# 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 125 (2021), which includes print and electronic access, is £672 (USA, Canada and Mexico US\$1,006) and includes delivery by air; single parts are available at £64 (USA, Canada and Mexico US\$96) plus postage. The electronic-only price available to institutional subscribers is £588 (USA, Canada and Mexico US\$882). 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, University Printing House, 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 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/catchup-on-events/conference-proceedings

### Advertising

All advertising enquiries should be sent to Neeral Patel partners@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

© 2021 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<sup>TM</sup>-certified paper and cover board. FSC is an independent, nongovernmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

Printed in Great Britain by Bell & Bain Ltd, Glasgow.



# CONTENTS

Volume 125 Number 1288	June 2021
Foreword: John Stollery CBE HonFRAeS Holger Babinsky FRAeS	967
A simple method for drag estimation for wedge-like fairings in hypersonic flow	
A. Kshitij, S.A. Prince, J.L. Stollery and F. de la P. Ricón	968
<b>Prediction of aircraft engine emissions using ADS-B flight data</b> A. Filippone, B. Parkes, N. Bojdo and T. Kelly	988
Impact of aromatic species selection and micro and bulk properties of alternative fuels on atomisation C.J. Wijesinghe and B. Khandelwal	1013
The state of the art and operational scenarios for urban air mobility with unmanned aircraft F.D. Maia and J.M. Lourenço da Saúde	1034
<b>A novel optimal route planning algorithm for searching on the sea</b> Y. Yang, Y. Mao, R. Xie, Y. Hu and Y. Nan	1064
Parameter optimisation of a carrier-based UAV drawbar based on strain fatigue analysis H. Chen, X. Fang, Z. Zhang, X. Xie, H. Nie and X. Wei	1083
	1003
Multi-agent cooperative multi-model adaptive guidance law S.B. Wang, S.C. Wang, Z.G. Liu, S. Zhang and Y. Guo	1103

Front Cover: The flap track canoe fairings on a Boeing 747. (Friedrich Haag)

Cambridge Core For further information about this journal please go to the journal website at: cambridge.org/aer https://doi.org/10.1017/aer.2021.50 Published online by Cambridge Un



MIX Paper from responsible sources FSC<sup>®</sup> C007785

