

UNIVERSITY OF BRISTOL

DEPARTMENT OF MECHANICAL ENGINEERING

An immediate vacancy exists for a Research Assistant to participate in a Ministry of Defence sponsored programme of research to improve air distribution in aircraft cockpits. Applicants should have a good first degree and some previous practical experience, preferably in the air-conditioning or aviation industries. The successful candidate will be given the opportunity to register for a higher degree. Salary according to age and experience in the range £957-£1353 per annum. Applications in writing, giving the names of two referees, to **Mr. P. W. Fitt, Department of Mechanical Engineering, University of Bristol, Queen's Building, University Walk, Bristol, BS8 1TR.**

Cranfield Institute of Technology

One Year M.Sc. Course in Structural Dynamics

Applications are invited for entry to the above course, commencing October 1971, from candidates who possess a degree or equivalent qualification in Engineering, Physics or Mathematics or who expect to graduate during 1971.

The course is specially designed to meet the need for dynamics specialists in Civil, Mechanical, Aeronautical and Marine Engineering. The aim of the lectures is to emphasise the similarity that exists over a wide range of dynamic problems and in methods of solution. Lecture courses cover the dynamic response, stability and control of elastic structures and their response to random excitations. Typical thesis research topics that are available include wind excited oscillations of tall structures, stability and control of aircraft in turbulence, random vibrations in taxiing aircraft, vibration and control of ships and random vibration of structures with nonlinear damping.

Advice on financial aid will be given.

Further details and forms of application from
The Registrar (Admissions), Cranfield Institute of
Technology, Cranfield, Bedford.

CARPETS

for aircraft, passenger reception, airline offices, flying clubs, etc.

All leading makes of Branded Carpets
WILTONS • AXMINSTERS • TUFTED • ORIENTALS
at Highly Competitive contract prices

Expert fitting service and free delivery throughout UK

Over £200,000 stocks in our London showrooms

Private individuals in the aircraft industry may purchase
from us at up to 30% DISCOUNT

DODSON BULL CARPET CO. LTD.

Please write to Dept. R.A.S. LONDON: 5 & 6, Old Bailey, EC4 7JD.
Tel: 01-248 7971. BIRMINGHAM: 164, Edmund St., B3 2HB. Tel: (021) 236 5882. BOURNEMOUTH: 268, Old Christchurch Rd., BH1 1PH. Tel: 21248. BRISTOL: 2-3, Royal London House, Queen Charlotte St., BS1 4EX. Tel: 28857. LEEDS: 12, Great George St., LS1 3DW. Tel: 41451. MANCHESTER: 55-61, Lever St., M1 1DE. Tel: (061) 236 3687/8/9. NEWCASTLE-upon-TYNE: 90-92, Pilgrim St., NE1 6SQ. Tel: 21428/20321. WESTCLIFF-on-SEA: 495, London Rd., SS0 9LG. Tel: Southend 46569. BRIGHTON: 2-5, North Rd., BN1 1YA. Tel: Brighton 66402.
Open: 9.00-5.30 Mon-Fri. Sat. 9.00-12.00 (Manchester 9.00-4.00)

THE CITY UNIVERSITY

ST. JOHN STREET
LONDON EC1V 4PB

DEPARTMENT OF MECHANICAL ENGINEERING

POSTGRADUATE COURSES

The following courses are offered for attendance on a one-day or part of a day per week basis:

GENERAL FLUID DYNAMICS	HEAT TRANSFER
APPLIED IRROTATIONAL FLOW	MASS TRANSFER
COMPRESSIBLE FLUID FLOW	COMBUSTION
THEORY OF TURBOMACHINERY	COMPUTING
BOUNDARY LAYER THEORY	AND NUMERICAL
THERMODYNAMICS	ANALYSIS

Each course is self-contained and registration for any number of them is permissible.

The entire series of courses constitutes the lecture content of an M.Sc. course in **Thermodynamics and Fluid Mechanics** which can be completed by one day per week attendance over two years.

For further details apply to the
HEAD OF DEPARTMENT OF MECHANICAL
ENGINEERING,
at the above address.

Department of Trade and Industry Aeronautical Engineers

At least two responsible and interesting posts for men as Investigating Officers in the Accidents Investigation Branch. Although based in London, officers must be prepared to fly at short notice to the scene of an accident in any part of the world.

The work involves evaluation of the engineering aspects of aircraft accidents including detailed examination and assessment of wreckage, both in situ and at base; critical perusal of relevant documents; interviewing witnesses; giving evidence at public inquiries; and compiling reports.

Candidates must have a sound technical and practical knowledge of turbine powered aircraft, and have been employed in at least one of the following fields of aircraft engineering: design; production; maintenance; inspection. Preference will be given to Chartered Engineers or holders of a relevant degree. The salary scale is £2067-£2549, with prospects of promotion to posts carrying salaries of £3320 and above. Non-contributory pension scheme.

For full details and an application form (to be returned by 17 August 1971) write to Civil Service Commission, Alencon Link, Basingstoke, Hants, or telephone BASINGSTOKE 29222, extension 500, or LONDON 01-839 1696 (24 hour 'Ansafone' service). Please quote reference T/7751.

UNIVERSITY COLLEGE, CARDIFF

M.Sc. & Diploma Course

APPLICATIONS OF POLYMERIC MATERIALS IN ENGINEERING DESIGN

Applications for entry to the above Course are invited from Graduates and others suitably qualified in the following subjects:

ENGINEERING (Civil, Structural, Mechanical, Chemical, etc.)
CHEMISTRY (Material Science, Metallurgy, Physics, etc.)

Introductory Courses in Engineering Theory for Non-Engineers and in the Chemistry of Polymers for Engineers. Advanced S.R.C. Studentships available.

ACCOMMODATION in Halls of Residence or Student Village may be arranged.

COURSE Commences 1st OCTOBER 1971.

Further information, detailed syllabus, application forms, etc., are available from:

Professor K. C. ROCKEY, Department of Civil & Structural Engineering, University College, Newport Road, CARDIFF CF2 1TA.

IRELAND

AERONAUTICAL INSPECTOR

required in the Department of Transport and Power. Salary up to £2,545 depending on qualifications and experience. Non-contributory pension. Widows and Orphans pension scheme. Candidates must have held an Aircraft Maintenance Engineers Licence in Category B for 2 years or in Category A and C for large transport aircraft for 6 years **or**

have held a position equivalent to that of a holder of these Licences on the maintenance of large transport aircraft for 6 years.

Upper age limit: 45 years.

Apply for particulars to The Secretary, Civil Service Commission (R/J)
45 Upper O'Connell Street, Dublin 1.

Latest date for receipt of completed application forms is—

5th SEPTEMBER 1971

MILLER, R. H.

Some Air Transportation Concepts for the Future

The role which advanced air transportation concepts could play in enhancing our ability to travel rapidly, safely and economically is discussed with particular emphasis on short-haul intra-urban and suburban travel. Possible technological advances are considered in the context of the total systems required to support their economic operations. The potentials in very long-haul transportation up to half global range are then considered, concluding with a brief review of a near-earth space transportation mission.

ROBERTS, L. R.

The Development of the BAC One-Eleven Autopilot

The One-Eleven has been developed over a period of some ten years from a small, fairly unsophisticated aircraft into a "family", each member of which has a unique auto-pilot requirement.

The choice of original equipment and its subsequent development as seen by the Test Pilot is described, with particular emphasis on the Cat.2 and Auto Flare phases which have demanded considerable effort on the part of BAC and Elliott Automation for the past three or four years.

HAMPTON, W.

BCAR A8—Problems and Benefits

In the past the approval of an aircraft constructor by the British Civil Airworthiness Authority has rested with the Chief Designer and the Chief Inspector of the Company, but as the complexity and the cost of development, production and maintenance of modern civil aircraft has grown, it has become increasingly clear that the responsibility for control of airworthiness lies throughout the whole company.

By the end of 1971, the ARB requires that civil aircraft companies comply with revised requirements which take account of this change in circumstances and involve the approval of the company as a whole headed by its Chief Executive. These requirements are stated in BCAR, Chapter A8. Earlier this year, the author addressed a meeting of the ARB's Survey staff on the subject of introducing these new requirements into a primary aircraft company. It was felt that the approach adopted by Hawker Siddeley Aviation, Hatfield and some of the problems and benefits experienced may be of interest to others engaged in similar preparations for approval.

ELLISON, A. P.

The Civil Aircraft Market: an Examination of the Replacement order cycle and the used Aircraft Market

The first part of the paper examines the possible relationship between the age of aircraft, scrapping and re-ordering. In the second part an estimatable model of used aircraft prices is established which is applied to the collected data. The final section deals with the effects of technological change on airline profits, and the ability of the airline to adjust their depreciation policies in order to account for the changes.

PRINTED BY THE LEWES PRESS LTD. FRIARS WALK, LEWES, SUSSEX, ENGLAND, AND PUBLISHED
BY THE ROYAL AERONAUTICAL SOCIETY, 4 HAMILTON PLACE, LONDON, W1V 0BQ, ENGLAND.



Aluminium is our breadwinner.

Whichever way you slice it, aluminium and its alloys are very versatile.

Light, strong, highly conductive to heat and electricity, highly resistant to corrosion, easy to machine. H.D.A. have an unmatched experience in the production of light alloy forgings, die-castings and extrusions.

Write or phone for details of how this advanced know-how can help provide you with a more profitable product.

And we'll send you food for thought.

 **HAWKER SIDDELEY
HIGH DUTY
ALLOYS LTD.**

89 BUCKINGHAM AVENUE, SLOUGH, BUCKINGHAMSHIRE.

Hawker Siddeley Group supplies mechanical, electrical and aerospace equipment with world-wide sales and service.

