

Our Successful Experiments

IN May 1993, when I replaced Dr. Clark Lewis at the end of his tenure as Editor-in-Chief of the *Journal of Spacecraft and Rockets*, I expressed a “thank you” to him for his efforts. Again, I would like to note that his willingness to consider a different way of doing business helped restore the journal. His ideas of using a two-track system for paper publication and permitting overlength papers appear to be very successful. Of course, thanks has to be extended to the AIAA for permitting these different procedures. Contrary to what some may or want to think, the submission of papers has increased. The present backlog is over six months, and in 1994 the *Journal of Spacecraft and Rockets* will publish some issues at 160 pages. Three years ago the journal was publishing 64-page issues. A decision has been made to publish some Track B (nonpaying) papers with the extra pages. Of course, the backlog of Track B papers must be cleared, and Track B papers will continue to experience substantial publication delays relative to Track A (paying) papers. Since I have become Editor, over 70% of the institutions have agreed to pay publication charges. Because JSR serves as an applications journal, many authors find the excess page option an advantage. The authors can use a few

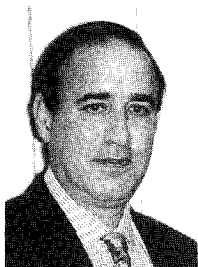
extra tables or figures to present their data to better illustrate their research.

More important, the quality of JSR published papers has improved. This is due primarily to the efforts of the Associate Editors of the *Journal of Spacecraft and Rockets*, and the quality of their reviews. Biographical sketches of the present AEs are presented in this issue. I want to extend a much deserved expression of thanks to Mr. Gerald Chrusciel and Dr. Antoni Jakubowski, whose terms have recently expired. Their efforts were much appreciated. Also appearing in this issue are the names of most JSR reviewers, whose technical thoroughness and promptness has been directly responsible for the improved quality.

Finally, since May, I have had the pleasure of working with Ken Berlack, Production Editor of JSR. Ken recently resigned to devote full time to furthering his education but his dedication to the editorial and production activities for the journal at AIAA Headquarters were extremely important and very much appreciated.

Vincent Zoby
Editor-in-Chief

Editor-in-Chief



ERNEST V. ZOBY is employed by NASA and has been at the Langley Research Center since 1962. He received his B.S.M.E. from Virginia Polytechnic Institute and State University and an M.S. in Thermal Engineering from Old Dominion University. Mr. Zoby has been responsible for developing and demonstrating the applicability of approximate codes that define the aerothermal environment about spacecraft at both Earth and planetary entry conditions. This work encompassed preliminary design and post-flight heating calculations for the RAM C, Re-Entry F Shuttle, and Venusian and Galileo vehicles. He has over 70 publications in the area of hypersonic aerothermodynamics to his credit, including studies for computing the equilibrium high temperature properties of gas mixtures and for the heat shield performance of entry probes. He is currently the Co-Principal Technologist for the Shuttle Infrared Leaside Temperature Sensing experiment, which provides a detailed mapping of the Shuttle leaside heat rates, and he is a member of the Aerodynamic Technology panel for the National Aerospace Plane. Mr. Zoby served on the AIAA Thermophysics Technical Committee and is an Associate Fellow of the AIAA.

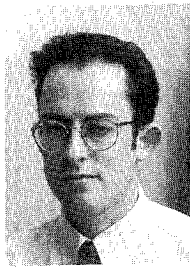
Associate Editors



JERRY M. ALLEN received a B.S. in Mechanical Engineering, Aeronautical Option, from North Carolina State University in 1962 and a M.S. in Aerospace Engineering from the University of Virginia in 1967. He has been a research scientist at the NASA Langley Research Center since 1962. His early work was primarily in high-speed turbulent boundary-layer research, where he developed improvements in several skin-friction measuring techniques. Since 1978 Mr. Allen's research has been concentrated in the field of high-speed missile aerodynamics. He has become the lead researcher and focal point for all missile research activities at the Langley Research Center. Mr. Allen recently completed an appointment to the AIAA Missile Systems Technical Committee where he directed the MSTC technical sessions at the annual Aerospace Sciences Meetings. He is the author or co-author of over sixty technical publications and presentations, including a chapter in the AIAA Progress in Astronautics and Aeronautics series *Tactical Missile Aerodynamics*. Mr. Allen is the recipient of three NASA Special Achievement Awards for his work in missile aerodynamics research, and is an Associate Fellow in the AIAA.



HUGH ANDERSON received his B.S. degree (1954) in Physics from Iowa State University and his Ph.D. degree (1961) in Physics from the California Institute of Technology. His experience has been in the field of experimental plasma physics with emphasis in measurement of ionizing radiation in space, auroral particles and currents, ionosphere-magnetosphere coupling, beam-plasma interactions, and also in the design and building of instrumentation for space measurements. He was involved with the Ranger and Mariner interplanetary spacecraft as well as recent Shuttle-based experiments. He has authored over 40 technical publications in these areas and since 1981 has been employed by Science Applications International Corporation.



IAIN D. BOYD received a B.S. in Mathematics (1985) and a Ph.D. in Aeronautics and Astronautics (1988) from the University of Southampton in England. He worked for four years as a contractor at NASA Ames Research Center in the area of rarefied gas dynamics. In particular, he participated in the development of nonequilibrium collision models and efficient numerical algorithms for computing low-density flows using Monte Carlo methods. Dr. Boyd recently became an Assistant Professor in Mechanical and Aerospace Engineering at Cornell University where he teaches aerodynamics and physical gas dynamics. His current research interests include hypersonics, electric propulsion, and materials processing. He has authored, or co-authored, over 40 technical papers.

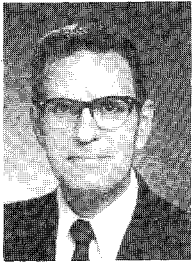


RONALD K. CLARK is a senior research engineer in the Materials Division at NASA Langley Research Center. He is Group Leader for the High Temperature Materials Coatings and Environmental Effect Group, which performs research on oxidation characteristics and hydrogen-materials interaction characteristics of advanced titanium-aluminum alloys, and oxygen/hydrogen and thermal control coatings for materials in hypersonic flight vehicle applications. He received his B.S.M.E. from the University of Florida in 1962, his M.A.E. from the University of Virginia in 1968, and his Ph.D. in Mechanical Engineering from Virginia Polytechnic Institute and State University in 1972. He is author or co-author of more than 70 refereed journal articles and conference proceedings. He is the holder of two patents. He has served on the AIAA Materials Technical Committee.

TONY C. LIN received his B.S. in Mechanical Engineering (1966) from National Taiwan University and his Ph.D. in Aerospace Engineering (1969) from Polytechnic Institute of Brooklyn. He has been employed since 1980 by TRW/BMD and is currently a department manager. His primary fields of interest have been aerothermodynamics, flight dynamics, CFD, and electromagnetic wave propagation. He has published over 40 publications in these areas.



JAMES A. MARTIN graduated from West Virginia University in 1966 with a B.S. in Aerospace Engineering. He completed his M.S. in Aeronautics and Astronautics in 1967 at the Massachusetts Institute of Technology and returned for the Engineer of Aeronautics and Astronautics professional degree in 1969. He completed his D.Sc. in Flight Sciences from George Washington University in January 1982. His work at NASA Langley Research Center has been on advanced Earth-to-orbit transportation, including trajectory analysis, vehicle sizing, rocket and air-breathing propulsion, and cost estimation. Dr. Martin recently became Associate Professor of Aerospace Engineering at the University of Alabama, where he teaches design and propulsion.



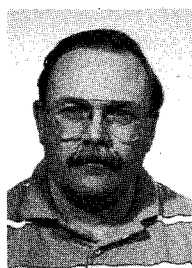
MICHAEL TAUBER received B.S. (1958) and M.S. (1959) degrees in Aeronautical Engineering from the University of Washington and Stanford University, respectively. After working at Boeing for several years, primarily on the hypersonic flowfield of the Dyna Solar vehicle, he joined NASA Ames Research Center in 1962. He spent the next 10 years working on hypersonic aerodynamic, heating, and trajectory problems associated with high-speed entry into planetary atmospheres. He determined the feasibility of a probe surviving Jupiter atmospheric entry at 50 km/s in 1968 and defined minimum heating shapes, trajectories, and thermal protection requirements. This work eventually led to the building of the Galileo probe vehicle. Following an internal reorganization, he participated in the development of a large aircraft conceptual design computer program and performed studies of the effect of new weapons and tactics on aircraft design. Subsequently, he led the development and demonstrated the application of three-dimensional transonic flow computer codes to rotary wing design with emphasis on reducing high-speed drag and noise. In recognition of this work, he received the American Helicopter Society's Howard Hughes Award in 1985. Since joining the Aerothermodynamics Branch at Ames in 1985, he has performed extensive research on transatmospheric flight and manned Mars entry and return vehicles and, also, planetary probes. He is on the faculty of Stanford University and North Carolina State University. At Stanford, he has been teaching a graduate course entitled Atmospheric Entry since 1986; he received the AIAA Student Chapter's Excellence in Teaching Award in 1987. He has authored, or co-authored, over 60 scientific and technical papers. He has been an Associate Fellow of the AIAA since 1969.



EARL A. THORNTON assumed the position of Professor of Mechanical and Aerospace Engineering at the University of Virginia in the fall of 1989. Prior to that time, he was a visiting scholar at the Texas Institute of Computational Mechanics at the University of Texas at Austin, a position he had held since 1987. He received a B.S. degree in Engineering Mechanics from Virginia Polytechnic Institute and State University in 1959, an M.S. degree from the University of Illinois in Theoretical and Applied Mechanics in 1961, and a Ph.D. degree in Engineering Mechanics from VPI & SU in 1968. From 1969 to 1987 he was a professor in the Mechanical Engineering and Mechanics Department at Old Dominion University. At ODU, Professor Thornton had a long association with the NASA Langley Research Center where he was engaged in a variety of projects. Since 1978 he has been heavily involved in interdisciplinary research on flow, thermal and structural behavior of space structures, and high-speed flight vehicles. Professor Thornton is an Associate Fellow of the AIAA, a past member of the Thermophysics Technical Committee, and is currently a member of the Structures Technical Committee. The author of over 100 engineering publications, he is co-author of the text *The Finite Element Method for Engineers*. He is also currently the director of short courses on thermal stresses and thermoviscoplasticity for the AIAA.



ALFRED L. VAMPOLA received a Ph.D. in Physics in 1961 from St. Louis University in the field of low energy nuclear physics. For 28 years, he was active in space research at the Space Sciences Laboratory of The Aerospace Corporation, flying 34 experiments on 18 satellites and three rockets during that period, including an electron spectrometer on the CRRES satellite that was launched in 1990. He has been engaged in experimental studies of magnetospheric particle morphology, wave-particle interactions, modeling, and environmental effects on satellites. From 1984 to 1988 he served as an Associate Editor of the *Journal of Spacecraft and Rockets*. Prior to and subsequent to his tenure as Associate Editor, he also organized and edited special topical issues for *JSR* covering Spacelab experiment results, spacecraft charging, SCATHA spacecraft engineering results, and, most recently, solar cycle effects on the space environment. In 1986 he was a Visiting Fellow on the staff of the University of Otago in Dunedin, New Zealand. He has published approximately 50 papers in refereed journals and conference proceedings, is a member of the American Geophysical Union, and is an Associate Fellow of AIAA. He has served on a number of committees in the field of spacecraft interactions and the space environment, including AIAA, Air Force, and NASA ad hoc committees. He has retired from The Aerospace Corporation and is now an independent consultant.



K. JAMES WEILMUNSTER has been employed by NASA Langley Research Center since 1964. He received his B.S.A.E. from Mississippi State University and a M.S. in Mechanical Engineering from North Carolina State University. He began his career at NASA as an experimentalist in hypersonic impulse facilities. For the past twenty years he has concentrated on the application of computational fluid dynamics to hypersonic flow phenomenon. He has been responsible for the development and application of codes for the analysis of flow about vehicles such as the Shuttle Orbiter, the AFE and the HL-20. He has published approximately 50 papers in the areas of experimental and computational hypersonic aerothermodynamics, computational fluid dynamics, and grid generation. He is an Associate Fellow of the AIAA.

Reviewers for the *Journal of Spacecraft and Rockets*—1993*

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*This list represents names received through November 1993. We regret any inadvertent omissions.