# The AERONAUTICAL Journal



S.S. Houston	
Longitudinal stability of gyroplanes	1
R.J. Smith and M.A. Leschziner	
Automatic grid generation for complex geometries	7
G. Giannakidis	
Prandtl-Batchelor flow on a circular cylinder and on aerofoil sections	15
A. Rosen <i>et al</i>	
The influence of unsteady aerodynamics and inter-blade aerodynamic coupling	
on the blades responses to harmonic variations of their pitch angles	27
Library Reviews	36

Volume 100 Number 991

January 1996

# The Volume 100 Number 991 January 1996 AERONAUTICAL Journal



Editor B.F. Baldwin, BSc, MRAeS

Deputy Editor S.M. Penney, BEng, Grad RAeS Assistant Editors C.S.C. Male, BSc(Eng), Grad RAeS I.R. Sheppard, BEng, Grad RAeS

RAeS Director R.J. Kennett, FIMgt, FInstD, FCIT, FRSA, AFAIAA, FRAeS

Published by The Royal Aeronautical Society 4 Hamilton Place, London W1V 0BQ. Tel: 0171-499 3515 Fax: 0171-499 6230

Advertisements Chris Marot/Trevor Hornshaw Marot & Co 3 Albion Buildings 1 Back Hill, London EC1R 5EN Tel: 0171-278 3686 Fax: 0171-837 2764

Reproduction of any of the papers published in this journal is not permitted without the written consent of the Editor.

The content does not necessarily express the opinion of the Council.

Printed by Manor Park Press, Unit 7, Highfield Industrial Estate, Edison Road, Hampden Park, Eastbourne.

Subscriptions: £200 a year, post free

RAeS members: £23 a year.

Single copies, including back numbers: £25.

Non-member subscriptions from The Royal Aeronautical Society Publications Subscriptions Department, Bradley Pavilions, Bradley Stoke North, Bristol BS12 0BQ, UK. Tel: 01454 620070. Fax: 01454 620080.

ISSN: 0001-9240

The Royal Aeronautical Society is a registered charity.

PUBLISHED MONTHLY EXCEPT JUNE AND AUGUST

## Aims and scope

The aims and scope of *The Aeronautical Journal* are intended to reflect the objectives of the Society as expressed in the Charter of Incorporation. Briefly these are to encourage and foster the advancement of all aspects of aeronautical and space science. Thus the topics of the *Journal* include all those which are covered by the various Sections and Groups of the Society such as fluid mechanics and aerodynamics, propulsion, structures and materials, rotorcraft, astronautics and guided flight, dynamics and control, aeromarine technology, aviation medicine, air transport, airworthiness and maintenance, test flying, flight simulation, air law, management studies, history of aviation and manpowered aircraft. Thus papers are solicited on all aspects of research, design and development, construction and operation of aircraft and space vehicles. Papers are also welcomed which review, comprehensively, the results of recent research developments in any of the above topics. For further information on the submission of papers, see Guidelines for Authors, p 37.

# **Editorial Advisory Board**

Chairman: Dr E.W.E. Rogers

### **Aerodynamics**

Professor P.W. Bearman, Department of Aeronautics, Imperial College

### Aerospace medicine

Air Vice Marshal P. Howard, formerly RAF Institute of Aviation Medicine

### Air traffic control and simulation

G.C. Howell, former Civil Aviation Authority chief scientist

### **Airworthiness**

R. Ashford, formerly Civil Aviation Authority and the European Joint Aviation Authorities

### Avionics and systems

Professor D. McLean, Department of Aeronautics & Astronautics, University of Southampton P.A. Hearne, formerly GEC-Marconi Avionics

### Computational fluid mechanics and propulsion

Professor P. Stow, Rolls-Royce

### Flight testing, flight operations and air transport

Captain W.D. Lowe, British Airways

### Maintenance and airworthiness

G.B. Ratcliffe, RAeS Airworthiness and Maintenance Committee

### Noise, aeroelasticity and fluid mechanics

Professor E.G. Broadbent, Department of Mathematics, Imperial College

### Rotorcraft and structural dynamics

Professor D.E.H. Balmford, formerly of Westland Helicopters

### Space technology

R. Gibson, Inmarsat

### Structures and materials

T. Sharples, Military Aircraft Division, BAe Defence