic and supersonic speeds.
76009	Thermal conductivity of liquid halogenated alighatic hydrocarbons.
76010	Heat capacity and enthalpy of liquids. II : halogenated methanes.
76011	First approximation to take-off field length of multi-engined transport
	aeroplanes.
76012	Thermodynamic properties of isopropyl alcohol.
76013	Elastic stresses and deflections under uniform pressure of flat rectangular sandwich panels, all edges simply supported (isotropic face plates and orthotropic cores of zero flexural stiffness).
76014	Estimation of end endurance and construction of constant amplitude SN curves from related data corrected for notch and mean stress effects.
76015	Aerodynamic centre of wing-fuselage combinations.
76016	Generalisation of smooth continuous stress-strain curves for metallic materials.
76017	Thermal conductivity of liquid n-alkyl esters of monobasic n-alkanoic
76010	acids.
76018	The friction component of pressure gradient for two-phase gas or vapour/ liquid flow through straight pipes.
76019	Estimation of fatigue crack growth rates and residual strength of
10019	components using linear elastic fracture mechanics.
76020	Estimation of peak values of discrete frequency noise from isolated rotors and propellers.

76021 Dynamic viscosity of carbon dioxide gas and liquid.

Elastic stresses and deflections under uniform pressure of flat rectangular 76022

#### world's foremost source data and is presented in graphical and tabular hard copy format. Data Items are concise, easy to use (through worked examples) and, above all, highly accurate and reliable.

The latest ESDU Data Items to be issued are :

Item No.	Title		
sandwich panels ; long edges clamped, short edges simply suppo			
	(isotropic face plates and orthotropic cores of zero flexural stiffness).		
76023	Buckling of struts, Lipped and unlipped channel sections.		
76024	Vapour pressures and critical points of liquids. IX : $C_2$ to $C_{11}$ aliphatic ethers and three aromatic ethers.		
76025	Vapour pressures and critical points of liquids. $X : C_1$ to $C_{18}$ aliphatic amines.		
76026	ift and drag due to spoiler operation in the ground run.		
76027	Introduction to design and performance data for diffusers.		
76028	Lift-interference and blockage corrections for two-dimensional subsonic flow in ventilated and closed wind-tunnels.		
76029	A guide on the design and selection of dry rubbing bearings.		
76030	Thermal conductivity of carbon dioxide gas and liquid.		
76031	Patigue crack progragation in low and medium strength low alloy steel plate, bar and forgings.		
76032	Fatigue strength of longitudinal welded joints. Symmetrical section I-beams, web to flange welds and T-sections.		
76033	Subsonic base drag of cylindrical bodies with conical boat-tails.		
76034	Estimation of thrust for take-off performance calculations : turbo-jet and turbo-fan engines:		
77001	Effect of intake total pressure loss on net thrust at take-off : turbo-jet and turbo-fan engines.		
77002	Design of parallel axis spur and helical gears – geometric design.		
77003	Elastic stresses and deflections under uniform pressure of flat rectangular sandwich panels; all edges clamped (isotropic face plates and orthotropi cores of zero flexural stiffness).		
77004	Fatigue life estimation under variable amplitude loading. (To be used in conjunction with Item Nos 76014 and 76016.)		
77005	Fatigue crack propagation in high strength low alloy steel plate, bar and forgings.		
77006	Thermal conductivity of liquid dialkyl ethers.		
77007	Heat capacity and enthalpy of liquids. III : halogenated ethanes and ethylenes.		
77009	Pressure losses in curved ducts : single hends		

#### 77008 Pressure losses in curved ducts : single bends. 77009 Pressure losses in curved ducts : interaction factors for two bends in series.

## **ESDU** service

Users of ESDU's Data Items also benefit by having access to a comprehensive back-up service, provided by the company's permanent staff of qualified engineers.



Aeronautical Journal February 1979

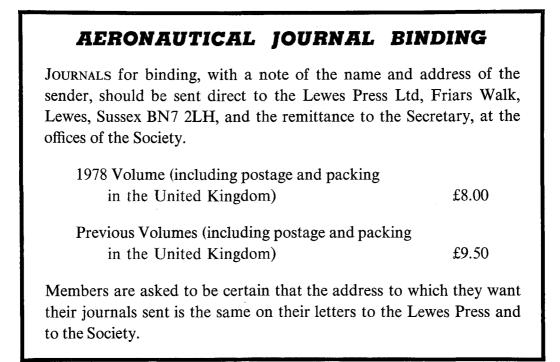
#### https://doi.org/10.1017/S0001924000095415 Published online by Cambridge University Press

### Designed to save time and money

Access to reliable and accurate data saves time and money. ESDU data help engineers to optimise their designs quickly, accurately - and cost-effectively. You can find out more by using the journal's free reply service, or by contacting us direct :

Phone or write to Tony Innes or Keith Reynard, **Engineering Sciences Data Unit** 251-259 Regent Street London W1 Ř 7 A D Tel: 01-437 4894 Telex: 916168 ENDASA G

1		
<b>BY JUPITER</b> The Life of Sir Roy Fedden	Royal Aeronautical Society	
by Bill Gunston		
•	WILSON HILL	
Sir Roy Fedden was "one of the greatest intuitive engin- eers in history" in the 1930s the aero engines he de- signed powered Britain's national airline, more than half the RAF, and about half the other airlines and air forces of the world. He was, at that time "the highest paid engineer in Britain" although he never formally qualified as an engin- eer. By Jupiter tells his story and that of the Jupiter engine, his first great success. By Jupiter is being offered to members of the RAeS and IMechE at the privilege price of 22.50 which barely covers the cost of printing. The book is available to those outside the Society at £5.00. Orders for By Jupiter are now being accepted and may be sent to the Society on the form printed below.	Members Tie, navy crimplene, gold motif£2.25Branch Tie, wine crimplene, gold motif£2.25Blazer Badge, gold tinsel hand emb.£5.50Cuff Links, 'gold' cased enamel motif£4.251 pt. Traditional Tankard, pewter£5.501 pt. Contemporary Tankard, pewter£6.50Car Badge, grille or bar fitting£4.95Tie Slide, motif in enamel£2.25	
Please send mecopy (copies*) of <i>By Jupiter</i> at the privilege member's price of £2.50 (at the full price of £5.00*) for which I enclose a cheque for £	Tie Tack, motif in enamel £2.25 Wall Plaques, hand carved, to order.	
Signed	ALL PRICES INCLUDE VAT AND POSTAGE (UK ONLY)	
Grade of Membership	The items listed above may only be obtained from	
Name	The items listed above may only be obtained from the Society's official stockist:	
Address to which your By Jupiter should be sent:	WILSON HILL & CO. LTD.,	
	17 KILMARNOCK ROAD, GLASGOW G41 3YN	
*Please delete words which are inapplicable.	Telephone: 041-649 5736	



## THE ROYAL AERONAUTICAL SOCIETY

Australia Brenches at: Canberra, Sydney, Melbourne and Adelaide. President: R. J. YATES, FRAeS, Hon. Secretary: B. A. J. SCOLES, MRAeS, 191 Royal Parade, Parkville, Victoria 3052.

Rhodesia Branches at: Bulawayo, Gwelo and Salisbury. Hon. President: Sir HUMPHREY GIBBS, KCMG. President: G. A. FORD, FRAeS. Hon. Secretary: Mrs. MARGARET HEAP, Assoc RAeS. P.O. Box 3759, Salisbury.

New Zealand Branches at: Auckland, Wellington, Palmerston North, Christchurch, Hamilton and Blenheim.

President: W. R. HEALD, FRAeS. Hon. Secretary: M. E. MURRAY, MRAeS, Shell Oil New Zealand Ltd, PO Box 2091, Wellington.

Southern Africa Southern Africa Branches at: Johannesburg, Pretoria, Cape Western and Durban. President: N. A. H. BARRAUD, CEng, MRAeS. Hon. Secretary: Wg Cdr N. F. HARRISON, MRAeS, P.O. Box 27335, Sunnyside 0132, RSA.

#### Bedford

President: G. P. DOLLIMORE, FRAeS. Chairman: M. E. ESHELBY, MRAeS. Hon. Secretary: A. McVITIE, College of Aeronautics, Cranfield Institute of Tech-nology, Bedford.

#### Belfast

President: Dr P. F. FOREMAN, CBE, FRAeS.
Chairman: Prof P. P. BENHAM.
Hon. Secretary: T. E. MORRISON, MRAeS,
Dept. of Mech. Eng., College of Technology, College Square East, Belfast BT1
6DJ. Tel: Work—Belfast 27244. Home
—Dundonald 3403.

#### **Birmingham and Wolverhampton**

President: J. H. GOODIER, MRAeS. Chairman: D. E HAMMOND, MRAeS. Hon. Secretary: E. V. G. ALBRECHT, MRAeS, 2 Stonehouse Avenue, The Dingle, Willenhall, West Midlands, WV13 1AP. Tel: 0902 67755.

#### Boscombe Down

President: Air Cdre. B. BROWNLOW, OBE, AFC, AMRAeS, RAF. Chairman: C. REDMAYNE, CEng, MRAeS. Hon. Secretary: T. J. HOWARD, MBE, CEng, MRAeS, A & AEE, Boscombe Down, Amesbury, Salisbury, Wilts. Tel: 098 02 3331. Ex. 2483.

#### Bristol

President: P. H. CALDER, MRAeS. Chairman: K. CHEVERTON, MRAeS. Hon. Secretary: Dr. R. K. NANGIA, MRAeS, Dept of Aero Engng, University of Bristol, Queens Bidng, Bristol BS8 1TL. Tel: 0272 24161. Ex. 459.

#### Brough

President: N. V. BARBER. Chairman: R. MELLING, MRAeS. Hon. Secretary: M. EDWARDS, MRAeS, c/o British Aerospace, Aircraft Group, Brough, North Humberside, HU15 1EQ. Tel: 0482 667121. Ex 383.

#### Cambridge

President: Professor W. A. MAIR, CBE, FRAeS.

Chairman: N. A. J. HARRY, FRAeS. Hon. Secretary: G. T. ATKINS, MRAeS, Marshall of Cambridge (Engineering) Ltd. Newmarket Road, Cambridge. Tel: 0223 61133.

#### Chester

President: R. GRIFFITHS, FRAeS. Chairman: V. W. CLARKSON, MRAeS. Hon. Secretary: J. R. YOUNG, AMRAeS, British Aerospace, Hatfield Chester Division, Broughton, Chester. Tel: 0244 535333.

#### Christchurch

President: R. CRONIN, MRAeS. Chairman: D. E. CAILES, MRAeS. Hon. Secretary: R. WELLS, AMRAeS, British Aerospace, Weybridge Bristol Division, Bournemouth (Hurn) Airport, Christchurch, Dorset. Tel: 020-16 3201.

#### Coventry

President: A. H. POPE, FRAeS. Chairman: A. J. WEBBER. MRAeS. Hon. Secretary: A. J. EAGLES, 30 Lupton Ave, Coventry, CV3 5BQ. Tel: Work— 0203 452152, Ex. 3336. Home—0203 415412.

#### Cranwell

President: Air Vice Marshal D. HARCOURT-

President: Air Vice Marshal D. HARCOURI-SMITH. Chairman: Wg Cdr D. M. F. BRIGHT, CEng, MRAeS, RAF. Hon. Secretary: Son Ldr R. C. HOLLIDAY, CEng, MRAeS, RAF, Dept of Specialist Ground Training, RAF College, Cranwell, Sleaford, Lincs NG34 & BHB. Tel: 0400 61201, Ex. Trenchard 254.

#### Derby

President: D. A. HEAD, MRAeS.
Chairman: J. BUSH, FRAeS.
Hon. Secretary: J. M. ROBERTSON, MRAeS, Rolis-Royce (1971) Ltd, Derby, DE2 8BJ. Tel: 0332 42424, Ex. 158.

#### Dublin

President: Capt. J. C. KELLY-ROGERS, OBE, FRAeS. Chairman: M. C. MCGOVERN, CEng, MRAeS.

Hon. Secretary: T. J. MORRISSEY, MRAeS, 109 Foxfield Grove, Raheny, Dublin 5. Tel: Dublin 370011. Ex. 2814.

#### Glasgow

President: Dr. A. W. BABISTER, MRAeS. Chairman: Capt. E. A. STARLING, MRAeS. Hon. Secretary: C. SNOWDON, AMRAeS, 18 Torwood Brae, Hamilton ML3 9XB. Tel: East Kilbride 20200. Ex. 395.

#### Gloucester and Cheltenham

President: R. F. HUNT FRAeS. Chairman: K. BEST, MRAeS. Hon. Secretary: R. W. WHITE, MRAeS, c/o Smiths Industries Ltd, Bishops Cleeve, Cheltenham, Glos. Tel: 024-267 3333, Ex. 2423.

#### Halton

President: Gp. Capt. J. P. DOWNES. Chairman: Wg. Cdr. P. SWINDLEHURST, MRAeS.

Minaes. on, Secretary: Sqn. Ldr. B. NOBLE, Student Wing, RAF Halton, Bucks HP22 5PG. Tel: 0296 623535. Ex. 436. Hon.

#### Hatfield President:

President: Chairman: D. R. NEWMAN, FRAeS. Hon. Secretary: G. B. EVANS, FRAeS, Drawing Office, British Aerospace, Hat-field Chester Division, Hatfield, Herts. Tel: 07072 62345.

#### Isle of Wight

President: Sir CHRISTOPHER HARTLEY. KCB, GBE, DFC, AFC. Chairman: R. L. WHEELER, MRAeS. Hon. Secretary: D. S. B. FLIPPANCE, Design Office, British Hovercraft Cor-poration Ltd, East Cowes, Isle of Wight. Tel: 098-382 4121.

#### London Airport

President: E. R. MAJOR, FRAeS. Chairman: D. W. FEARON, MRAeS. Hon. Secretary: D. S. FORSYTH, AMRAeS, 3 Mole Abbey Gdns, West Molesey, Surrey. Tel: Office 759 3131, Ex. 4755. Home 979 7588.

#### Loughborough

President: Professor D. J. JOHNS, FRAeS. Chairman: F. G. MACCABEE, MRAeS. Hon. Secretary: L. E. WOODFIELD, AMRAeS, Transport Technology Dept, Loughborough University of Technology, Loughborough, Leics, LE11 3TU. Tel: Loughborough 63171, Ex. 470.

#### Luton and Stevenage

President: T. G. KENT, MRAeS. Chairman: C. H. MARTIN, CEng, FRAeS. Hon. Secretary: M. F. RICKETT, AMRAeS, British Aerospace, Dynamics Group, Gunnels Wood Rd, Stevenage, Herts. SG1 2AS. Tel: 0438 3456. Ex. 325.

#### Manchester

President: C. E. FIELDING, OBE, FRAeS. Chairman: A. J. TROUGHTON, FRAeS. Hon. Secretary: M. J. TAYLOR, CEng, MRAeS. Flight Development Dept, Britsh Aerospace, Woodford, Stockport, Cheshire. Tel: 061-439-5050. Ex. 556.

#### Medway

President: P. A. HEARNE, FRAeS. Chairman: M. MOULTON, MRAeS. Hon. Secretary: F. H. WOOD, MRAeS. c/o Marconi Avionics Ltd, Airport Works, Rochester, Kent. Tel: 0634 44400.

#### Preston

President: F. E. ROE, FRAeS. Chairman: H. C. CHANNON, MRAeS. Hon. Secretary: D. K. KEMPSTON, MRAeS, British Aerospace, Warton Division, Warton Aerodrome, Preston. Tel: Pres-ton 633333. Ex. 671.

#### Prestwick

President: R. McINTYRE, FRAeS. Chairman: J. CHEERS, MRAeS. Hon. Secretary: P. BERRY. MRAeS, 9 Carcluie Crescent, Ayr KA7 4SP. Tel: 0292 42747.

#### Southampton

President: Professor G. M. LILLEY, FRAeS. Chairman: A. G. J. SMITH, MRAeS Hon. Secretary: Dr. P. TAYLOR, AMRAeS, Dept of Aeronautics and Astronautics, The University, Southampton, Hants. SO9 5NH. Tel: 0703 559122, Ex. 2303.

#### Southend

President: J. R. BATT, MRAeS. Chairman: R. R. ATWOOD, MRAeS. Hon. Secretary: P. R. GROUT, AMRAeS, 36 Alexandra Road, Ashingdon, Roch-ford, Essex. Tel: 0702 546160.

#### Swindon

President: W. GILLESPIE, MRAeS. Chairman: G. N. GINGELL, MRAeS. Hon. Secretary: W. H. BUNTING, MRAeS, Vickers Ltd, Design and Procurement Div, PO Box 44, Swindon. Tel: Stratton St. Margaret 3241.

#### **Thames Valley**

President: E. N. MOBBS. Chairman: J. L. FAREHAM, MRAeS. Hon. Secretary: A. G. FOSKETT, MRAeS, M.L. Aviation Co. Ltd, White Waltham Aerodrome, Berks. Tel: 062-882 3361.

#### Weybridge

President: J. FERGUSON SMITH, FRAeS. Chairman: G. ALESBURY, MRAeS. Hon. Secretary: A. M. DOBSON, MRAeS, British Aerospace, Weybridge Bristol Division, Weybridge, Surrey. Tel: 97 45522. Ex. 6945.

#### Yeovil

President: B. D. BLACKWELL, FRAeS. Chairman: Dr. J. P. JONES, FRAeS. Hon. Secretary: S. J. LOVE, MRAeS, Development Instrumentation, Westland Helicopters Ltd, Yeovil, Somerset. Tel: 0935 5222. Ex. 160.



Decca Aviation Electronics – the choice of an ever growing number of users.

Decca Doppler Navigation Systems have been installed in over 80 different types of rotary and fixed wing aircraft and has been supplied to 40 different countries. The TANS Computer/Display has also been ordered in quantity for a number of major aircraft programmes.

The Decca Navigator is used by the Royal Air Force, British Airways and in a wide variety of fixed and rotary wing civil and military aircraft throughout the world. Decca Loran is in service with the RAF, the USAF and the US Coast Guard. The MONA R-Nav system, certified by the CAA and FAA in the Lockheed TriStar, is now in widespread airline service.

Decca manufactures airborne VHF Nav/Comm and DME equipment, ordered by the MOD. The Decca range of equipment includes a CAA approved NDB, ILS, the type DVB 50 Doppler/VOR Beacon, and a portable TACAN. Decca is also a major supplier of electronic warfare systems, ASMI and communications equipment.

The Decca Navigator Company Limited 9 Albert Embankment London SE1 7SW