

# The **AERONAUTICAL** Journal



Advanced propulsion controls—  
A total system view  
Laser strike

MAY 1983 Volume 87 No 865

# The AERONAUTICAL Journal

Volume 87 Number 865 May 1983

Incorporating The Institution of Aeronautical Engineers  
and The Helicopter Association of Great Britain



Editor: Jay Wolff,  
Assoc. Member RAeS

Assistant Editor: Michèle Didyk

Secretary of the Society:  
N. A. M. Eastwood, MA, CEng,  
MRAeS  
4 Hamilton Place, London W1V 0BQ  
Tel: 01-499 3515  
Telegrams: Didaskalos,  
London W1

Advertisements:  
Harris Associates,  
15 Studlands Rise,  
Royston, Herts SG8 9EZ.  
Tel: 0763 42890

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.

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

Subscriptions: £88 per annum,  
post free.

RAeS members: £9 per annum.

Single copies, including back  
numbers: £9.

All foreign currency rates on  
application.

Published by  
The Royal Aeronautical Society,  
4 Hamilton Place,  
London W1V 0BQ, England  
ISSN: 0001-9240

**PUBLISHED MONTHLY  
EXCEPT JUNE AND  
AUGUST**

## Contents

**165**

**P. H. Young**

Advanced propulsion controls — a  
total system view

**173**

**J. A. C. Beattie**

A true air speed sensor for miniature  
unmanned aircraft

**176**

**R. F. Mackrill**

Laser strike

**183**

**G. Baker and M. N. Pavlovic**

Rectangular plates compressed by a  
series of in-plane loads: stability  
and stress distribution



**189**

**G. Bandyopadhyay, B. K. Singh and  
B. C. Basu**

Application of internal singularity  
distribution approach to multi-  
element aerofoil problems

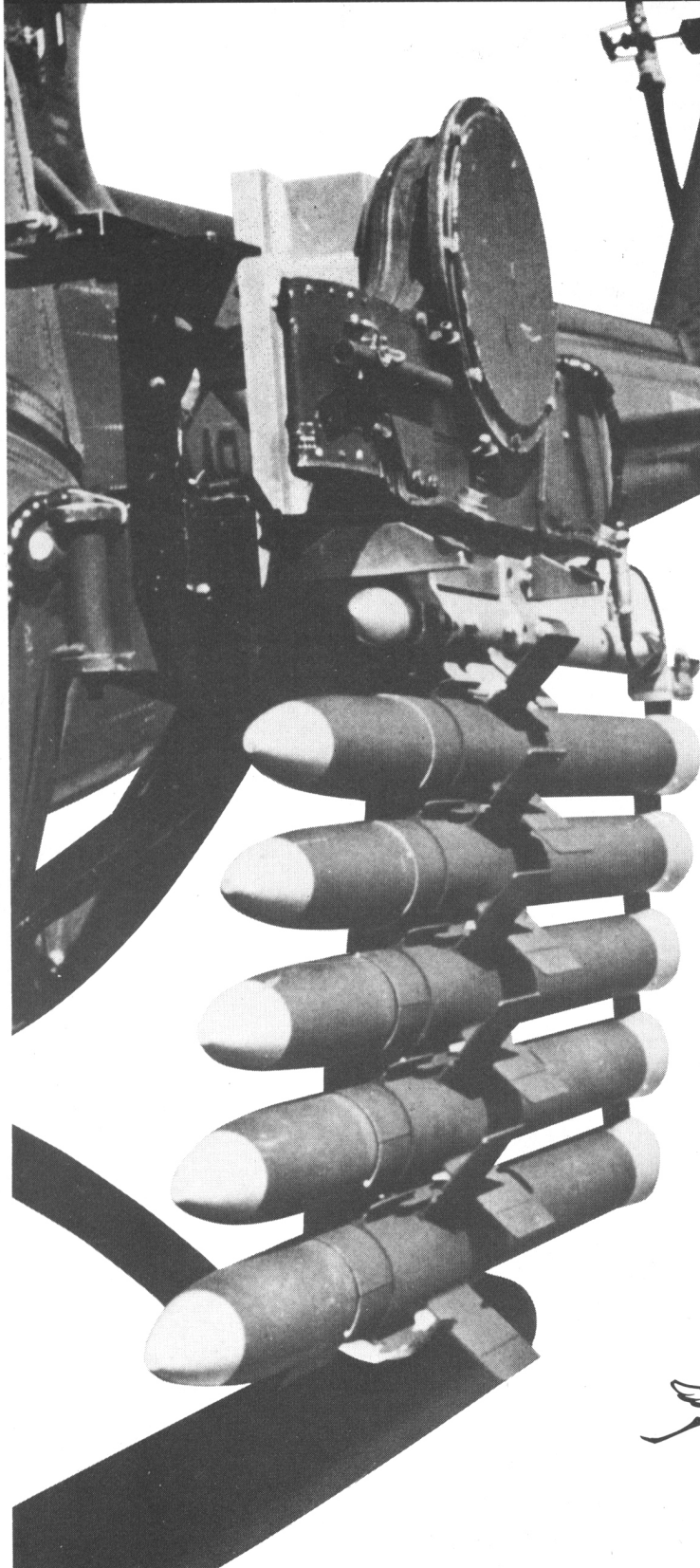
**191**

**Library additions and reports**

### Cover picture

The Westland 30, already in service with British Airways Helicopters, is being used in a new service inaugurated by the Los Angeles based commuter airline, Airspur. The Westland 30 series has won a 1983 Design Council Award. Together with the Lynx 3, it will be the main feature of Westland Helicopters' display at the Paris Air Show.

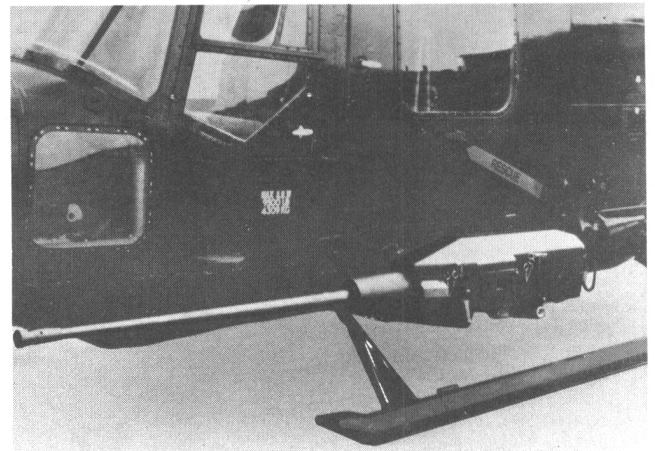
# **BMARC adds more firepower... ...less weight**



Troop carrier, transport, reconnaissance unit, gunship: in defence, the helicopter fulfils a variety of purposes. Switching from one role to another is made quicker and simpler by the range of purpose-built armaments from BMARC, suppliers of optional weapon fits for the Westland Lynx.

## **Fit... Fly... Fire...**

Fitting a lightweight, low-recoil 20mm cannon with a range of up to 1,500m and a firing rate of 950 rounds per minute, can be surprisingly fast. Fitting 81mm SURA-D rail-launched rockets capable of knocking out heavily armoured vehicles is even faster.



BMARC weapons and ammunition make the helicopter a force to be reckoned with. A force that is quick on the draw. BMARC is the British manufacturing company in the Oerlikon-Bührle Group.



# **BMARC**

BMARC is a member of the Oerlikon-Bührle Group.



British Manufacture & Research Co. Ltd., Springfield Road, Grantham, Lincs, NG31 7JB. Tel: 0476 5577. Telex: 37635 BMARC G