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THE AERONAUTICAL JOURNAL OF THE ROYAL AERONAUTICAL SOCIETY] 3

## Reliability Engineer

### AVIATION

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The man appointed will report to the Senior Reliability Engineer and will be responsible for developing and implementing methods of predicting the functional reliability of components as well as determining the character and mode of failure and in preparing fault analysis reports.

Experience in the field of development and environmental testing or alternatively quality assurance techniques, including statistical methods would be desirable as would a background in the aircraft industry.

The starting salary would be of interest to men in the 25-35 age group who have a good theoretical and practical knowledge of mechanical engineering, preferably to ONC standard or higher.

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Coventry.

### UNIVERSITY OF SOUTHAMPTON

#### Department of Aeronautics and Astronautics

#### SPITFIRE MITCHELL MEMORIAL STUDENTSHIP

Applications are invited from holders of good honours degrees in Engineering or Science, or Mathematics to engage in aimed research in a branch of Aeronautics and Astronautics in the spirit of the work of the aviation pioneer R. J. Mitchell in whose memory the Studentship is awarded.

The value of the Studentship, which is for two years and may be extended to a third year, will be between £600 and £800 p.a. exclusive of fees. Candidates must register for a higher degree. Closing date 30th November, 1970.

For further details and application form write to:  
**Academic Registrar, The University of Southampton,  
SO9 5NH, quoting ref.: AeJ.**

[ADVERTISEMENTS NOVEMBER 1970

# MECHANICAL ENGINEER

Aero-engine Test and Development

## COMMONWEALTH OF AUSTRALIA

This is a particularly interesting appointment within the Department of Air in Melbourne, Victoria. It offers a wide variety of work related to the testing and development of aircraft gas turbines and reciprocating engines and involves close liaison with engineering staffs in industry, government departments and the Services. The scope of the work includes spectrometric analysis of engine oils for wear in metals; advising on new development in engine condition monitoring systems and the design and acceptance of test and servicing equipment for engines and engine accessories. Other work will cover analysis of engine defects and failure data, the implementation of corrective action and advising on the specifications, maintenance and storage of anti-friction bearings.

**SALARY:** In the range \$A6276-\$A7030 per annum (SA1=9/4d. Stg.)

**QUALIFICATIONS:** Professional qualifications admitting to corporate Membership of the Institute of

Mechanical Engineers and/or Membership of the Royal Aeronautical Society; together with a sound background of experience in aircraft gas turbine engine design, maintenance and testing. A knowledge of metallurgy is also desirable.

**CONDITIONS:** First class passages by sea or air for successful applicant and dependants together with generous baggage allowances. Salary paid from date of embarkation. Three weeks' annual leave, accumulative sick leave provisions and comprehensive superannuation scheme.

**APPLICATIONS:** Application forms may be obtained from:

The Recruitment Officer,  
Office of the Public Service Board,  
Canberra House,  
10-16 Maltravers Street,  
Strand, LONDON WC2 UK.



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## UNIVERSITY OF BRISTOL

### DEPARTMENT OF AERONAUTICAL ENGINEERING

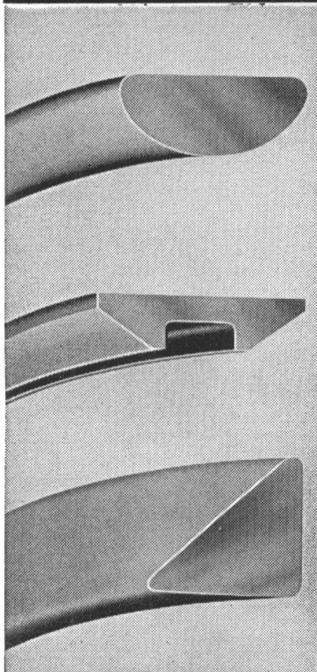
#### RESEARCH ASSISTANT

#### LOW DENSITY AERODYNAMICS

Applications are invited from suitably qualified graduates for the post of Research Assistant to undertake research into trailing edge interactions in low density supersonic gas flow. In low density gas flow, such as that experienced in flight at extreme altitudes, very thick boundary layers are generated, and there is a significant interaction in the vicinity of a sharp trailing edge between these boundary layers, the wake, and the external pressure field. Although having possible application to such vehicles as the proposed space shuttle, the research will basically be of a more fundamental fluid mechanics nature, using simple models in the Department's low density wind tunnel.

The work will be supported for about three years by the Ministry of Technology, and a salary, depending on qualifications and experience, of up to £1,605 will be paid. A suitable candidate will be able to register for a higher degree. Applications, mentioning two referees, should be sent to **Professor A. R. Collar, Queen's Building, University Walk, Bristol, BS8 1TR.**

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DEPARTMENT OF AERONAUTICS

### RESEARCH ASSISTANT IN TRANS-SONIC AERODYNAMICS

Applications are invited from holders of good honours degrees in Engineering, Science or Mathematics for the above post. Some industrial experience would be an advantage.

The appointment will be for one year initially, with the prospect of extension up to three years.

Salary will be in the range £1,200-£1,500 p.a.

Further details from, and applications to, **The Secretary, Department of Aeronautics, The City University, at the above address.**

## THE CITY UNIVERSITY

ST. JOHN STREET, LONDON, E.C.1

DEPARTMENT OF MECHANICAL ENGINEERING

### PRESSURE TRANSIENTS SYMPOSIUM

A one-day symposium on Pressure Transients will be held at The City University on Wednesday, 25th November, 1970. Papers will be presented by members of the University and by engineers actively concerned with transients. The topics will include the following:

- Aircraft Fuel Systems
- Long Pumping mains
- Resonance
- Gas Pipe Lines
- Computing Techniques

Further information may be obtained from:  
MR. J. W. R. TWYMAN,

Department of Mechanical Engineering, at the above address.

# Aircraft Engineering

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The Aeronautical Journal RAeS November 1970

JONES, J. P.

#### **The Helicopter Rotor**

*The conditions of working of a helicopter rotor are outlined and the methods of providing roll balance and control are discussed. The development of the conventional rotor is explained and its inherent performance and control penalties are described. The influence of blade section characteristics on performance is discussed in detail. It is then argued that the semi-rigid and rigid rotors offer greater potential for future development. The semi-rigid rotor offers better handling qualities and this is illustrated by reference to gyro and electronic autostabilisation systems. The performance advantages of much stiffer rotors are brought out by reference to the ABC helicopter.*

The Aeronautical Journal RAeS November 1970

TYE, W.

#### **Airworthiness and the Air Registration Board**

*This paper is a commentary on the history of civil aircraft airworthiness, mainly as it has developed in Britain over the past 33 years, this being the present age of the ARB. The author views the scene in three ways: the aims and objectives; the administrative arrangements; and the achievements and accidents.*

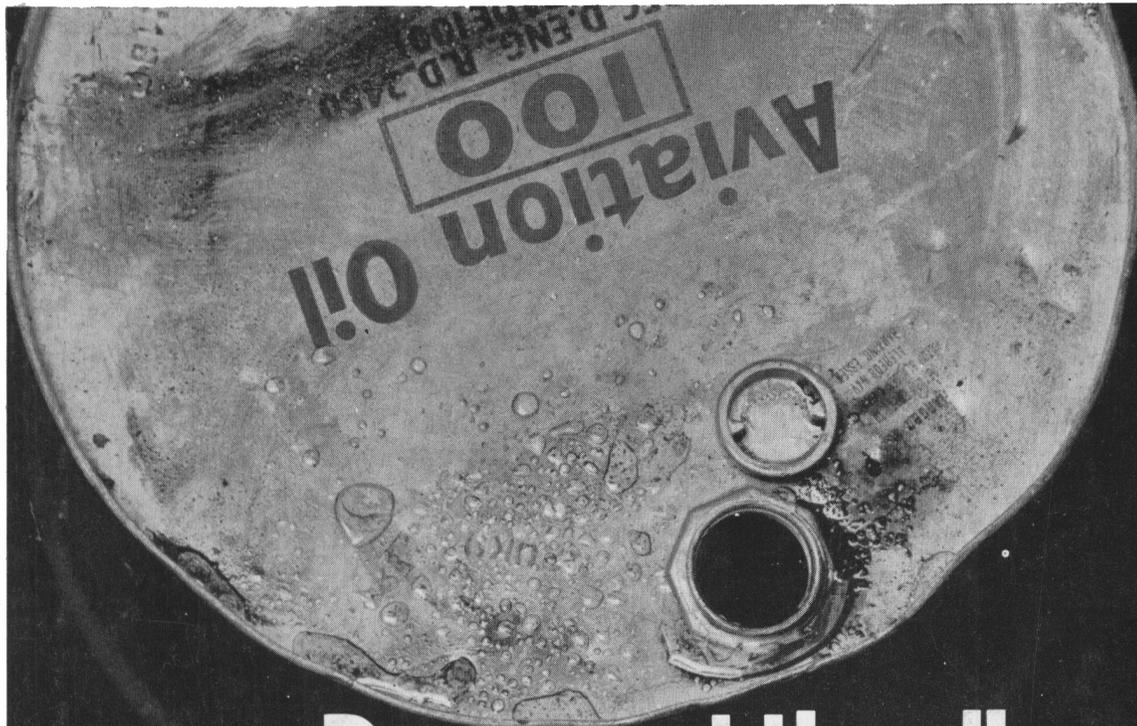
*An airworthiness authority has obligations to the various users of aircraft, passengers, crew, and private owners, to provide acceptable safety standards. It is also important not to impede the designer's ingenuity in the struggle for economy. These considerations have led to increasing rationalisation; objectively stated requirements; account of operational circumstances; quantification of the "acceptable" risk. Post-war developments in airworthiness have been rapid, matching the introduction of turboprop and turbojet aircraft, automatic landing, supersonic aircraft and hovercraft, Britain having led the world in many fields.*

The Aeronautical Journal RAeS November 1970

MATTHEWS, N. O.

#### **Accident and Maintenance Recording for Civil Aircraft**

*National requirements for accident recording systems are reviewed. Equipment developed to meet these requirements is described and some operational aspects considered. Future developments in this field are examined. Surplus capacity on these systems has led to their use for maintenance recording purposes. These, and the development of specialised maintenance recording systems has led to problems in handling the mass of data recorded. This has to be processed and presented in a form and time-scale which is consistent with the airline maintenance problem. Future possibilities, including telemetry systems for the transmission of performance data in flight to the airline maintenance base, are discussed.*



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