



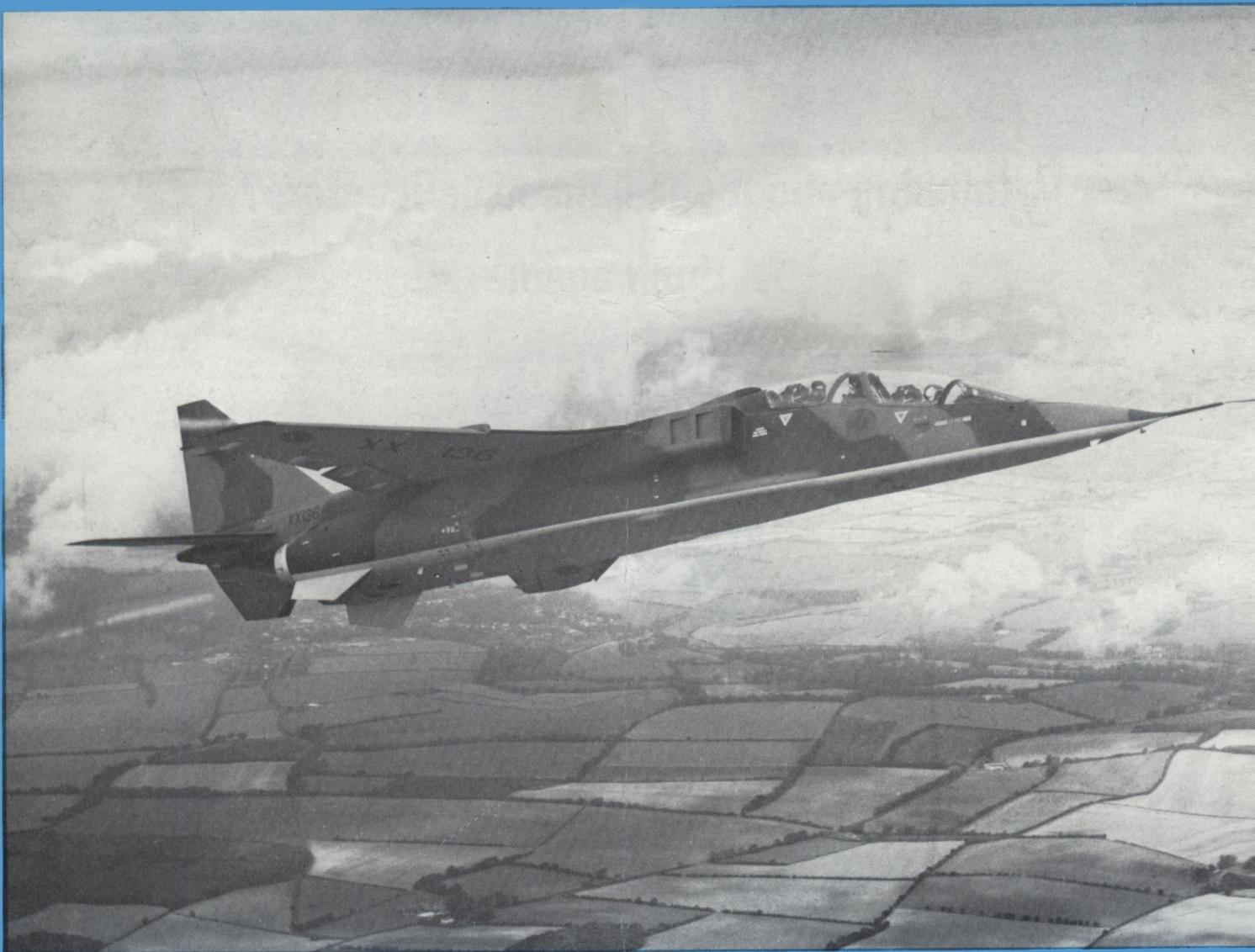
JUNE 1978

THE *aeronautical* JOURNAL

VOLUME 82

No. 810

JUNE 1978



This Month

AIDS

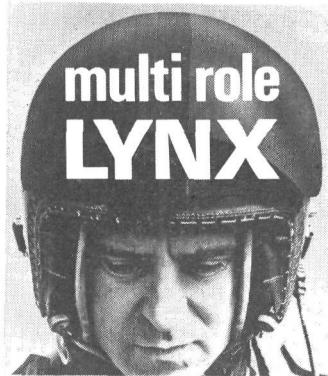
FLIGHT SIMULATION

AG AVIATION



thinking about specialised helicopters?

think again



in production now



Westland®
WESTLAND HELICOPTERS YEOVIL ENGLAND

*7 times winner of the Queen's Award to Industry
and winners of the MacRobert Award for innovation in engineering.*

VOLUME 82
NUMBER 810
JUNE 1978

THE
aeronautical
Incorporating *The Institution of Aeronautical Engineers and
The Helicopter Association of Great Britain*
Published Monthly

JOURNAL

contents

Editor: G. R. Wrixon, AMRAeS.
Assistant Editors:

Jay Wolff, David Scallan.

Secretary of the Society:
E. M. J. Schaffter, MA, CEng,
MRAeS.

4 Hamilton Place, London
W1V 0BQ. Tel: 01-499 3515.

Telegrams: Didaskalos, London, W1.

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

**None of the papers or paragraphs
must be taken as expressing the
opinion of the Council unless
otherwise stated.**

Advertisements:
J. G. Heller,
Cheiron Press Ltd,
8/10 Parkway,
London NW1 7AD.
Tel: 01-267 1285

Printed by
Lewes Press Ltd,
Lewes, Sussex, England.

Subscriptions: £43.00 per annum,
post free.

**Single copies, including back
numbers:** £4.00.

Published by
The Royal Aeronautical Society,
4 Hamilton Place,
London W1V 0BQ, England.

ISSN: 0001-9240

Cover picture:

The complex systems of the present generation of military aircraft, such as the Jaguar shown on the cover, has led to increased emphasis on the reliability and integrity of avionic systems. In this issue the use of AIDS (airborne integrated data systems) in military aircraft is discussed by Messrs Daley and Delahunty, and in engine management by A. E. Davies.

A. E. Davies AIDS IN ENGINE MANAGEMENT PROGRAMMES	235
E. Daley and A. Delahunty AIDS IN MILITARY AIRCRAFT	243
J. D. Bird DESIGN CONCEPTS OF THE SHUTTLE MISSION SIMULATOR	247
A. G. Barnes and D. E. A. Houghton AIR-TO-AIR COMBAT SIMULATION	255
J. Morland Beazley THE OPERATOR'S RESPONSIBILITY	261
R. J. Adams THE IMPORTANCE OF THE WEATHER IN AERIAL SPRAYING	264
TECHNICAL NOTES	
M. H. Patel On the linear superposition of aerodynamic forces on wings in periodic gusts	267
W. A. Mair and S. M. Wilkin Asymmetric distributions of base pressure on an axi-symmetric body	273
Library, Review, Additions and Reports	
	276

The Royal Aeronautical Society

FOUNDED 1866

INCORPORATED BY ROYAL CHARTER 1949

Patron: HER MAJESTY THE QUEEN

COUNCIL

President: PROF. L. F. CRABTREE, PhD, BSc, DIC, CEng, AFAIAA, FRAeS

President-Elect: R. P. PROBERT, CB, MA, CEng, FRAeS

Vice-Presidents:

M. J. BRENNAN, BSc, CEng, FIMechE, FRAeS
P. A. HEARNE, DCAe, DLC, CEng, FRAeS
J. T. STAMPER, MA(Cantab), FEng, FRAeS

Past Presidents:

AIR MARSHAL SIR CHARLES PRINGLE, KBE, MA, FEng, FBIM, FRAeS,
RAF (Ret'd)
CHARLES ABELL, OBE, CEng, HonFSLAET, HonFRAeS
HANDEL DAVIES, CB, MSc, CEng, FAIAA, FRAeS

Members:

A. J. ADCOCK, BSc(Eng), AMRAeS
M. W. ANDERSON, MA(Cantab), CEng, MICE, MSAE, AFAIAA, FRAeS
AIR CDRE F. R. BANKS, CB, OBE, HonCGIA, CEng, HonFAIAA, HonFRAeS,
RAF (Ret'd)
N. A. H. BARRAUD, CEng, MRAeS (*President, Southern Africa Division*)
A. E. M. BARTON, DFC, CEng, MRAeS
CAPTAIN E. M. BROWN, CBE, DSC, AFC, MA, FRAeS, RN (Ret'd)
PROF. I. C. CHEESEMAN, PhD, BSc, ARCS, CEng, FCIT, FRAeS (*Chairman,
Rotorcraft Section*)
J. H. COOK, CEng, MRAeS
N. FALCONER, MA, BSc, MRAeS
PROF. M. G. FARLEY, CEng, FIMechE, FIProdE, MBIM, FRAeS
J. W. FOZARD, DCAe, BSc(Hons), CEng, FIMechE, FRAeS
W. R. HEALD, FRAeS (*President, New Zealand Division*)
DR W. F. HILTON, PhD, DSc, CEng, AFAIAA, FRAeS
DR G. S. HISLOP, CBE, HonDSc, PhD, BSc, ARCST, FRSE, CEng, FIMechE,
FRSA, FRAeS
A. S. HUGHES, CEng, MRAeS (*Chairman, Branches Committee*)
G. R. JEFFERSON, CBE, BSc, CEng, MIMechE, FRAeS
B. P. LAIGHT, OBE, MSc, CEng, MIMechE, FRAeS
D. J. LASCELLES, BSc(Eng), AMRAeS
M. MADDERS, CEng, FRAeS (*President, Rhodesia Division*)
E. W. R. MARTIN, MNDTS, LIM, AMRAeS
G. K. C. PARDOE, BSc(Eng), DLC, CEng, FBIS, FRAeS
A. C. SOUTHGATE, BSc, CEng, DCAe, FRAeS (*Chairman of Astronautics and
Guided Flight Section*)
G. E. WELLER, BTech(Hons), MAIAA, AMRAeS (*Chairman, Graduates' and
Students' Section*)
DR K. G. WILKINSON, HonDSc, BSc, DIC, FCGI, CEng, FCIT, FRAeS
R. J. YATES, CEng, FRAeS (*President, Australian Division*)

Officers:

Hon. Treasurer: C. F. HUGHESDON, AFC, FRAeS
Solicitor: C. L. BYWATERS, Associate RAeS
Secretary: E. M. J. SCHAFFTER, MA, CEng, MRAeS