

INDUSTRIALIZATION OF SPACE IN THE 1990s

The applications of space science and technology have already matured into vital programmes such as communication satellites, Earth observation (involving weather as well as natural resources), spacecraft, and others providing navigational facilities to ships and, soon, to aircraft. Deep commercial opportunities and interests are now involved, embracing the full spectrum from high-quality components supplied by thousands of small companies through to the major projects of spacecraft and launch vehicles put together by some of the great aerospace organizations in the world. The field is international, not only by definition of its utilization, but by the nature of its joint developments and operations. About 150 countries, one way or another, have some interest or involvement in space programmes, with much potential interest and benefit already emerging from developing countries, as well as in the high technology industries of developed countries.

This book draws together 14 papers from some of the leading experts in the world on different aspects of space where the industrialization process is either already well in hand, or poised to evolve. The relationship of each technical aspect to the other, as well as the financial and political sectors of activity, are demonstrated clearly by the content of the speakers' papers.

The Royal Society provided an excellent forum on 7 and 8 December 1983 for the review of this situation from the experts. The participation by many people, not only from within, but also from outside the aerospace profession helped to underline the rapid broadening of the scene. The participants at the meeting and the reader of this book will have seen the breadth and depth of the applications of space technology and should be more able to appreciate the future developments.

140 pages

2 plates

clothbound

ISBN 0 85403 233 9

First published in *Philosophical Transactions of the Royal Society, Series A*, Vol 312
1984

Price including packing and postage

£22.00 (U.K. addresses) £23.00 (Overseas addresses)

The Royal Society
6 Carlton House Terrace, London, SW1Y 5AG

CONTENTS

CHADWICK, P. A general analysis of transonic states in an anisotropic elastic body	pages 203–223
FIELD, J. E., LESSER, M. B. & DEAR, J. P. Studies of two-dimensional liquid-wedge impact and their relevance to liquid-drop impact problems. [Plates 1–4]	225–249
HU, X.-Z., COTTERELL, B. & MAI, Y.-W. A statistical theory of fracture in a two-phase brittle material	251–265
POWER, E. A. & THIRUNAMACHANDRAN, T. The non-additive dispersion energies for N molecules: a quantum electrodynamical theory	267–279
ESTRADA, R. & KANWAL, R. P. Regularization and distributional derivatives of $(x_1^2 + x_2^2 + \dots + x_p^2)^{-\frac{1}{2}n}$ in \mathbb{R}^p	281–297
GLADWELL, G. M. L. Qualitative properties of vibrating systems	299–315
MAYBANK, S. J. The angular velocity associated with the optical flowfield arising from motion through a rigid environment	317–326
LEGON, A. C., MILLEN, D. J. & WILLOUGHBY, L. C. Spectroscopic investigations of hydrogen bonding interactions in the gas phase. X. Properties of the hydrogen-bonded heterodimer HCN \cdots HF determined from hyperfine coupling and centrifugal distortion effects in its ground-state rotational spectrum	327–347
BURROWS, A. Waves incident on a circular harbour	349–371
BYERS BROWN, W. & CHANG, T. Y. Exact formula for the dipole moment of a one-electron diatomic molecule	373–392
ERRATUM: IRVINE, P. & GORDON, M., <i>Proc. R. Soc. Lond. A</i> 375 , 397–408 (1981)	393
INDEXES	395–398

* * *

VOLUME TITLE PAGE AND CONTENTS

Published by the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG

Printed in Great Britain

for the Royal Society by the University Press, Cambridge