

6ASDC



ROYAL
AERONAUTICAL
SOCIETY

6TH AIRCRAFT STRUCTURAL DESIGN CONFERENCE

BRISTOL, UK / 9 - 11 OCTOBER 2018

The 6th Aircraft Structural Design Conference will address the challenges facing the designers of the next generation aircraft. New designs will need to meet stricter environmental constraints and be subjected to increasing pressures for reductions in manufacturing and life-cycle costs, coupled with continual improvements in overall performance/efficiency factors.



www.aerosociety.com/6ASDC

Sponsorship Opportunites

Sponsorship and Exhibition opportunites are available for this conference. For more information please contact conference@aerosociety.com or +44(0)20 7670 4345

RAeS/AHS/AIAA/SAE



ROYAL
AERONAUTICAL
SOCIETY

INTERNATIONAL POWERED LIFT CONFERENCE 2018

BRISTOL, UK / 13 - 15 NOVEMBER 2018

In 2018, the International Powered Lift Conference (IPLC) returns to the UK. This gathering of top powered-lift propulsion experts is a unique opportunity for those wanting to learn the latest advances in the challenging regime of vertical and/or short take-off and landing (V/STOL) flight, and to learn about the latest powered lift-related systems in closer detail.



www.aerosociety.com/IPLC18

Sponsor





ROYAL
AERONAUTICAL
SOCIETY

Written Paper Prizes

The most prestigious and long-standing awards in global aerospace honouring achievements, innovation and excellence.

The Royal Aeronautical Society Written Paper Prizes are awarded annually for the best papers published in *The Aeronautical Journal* by the Society during the previous calendar year. Awards can be conferred at Gold, Silver or Bronze level. The Written Paper Prizes are presented following the approval of the Council of the Royal Aeronautical Society on the basis of recommendations from the RAeS Medals & Awards Committee, supported by the Editor-in-Chief of *The Aeronautical Journal*. The Society recognises the achievements, innovation and excellence of both individual and multiple authors.

Submission of Manuscripts

All manuscripts should be submitted online at: <http://www.edmgr.com/aeroj>

Any enquiries should be directed to Wayne J Davis at aerojournal@aerosociety.com.

The current set of instructions for authors are available at: <http://journals.cambridge.org/AER>

Subscriptions

The Aeronautical Journal (ISSN 0001-9240) is published monthly in 12 issues each year.

Non-Members

The subscription price (excluding VAT) to *The Aeronautical Journal* for volume 122 (2018), which includes print and electronic access, is £579 (USA, Canada and Mexico US\$869) and includes delivery by air; single parts are available at £55 (USA, Canada and Mexico US\$83) plus postage. The electronic-only price available to institutional subscribers is £508 (USA, Canada and Mexico US\$762). EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Orders, which must be accompanied by payment, may be sent to any bookseller or subscription agent or direct to the publishers: Cambridge University Press, UPH, Shaftesbury Road, Cambridge CB2 8BS, or in the USA, Canada, and Mexico to Cambridge University Press, Journals Fulfillment Department, 1 Liberty Plaza, Floor 20, New York, NY 10006, USA. Japanese Prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo, Japan.

RAeS Members

The subscription price for RAeS members is £94 for Hardcopy and online access and £72 for online access only. Individual copies are £8.20. Orders are available from: Membership Department, Royal Aeronautical Society, No.4 Hamilton Place, London, W1J 7BQ, UK. Tel: +44 (0)20 7670 4304 or email: subscriptions@aerosociety.com

RAeS Conference Proceedings

Details, prices and availability of Royal Aeronautical Society Conference Proceedings can be obtained from: RAeS Conference and Events Department, No.4 Hamilton Place, London, W1J 7BQ, UK. Tel: +44 (0)20 7670 4345, email: conference@aerosociety.com or via www.aerosociety.com/events/catch-up-on-events/conference-proceedings

Advertising

All advertising enquiries should be sent to Simon Levy, simon.levy@aerosociety.com

Internet Access

The Aeronautical Journal is included in the Cambridge Journals Online service and can be found at: <http://journals.cambridge.org/AER>.

The Aeronautical Journal now supports open access publications across its hardcopy and online platforms, and accepts papers to consider for publication under both the 'green' and 'gold' open access options.

Information contained within *The Aeronautical Journal* has been published in good faith and the opinions expressed do not represent those of the Royal Aeronautical Society.

The Royal Aeronautical Society is a registered charity: No 313708

© 2018 Royal Aeronautical Society

All rights reserved. No part of this publication may be reproduced in any form or by any means, electronic, photocopying or otherwise, without permission in writing from Cambridge University Press. Permission to copy (for users in the USA) is available from the Copyright Clearance Center, <http://www.copyright.com>.

This journal issue has been printed on FSC™-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

Printed in the UK by Bell & Bain Limited, Glasgow.



ROYAL
AERONAUTICAL
SOCIETY

CONTENTS

Volume 122 Number 1254

August 2018

J.-F. Brouckaert, F. Mirville, K. Phuah and P. Taferner

Clean Sky research and demonstration programmes for next-generation aircraft engines

1163

H. Zare, Seid H. Pourtakdoust and A. Bighashdel

Analytical structural behaviour of elastic flapping wings under the actuator effect

1176

O. Sugar-Gabor

A general numerical unsteady non-linear lifting line model for engineering aerodynamics studies

1199

K. Maruthupandian and E. Rathakrishnan

Tab location effect on supersonic jet mixing

1229

H. L. Mou, X. Su, J. Xie and Z. Y. Feng

Parametric analysis of composite sinusoidal specimens under quasi-static crushing

1244

H. M. Shakir and B. Iqbal

Application of Lean principles and software solutions for maintenance records in continuing airworthiness management organisations

1263

M. Suo, S. Li, Y. Chen, Z. Zhang, B. Zhu and R. An

Effectiveness evaluation of fighter using fuzzy Bayes risk weighting method

1275

Front Cover: The Pratt & Whitney PW1000G high-bypass geared turbofan engine.

Cambridge Core

For further information about this journal
please go to the journal website at:
cambridge.org/aer



MIX
Paper from
responsible
sources
FSC® C007785

CAMBRIDGE
UNIVERSITY PRESS