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for Calendar Year 1985**

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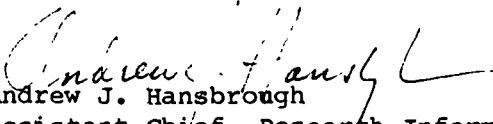
FOREWORD

This report contains a listing of Langley Research Center's scientific and technical research output for calendar year 1985.

The intent of this report is to provide a greater awareness of the broad scope of results and the importance of the research and development work conducted by scientists and engineers at Langley. This current awareness is mandated by the National Aeronautics and Space Act of 1958, which provides for the widest practical dissemination of NASA research.

During the calendar year 1985, Langley's contributions to NASA and non-NASA literature included 167 NASA Formal Reports, 144 Quick-Release Technical Memorandums, 302 Contractor Reports, 265 Journal Articles and Other Publications, 599 Meeting Presentations, 238 Technical Talks, 15 Computer Programs, 66 Tech Briefs, and 23 Patents. In addition, during the year 13 conferences, symposia, and workshops were sponsored or cosponsored by Langley and held locally.

Comments or suggestions concerning this publication should be addressed to the Research Information and Applications Division, Mail Stop 180A, NASA Langley Research Center, Hampton, Virginia 23665.


Andrew J. Hansbrough
Assistant Chief, Research Information
and Applications Division

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CONFERENCES SPONSORED OR COSPONSORED BY LANGLEY AND HELD LOCALLY IN 1985

Title of conference	Date	Langley contacts	Langley		Non-Langley	
			Speakers	Attendees	Speakers	Attendees
1. 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure	Feb. 6	P. A. Newman	4	21	1	5
2. Mini-Workshop on the Development and Application of Wind Tunnel Seeding Systems for Laser Velocimeters	Mar. 19-20	W. W. Hunter, Jr. C. E. Nichols	6	32	14	30
3. Government/Industry Controlled Impact Demonstration (CID)	Apr. 10	R. J. Hayduk	5	11	8	70
4. Langley Symposium on Aerodynamics	Apr. 23-25	S. H. Stack	48	134	0	182
5. SATA 21st Annual Meeting	May 14-16	Z. T. Applin F. E. Sabo	5	33	21	57
6. Workshop on Computational Methods for Structural Mechanics and Dynamics	June 19-21	W. J. Stroud	2	51	26	87
7. Symposium on Vortex Dominated Flows	July 9-10	M. D. Salas R. G. Voigt	1	72	0	53
8. Symposium on the LaRC Space Commercialization Program	July 18	F. O. Allamby C. S. Hoffman	0	45	8	125
9. Review of CFD Contractors and Grantees--1985	Aug. 13-15	J. D. Keller	0	31	70	50
10. Control of Flexible Structures (COFS) Workshop	Aug. 27-28	C. S. Hoffman	0	63	0	73
11. Symposium on Vortex Flow Aerodynamics	Oct. 8-10	J. F. Campbell	11	67	21	55
12. First International DIAL Data Collection and Analysis Workshop	Nov. 18-21	E. V. Browell	1	14	21	36
13. Workshop on Interfacial Aspects of Adhesion to Carbon Fibers	Dec. 10-12	J. A. Hinkley	0	6	9	15
Total			83	580	199	838

INTRODUCTION

The NASA Langley Research Center is one of the Nation's leading laboratories for research and development in the sciences of aeronautics and space technology. Langley conducts basic and applied research in fluid and flight mechanics, structures and materials, acoustics and noise reduction, measurement and instrumentation systems, numerical methods and techniques, data systems, electronics, physics, chemistry, and Earth and space sciences.

This publication is a compilation of Langley's scientific and technical research output for 1985 which is processed through the Center's Research Information and Applications Division, an integral part of NASA's Agency-wide Scientific and Technical Information (STI) system. This document is intended as a reference summary for researchers and as a current awareness publication for the scientific, research, and academic community.

The results of Langley's research are disseminated in a variety of NASA and non-NASA scientific and technical media and information systems. Details of the availability of the research references in this document are found in the section, "Availability," on page vii.

The citations are grouped first by Langley Directorates, then by the Langley Office or Division to which the senior author or innovator belongs. Citations are listed alphabetically by author or innovator under the following headings: Formal Reports (Technical Papers, Technical Memorandums, Conference Publications, Reference Publications, and Special Publications), Quick-Release Technical Memorandums, Contractor Reports, Journal Articles and Other Publications, Meeting Presentations, Technical Talks, Computer Programs, Tech Briefs, and Patents. If a citation has more than one author, it is listed only once under the first author's name. The subject category number used to index the citation and the Research Technology Objectives and Plans (RTOP) number are noted below citations when appropriate.

Computer Programs listed are those which were submitted by Langley to COSMIC in 1985.

The NASA Tech Briefs cited have either been published¹ or submitted in 1985 for publication in "NASA Tech Briefs," a quarterly journal for United States industry, entrepreneurs, and academia. Free subscriptions to this journal are available through the publisher, NASA Tech Briefs, 41 East 42nd Street, Suite 921, New York, New York 10017 or the NASA Technology Utilization Program by writing to the Technology Utilization Office, NASA Scientific and Technical Information Facility, P. O. Box 8757, Baltimore/Washington International Airport, Maryland 21240.

Patents listed, which are owned in whole or in part by Langley Research Center personnel, have been published in issues of "Scientific and Technical Aerospace Reports" (STAR), a NASA announcement journal for report literature. A subscription to STAR is available from the U.S. Government Printing Office (GPO) or to qualified recipients from the NASA Scientific and Technical Information Facility (STIF).

¹Those submitted in 1984 (and therefore listed in the 1984 issue of this document) but published in 1985 have not been listed.

Publication of some journal articles was not known at press time for the 1984 issue of this document. These articles are therefore listed in the 1985 issue.

AVAILABILITY

<u>Category</u>	<u>Source</u>
Formal Reports Quick-Release Technical Memorandums Contractor Reports	National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161 NASA Scientific and Technical Information Facility (STIF) P. O. Box 8757 Baltimore/Washington International Airport, MD 21240 NASA Industrial Applications Centers (IAC) (See Appendix for addresses of IAC's)
Computer Programs	Computer Software Management and Information Center (COSMIC) 112 Barrow Hall University of Georgia Athens, GA 30602
Langley Tech Briefs	Office of Technology Utilization and Applications Mail Stop 139A NASA Langley Research Center Hampton, VA 23665
Patents:	
Patent Application Specifications	National Technical Information Service (NTIS)
Printed Copies	Commissioner of Patents and Trademarks U.S. Patent and Trademark Office Washington, DC 20231

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NASA LANGLEY RESEARCH CENTER
Hampton, Virginia

CALENDAR YEAR 1985

PUBLICATIONS FOR OFFICE OF THE DIRECTOR

Formal Reports

1. Burke, J.; Bergman, J.; and Asimov, I.: The Impact of Science on Society. NASA SP-482, 1985, 102 p.
(Avail: NTIS Subject Category 99)

Quick-Release Technical Memorandums

2. Anon.: Langley Aeronautics and Space Test Highlights - 1984. NASA TM-87585, September 1985, 88 p.
(Avail: NTIS Subject Category 99)
3. Anon.: Research and Technology - 1985 Annual Report of the Langley Research Center. NASA TM-87623, November 1985, 113 p.
(Avail: NTIS Subject Category 99)

Contractor Reports

4. Abarbanel, S.; and Gottlieb, D.: Information Content in Spectral Calculations. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172558, February 1985, 14 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
5. Abarbanel, S.; Gottlieb, D.; and Tadmor, E.: Spectral Methods for Discontinuous Problems. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177974, August 1985, 31 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
6. Adams, L.: Reordering Computations for Parallel Execution. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177961, July 1985, 19 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
7. Alaghband, G.; and Jordan, H. F.: Multiprocessor Sparse L/U Decomposition With Controlled Fill-In. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178016, October 1985, 38 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
8. Anon.: Cumulative Reports and Publications Through December 31, 1984. (NAS1-17070, NAS1-17130, NAS1-15810, NAS1-16394, NAS1-14101, and NAS1-14472 Institute for Computer Applications in Science and Engineering.) NASA CR-172569, March 1985, 39 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)

9. Anon.: Semi-Annual Report, October 1, 1984 Through March 31, 1985.
(NAS1-17070 and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-172610, May 1985, 59 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
10. Anon.: Semi-Annual Report - April 1, 1985 Through October 2, 1985.
(NAS1-17070 and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-178020, November 1985, 64 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
11. Banks, H. T.: On a Variational Approach to Some Parameter Estimation Problems. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177935, June 1985, 39 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
12. Banks, H. T.; and Rosen, I. G.: A Galerkin Method for the Estimation of Parameters in Hybrid Systems Governing the Vibration of Flexible Beams With Tip Bodies. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172537, February 1985, 48 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
13. Bayliss, A.; Maestrello, L.; Parikh, P.; and Turkel, E.: Numerical Simulation of Boundary Layer Excitation by Surface Heating/Cooling. (NAS1-16394, NAS1-17070, and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-172575, March 1985, 23 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
14. Bayliss, A.; Maestrello, L.; Parikh, P.; and Turkel, E.: Wave Phenomena in a High Reynolds Number Compressible Boundary Layer. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178025, November 1985, 25 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
15. Bayliss, A.; Maestrello, L.; and Turkel, E.: On the Interaction of a Sound Pulse With the Shear Layer of an Axisymmetric Jet, III. Nonlinear Effects. (NAS1-15810, NAS1-16394, NAS1-17070, and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-172512, January 1985, 23 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
16. Bayliss, A.; Parikh, P.; Maestrello, L.; and Turkel, E.: A Fourth-Order Scheme for the Unsteady Compressible Navier-Stokes Equations. (NAS1-17070 and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-177994, October 1985, 25 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-83)
17. Berger, M. J.; and Bokhari, S. H.: A Partitioning Strategy for Non-Uniform Problems on Multiprocessors. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178024, November 1985, 30 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)

18. Bokhari, S. H.: Partitioning Problems in Parallel, Pipelined and Distributed Computing. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178023, November 1985, 33 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
19. Brandt, A.; and Ta'asan, S.: Multigrid Method for Nearly Singular and Slightly Indefinite Problems. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178026, November 1985, 37 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
20. Brandt, A.; and Ta'asan, S.: Multigrid Solutions to Quasi-Elliptic Schemes. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177973, May 1985, 22 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
21. Brewer, D. W.; and Gibson, J. S.: Parameter Identification for a Robotic Manipulator Arm. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178002, September 1985, 25 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
22. Burns, J. A.; and Powers, R. K.: Factorization and Reduction Methods for Optimal Control of Distributed Parameter Systems. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178033, November 1985, 103 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
23. Cox, C. L.; and Fix, G. J.: On the Accuracy of Least Squares Methods in the Presence of Corner Singularities. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172552, February 1985, 27 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
24. Davis, S. F.: Shock Capturing. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172592, April 1985, 23 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
25. Drummond, J. P.; Hussaini, M. Y.; and Zang, T. A.: Spectral Methods for Modeling Supersonic Chemically Reacting Flow Fields. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172578, March 1985, 41 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
26. Dutt, P.: Stable Boundary Conditions and Difference Schemes for Navier-Stokes Equations. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177984, August 1985, 89 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
27. Fix, G. J.; and Suri, M.: Three-Dimensional Mass Conserving Elements for Compressible Flows. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172513, January 1985, 28 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)

28. Fleming, P. J.: SUBOPT - A CAD Program for Suboptimal Linear Regulators. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172536, February 1985, 17 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
29. Goglia, G. (Compiler): NASA/American Society for Engineering Education (ASEE) Summer Faculty Fellowship Program - 1985. (NGT 47-003-029 Old Dominion University.) NASA CR-177972, September 1985, 158 p.
(Avail: NTIS Subject Category 80)
30. Gottlieb, D.; and Tadmor, E.: Recovering Pointwise Values of Discontinuous Data Within Spectral Accuracy. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172535, January 1985, 21 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
31. Grosch, C. E.: Adapting a Navier-Stokes Code to the ICL-DAP. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178034, December 1985, 41 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
32. Hall, P.: An Asymptotic Investigation of the Stationary Modes of Instability of the Boundary Layer on a Rotating Disc. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177977, September 1985, 30 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
33. Hall, P.: Instability of Time-Periodic Flows. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178009, October 1985, 30 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
34. Hall, P.: Taylor-Görtler Instabilities of Tollmien-Schlichting Waves and Other Flows Governed by the Interactive Boundary Layer Equations. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178010, October 1985, 29 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
35. Harabetian, E.: A Convergent Series Expansion for Hyperbolic Systems of Conservation Laws. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172557, February 1985, 89 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
36. Harabetian, E.: Matched Asymptotic Expansions to Similarity Solutions of Shock Diffraction. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178022, November 1985, 32 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
37. Hariharan, S. I.: Absorbing Boundary Conditions for Exterior Problems. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177944, July 1985, 34 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)

38. Hossain, M.; Vahala, G.; and Montgomery, D.: Forced MHD Turbulence in a Uniform External Magnetic Field. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172576, March 1985, 40 p.
(Avail: NTIS Subject Category 75 RTOP 505-31-83)
39. Israeli, M.: Marching Iterative Methods for the Parabolized and Thin Layer Navier-Stokes Equations. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178028, December 1985, 27 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
40. Ito, K.; and Powers, R. K.: Chandrasekhar Equations for Infinite Dimensional Systems. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172515, January 1985, 37 p.
(Avail: NTIS Subject Category 67 RTOP 505-31-83)
41. Jordan, H. F.: Parallel Computation With the Force. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177999, October 1985, 13 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
42. Kreiss, G.; and Kreiss, H-O.: Convergence to Steady State of Solutions of Burgers' Equation. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178017, December 1985, 30 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
43. Lakin, W. D.: Differentiating Matrices for Arbitrarily Spaced Grid Points. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172556, January 1985, 25 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
44. LeVeque, R. J.: Intermediate Boundary Conditions for LOD, ADI, and Approximate Factorization Methods. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172591, March 1985, 25 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
45. Maday, Y.: Analysis of Spectral Operators in One-Dimensional Domains. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172573, February 1985, 27 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
46. Maestrello, L.; Parikh, P.; Bayliss, A.; and Turkel, E.: Active Control of Compressible Flows on a Curved Surface. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178018, November 1985, 28 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
47. Majda, G.: A New Theory for Multistep Discretizations of Stiff Ordinary Differential Equations: Stability With Large Step Sizes. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177941, June 1985, 71 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)

48. Mehrotra, P.; and Van Rosendale, J.: The BLAZE Language: A Parallel Language for Scientific Programming. (NAS1-17070 and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-172615, May 1985, 57 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
49. Noonan, R. E.: An Algorithm for Generating Abstract Syntax Trees. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172541, January 1985, 19 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
50. Noonan, R. E.; and Collins, W. R.: Construction of a Menu-Based System. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172560, February 1985, 12 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
51. Noonan, R. E.; and Collins, W. R.: The Parser Generator as a General Purpose Tool. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177955, July 1985, 36 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
52. Ortega, J. M.; and Voigt, R. G.: Solution of Partial Differential Equations on Vector and Parallel Computers. (NAS1-17070 and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-172500, January 1985, 173 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
53. Osher, S.; and Tadmor, E.: On the Convergence of Difference Approximations to Scalar Conservation Laws. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172614, May 1985, 74 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
54. Pratt, T. W.: PISCES: An Environment for Parallel Scientific Computation. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172544, February 1985, 31 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)
55. Roe, P. L.: Discrete Models for the Numerical Analysis of Time-Dependent Multidimensional Gas Dynamics. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172574, March 1985, 37 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
56. Rosen, I. G.: Spline-Based Rayleigh-Ritz Methods for the Approximation of the Natural Modes of Vibration for Flexible Beams With Tip Bodies. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172566, March 1985, 32 p.
(Avail: NTIS Subject Category 39 RTOP 505-31-83)
57. Rosenau, P.; and Turkel, E.: Long-Time Asymptotics of a System for Plasma Diffusion. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177947, July 1985, 20 p.
(Avail: NTIS Subject Category 75 RTOP 505-31-83)

58. Saltz, J.; and Naik, V. K.: Towards Developing Robust Algorithms for Solving Partial Differential Equations on MIMD Machines. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177979, September 1985, 52 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
59. Shih, K-G.; and Antman, S. S.: Qualitative Properties of Large Buckled States of Spherical Shells. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177980, September 1985, 75 p.
(Avail: NTIS Subject Category 31 RTOP 505-31-83)
60. Speziale, C. G.: Second-Order Closure Models for Rotating Turbulent Flows. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178005, October 1985, 25 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
61. Swanson, R. C.; and Turkel, E.: A Multistage Time-Stepping Scheme for the Navier-Stokes Equations. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172527, February 1985, 36 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
62. Tadmor, E.: Complex Symmetric Matrices With Strongly Stable Iterates. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172542, February 1985, 23 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
63. Tadmor, E.: The Numerical Viscosity of Entropy Stable Schemes for Systems of Conservation Laws. I. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-178021, November 1985, 30 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
64. Tal-Ezer, H.: The Eigenvalues of the Pseudospectral Fourier Approximation to the Operator $\sin(2x)\frac{\partial}{\partial x}$. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172538, February 1985, 11 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
65. Tal-Ezer, H.: Spectral Methods in Time for Parabolic Problems. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172539, February 1985, 20 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
66. Trefethen, L. N.; and Halpern, L.: Well-Posedness of One-Way Wave Equations and Absorbing Boundary Conditions. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172619, June 1985, 24 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
67. Turkel, E.: Algorithms for the Euler and Navier-Stokes Equations for Supercomputers. (NAS1-16394 and NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172543, February 1985, 28 p.
(Avail: NTIS Subject Category 61 RTOP 505-31-83)

68. Turkel, E.: Accuracy of Schemes With Nonuniform Meshes for Compressible Fluid Flows. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-177988, September 1985, 49 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
69. Turkel, E.; Yaniv, S.; and Landau, U.: Accuracy of Schemes for the Euler Equations With Non-Uniform Meshes. (NAS1-17070 and NAS1-18107 Institute for Computer Applications in Science and Engineering.) NASA CR-178038, December 1985, 21 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
70. Voigt, R. G.: Where Are the Parallel Algorithms? (NAS1-17070 and NAS1-17130 Institute for Computer Applications in Science and Engineering.) NASA CR-172516, January 1985, 15 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
71. Zang, T. A.; and Hussaini, M. Y.: A Three-Dimensional Spectral Algorithm for Simulations of Transition and Turbulence. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172561, March 1985, 40 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-83)
72. Zang, T. A.; and Hussaini, M. Y.: On Spectral Multigrid Methods for the Time-Dependent Navier-Stokes Equations. (NAS1-17070 Institute for Computer Applications in Science and Engineering.) NASA CR-172613, May 1985, 25 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)

Journal Articles and Other Publications

73. Hearth, D. P.; and Boyer, W. J.: Flexibility of Space Structures Makes Design Shaky. Aerospace America, Volume 23, No. 5, May 1985, p. 100-103.
(Subject Category 15)
74. Petersen, R. H.; and Driver, C.: Readyng Technology for a Super SST. Aerospace America, Volume 23, No. 7, July 1985, p. 56-59.
(Subject Category 01 RTOP 505-43-43)

Meeting Presentations

75. Petersen, R. H.: Computer-Aided Analysis at NASA Langley Research Center: Looking Toward the 1990's. Presented at the Purdue University Third National Conference on University Programs in Computer Aided Engineering, Design and Manufacturing (UPCAEDM) '85, July 8-10, 1985, Lafayette, Indiana. In Proceedings, p. 17-20.
(Subject Category 59)
76. South, J. C., Jr.: Recent Advances in Computational Transonic Aerodynamics. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0366.
(Subject Category 02 RTOP 505-31-03)

77. South, J. C., Jr.; Doria, M. L.; and Green, L. L.: Finite-Volume Scheme for Transonic Potential Flow About Airfoils and Bodies in an Arbitrarily-Shaped Channel. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-31-03)

Technical Talks

78. Petersen, R. H.; and Driver, C.: The Advanced Supersonic Transport - Status. Presented at the 1985 AIAA Annual Meeting and International Aerospace Exhibit, April 9-11, 1985, Washington, DC.
(Subject Category 01 RTOP 505-43-43)
79. Petersen, R. H.; Harris, R. V., Jr.; and Stack, S. H.: Applied Aerodynamics at NASA Langley - An Overview. Presented at the AIAA 3rd Applied Aerodynamics Conference, October 14-16, 1985, Colorado Springs, Colorado.
(Subject Category 02 RTOP 505-61-41)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR PROJECTS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

80. Wright, H. T.: Project Management Within NASA. Presented at the FGIPC, IRAC, et al., Government Computer Expo 85, June 10-14, 1985, Washington, DC. In Proceedings.
(Subject Category 81 RTOP 023-10-01)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR AERONAUTICAL SYSTEMS OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

81. Bantle, J. W.: An Experimental and Analytical Study of the Aerodynamic Interference Effects Between Two Sears-Haack Bodies at Mach 2.7. NASA TM-85729, April 1985, 185 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-43)
82. Coen, P. G.; and Foss, W. E., Jr.: Computer Sizing of Fighter Aircraft. NASA TM-86351, January 1985, 21 p.
(Avail: NTIS Subject Category 01 RTOP 505-43-43)
83. Fetterman, D. E., Jr.: Preliminary Sizing and Performance of Aircraft. NASA TM-86357, July 1985, 114 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-43)
84. Gall, P. D.: Study of an Efficient Long-Range Mach 2.7 Supersonic Transport Configuration Concept. NASA TM-86414, July 1985, 52 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-43)
85. Gall, P. D.; and Smith, H. C.: Study of Winglets Applied to Biplanes. NASA TM-86350, January 1985, 20 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-43)
86. Liu, G. C.; and Hsu, C-H.: Numerical Studies of Interacting Vortices. NASA TM-86325, January 1985, 15 p.
(Avail: NTIS Subject Category 34 RTOP 505-43-43)
87. Nguyen, H. Q.: Design Considerations for High-Altitude, Long-Endurance, Microwave-Powered Aircraft. NASA TM-86403, April 1985, 135 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-43)
88. Spearman, M. L.: Effects of Body Shape on the Aerodynamics of a Body of Revolution at Mach Numbers From 1.6 to 4.6. NASA TM-86345, January 1985, 22 p.
(Avail: NTIS Subject Category 01 RTOP 505-43-43)
89. Spearman, M. L.: Some Fighter Aircraft Trends. NASA TM-86352, January 1985, 37 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-43)
90. Spearman, M. L.: The Application of Some Lifting-Body Reentry Concepts to Missile Design. NASA TM-86394, March 1985, 30 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-43)

91. Spearman, M. L.: Supersonic Aerodynamic Characteristics of Some Reentry Concepts for Angles of Attack to 90°. NASA TM-87645, November 1985, 31 p.
(Avail: NTIS Subject Category 15 RTOP 505-69-41)
92. Spearman, M. L.: Some Comparisons of US and USSR Aircraft Design Developments. NASA TM-87611, December 1985, 35 p.
(Avail: NTIS Subject Category 03 RTOP 505-69-41)

Contractor Reports

93. Beck, W. E., Jr.; and Bochary, E.: Aerodynamic and Acoustic Performance of an Axisymmetric Supersonic Inlet With Auxiliary Inlets Operating at Low Speed. (NAS1-16048 Lockheed-California Company.) NASA CR-177962, October 1985, 304 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-43)
94. Miley, S. J.; and Von Lavante, E.: Propeller Propulsion System Integration - State of Technology Survey. (NAG1-214 Texas A&M University.) NASA CR-3882, March 1985, 186 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-43)
95. Powell, A. G.; Frasca, R. L.; and Pellino, A. G.: Technology Study for Advanced Supersonic Cruise Vehicles Inlet Technology. (NAS1-16147 McDonnell Douglas Corporation.) NASA CR-172602, February 1985, 55 p.
(Avail: STIF Subject Category 02 RTOP 505-43-43)
96. Robins, A. W.; Beissner, F. L., Jr.; Domack, C. S.; and Swanson, E. E.: Preliminary Performance of a Vertical-Attitude Takeoff and Landing, Supersonic-Cruise Aircraft Concept Having Thrust Vectoring Integrated Into the Flight Control System. (Kentron International, Inc.) NASA CR-172530, February 1985, 39 p.
(Avail: NTIS Subject Category 05 RTOP 505-43-43)
97. Scott, S. J.; Nicks, O. W.; and Imbrie, P. K.: Effects of Leading-Edge Devices on the Low-Speed Aerodynamic Characteristics of a Highly-Swept Arrow-Wing. (L-69215B TEKWORLD Company.) NASA CR-172531, February 1985, 66 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-43)

Journal Articles and Other Publications

98. Spearman, M. L.: Guided Missile. Encyclopedia of Science and Technology, 5th Edition, McGraw-Hill Book Company, Volume 6, 1985, p. 409-412.
(Subject Category 02 RTOP 505-43-43)

Meeting Presentations

99. Coen, P. G.; and Foss, W. E., Jr.: Computer Sizing of Fighter Aircraft. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0212.
(Subject Category 05 RTOP 505-43-43)

100. Dollyhigh, S. M.; and Foss, W. E., Jr.: The Impact of Emerging Technology on Fighter Aircraft Requirements. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851841.
(Subject Category 05 RTOP 505-43-43)
101. Gall, P. D.; and Smith, H. C.: Study of Winglets Applied to Biplanes. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0279.
(Subject Category 05 RTOP 505-43-43)
102. Johnson, V. S.: Computer Methods for the Design and Analysis of Aircraft. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 05 RTOP 505-43-43)
103. Johnson, V. S.: A Computer-Assisted Process for Supersonic Aircraft Conceptual Design. Presented at the AIAA, AHS, ASEE Aircraft Design, Systems and Operations Meeting, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-4027.
(Subject Category 05 RTOP 505-43-43)
104. Spearman, M. L.: Some Comparisons of US and USSR Aircraft Design Developments. Presented at the AIAA, AHS, ASEE Aircraft Design, Systems and Operations Meeting, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-3060.
(Subject Category 01 RTOP 505-43-43)
105. Spearman, M. L.: Reform of General Education and Vocational Training in the U.S.S.R. Presented at the AIAA, AHS, ASEE Aircraft Design Systems and Operations Meeting, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-3082.
(Subject Category 99 RTOP 505-43-43)
106. Spearman, M. L.: Aerospace Vehicles - Past Progress and Future Possibilities. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 01 RTOP 505-43-43)
107. Spearman, M. L.: Soviet Union Views on the Influence of Science and Technology. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 99 RTOP 505-43-43)
108. Spearman, M. L.: Supersonic Aerodynamic Characteristics of Some Reentry Concepts for Angles of Attack to 90°. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1795-CP.
(Subject Category 02 RTOP 505-43-43)

109. Spearman, M. L.: The Application of Some Lifting-Body Reentry Concepts to Missile Design. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0497.
(Subject Category 01 RTOP 505-43-43)

Technical Talks

110. Driver, C.: The Impact of Emerging Technologies on an Advanced Supersonic Transport. Presented at the Air Traffic Control Association (ATCA) Fall Conference, September 27 - October 3, 1985, Arlington, Virginia.
(Subject Category 02 RTOP 505-43-43)
111. Koenig, R. W.: NASA Technology for Advanced Commuters. Presented at the AIAA, ASCE, et al., International Air Transportation Conference, June 26-28, 1985, Norfolk, Virginia.
(Subject Category 02 RTOP 505-43-43)
112. Koenig, R. W.: Advanced Technology for Commuter Aircraft. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas.
(Subject Category 05 RTOP 505-43-43)
113. Liu, G. C.; and Liu, C-H.: Computations of Vortex Flows. Presented at the National Tsing Hua University, January 9, 1985, Hsinchu, Taiwan.
(Subject Category 02 RTOP 505-43-43)
114. Maglieri, D. J.; Dean, H.; and Densmore, J.: Status and Outlook on Sonic Boom. Presented at the 1985 AIAA Annual Meeting and International Aerospace Exhibit, April 9-11, 1985, Washington, DC.
(Subject Category 02 RTOP 505-43-43)
115. Spearman, M. L.: Tactical Missiles. Presented at the AIAA Soviet Threat Technology, April 17-18, 1985, Albuquerque, New Mexico.
(Subject Category 02 RTOP 505-43-43)

Computer Programs

No computer programs.

Tech Briefs

116. Maksymiuk, C. M. (Langley Research Center); and Viken, S. A. W. (University of Kansas Center for Research, Inc.): Aerodynamic Characteristics of NACA 16-Series Airfoils. NASA Tech Brief LAR-13355.

Patents

No patents.

PUBLICATIONS FOR SPACE TECHNOLOGY FLIGHT EXPERIMENTS OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

117. Crumbly, K. H.: Space Technology Experiments Platform (STEP). Presented at the NASA Symposium on the LaRC Space Commercialization Program, July 18, 1985, Hampton, Virginia.
(Subject Category 14 RTOP 542-03-44)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR SCOUT PROJECT OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

118. Harris, C. G.; and Harris, D. K.: User's Operating Procedures, Volume I - Scout Project Information Programs. (NAS1-18000 PRC Kentron, Inc.) NASA CR-177948, July 1985, 271 p.
(Avail: NTIS Subject Category 61 RTOP 563-22-68)
119. Harris, C. G.; and Harris, D. K.: User's Operating Procedures, Volume II - Scout Project Financial Analysis Program. (NAS1-18000 PRC Kentron, Inc.) NASA CR-177949, July 1985, 171 p.
(Avail: NTIS Subject Category 61 RTOP 563-22-68)
120. Harris, C. G.; and Harris, D. K.: User's Operating Procedures, Volume III - Projects Directorate Information Programs. (NAS1-18000 PRC Kentron, Inc.) NASA CR-177950, July 1985, 239 p.
(Avail: NTIS Subject Category 61 RTOP 563-22-68)

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

tech briefs.

Patents

o patents.

PUBLICATIONS FOR SPACE FLIGHT EXPERIMENT DEFINITION AND INTEGRATION OFFICE

Formal Reports

121. Boyer, W. J. (Compiler): Large Space Antenna Systems Technology - 1984.
NASA CP-2368, Part 1, April 1985, 479 p.
(Avail: NTIS Subject Category 15 RTOP 506-62-23)
122. Boyer, W. J. (Compiler): Large Space Antenna Systems Technology - 1984.
NASA CP-2368, Part 2, April 1985, 499 p.
(Avail: NTIS Subject Category 15 RTOP 506-62-23)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR AIRCRAFT ENERGY EFFICIENCY PROJECT OFFICE

Formal Reports

123. ACEE Composites Project Office (Compiler): NASA/Aircraft Industry Standard Specification for Graphite Fiber/Toughened Thermoset Resin Composite Material. NASA RP-1142, June 1985, 57 p.
(Avail: NTIS Subject Category 24 RTOP 534-06-13)
124. Middleton, D. B.; Bartlett, D. W.; and Hood, R. V.: Energy Efficient Transport Technology - Program Summary and Bibliography. NASA RP-1135, September 1985, 54 p.
(Avail: NTIS Subject Category 05 RTOP 534-02-13)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

125. Bunin, B. L.: Critical Joints in Large Composite Primary Aircraft Structures, Volume II - Technology Demonstration Test Report. (NAS1-16857 McDonnell Douglas Corporation.) NASA CR-172587, June 1985, 221 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
126. Bunin, B. L.: Critical Joints in Large Composite Primary Aircraft Structures, Volume I - Technical Summary. (NAS1-16857 McDonnell Douglas Corporation.) NASA CR-3914, September 1985, 64 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
127. Bunin, B. L.; and Sagui, R. L.: Critical Joints in Large Composite Primary Aircraft Structures, Volume III - Ancillary Test Results. (NAS1-16857 McDonnell Douglas Corporation.) NASA CR-172588, June 1985, 341 p.
(Avail: IAC Subject Category 24 RTOP 534-03-13)
128. Griffin, C. F.; and James, A. M.: Fuel Containment, Lightning Protection, and Damage Tolerance in Large Composite Primary Aircraft Structures. (NAS1-16856 Lockheed-California Company.) NASA CR-3875, May 1985, 42 p.
(Avail: IAC Subject Category 24 RTOP 534-06-13)
129. Johnson, R. W.; Thomson, L. W.; and Wilson, R. D.: Study on Utilization of Advanced Composites in Fuselage Structures of Large Transports. (NAS1-17417 Boeing Commercial Airplane Company.) NASA CR-172406, February 1985, 153 p.
(Avail: IAC Subject Category 24 RTOP 534-06-13)
130. Lineberger, L. B.: Structural Tests and Development of a Laminar Flow Control Wing Surface Composite Chordwise Joint. (NAS1-17487 Lockheed-Georgia Company.) NASA CR-172462, December 1984 (Released 1985), 199 p.
(Avail: IAC Subject Category 24 RTOP 505-45-63)

131. Pearce, W. E.; McNay, D. E.; and Thelander, J. A.: Laminar Flow Control Leading Edge Glove Flight Test Article Development. (NAS1-16220 McDonnell Douglas Corporation.) NASA CR-172137, November 1984 (Released 1985), 109 p.
(Avail: IAC Subject Category 02 RTOP 505-45-63)
132. Sandifer, J. P.; Denny, A.; and Wood, M. A.: Fuel Containment and Damage Tolerance in Large Composite Primary Aircraft Structures, Phase II - Testing. (NAS1-16856 Lockheed-California Company.) NASA CR-172519, April 1985, 283 p.
(Avail: IAC Subject Category 24 RTOP 534-06-13)
133. Staff of Boeing Commercial Airplane Company: Integrated Application of Active Controls (IAAC) Technology to an Advanced Subsonic Transport Project--Test ACT System Validation. (NAS1-15325 Boeing Commercial Airplane Company.) NASA CR-172525, August 1985, 130 p.
(Avail: IAC Subject Category 05 RTOP 505-45-63)
134. Watts, D. J.; Sumida, P. T.; Bunin, B. L.; Janicki, G. C.; Walker, J. V.; and Fox, B. R.: A Study of the Utilization of Advanced Composites in Fuselage Structures of Commercial Aircraft. (NAS1-17416 McDonnell Douglas Corporation.) NASA CR-172405, January 1985, 188 p.
(Avail: IAC Subject Category 24 RTOP 534-06-13)

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

135. Bohon, H. L.: Composites in Today's and Tomorrow's U.S. Airliners. Presented at the NOWEA 3rd International Aircraft Maintenance Engineering Exhibition (AIRMEC 85), February 26 - March 1, 1985, Dusseldorf, Germany.
(Subject Category 24 RTOP 534-06-13)
136. Braslow, A. L.; and Fischer, M. C.: Design Considerations for Application of Laminar Flow Control Systems to Transport Aircraft. Presented at the AGARD von Karman Institute for Fluid Dynamics, Lecture Series on Aircraft Drag Prediction and Reduction, May 20-24, 1985, Brussels, Belgium. AGARD Report No. 723.
(Subject Category 02 RTOP 505-45-63)
137. Maddalon, D. V.; and Wagner, R. D.: Operational Considerations for Laminar Flow Aircraft. Presented at the NASA, SAE, et al., Laminar Flow Aircraft Certification Workshop, April 15-16, 1985, Wichita, Kansas. NASA CP pending.
(Subject Category 05 RTOP 505-45-63)
138. Wagner, R. D.: Laminar Flow Systems Integration-Flight Test Status and Plans. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-45-63)

Technical Talks

139. Bohon, H. L.: The Application of Composites to Large Transport Aircraft. Presented at the Society of Manufacturing Engineers Composites in Manufacturing 4 Conference and Exposition, January 8-10, 1985, Anaheim, California.
(Subject Category 24 RTOP 534-06-13)

140. Davis, J. G., Jr.: NASA/Aircraft Industry Standard Specification for Graphite Fiber/Toughened Resin Composite Material. Presented at the Institute for Defense Analyses (IDA) Workshop on Test Methods for Composite Materials - Development and Standardization, February 27, 1985, Alexandria, Virginia.
(Subject Category 24 RTOP 534-06-13)

141. Wagner, R. D.: Development of Laminar Flow Technology for Transport Aircraft. Presented at the AIAA, ASCE, et al., International Air Transportation Conference, June 26-28, 1985, Norfolk, Virginia.
(Subject Category 02 RTOP 505-45-63)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR ELECTRONICS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR ANALYSIS AND COMPUTATION DIVISION

Formal Reports

142. Fay, T. H.; and Shoosmith, J. N. (Compilers): Computational Geometry and Computer-Aided Design. NASA CP-2379, June 1985, 135 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)
143. Schiess, J. R.; and Matthews, C. G.: Spline Methods for Approximating Quantile Functions and Generating Random Samples. NASA TP-2389, January 1985, 32 p.
(Avail: NTIS Subject Category 65 RTOP 505-31-83)

Quick-Release Technical Memorandums

144. Craidon, C. B. (Compiler): A Description of the Langley Wireframe Geometry Standard (LaWGS) Format. NASA TM-85767, February 1985, 44 p.
(Avail: NTIS Subject Category 05 RTOP 505-37-23)
145. Earnest, B. M.: Guidelines for Developing Structured FORTRAN Programs. NASA TM-86407, March 1985, 34 p.
(Avail: NTIS Subject Category 61 RTOP 992-16-05)
146. Kaylor, J. T.; Simmons, H. I.; Naftel, P. B.; Houck, J. A.; and Grove, R. D.: The Mission Oriented Terminal Area Simulation Facility. NASA TM-87621, October 1985, 62 p.
(Avail: NTIS Subject Category 62 RTOP 505-45-33)
147. Taylor, N. L.; Randall, D. P.; Matthews, C. G.; Gates, R. L.; Bowen, J. T.; Jones, K. H.; von Ofenheim, W. H.; Gooden, A. L.; Johnson, M. M.; Everton, E. L.; and Roland, V. R.: Graphics Mini Manual. NASA TM-87622, September 1985, 71 p.
(Avail: NTIS Subject Category 60 RTOP 505-60-01)

Contractor Reports

148. DeLoatch, S. J.: MACSYMA Usage at Langley. (NAS1-16921 Norfolk State University Foundation.) NASA CR-172518, February 1985, 67 p.
(Avail: NTIS Subject Category 59 RTOP 340-00-00)
149. Evans, A. B.; and Lee, L. L.: Magnetic Tape User Guide. (NAS1-17300 System Development Corporation.) NASA CR-177993, September 1985, 57 p.
(Avail: NTIS Subject Category 62 RTOP 505-60-01)
150. Hurst, P. W.: Executive Control Systems in the Engineering Design Environment. (NAG1-242 University of Virginia.) NASA CR-172582, May 1985, 107 p.
(Avail: NTIS Subject Category 62 RTOP 505-36-33)

151. Irvine, L. D.: Minimal Norm Constrained Interpolation. (NAG1-363 Old Dominion University.) NASA CR-178001, September 1985, 108 p.
(Avail: NTIS Subject Category 64 RTOP 505-31-83)
152. Naftel, P. B.: MAVEC, A Fully-Manual Terminal Area Model. (NAS1-17743 Research Triangle Institute.) NASA CR-178000, September 1985, 51 p.
(Avail: STIF Subject Category 60 RTOP 505-45-33)
153. Saunders, B. V.: Algebraic Grid Generation Using Tensor Product B-Splines. (NGT 47-003-802 Old Dominion University.) NASA CR-177968, September 1985, 152 p.
(Avail: NTIS Subject Category 59 RTOP 505-31-83)

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

154. Park, S. K.: Digital Image Fidelity: An End-To-End Analysis. Presented at the SPSE 25th Fall Symposium - Imaging, November 17-22, 1985, Arlington, Virginia. In Proceedings, p. 157-161.
(Subject Category 36 RTOP 506-54-73)
155. Park, S. K.: Information Extraction From Multi-Spectral Images. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 59 RTOP 505-37-23)
156. Schiess, J. R.: Composite Statistical Method for Modeling Wind Gusts for Aircraft Simulation. Presented at the AIAA Flight Simulation Technologies Conference, July 22-24, 1985, St. Louis, Missouri. AIAA Paper No. 85-1750.
(Subject Category 08 RTOP 505-31-83)
157. Smith-Taylor, R.: Designing a Priority Driven Multi-Frame Rate Flight Executive. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0309.
(Subject Category 61 RTOP 505-45-33)
158. Smith-Taylor, R.: A Color Graphics Environment in Support of Supercomputer Systems. Presented at the IEEE First International Conference on Supercomputing Systems, December 16-20, 1985, St. Petersburg, Florida. IEEE Paper No. 114.
(Subject Category 61 RTOP 505-37-23)
159. Smith-Taylor, R.; and Noland, M. S.: Designing a Configuration Control Mechanism for a Flight Software Validation Facility. Presented at the AIAA, NASA, et al., Computers in Aerospace V Conference, October 21-23, 1985, Long Beach, California. AIAA Paper No. 85-6012-CP.
(Subject Category 61 RTOP 505-45-33)

160. Taylor, N. L.; Fedors, E. G.; and Pinelli, T. E.: Computer Graphics and the Graphic Artist. Presented at the Society for Technical Communication 32nd International Technical Communication Conference (ITCC), May 19-22, 1985, Houston, Texas. In Proceedings, A Mission to Communicate, 1985, p. VC-7 - VC-10.
(Subject Category 82 RTOP 505-37-23)

Technical Talks

161. Schiess, J. R.: Statistical Approach to Modeling and Simulating Wind Gusts. Presented at the Society for Computer Simulation 1985 Eastern Simulation Conferences, March 3-8, 1985, Norfolk, Virginia.
(Subject Category 08 RTOP 505-31-83)

Computer Programs

162. Computer Science and Applications Branch: VPS-32 Mathematics Library.
Program No. LAR-13520.
163. Lakeotes, C. J. (Computer Sciences Corporation): VPS-32 Utilities IDUMP, TPVPS, and STRACE. Program No. LAR-13521.

Tech Briefs

164. Barker, L. K.; and Houck, J. A. (Langley Research Center); and Carzoo, S. W. (Sperry Corporation): Translational Control of Robot Arm That Overcomes Joint Singularity. NASA Tech Brief LAR-13415.

Patents

No patents.

PUBLICATIONS FOR INSTRUMENT RESEARCH DIVISION

Formal Reports

165. Hunter, W. W., Jr.; and Nichols, C. E., Jr. (Compilers): Wind Tunnel Seeding Systems for Laser Velocimeters. NASA CP-2393, October 1985, 273 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
166. Meyers, J. F.; Hunter, W. W., Jr.; Reubush, D. E.; Nichols, C. E., Jr.; *Hepner, T. E.; and Lee, J. W.: Performance Test of Laser Velocimeter System for the Langley 16-Foot Transonic Tunnel. NASA TP-2502, AVSCOM TR 85-B-4, December 1985, 36 p.
(Avail: NTIS Subject Category 36 RTOP 505-31-53)
167. Singh, J. J.; Sprinkle, D. R.; and Puster, R. L.: New Method for Measuring Heats of Combustion of Gaseous Hydrocarbons. NASA TP-2531, December 1985.
(Avail: NTIS Subject Category 35 RTOP 141-20-10)
168. Tripp, J. S.: Rapid Estimation of Frequency Response Functions by Close-Range Photogrammetry. NASA TP-2471, November 1985, 29 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
169. Zuckerwar, A. J.; and Mazel, D. S.: Sound Speed Measurements in Liquid Oxygen-Liquid Nitrogen Mixtures. NASA TP-2464, September 1985, 20 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)

Quick-Release Technical Memorandums

170. Faulcon, N. D.: Image Processing of Aerodynamic Data. NASA TM-87629, December 1985, 14 p.
(Avail: NTIS Subject Category 35 RTOP 505-61-01)
171. Faulcon, N. D.; Monteith, J. H.; and Miller, K.: IPLIB (Image Processing Library) User's Manual. NASA TM-87646, December 1985, 216 p.
(Avail: NTIS Subject Category 61 RTOP 505-61-01)
172. Honaker, W. C.; and Lawing, P. L.: Measurements in the Flow Field of a Cylinder With a Laser Transit Anemometer and a Drag Rake in the Langley 0.3 m Transonic Cryogenic Tunnel. NASA TM-86399, April 1985, 24 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
173. Larson, W. E.: A Voice-Actuated Wind Tunnel Model Leak Checking System. NASA TM-86359, February 1985, 7 p.
(Avail: NTIS Subject Category 01 RTOP 992-19-00)

*Aerostructures Directorate, USAARTA (AVSCOM)

174. Singh, J. J.; St. Clair, T. L.; Holt, W. H.; and Mock, W., Jr.: An Investigation of Molecular Structure of Copolymers Using Positron Annihilation Spectroscopy. NASA TM-86431, May 1985, 7 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-90)
175. Zuckerwar, A. J.: Preliminary Study of Gaseous Nitrogen-Liquid Oxygen Mixing and Self Cleaning. NASA TM-87658, December 1985, 11 p.
(Avail: NTIS Subject Category 77 RTOP 505-63-81)

Contractor Reports

176. Downward, J. G.; Vavra, P. C.; Schebor, F. S.; and Vest, C. M.: Modular Digital Holographic Fringe Data Processing System. (NAS1-17945 KMS Fusion, Inc.) NASA CR-177952, June 1985, 53 p.
(Avail: NTIS Subject Category 35 RTOP 324-01-00)
177. Johnson, J. M.; and Holmes, H. K.: Solar Powered Hybrid Sensor Module Program. (NAS1-17179 Hughes Aircraft Company.) NASA CR-172495, March 1985, 28 p.
(Avail: STIF Subject Category 35 RTOP 506-53-63)
178. Koenig, E. W.; et al.: Stereo Electro-Optical Tracking System (SETS). (NAS1-16883 ITT Aerospace/Optical Division.) NASA CR-172471, September 1984 (Released 1985), 45 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-09)
179. Pandey, D. K.; and Ash, R. L.: Response Time Correlations for Platinum Resistance Thermometers in Flowing Fluids. (NAS1-17099 Old Dominion University Research Foundation.) NASA CR-172523, February 1985, 54 p.
(Avail: NTIS Subject Category 35 RTOP 505-31-53)
180. Pond, C. R.; and Texeira, P. D.: Laser Angle Sensor. (NAS1-16546 Boeing Aerospace Company.) NASA CR-172369, September 1985, 183 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
181. Sheldon, L. S.; and Keever, J.: Collection and Analysis of NASA Clean Room Air Samples. (L-78258B Research Triangle Institute.) NASA CR-3947, November 1985, 62 p.
(Avail: NTIS Subject Category 25 RTOP 678-12-04)
182. Smart, A. E.: Laser Transit Anemometry Software. (NAS1-17783 Spectron Development Laboratories, Inc.) NASA CR-177978, October 1985, 181 p.
(Avail: STIF Subject Category 35 RTOP 505-31-53)
183. Stokes, J. H.; and Ward, S. M.: Miniature Infrared Data Acquisition and Telemetry System. (NAS1-17944 Energy Optics, Inc.) NASA CR-177953, September 1985, 92 p.
(Avail: NTIS Subject Category 35 RTOP 324-01-00)

Journal Articles and Other Publications

184. Batten, C. E.: Spectral Optical Constants of Soots From Polarized Angular Reflectance Measurements. Applied Optics, Volume 24, No. 8, April 15, 1985, p. 1193-1199.
(Subject Category 25 RTOP 506-51-13)
185. Cantrell, J. H., Jr.; and Yost, W. T.: Can Ultrasound Assist an Experienced Surgeon in Estimating Burn Depth? The Journal of Trauma, Volume 24, No. 9, September 1984, p. S64-S70.
(Subject Category 71 RTOP 505-33-23)
186. Ioup, J. W.; Ioup, G. E.; Rayborn, G. H.; Wood, G. M., Jr.; and Upchurch, B. T.: Iterative and Function-Continuation-Fourier Deconvolution Methods for Enhancing Mass Spectrometer Resolution. International Journal of Mass Spectrometry and Ion Physics, Volume 55, 1984, p. 93-109..
(Subject Category 35 RTOP 506-53-23)
187. Jafri, J. A.; Lengsfeld, B. H., III; Bauschlicher, C. W., Jr.; and Phillips, D. H.: The Lower Electronic States of C100: A Computational Investigation. The Journal of Chemical Physics, Volume 83, No. 4, August 15, 1985, p. 1693-1701.
(Subject Category 23 RTOP 147-33-03)
188. Smith, A. C.: A Review of Contamination Issues Associated With an Orbiting Space Station External Environment. The Journal of Environmental Science, Volume 28, January - February 1985, p. 52-55.
(Subject Category 24 RTOP 505-34-13)
189. Zuckerwar, A. J.; and Meredith, R. W.: Low-Frequency Absorption of Sound in Air. The Journal of the Acoustical Society of America, Volume 78, No. 3, September 1985, p. 946-955.
(Subject Category 71 RTOP 505-31-33)

Meeting Presentations

190. Ake, R. L.; and Phillips, D. H.: The Hydration of SO₂: An Ab Initio Investigation. Presented at the 1985 National American Chemical Society Meeting, April 28 - May 3, 1985, Miami Beach, Florida. Abstract in Book of Abstracts for Meeting.
(Subject Category 25 RTOP 147-33-03)
191. Allison, S. G.; Heyman, J. S.; and Salama, K.: Ultrasonic Characterization of Plastic Deformation in Metals. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)

192. Batten, C. E.; Upchurch, B. T.; Wood, G. M., Jr.; Swann, R. T.; Hoyt, R. F.; and Allen, G. J.: Elucidation of Oxygen-Silica Reaction Mechanisms at High Temperatures Using Stable-Isotope Mass Spectrometry. Presented at the 1985 National American Chemical Society Meeting, April 28 - May 3, 1985, Miami Beach, Florida. Abstract in Book of Abstracts for Meeting.
(Subject Category 23 RTOP 307-04-02)
193. Blalock, T. N.; and Yost, W. T.: Detection of Fiber Damage in a Graphite Epoxy Composite Using Current Injection and Field Mapping. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
194. Brewer, D. A.; and Yeager, P. R.: Space Station In Situ Trace Contaminant Analysis. Presented at the NASA In-Space Research Technology and Engineering (RT&E) Conference, October 8-10, 1985, Williamsburg, Virginia. In Proceedings.
(Subject Category 18 RTOP 506-49-31)
195. Burner, A. W.; Snow, W. L.; and Goad, W. K.: Model Deformation Measurements at a Cryogenic Wind Tunnel Using Photogrammetry. Presented at the ISA 31st International Instrumentation Symposium, May 6-9, 1985, San Diego, California. Paper No. 503.
(Subject Category 35 RTOP 505-31-53)
196. Burner, A. W.; Snow, W. L.; and Goad, W. K.: Close-Range Photogrammetry With Video Cameras. Presented at the 1985 American Society of Photogrammetry and The American Congress on Surveying and Mapping Convention, March 10-15, 1985, Washington, DC. In Proceedings of Technical Papers, Volume 1, p. 62-77.
(Subject Category 35 RTOP 505-31-53)
197. Cantrell, J. H., Jr.: Thermal Properties of Solids From Random Nonlinear Acoustic Radiation. Presented at the March General Meeting of the American Physical Society, March 25-29, 1985, Baltimore, Maryland. Abstract published in APS Bulletin, Volume 30, 1985, p. 318.
(Subject Category 71 RTOP 505-33-23)
198. Cantrell, J. H., Jr.: Derivation of Planck's Radiation Law and Thermodynamic State Functions From Stochastic Nonlinear Acoustic Fields. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-47.
(Subject Category 71 RTOP 505-33-23)
199. Cantrell, J. H., Jr.: Equilibrium Thermodynamics and Stochastic Nonlinear Acoustic Fields. Presented at the 15th Ultrasonics International '85 Conference and Exhibition, July 2-4, 1985, London, United Kingdom. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)

200. Chang, M-C.; Ramana, M. V.; and Phillips, D. H.: Titanium-Oxygen Bonding: A First Principles Investigation. Presented at the March General Meeting of the American Physical Society, March 25-29, 1985, Baltimore, Maryland. Abstract HY28-B, Addendum to APS Bulletin, Volume 30, 1985. (Subject Category 23 RTOP 505-33-90)
201. Childers, B. A.: An Investigation of Particle Image Velocimetry for Mapping Low Velocity Flow Fields. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science. (Subject Category 35 RTOP 505-31-53)
202. Davis, P. A.; and Zasimowich, R. F.: High Frequency Dynamic Pressure Calibration Technique. Presented at the ISA 31st International Instrumentation Symposium, May 6-9, 1985, San Diego, California. Paper No. A121. (Subject Category 35 RTOP 505-31-53)
203. Edwards, S. F.: NASA Resistance Measurement Assurance Program Status Report. Presented at the NASA Metrology and Calibration Workshop, October 23-25, 1985, Cleveland, Ohio. Proceedings pending. (Subject Category 35 RTOP 505-61-01)
204. Heath, D. M.; Welch, C. S.; Winfree, W. P.; Heyman, J. S.; and Miller, W. E.: Quantitative Thermal Diffusivity Measurements of Composites. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending. (Subject Category 71 RTOP 505-33-23)
205. Heyman, J. S.; Allison, S. G.; and Salama, K.: The Effect of Carbon Concentration and Plastic Deformation on Ultrasonic Higher Order Elastic Properties of Steel. Presented at the 15th Ultrasonics International '85 Conference and Exhibition, July 2-4, 1985, London, United Kingdom. Proceedings pending. (Subject Category 71 RTOP 505-33-23)
206. Holmes, H. K.: Model Measurements in the Cryogenic National Transonic Facility, An Overview. Presented at the AESS/IEEE Eleventh International Congress on Instrumentation in Aerospace Simulation Facilities (ICIASF), August 26-28, 1985, Stanford, California. In IEEE Publication 85CH2210-3, p. 1-8. (Subject Category 35 RTOP 505-31-53)
207. Holmes, H. K.; and Carraway, D. L.: Boundary Layer Measurements Using Hot-Film Sensors. Presented at the NASA, SAE, et al., Laminar Flow Aircraft Certification Workshop, April 15-16, 1985, Wichita, Kansas. NASA CP pending. (Subject Category 35 RTOP 505-31-53)

208. Jackels, C. F.; and Phillips, D. H.: Intermediates in the Reaction of Hydroxyl and Hydroperoxyl Radicals. Presented at the National Research Council of Canada 5th International Congress on Quantum Chemistry, August 18-24, 1985, Montreal, Canada. Abstract Resumes published, 1985, p. 97, 10-B.
(Subject Category 25 RTOP 147-33-03)
209. Jafri, J. A.; and Phillips, D. H.: Computational Investigation of Atmospheric Complexes: H_2O_3 and $HC1O_2$. Presented at the National Research Council of Canada 5th International Congress on Quantum Chemistry, August 18-24, 1985, Montreal, Canada. Abstract Resumes published, 1985, p. 322, 55-A.
(Subject Category 25 RTOP 147-33-03)
210. Kern, F. A.: Langley Research Center Metrology and Calibration Program. Presented at the NASA Metrology and Calibration Workshop, October 23-25, 1985, Cleveland, Ohio. Proceedings pending.
(Subject Category 38 RTOP 992-19-00)
211. Kern, F. A.: Support Service Contractor Performance Evaluation Using the Personal Computer. Presented at the NASA Metrology and Calibration Workshop, October 23-25, 1985, Cleveland, Ohio. Proceedings pending.
(Subject Category 38 RTOP 992-19-00)
212. Kern, F. A.; and German, E. S., Jr.: Development and Implementation of the NASA Metrology and Information System. Presented at the 1985 Workshop and Symposium on Managing Measurements to Achieve Quality, July 15-18, 1985, Boulder, Colorado.
(Subject Category 38 RTOP 323-52-60)
213. Kern, F. A.; Knight, C. W.; and Zasimowich, R. F.: National Transonic Facility Mach Number System. Presented at the 31st International Instrumentation Symposium, May 6-9, 1985, San Diego, California. Paper No. 509.
(Subject Category 35 RTOP 505-31-53)
214. Kishoni, D.: Application of Digital Pulse Shaping by Least-Squares Method to Ultrasonic Signals in Composites. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
215. Kishoni, D.; and Heyman, J. S.: Energy Shadowing Correction of Ultrasonic Pulse-Echo Records by Digital Signal Processing. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
216. Kishoni, D.; and Heyman, J. S.: Information Extraction by Signal Processing From Time Trace Records in Composite Materials. Presented at the IEEE 1985 Ultrasonics Symposium, October 16-18, 1985, San Francisco, California. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)

217. Kishoni, D.; and Heyman, J. S.: Ultrasonic Wave Propagation in Thick Filament Wound Graphite-Epoxy Composite. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-59.
(Subject Category 71 RTOP 505-33-23)
218. Kishoni, D.; and Sachse, W.: Generation of Elastic Ultrasonic Waves by Electric Spark. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-3.
(Subject Category 71 RTOP 505-33-23)
219. Li, P.; Yost, W. T.; Cantrell, J. H., Jr.; and Salama, K.: Dependence of Acoustic Nonlinearity Parameters on Second Phase Precipitates of Aluminum Alloys. Presented at the IEEE 1985 Ultrasonics Symposium, October 16-18, 1985, San Francisco, California. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
220. Mangalam, S. M.; Meyers, J. F.; Dagenhart, J. R.; and Harvey, W. D.: A Study of Laminar Separation Bubble in the Concave Region of an Airfoil Using Laser Velocimetry. Presented at the ASME Winter Annual Meeting, November 17-22, 1985, Miami Beach, Florida. Published in International Symposium on Laser Anemometry, p. 265-273.
(Subject Category 02 RTOP 505-31-23)
221. Meyers, J. F.: Estimation of Particle Size Based on LDV Measurements in a De-Accelerating Flow Field. Presented at the NASA Mini-Workshop on the Development and Application of Wind Tunnel Seeding Systems for Laser Velocimeters, March 19-20, 1985, Hampton, Virginia. In NASA CP-2393, p. 29-51..
(Subject Category 36 RTOP 505-31-53)
222. Meyers, J. F.: The Elusive Third Component. Presented at the ASME Winter Annual Meeting, November 17-22, 1985, Miami Beach, Florida. Abstract published in NASA CP-2404, p. 247-255.
(Subject Category 36 RTOP 505-31-53)
223. Namkung, M.; Allison, S. G.; and Heyman, J. S.: Magnetoacoustic Stress Measurements in Steel. Presented at the IEEE 1985 Ultrasonics Symposium, October 16-18, 1985, San Francisco, California. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
224. Namkung, M.; Allison, S. G.; and Heyman, J. S.: Effects of Texture on Magnetoacoustic Stress Measurement in Steel. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)

225. Namkung, M.; Utrata, D.; Allison, S. G.; and Heyman, J. S.: Magnetoacoustic Stress Measurement in Railroad Rail Steel. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
226. Pandey, D. K.; Dillon-Townes, L. A.; and Ash, R. L.: Response Time Correlation for Platinum Resistance Thermometers (PRT's). Presented at the ISA 31st International Instrumentation Symposium, May 6-9, 1985, San Diego, California. Paper No. 505.
(Subject Category 35 RTOP 505-31-53)
227. Parker, F. R.; and Winfree, W. P.: Acoustic Characterization of Composite Cure. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
228. Phillips, D. H.; and Ake, R. L.: Hydrated SO₂ Clusters: A Computational Investigation. Presented at the 1985 Spring Meeting of the American Physical Society, April 24-27, 1985, Crystal City, Virginia. Abstract published in Bulletin of APS, Volume 30, No. 4, April 1985, p. 769-770.
(Subject Category 25 RTOP 147-33-03)
229. Ramana, M. V.; and Phillips, D. H.: The Ti_{1-x}O_x System. Presented at the National Research Council of Canada 5th International Congress on Quantum Chemistry, August 18-24, 1985, Montreal, Canada. Abstract Resumes published, 1985, p. 198, 29-C.
(Subject Category 26 RTOP 506-53-33)
230. Singh, J. J.; Holt, W. H.; and Mock, W., Jr.: Effect of Transition Metal Ions on Positronium Formation in Polymeric Systems. Presented at the 1985 Annual General Meeting of the APS/AAPT, January 21-24, 1985, Toronto, Canada. In Bulletin of APS, Volume 30, No. 1, 1985, p. 42.
(Subject Category 24 RTOP 505-33-90)
231. Singh, J. J.; and Spijkerman, J. J.: Growth of Thin Single Crystal Films of Rhodium and Palladium. Presented at the NASA In-Space Research, Technology and Engineering Conference, October 8-10, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 24 RTOP 505-63-91)
232. Smith, B. T.; Heyman, J. S.; Moore, J. G.; Cucura, S. J.; and Freeman, S. M.: Correlation of the Depty Technique With Ultrasonic Imaging of Impact Damage in Graphite/Epoxy Composites. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
233. Welch, C. S.; Heath, D. M.; and Winfree, W. P.: Quantitative Thermal Characterization of Thin Plates. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-21)

234. Welch, C. S.; Heath, D. M.; and Winfree, W. P.: Remote Determination of 2-D Phonon Diffusivity Tensor in Thin Plates. Presented at the IEEE 1985 Ultrasonics Symposium, October 14-18, 1985, San Francisco, California. Proceedings pending.
(Subject Category 70 RTOP 505-33-23)
235. Whitney, D. A.; and Hoppe, J. C.: Rayleigh Scattering as a Probe for Entry Vehicle Flow Field Analysis. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 19 RTOP 506-63-24)
236. Winfree, W. P.; and Parker, F. R.: Measurement of Degree of Cure in Epoxies With Ultrasonic Velocity. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
237. Wood, G. M., Jr.; Hoppe, J. C.; Eide, D. G.; Lewis, B. W.; and Brown, K. G.: Candidate Techniques for Non-Intrusive Measurement of Flight Boundary-Layer Properties. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0970.
(Subject Category 06 RTOP 506-51-13)
238. Yost, W. T.; and Cantrell, J. H., Jr.: Surface Generation and Detection of Coupled Fiber-Matrix Mode Acoustic Wave Propagation in Fiber-Reinforced Composites. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 71 RTOP 505-33-23)
239. Yost, W. T.; and Cantrell, J. H., Jr.: Fiber-Matrix Mode Acoustic Wave Propagation in Carbon-Epoxy Composites. Presented at the 110th Meeting of the Acoustical Society of America, November 4-8, 1985, Nashville, Tennessee. Abstract published in Journal of Acoustical Society of America, Volume 78, Supplement 1, p. 85.
(Subject Category 71 RTOP 505-33-23)
240. Yost, W. T.; Cantrell, J. H., Jr.; and Li, P.: Nonlinearity Parameters From Measurement of Acoustic Radiation-Induced Static Strains in Silicon. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-47.
(Subject Category 71 RTOP 505-33-23)
241. Yost, W. T.; Cantrell, J. H., Jr.; and Li, P.: Acoustic Radiation-Induced Static Strains in Single Crystal Silicon. Presented at the March General Meeting of the American Physical Society, March 25-29, 1985, Baltimore, Maryland. Abstract published in Bulletin of APS, Volume 30, 1985, p. 317.
(Subject Category 71 RTOP 505-33-23)

242. Zuckerwar, A. J.; and Mazel, D. S.: Sound Speed Measurements in Liquid Oxygen-Liquid Nitrogen Mixtures. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-20.
(Subject Category 18 RTOP 505-33-53)
243. Zuckerwar, A. J.; Mazel, D. S.; and Hodges, D. Y.: Ultrasonic Depth Gauge for Liquids Under High Pressure. Presented at the 110th Meeting of the Acoustical Society of America, November 4-8, 1985, Nashville, Tennessee. Abstract published in Journal of Acoustical Society of America, Volume 78, Supplement 1, p. 52.
(Subject Category 71 RTOP 505-33-53)

Technical Talks

244. Brown, K. G.; Wood, G. M., Jr.; Lewis, B. W.; Nowak, R. J.; Puster, R. L.; Fishel, C.; and Paulin, P. A.: Enthalpy Environment by Gas Spectroscopy. Presented at the 36th Pittsburgh Conference and Exposition on Analytical Chemistry and Applied Spectroscopy, February 25 - March 1, 1985, New Orleans, Louisiana.
(Subject Category 35 RTOP 506-51-23)
245. Cantrell, J. H., Jr.: Burn Depth Diagnosis. Presented at the George Washington University School of Medicine Health Care Expo '85, August 18-24, 1985, Washington, DC.
(Subject Category 71 RTOP 141-20-40)
246. Edwards, S. F.: NASA MAP Program. Presented at the National Conference of Standards Laboratories, November 14, 1985, Hampton, Virginia.
(Subject Category 35 RTOP 992-19-00)
247. Exton, R. J.; Hillard, M. E.; and Lempert, W. R.: Stimulated Raman Spectroscopy of Supersonic Molecular Flows. Presented at the Third Gordon Research Conference on the Physics and Chemistry of Laser Diagnostics in Combustion, July 15-19, 1985, New London, New Hampshire.
(Subject Category 72 RTOP 505-43-83)
248. Exton, R. J.; Hillard, M. E.; and Lempert, W. R.: Velocity, Temperature, and Pressure Measurements in Supersonic Wind Tunnels Using Stimulated Raman Scattering. Presented at the Princeton University Department of Mechanical and Aerospace Engineering Seminar Series, October 11, 1985, Princeton, New Jersey.
(Subject Category 74 RTOP 505-61-01)
249. Heyman, J. S.: Nondestructive Quantitative Materials Characterization. Presented at the IBM Measurement Science in NDE, September 6, 1985, Yorktown Heights, New York.
(Subject Category 71 RTOP 505-33-23)

250. Heyman, J. S.: Magnetic-Acoustic Technique to Measure Residual Stresses. Presented at the Office of Naval Research Symposium on Solid Mechanics Research for QNDE, September 18-20, 1985, Evanston, Illinois. (Subject Category 71 RTOP 506-43-11)
251. Heyman, J. S.; and Companion, J.: Ultrasonic Thermal Monitor for Hyperthermia Treatment. Presented at the George Washington University School of Medicine Health Care Expo '85, August 18-24, 1985, Washington, DC. (Subject Category 71 RTOP 141-20-40)
252. Larson, W. E.: A Voice-Actuated Wind Tunnel Model Leak Checking System. Presented at the NASA 21st Annual Subsonic Aerodynamic Testing Association (SATA) Meeting, May 14-16, 1985, Williamsburg, Virginia. (Subject Category 01 RTOP 992-19-00)
253. McCormick, R. F.: Impact Dynamics Instrumentation for 720B Controlled Impact Demonstration. Presented at the NASA Government/Industry Controlled Impact Demonstration (CID) Workshop, April 10, 1985, Hampton, Virginia. (Subject Category 01 RTOP 505-33-53)
254. Miller, I. M.; Schryer, D. R.; Hess, R. V.; Wood, G. M., Jr.; Upchurch, B. T.; and Brown, K. G.: The Catalytic Oxidation of CO for Sealed CO₂ Laser Applications. Presented at the National American Chemical Society Meeting, September 8-13, 1985, Chicago, Illinois. (Subject Category 36 RTOP 506-54-23)
255. Singh, J. J.: Growth of Thin Single Crystal Films of Rhodium. Presented at the NASA Symposium on the LaRC Space Commercialization Program, July 18, 1985, Hampton, Virginia. (Subject Category 24 RTOP 505-33-90)
256. Yeager, P. R.; and Wood, G. M., Jr.: Expansion and Update of the Mass Spectrometer Facility. Presented at the NASA Symposium on the LaRC Space Commercialization Program, July 18, 1985, Hampton, Virginia. (Subject Category 27 RTOP 327-05-00)
257. Zuckerwar, A. J.: Acoustical Determination of Vibrational Relaxation Frequencies in Air. Presented at the University of Rhode Island Physics Colloquium, April 26, 1985, Kingston, Rhode Island. (Subject Category 71 RTOP 505-31-33)

Computer Programs

No computer programs.

Tech Briefs

258. Ackley, D. E. (RCA Corporation): Phase-Locked Laser Array With Non-Uniform Stripe Spacing. NASA Tech Brief LAR-13281.

- 259. Botez, D. (RCA Corporation): Positive-Index Guiding Structure in Passive Sections of NAM-CDH-LOC Lasers. NASA Tech Brief LAR-13312.
- 260. Cantrell, J. H., Jr.; and Yost, W. T.: Acoustic Radiation Stress Measurement System. NASA Tech Brief LAR-13440.
- 261. Davis, W. T.: Phase Measurement Technique. NASA Tech Brief LAR-13439.
- 262. Heyman, J. S.: Double Reference Pulsed Phase Locked Loop (DRP²L²). NASA Tech Brief LAR-13310.
- 263. Heyman, J. S.: Phase Length Optical Phase-Locked-Loop Sensor (PLOPS). NASA Tech Brief LAR-13387.
- 264. Larson, W. E.: Voice-Actuated Wind Tunnel Model Leak Checking System. NASA Tech Brief LAR-13449.
- 265. Mazel, D. S. (Old Dominion University); and Zuckerwar, A. J. (Langley Research Center): Depth Gage for Liquids Under High Pressure. NASA Tech Brief LAR-13300.
- 266. Schutte, P. C.; Cate, K. H.; and Young, S. D.: Dynamic Pressure Calibration Standard. NASA Tech Brief LAR-13443.

Patents

- 267. Claus, R. O.; and Turner, T. M.: Dual Differential Interferometer. U.S. Patent 4,512,661. Issued April 23, 1985.
(Subject Category 71)
- 268. *Hepner, T. E.; and Meyers, J. F.: Auto Covariance Computer. U.S. Patent 4,545,025. Issued October 1, 1985.
(Subject Category 35)
- 269. Heyman, J. S.; and Brandenburger, G. H.: Method for Thermal Monitoring Subcutaneous Tissue. U.S. Patent 4,513,750. Issued April 30, 1985.
(Subject Category 52)
- 270. Singh, J. J.; and Sprinkle, D. R.: Technique for Measuring Gas Conversion Factors. U.S. Patent 4,538,446. Issued September 3, 1985.
(Subject Category 35)

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PUBLICATIONS FOR FLIGHT ELECTRONICS DIVISION

Formal Reports

271. Grew, G. W.: Characteristic Vector Analysis of Inflection Ratio Spectra: New Technique for Analysis of Ocean Color Data. NASA TP-2428, April 1985, 24 p.
(Avail: NTIS Subject Category 43 RTOP 618-32-33)

Quick-Release Technical Memorandums

272. Hess, R. V.; Brockman, P.; Schryer, D. R.; Miller, I. M.; Bair, C. H.; Sidney, B. D.; Wood, G. M., Jr.; Upchurch, B. T.; and Brown, K. G.: Technology Assessment of High Pulse Energy CO₂ Lasers for Remote Sensing From Satellites. NASA TM-86415, April 1985, 46 p.
(Avail: NTIS Subject Category 36 RTOP 506-54-23)
273. Miller, I. M.; Wood, G. M., Jr.; Schryer, D. R.; Hess, R. V.; Upchurch, B. T.; Brown, K. G.; and Sidney, B. D.: Optimization of the Catalytic Oxidation of CO for Closed-Cycle CO₂ Laser Applications. NASA TM-86421, April 1985, 11 p.
(Avail: NTIS Subject Category 25 RTOP 506-54-23)

Contractor Reports

274. Cheo, P. K.; Wagner, R.; and Gilden, M.: Advanced Infrared Laser Modulator Development. (NAS1-16904 United Technologies Corporation.) NASA CR-172479, December 1984 (Released 1985), 57 p.
(Avail: NTIS Subject Category 36 RTOP 506-54-43)
275. Edmonds, W. L.: Earth Radiation Budget Experiment Software Development. (NAS1-16571 Systems and Applied Sciences Corporation.) NASA CR-172567, April 1985, 87 p.
(Avail: NTIS Subject Category 61 RTOP 619-12-01)
276. Gardner, P. D.: Monolithic Integrated Optical Electronic Circuits. (NAS1-17160 RCA Corporation.) NASA CR-172480, January 1985, 50 p.
(Avail: STIF Subject Category 33 RTOP 506-54-13)

Journal Articles and Other Publications

277. Byvik, C. E.; and Buoncristiani, A. M.: Analysis of Vibronic Transitions in Titanium Doped Sapphire Using the Temperature of the Fluorescence Spectra. Journal of Quantum Electronics, Volume QE-21, No. 10, October 1985, p. 1619-1624.
(Subject Category 36 RTOP 506-54-23)

278. Hoell, J. M., Jr.; Gregory, G. L.; Carrol, M. A.; McFarland, M.; Ridley, B. A.; Davis, D. D.; Bradshaw, J.; Rodgers, M. O.; Torres, A. L.; Sachse, G. W.; Hill, G. F.; Condon, E. P.; Rasmussen, R. A.; Campbell, M. C.; Farmer, J. C.; Sheppard, J. C.; Wang, C. C.; and Davis, L. I.: An Intercomparison of Carbon Monoxide, Nitric Oxide, and Hydroxyl Measurement Techniques: Overview of Results. Journal of Geophysical Research, Volume 89, No. C12, December 1984, p. 11,819-11,825.
(Subject Category 46 RTOP 176-20-03)
279. Jasperson, W. H.; Nastrom, G. D.; Davis, R. E.; and Holdeman, J. D.: Variability of Cloudiness at Airline Cruise Altitudes From GASP Measurements. Journal of Climate and Applied Meteorology, Volume 24, No. 1, January 1985, p. 74-82.
(Subject Category 47 RTOP 505-45-63)
280. LeBel, P. J.; Hoell, J. M., Jr.; Levine, J. S.; and Vay, S. A.: Aircraft Measurements of Ammonia and Nitric Acid in the Lower Troposphere. Geophysical Research Letters, Volume 12, No. 6, June 1985, p. 401-404.
(Subject Category 46 RTOP 176-20-03)
281. Mauldin, L. E., III; Zaun, N. H.; McCormick, M. P.; Guy, J. H.; and Vaughan, W. R.: Stratospheric Aerosol and Gas Experiment II Instrument: A Functional Description. Optical Engineering, Volume 24, No. 2, March - April 1985, p. 307-312.
(Subject Category 19 RTOP 619-12-30)
282. Nigro, N. J.; Yang, J. K.; Elkouh, A. F.; and Hinton, D. E.: Generalized Model for Simulation of Balloon Systems. Journal of Aircraft, Volume 22, No. 8, August 1985, p. 697-704.
(Subject Category 61 RTOP 506-56-13)

Meeting Presentations

283. Allario, F.: Status of Lidar Remote Sensing Program Within NASA. Presented at the OSA Topical Meeting on Tunable Solid State Lasers, May 16-17, 1985, Arlington, Virginia. Summary published in Technical Digest, p. ThA1-1.
(Subject Category 36 RTOP 506-54-23)
284. Bair, C. H.; Brockman, P.; and Hess, R. V.: MOPA Status and Future Plans. Presented at the Third NASA/NOAA Infrared Backscatter Workshop, January 14, 1985, Incline Village, Nevada. Abstract in Compilation of Workshop Presentation Materials, January 14, 1985, p. 220.
(Subject Category 35 RTOP 506-54-23)
285. Byvik, C. E.; Buoncristiani, A. M.; and Barnes, J. C.: Temperature Dependence of the Fluorescence Lineshape and Fluorescence Lifetime of Titanium Doped Sapphire. Presented at the OSA Topical Meeting on Tunable Solid State Lasers, May 16-17, 1985, Arlington, Virginia. Summary published in Technical Digest, p. ThB2-1 - ThB2-4.
(Subject Category 36 RTOP 506-54-23)

286. Devi, V. M.; Sidney, B. D.; Rinsland, C. P.; Smith, M. A. H.; Benner, D. C.; and Fridovich, B.: Tunable Diode Laser Measurements of N_2^- and Air-Broadened Halfwidths: Lines of $^{12}C_2H_2$, H_2O , HDO, and H_2O_2 in the 1250-1380- cm^{-1} Region. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 95.
(Subject Category 72 RTOP 147-23-11)
287. Hess, R. V.; Schryer, D. R.; Sidney, B. D.; Miller, I. M.; Wood, G. M., Jr.; Upchurch, B. T.; and Brown, K. G.: Long Lifetime Stable CO_2 Lasers for Lidar and Comparison With Nd:YAG Lidar. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume II, p. 6-87 - 6-126.
(Subject Category 36 RTOP 506-54-23)
288. Hoell, J. M., Jr.; Levine, J. S.; LeBel, P. J.; Tennille, G. M.; and Vay, S. A.: The Photochemistry of Nitric Acid and Ammonia in the Lower Troposphere. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS, Volume 66, No. 18, April 30, 1985, p. 238.
(Subject Category 45 RTOP 176-20-03)
289. Jackson, T. J.; Hawley, M. E.; Delnore, V. E.; Shuie, J.; O'Neill, P.; and Lawrence, R. W.: Preplanting Soil Moisture Assessment Using Aircraft Microwave Sensors. Presented at the WMO/IAHS International Workshop on Hydrologic Applications of Space Technology, August 18-23, 1985, Cocoa Beach, Florida. Proceedings pending.
(Subject Category 33 RTOP 506-58-23)
290. LeBel, P. J.; Hoell, J. M., Jr.; Vay, S. A.; and Marinaro, R. M.: Simultaneous Measurements of Atmospheric Ammonia and Nitric Acid. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 826.
(Subject Category 46 RTOP 176-20-03)
291. Mauldin, L. E., III; McCormick, M. P.; McMaster, L. R.; and Vaughan, W. R.: The Stratospheric Aerosol and Gas Experiment II (SAGE II) Design and In-Orbit Performance. Presented at the SPIE Second International Technical Symposium on Optical and Electro-Optical Applied Science and Engineering, November 25 - December 6, 1985, Cannes, France. SPIE Paper No. 589018. Proceedings pending.
(Subject Category 19 RTOP 619-12-30)
292. Mauldin, L. E., III; Moore, A. S.; Stump, C. W.; and Mayo, L. S.: Application of a Silicon Photodiode Array for Solar Edge Tracking in the Halogen Occultation Experiment. Presented at the SPIE's 29th Annual International Technical Symposium on Optical and Electro-Optical Engineering, August 18-23, 1985, San Diego, California. Proceedings pending.
(Subject Category 19 RTOP 678-12-04)

293. Shull, T. A.; Rinsland, P. L.; and Larsen, J. C.: Sample Averaging and Rectify, Integrate and Dump for Synchronous Demodulation Measurement of Mean Radiation. Presented at the IEEE IMTC/85 Instrumentation/Measurement Technology Conference, March 21-22, 1985, Tampa, Florida. In Proceedings, p. 161-164.
(Subject Category 32 RTOP 506-61-73)

Technical Talks

294. Buoncristiani, A. M.; Byvik, C. E.; and Barnes, J. C.: Temperature Dependence of the Fluorescence Lineshape and Lifetime of Titanium Doped Sapphire. Presented at the Italian Ministry of Scientific and Technological Research International School of Atomic and Molecular Spectroscopy, June 16-30, 1985, Erice, Italy.
(Subject Category 36 RTOP 506-54-23)
295. Byvik, C. E.; Buoncristiani, A. M.; and Barnes, J. C.: Absorption and Emission of Spectra of Transition Metal Doped Titanates. Presented at the 167th Meeting of the Electrochemical Society, May 12-17, 1985, Toronto, Canada.
(Subject Category 36 RTOP 506-54-23)
296. Calloway, R. S.: High-Environment Flight Instrumentation System for Controlled Impact Test. Presented at the NASA Government/Industry Controlled Impact Demonstration (CID) Workshop, April 10, 1985, Hampton, Virginia.
(Subject Category 06 RTOP 505-33-53)
297. Hall, W. M.; Taback, I.; Kenimer, R. L.; Degnan, J. J.; and Browell, E. V.: An In-Flight Tuning Method for the NASA ER-2 Water Vapor Lidar System. Presented at the OSA Tunable Solid State Lasers, May 16-17, 1985, Arlington, Virginia.
(Subject Category 36 RTOP 618-32-33)
298. Vaughan, W. R.: NASA LASE Project. Presented at the NASA First International DIAL Data Collection and Analysis Workshop, November 18-21, 1985, Virginia Beach, Virginia.
(Subject Category 36 RTOP 618-32-33)

Computer Programs

No computer programs.

Tech Briefs

299. Ferguson, R. L.; and Lovelady, R. W.: Fabricating Underwater Electroacoustic Transducers. NASA Tech Brief LAR-13007.

Patents

300. Reichman, B.; and Byvik, C. E.: Method for Determining the Point of Zero Zeta Potential of Semiconductor. U.S. Patent 4,511,838. Issued April 19, 1985.
(Subject Category 33)

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR STRUCTURES

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

301. Blankenship, C. P.: Progress in Composites Research for Aircraft Structures. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas.
(Subject Category 24 RTOP 505-33-33)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR STRUCTURES AND DYNAMICS DIVISION

Formal Reports

302. Daugherty, R. H.: Impact Studies of a 1/3-Scale Model of an Air Cushion Vehicle. NASA TM-86360, April 1985, 23 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-14)
303. Daugherty, R. H.; and Stubbs, S. M.: A Study of the Cornering Forces Generated by Aircraft Tires on a Tilted, Free-Swiveling Nose Gear. NASA TP-2481, October 1985, 28 p.
(Avail: NTIS Subject Category 39 RTOP 505-45-14)
304. *Jackson, K. E.: Abrasion Behavior of Aluminum and Composite Skin Coupons, Stiffened Skins, and Stiffened Panels Representative of Transport Airplane Structures. NASA TP-2520, AVSCOM TR 85-B-7, November 1985, 31 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
305. Rhodes, M. D.; and Mikulas, M. M., Jr.: Deployable Controllable Geometry Truss Structure. NASA TM-86366, June 1985, 16 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-43)
306. Watson, J. J.; Heard, W. L., Jr.; and Jensen, J. K.: Swing-Arm Beam Erector (SABER) Concept for Single Astronaut Assembly of Space Structure. NASA TP-2379, March 1985, 31 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-43)

Quick-Release Technical Memorandums

307. Bales, K. S.: Structures and Dynamics Division - Research and Technology Plans for FY 1985 and Accomplishments for FY 1984. NASA TM-86417, April 1985, 94 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-43)
308. Card, M. F.; Anderson, M. S.; and Walz, J. E.: Dynamic Response of a Flexible Space Beam. NASA TM-86441, May 1985, 18 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-43)
309. Carden, H. D.: Impact Dynamics Research on Composite Transport Structures. NASA TM-86391, March 1985, 24 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-53)
310. Fulton, R. E.; and Salley, G. C.: IPAD: A Unique Approach to Government/Industry Cooperation for Technology Development and Transfer. NASA TM-86422, June 1985, 115 p.
(Avail: IAC Subject Category 62 RTOP 505-33-53)

*Aerostructures Directorate, USAARTA (AVSCOM)

311. Housner, J. M.: Structural Dynamics Model and Response of the Deployable Reference Configuration Space Station. NASA TM-86386, May 1985, 93 p.
(Avail: NTIS Subject Category 39 RTOP 482-53-53)
312. *Jackson, K. E.: Friction and Wear Behavior of Aluminum and Composite I-Beam Stiffened Airplane Skins. NASA TM-86418, AVSCOM TM 85-B-2, June 1985, 27 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
313. Knight, N. F., Jr.; and Stroud, W. J.: Computational Structural Mechanics: A New Activity at the NASA Langley Research Center. NASA TM-87612, September 1985, 38 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-53)
314. Lotts, C. G.; and Greene, W. H.: Experiences With a Preliminary NICE/SPAR Structural Analysis System. NASA TM-87586, October 1985, 38 p.
(Avail: NTIS Subject Category 39 RTOP 505-63-31)
315. McComb, H. G., Jr.: Large Deflections of a Cantilever Beam Under Arbitrarily Directed Tip Load. NASA TM-86442, May 1985, 22 p.
(Avail: NTIS Subject Category 39 RTOP 505-53-43)
316. McGowan, P. E.; and Housner, J. M.: Nonlinear Dynamic Analysis of Deploying Flexible Space Booms. NASA TM-87617, September 1985, 33 p.
(Avail: NTIS Subject Category 39 RTOP 506-43-51)
317. Mikulas, M. M., Jr.; Croomes, S. D.; Schneider, W.; Bush, H. G.; Nagy, K.; Pelischek, T.; Lake, M. S.; and Wesselski, C.: Space Station Truss Structures and Construction Considerations. NASA TM-86338, January 1985, 117 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-43)
318. Mikulas, M. M., Jr.; Wright, A. S., Jr.; Bush, H. G.; Watson, J. J.; Dean, E. B.; Twigg, L. T.; Rhodes, M. D.; Cooper, P. A.; Dorsey, J. T.; Lake, M. S.; Young, J. W.; Stein, P. A.; Housner, J. M.; and Ferebee, M. J., Jr.: Deployable/Erectable Trade Study for Space Station Truss Structures. NASA TM-87573, July 1985, 195 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-43)
319. Ransom, J. B.; and Fulton, R. E.: Concurrent Implementation of the Crank-Nicolson Method for Heat Transfer Analysis. NASA TM-86448, June 1985, 27 p.
(Avail: NTIS Subject Category 62 RTOP 505-33-53)
320. Shuart, M. J.: Short-Wavelength Buckling and Shear Failures for Compression-Loaded Composite Laminates. NASA TM-87640, November 1985, 227 p.
(Avail: NTIS Subject Category 24 RTOP 534-06-23)

*Aerostructures Directorate, USAARTA (AVSCOM)

321. Waters, W. A., Jr.; and Williams, J. G.: Failure Mechanisms of Laminates Transversely Loaded by Bolt Push-Through. NASA TM-87603, September 1985, 25 p.
(Avail: NTIS Subject Category 24 RTOP 534-06-23)

Contractor Reports

322. Crockett, T. W.; and Knott, J. D.: System Software for the Finite Element Machine. (NAS1-16000 Kentron International, Inc.) NASA CR-3870, February, 1985, 30 p.
(Avail: NTIS Subject Category 62 RTOP 505-37-33)
323. Fuh, J-S.; and Berman, A.: Automated Dynamic Analytical Model Improvement for Damped Structures. (NAS1-15805 Kaman Aerospace Corporation.) NASA CR-177945, September 1985, 35 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-43)
324. Miller, R. E., Jr.: IPAD - Integrated Programs for Aerospace-Vehicle Design. (NAS1-14700 Boeing Commercial Airplane Company.) NASA CR-3890, May 1985, 30 p.
(Avail: NTIS Subject Category 62 RTOP 505-33-33)
325. Shane, S. J.: Design and Testing of an Energy-Absorbing Crewseat for the F/FB-111 Aircraft, Volume I - Final Report. (NAS1-17387 Simula, Inc.) NASA CR-3916, August 1985, 150 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
326. Shane, S. J.: Design and Testing of an Energy-Absorbing Crewseat for the F/FB-111 Aircraft, Volume II - Data From Seat Testing. (NAS1-17387 Simula, Inc.) NASA CR-3917, August 1985, 336 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)
327. Shane, S. J.: Design and Testing of an Energy-Absorbing Crewseat for the F/FB-111 Aircraft, Volume III - Data From Crew Module Testing. (NAS1-17387 Simula, Inc.) NASA CR-3918, August 1985, 256 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)

Journal Articles and Other Publications

328. Barnes, A. G.; and Yager, T. J.: Simulation of Aircraft Behavior on and Close to the Ground. AGARDograph, January 1985, AGARD-AG-285, p. 1-B21.
(Subject Category 05 RTOP 505-45-14)
329. Belvin, W. K.: Vibration Characteristics of Hexagonal Radial Rib and Hoop Platforms. Journal of Spacecraft and Rockets, Volume 22, No. 4, July - August 1985, p. 450-456.
(Subject Category 39 RTOP 506-53-43)
330. Chun, H. M.; Turner, J. D.; and Juang, J-N.: Disturbance-Accommodating Tracking Manuevers of Flexible Spacecraft. Journal of the Astronautical Sciences, Volume 33, No. 2, April - June 1985, p. 197-216.
(Subject Category 39 RTOP 506-53-43)

331. Greene, W. H.: Effects of Random Member Length Errors on the Accuracy and Internal Loads of Truss Antennas. Journal of Spacecraft and Rockets, Volume 22, No. 5, September - October 1985, p. 554-559.
(Subject Category 39 RTOP 506-53-43)
332. Greene, W. H.: Minimum Weight Sizing of Guyed Antenna Towers. Journal of Structural Engineering, Volume 111, No. 10, October 1985, p. 2121-2137.
(Subject Category 39 RTOP 506-53-43)
333. Guardal, Z.; Haftka, R. T.; and Starnes, J. H., Jr.: The Effects of Slots on the Buckling and Postbuckling Behavior of Laminated Plates. Journal of Composites Technology and Research, Volume 7, No. 3, 1985, p. 82-87.
(Subject Category 24 RTOP 505-33-33)
334. Juang, J-N.: Optimal Design of a Passive Vibration Absorber for a Truss Beam. Aeronautics/Space Technology, July 1985.
(Subject Category 39 RTOP 506-43-51)
335. Juang, J-N.; Turner, J. D.; and Chun, H. M.: Closed-Form Solutions for Feedback Control With Terminal Constraints. Journal of Guidance, Control, and Dynamics, Volume 8, No. 1, January - February 1985, p. 39-43.
(Subject Category 39 RTOP 506-53-53)
336. Juang, J-N.; and Pappa, R. S.: An Eigensystem Realization Algorithm for Modal Parameter Identification and Model Reduction. Journal of Guidance, Control, and Dynamics, Volume 8, No. 5, September - October 1985, p. 620-627.
(Subject Category 39 RTOP 506-53-53)
337. Knight, N. F., Jr.: Nonlinear Structural Dynamic Analysis Using a Modified Modal Method. AIAA Journal, Volume 23, No. 10, October 1985, p. 1594-1601.
(Subject Category 39 RTOP 505-33-53)
338. Knight, N. F., Jr.; and Starnes, J. H., Jr.: Postbuckling Behavior of Axially Compressed Graphite-Epoxy Cylindrical Panels with Circular Holes. Journal of Pressure Vessel Technology, Volume 107, November 1985, p. 394-402.
(Subject Category 24 RTOP 505-33-53)
339. Pappa, R. S.; and Juang, J-N.: Galileo Spacecraft Modal Identification Using an Eigensystem Realization Algorithm. Journal of the Astronautical Sciences, Volume 33, No. 1, January - March 1985, p. 15-33.
(Subject Category 39 RTOP 506-53-53)
340. Sawyer, J. W.: Effect of Stitching on the Strength of Bonded Composite Single Lap Joints. AIAA Journal, Volume 23, No. 11, November 1985, p. 1744-1748.
(Subject Category 39 RTOP 506-53-43)
341. Sirlin, S. W.; Longman, R. W.; and Juang, J-N.: Identifiability of Conservative Linear Mechanical Systems. The Journal of Astronautical Sciences, Volume 33, No. 1, January - March 1985, p. 95-118.
(Subject Category 39 RTOP 506-43-51)

342. Starnes, J. H., Jr.; Knight, N. F., Jr.; and Rouse, M.: Postbuckling Behavior of Selected Flat Stiffened Graphite-Epoxy Panels Loaded in Compression. AIAA Journal, Volume 23, No. 8, August 1985, p. 1236-1246. (Subject Category 24 RTOP 505-33-33)
343. Stein, M.: Analytical Results for Post-Buckling Behavior of Plates in Compression and in Shear. Book entitled: Aspects of the Analysis of Plate Structures - A Volume in honor of W. H. Wittrick, 1985, p. 205-223. (Subject Category 39 RTOP 534-03-23)
344. Stein, M.: Postbuckling of Long Orthotropic Plates in Combined Shear and Compression. AIAA Journal, Volume 23, No. 5, May 1985, p. 788-794. (Subject Category 39 RTOP 534-03-23)
345. Stein, M.: Postbuckling of Long Orthotropic Plates Under Combined Loading. AIAA Journal, Volume 23, No. 8, August 1985, p. 1267-1272. (Subject Category 39 RTOP 505-33-33)
346. Taylor, A. H.; Jackson, L. R.; Davis, R. C.; Cerro, J. A.; and Scotti, S. J.: Structural Concepts for Future Space Transportation System Orbiters. Journal of Spacecraft and Rockets, Volume 22, No. 3, May - June 1985, p. 333-339. (Subject Category 39 RTOP 506-53-43)
347. Turner, J. D.; Chun, H. M.; and Juang, J-N.: An Analytic Solution for the State Trajectories of a Feedback Control System. Journal of Guidance, Control, and Dynamics, Volume 8, No. 1, January - February 1985, p. 147-148. (Subject Category 39 RTOP 506-53-53)
348. Turner, J. D.; Chun, H. M.; and Juang, J-N.: Closed-Form Solutions for a Class of Optimal Quadratic Tracking Problem. Journal of Optimization Theory and Application, Volume 47, No. 4, December 1985, p. 465-481. (Subject Category 39 RTOP 506-53-53)
349. Williams, F. W.; and Anderson, M. S.: Buckling and Vibration Analysis of Shear-Loaded Prismatic Plate Assemblies With Supporting Structures, Utilizing Symmetric or Repetitive Cross-Section. Book entitled: Aspects of the Analysis of Plate Structures - A Volume in honor of W. H. Wittrick, September 26, 1985, p. 51-71. (Subject Category 39 RTOP 506-43-51)

Meeting Presentations

350. Alfaro-Bou, E.; Fasanella, E. L.; and Williams, M. S.: Crashworthy Design Considerations for General Aviation Seats. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850855. (Subject Category 05 RTOP 505-33-53)

351. Anderson, M. S.; and Nimmo, N. A.: Dynamic Characteristics of Statically Determinate Space-Truss Platforms. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0819-CP. (Subject Category 39 RTOP 506-53-53)
352. Bainum, P. M.; Woodard, S. E.; and Juang, J-N.: The Development of Optimal Control Laws for Orbiting Tethered Platform Systems. Presented at the AAS/AIAA Astrodynamics Specialist Conference, August 12-15, 1985, Vail, Colorado. AAS Paper No. 85-360. Proceedings pending. (Subject Category 39 RTOP 506-53-43)
353. Boitnott, R. L.; Johnson, E. R.; and Starnes, J. H., Jr.: A Nonlinear Analysis of Infinitely Long Graphite-Epoxy Cylindrical Panels Loaded With Internal Pressure. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0770-CP. (Subject Category 24 RTOP 505-33-33)
354. Bostic, S. W.; and Fulton, R. E.: A Concurrent Processing Implementation for Structural Vibration Analysis. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0783-CP. (Subject Category 39 RTOP 507-37-13)
355. Brumfield, M. L.; Pappa, R. S.; Miller, J. B.; and Adams, R. R.: Orbital Dynamics of the OAST-1 Solar Array Using Video Measurements. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0758-CP. (Subject Category 39 RTOP 506-53-53)
356. Carden, H. D.; Boitnott, R. L.; and Jackson, K. E.: Composite Crash Dynamics. Presented at the AFSC/WPAFB Eleventh Annual Mechanics of Composites Review, October 22-24, 1985, Dayton, Ohio. Abstract in proceedings, p. 26. (Subject Category 24 RTOP 505-33-53)
357. Chun, H. M.; Turner, J. D.; and Juang, J-N.: Spacecraft Slewing Maneuvers Using a Closed-Form Solution for the Neighboring Extremal Path Problem. Presented at the AAS/AIAA Astrodynamics Specialist Conference, August 12-15, 1985, Vail, Colorado. Proceedings pending. (Subject Category 39 RTOP 506-53-43)
358. Cudney, H. H., Jr.; Inman, D. J.; and Horner, G. C.: Vibration Control of Flexible Beams Using an Active Hinge. Presented at the Fifth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, June 12-14, 1985, Blacksburg, Virginia. Proceedings pending. (Subject Category 39 RTOP 506-53-43)

359. Darbhamulla, S. P.; Razzaq, Z.; and Storaasli, O. O.: Concurrent Processing for Nonlinear Analysis of Hollow Rectangular Structural Sections. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0740-CP.
(Subject Category 39 RTOP 505-37-33)
360. Daugherty, R. H.; and Stubbs, S. M.: The Generation of Tire Cornering Forces in Aircraft With a Free-Swiveling Nose Gear. Presented at the SAE Aerospace Technology Conference & Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851939.
(Subject Category 05 RTOP 505-45-14)
361. Davis, P. A.; Stubbs, S. M.; and Tanner, J. A.: Aircraft Landing Dynamics Facility, A Unique Facility With New Capabilities. Presented at the SAE Aerospace Technology Conference & Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851938.
(Subject Category 09 RTOP 505-45-14)
362. Dickson, J. N.; Biggers, S. B.; and Starnes, J. H., Jr.: Stiffener Attachment Concepts for Graphite-Epoxy Panels Designed for Postbuckling Strength. Presented at the Seventh DOD/NASA Conference on Fibrous Composites in Structural Design, June 17-20, 1985, Denver, Colorado. Proceedings pending.
(Subject Category 24 RTOP 505-33-33)
363. Haftka, R. T.; and Starnes, J. H., Jr.: Use of Optimum Stiffness Tailoring to Improve the Compressive Strength of Composite Plates With Holes. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0721-CP.
(Subject Category 24 RTOP 505-33-33)
364. Hanks, B. R.: Dynamic Verification of Very Large Space Structures. Presented at the DGLR/DRVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending.
(Subject Category 39 RTOP 506-53-43)
365. Hayduk, R. J.; Fasanella, E. L.; and Alfaro-Bou, E.: Full-Scale Transport Controlled Impact Demonstration - Preliminary NASA Structural Data. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0712-CP.
(Subject Category 39 RTOP 505-33-53)
366. Hayduk, R. J.; Fasanella, E. L.; and Alfaro-Bou, E.: NASA Experiments Onboard the Controlled Impact Demonstration. Presented at the SAE 1985 Aerospace Congress and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851885.
(Subject Category 39 RTOP 505-45-11)

367. Hayduk, R. J.; Fasanella, E. L.; and Alfaro-Bou, E.: Structural Crashworthiness Experiments of the Controlled Impact Demonstration. Presented at the International Society of Air Safety Investigators (ISASI) 16th International Seminar/Forum, September 3-6, 1985, Scottsdale, Arizona. To be published in Forum.
(Subject Category 39 RTOP 505-33-53)
368. Heard, W. L., Jr.: ACCESS (Assembly Concept for Construction of Erectable Space Structure) - A Shuttle Flight Experiment. Presented at the IEEE 18th Annual Electronics and Aerospace Systems Conference (EASCON 85), October 28-30, 1985, Washington, DC. Proceedings pending.
(Subject Category 18 RTOP 506-53-43)
369. Horne, W. B.; Yager, T. J.; and Ivey, D. L.: Results From Recent Studies to Improve Prediction of Ground Vehicle Tire Minimum Dynamic Hydroplaning Speed. Presented at the ASTM Symposium on Tire/Pavement Interface, June 5-7, 1985, Columbus, Ohio. ASTM STP Pending.
(Subject Category 05 RTOP 505-45-14)
370. Horner, G. C.; and Walz, J. E.: A Design Technique for Determining Actuator Gains in Spacecraft Vibration Control. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0628-CP.
(Subject Category 39 RTOP 506-53-53)
371. Horta, L. G.; and Juang, J-N.: Identifying Approximate Linear Models for Simple Nonlinear Systems. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0686-CP.
(Subject Category 39 RTOP 506-53-53)
372. Horta, L. G.; Juang, J-N.; and Junkins, J. L.: A Sequential Linear Optimization Approach for Controller Design. Presented at the AIAA Guidance, Navigation and Control Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1971-CP.
(Subject Category 39 RTOP 506-53-43)
373. Howell, W. E.; Perez, S. E.; and Vogler, W. A.: Aircraft Tire Footprint Forces. Presented at the ASTM Symposium on Tire/Pavement Interface, June 5-7, 1985, Columbus, Ohio. ASTM STP Pending.
(Subject Category 39 RTOP 505-45-14)
374. *Jackson, K. E.: A Comparative Study of the Friction and Wear Behavior of Aluminum and Composite Airplane Skin Coupons, Skin-Stiffener Elements, and Stiffened Panels. Presented at the Seventh DOD/NASA Conference on Fibrous Composites in Structural Design, June 17-20, 1985, Denver, Colorado. Proceedings pending.
(Subject Category 24 RTOP 505-33-53)

*Aerostructures Directorate, USAARTA (AVSCOM)

375. Juang, J-N.; and Pappa, R. S.: Effects of Noise on ERA-Identified Modal Parameters. Presented at the AAS/AIAA Astrodynamics Specialist Conference, August 12-15, 1985, Vail, Colorado. AAS Paper No. 85-422. Proceedings pending.
(Subject Category 39 RTOP 506-53-43)
376. Juang, J-N.; and Pinson, L. D.: Application of Singular Value Decomposition to Structural Dynamics Systems With Constraints. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0687-CP.
(Subject Category 39 RTOP 506-53-53)
377. Knight, N. F., Jr.: Computational Structural Mechanics at the NASA Langley Research Center. Presented at the 22nd Annual Meeting of the Society of Engineering Science, October 7-9, 1985, University Park, Pennsylvania. Abstract to be published.
(Subject Category 24 RTOP 505-33-53)
378. Knight, N. F., Jr.; Greene, W. H.; and Stroud, W. J.: Nonlinear Response of a Blade-Stiffened Graphite-Epoxy Panel With a Discontinuous Stiffener: Work-in-Progress. Presented at the NASA Workshop on Computational Methods in Structural Mechanics and Dynamics, June 19-21, 1985, Hampton, Virginia. NASA CP Pending.
(Subject Category 39 RTOP 505-33-53)
379. Knight, N. F., Jr.; and Starnes, J. H., Jr.: Postbuckling Behavior of Selected Curved Stiffened Graphite-Epoxy Panels Loaded in Axial Compression. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0768-CP.
(Subject Category 24 RTOP 505-33-53)
380. McGowan, P. E.; and Housner, J. M.: Nonlinear Dynamic Analysis of Deploying Flexible Space Booms. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0594-CP.
(Subject Category 39 RTOP 506-53-53)
381. Nemeth, M. P.: Importance of Anisotropic Bending Stiffnesses on Buckling of Symmetrically Laminated Composite Plates Loaded in Compression. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0673-CP.
(Subject Category 39 RTOP 505-33-33)
382. Ransom, J. B.; and Fulton, R. E.: Concurrent Implementation of the Crank-Nicolson Method for Heat-Transfer Analysis. Presented at the Second SIAM Conference on Parallel Processing for Scientific Computing, November 18-21, 1985, Norfolk, Virginia. Special issue of SIAM Journal on Scientific and Statistical Computing pending.
(Subject Category 62 RTOP 505-33-53)

383. Rasdorf, W. J.; and Storaasli, O. O.: The Role of Computing in Engineering Education. Presented at the International Federation for Information Processing (IFIP) 4th World Conference on Computers in Education, July 29 - August 2, 1985, Norfolk, Virginia. Published in Proceedings, Part 1, p. 417-423, North-Holland 1985.
(Subject Category 39 RTOP 505-37-33)
384. Rouse, M.: Postbuckling of Flat Unstiffened Graphite-Epoxy Plates Loaded in Shear. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0771-CP.
(Subject Category 39 RTOP 505-33-33)
385. Sohi, M.; Hahn, H. T.; and Williams, J. G.: The Effect of Resin Toughness and Modulus on Compressive Failure Modes of Quasi-Isotropic Graphite/Epoxy Laminates. Presented at the ASTM Symposium on Toughened Composites, March 13-15, 1985, Houston, Texas. ASTM STP pending.
(Subject Category 24 RTOP 505-06-23)
386. Stein, M.: Nonlinear Theory for Laminated and Thick Plates and Shells Including the Effects of Transverse Shearing. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0671-CP.
(Subject Category 39 RTOP 505-33-33)
387. Stein, M.; and Jegley, D. C.: Effects of Transverse Shearing on Cylindrical Bending, Vibration, and Buckling of Laminated Plates. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0744-CP.
(Subject Category 39 RTOP 505-33-33)
388. Thurston, G. A.; Brogan, F. A.; and Stehlin, P.: Postbuckling Analysis Using a General Purpose Code. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0719-CP.
(Subject Category 39 RTOP 505-33-53)
389. Venneri, S. L.; Hanks, B. R.; and Pinson, L. D.: Future Trends in Spacecraft Design and Qualification. Presented at the AGARD 61st Meeting of the Structures and Materials Panel Specialists' Meeting I on Mechanical Qualification of Large Flexible Spacecraft Structures, Oberammergau, Germany, September 8-13, 1985.
(Subject Category 39 RTOP 506-43-51)
390. Waters, W. A., Jr.; and Williams, J. G.: Failure Mechanisms of Laminates Transversely Loaded by Bolt Push-Through. Presented at the Seventh DOD/NASA Conference on Fibrous Composites in Structural Design, June 17-20, 1985, Denver, Colorado. Proceedings pending.
(Subject Category 24 RTOP 534-06-23)

391. Williams, J. G.: The Multi-Span-Beam Shear Test Method for Studying Composite Transverse Shear Failure Characteristics. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0791-CP.
(Subject Category 24 RTOP 505-33-33)
392. Yager, T. J.: Results From Recent Studies to Better Define Ground Vehicle Tire Hydroplaning Inception Speed. Presented at the Clemson University Tire Technology Conference, October 30-31, 1985, Greenville, South Carolina. In proceedings, October 1985.
(Subject Category 34 RTOP 505-45-14)

Technical Talks

393. Alfaro-Bou, E.: NASA Experiments on the B720 Structure and Seats. Presented at the NASA Government/Industry Controlled Impact Demonstration (CID) Workshop, April 10, 1985, Hampton, Virginia.
(Subject Category 39 RTOP 505-33-53)
394. Alfaro-Bou, E.: The Development and Testing of an Energy Absorbing Passenger Seat for a Transport Aircraft. Presented at the 1985 Government Agency Aircraft Seating Systems Meeting, November 18-19, 1985, Wright-Patterson AFB, Ohio.
(Subject Category 03 RTOP 505-61-43)
395. Bostic, S. W.; Ransom, J. B.; and Crockett, T. W.: Architectural Consideration in Program Design: A Comparison of Two MIMD Computers. Presented at the Second SIAM Conference on Parallel Processing for Scientific Computing, November 18-21, 1985, Norfolk, Virginia.
(Subject Category 62 RTOP 505-33-53)
396. Darbhamulla, S. P.; Razaq, Z.; and Storaasli, O. O.: Parallel Computing in Nonlinear Structural Stability. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida.
(Subject Category 39 RTOP 505-37-37)
397. Juang, J-N.; and Horta, L. G.: A Linear Optimization Approach for Structure and Control Design. Presented at the 24th IEEE Conference on Decision and Control, December 11-13, 1985, Fort Lauderdale, Florida.
(Subject Category 39 RTOP 506-43-51)
398. Pinson, L. D.: NASA Research in Structural Dynamics. Presented at the Shock & Vibration Information Center 56th Shock and Vibration Symposium, October 22-24, 1985, Monterey, California.
(Subject Category 39 RTOP 506-43-51)
399. Storaasli, O. O.: The Impact of Concurrent Processing on Finite Element Structural Analysis. Presented at the Colloquium, April 3, 1985, at Delft University, Delft, Netherlands.
(Subject Category 39 RTOP 505-37-37)

400. Yager, T. J.: Status Report on Joint FAA/NASA Aircraft and Ground Vehicle Runway Friction Program. Presented at the SAE Ad Hoc Committee on Take-Off Performance Monitoring, October 1-2, 1985, Williamsburg, Virginia.
(Subject Category 05 RTOP 505-45-23)
401. Yager, T. J.: Winter Runway Testing Overview and Preliminary NASA Findings. Presented at the Northeast Chapter of the American Association of Airport Executives Nineteenth Annual International Snow Symposium, April 29 - May 2, 1985, Allentown, Pennsylvania.
(Subject Category 05 RTOP 505-45-14)

Computer Programs

402. Nemeth, M. P.: BUCKO - A Buckling Analysis for Rectangular Orthotropic Plates With Centrally Located Cutouts. Program No. LAR-13466.

Tech Briefs

403. Carden, H. D.: Full-Scale Crash-Test Evaluation of Two Load-Limiting Subfloors for General Aviation Airframes. NASA Tech Brief LAR-13414.
404. Rhodes, M. D.: Joint for Rapid Assembly of Large Space Structures. NASA Tech Brief LAR-13489.
405. Rhodes, M. D. (Langley Research Center); and Hedgepeth, J. M. (Astro Research Corporation): Synchronously Deployable Double Fold Beam and Planar Truss Structures. NASA Tech Brief LAR-13490.

Patents

406. Bush, H. G.; and Wallsom, R. E.: Self-Locking Mechanical Center Joint. U.S. Patent 4,518,277. Issued May 21, 1985.
(Subject Category 37)
407. Mikulas, M. M., Jr.: Sequentially Deployable Maneuverable Tetrahedral Beam. U.S. Patent 4,557,097. Issued December 12, 1985.
(Subject Category 18)

PUBLICATIONS FOR LOADS AND AEROELASTICITY DIVISION

Formal Reports

408. Avery, D. E.: Experimental Aerodynamic Heating to Simulated Space Shuttle Tiles in Laminar and Turbulent Boundary Layers With Variable Flow Angles at a Nominal Mach Number of 7. NASA TP-2307, August 1985, 48 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-23)
409. Batina, J. T.: Effects of Airfoil Shape, Thickness, Camber and Angle of Attack on Calculated Transonic Unsteady Airloads. NASA TM-86320, March 1985, 55 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
410. Davis, R. C.; Moses, P. L.; and Kanenko, R. S.: Joint Design for Improved Fatigue Life of Diffusion-Bonded Box-Stiffened Panels. NASA TP-2480, September 1985, 16 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-33)
411. Dunn, H. J.: UNAERO: A Package of FORTRAN Subroutines for Approximating Unsteady Aerodynamics in the Time Domain. NASA TM-86392, October 1985, 51 p.
(Avail: IAC Subject Category 61 RTOP 505-33-43)
412. Eckstrom, C. V.: Flight Measurements of Surface Pressures on a Flexible Supercritical Research Wing. NASA TP-2501, December 1985, 118 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
413. Kehoe, M. W.; Cazier, F. W., Jr.; and Ellison, J. F.: Ground Vibration Test of the Laminar Flow Control JetStar Airplane. NASA TM-86398, October 1985, 60 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-43)
414. Nowak, R. J.; Albertson, C. W.; and Hunt, L. R.: Aerothermal Tests of a 12.5° Cone at Mach 6.7 for Various Reynolds Numbers, Angles of Attack, and Nose Shapes. NASA TP-2345, January 1985, 88 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-23)
415. Runyan, H. L.; and Tai, H.: Compressible, Unsteady Lifting-Surface Theory for a Helicopter Rotor in Forward Flight. NASA TP-2503, December 1985, 19 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-43)
416. Shore, C. P.: Reduction Method for Thermal Analysis of Complex Aerospace Structures. NASA TP-2373, January 1985, 29 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-53)
417. Wieseman, C. D.: A Method To Stabilize Linear Systems Using Eigenvalue Gradient Information. NASA TP-2479, November 1985, 38 p.
(Avail: NTIS Subject Category 63 RTOP 505-33-43)

Quick-Release Technical Memorandums

418. Batina, J. T.: Unsteady Transonic Flow Calculations for Two-Dimensional Canard-Wing Configurations With Aeroelastic Applications. NASA TM-86375, February 1985, 10 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
419. Batina, J. T.: Unsteady Transonic Flow Calculations for Interfering Lifting Surface Configurations. NASA TM-86432, May 1985, 12 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
420. Bennett, R. M.; Seidel, D. A.; and Sandford, M. C.: Transonic Calculations for a Flexible Supercritical Wing and Comparison With Experiment. NASA TM-86439, May 1985, 18 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
421. Bennett, R. M.; Wynne, E. C.; and Mabey, D. G.: Calculation of Transonic Steady and Oscillatory Pressures on a Low Aspect Ratio Model and Comparison With Experiment. NASA TM-86449, June 1985, 17 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
422. Berry, H. M.; Batina, J. T.; and Yang, T. Y.: Viscous Effects on Transonic Airfoil Stability and Response. NASA TM-86374, February 1985, 14 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
423. Bey, K. S.; Thornton, E. A.; Dechaumphai, P.; and Ramakrishnan, R.: A New Finite Element Approach for Prediction of Aerothermal Loads - Progress in Inviscid Flow Computations. NASA TM-86434, July 1985, 15 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-33)
424. Cole, S. R.: Exploratory Flutter Test in a Cryogenic Wind Tunnel. NASA TM-86380, February 1985, 10 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-43)
425. Dixon, S. C.: NASA R&T for Aerospace Plane Vehicles - Progress and Plans. NASA TM-86429, May 1985, 241 p.
(Avail: NTIS Subject Category 16 RTOP 506-53-33)
426. Dixon, S. C.; Tenney, D. R.; Rummler, D. R.; Wieting, A. R.; and Bader, R. M.: Structures and Materials Technology Issues for Reusable Launch Vehicles. NASA TM-87626, October 1985, 29 p.
(Avail: NTIS Subject Category 16 RTOP 506-53-33)
427. Eckstrom, C. V.: Prediction of Wing Aeroelastic Effects on Aircraft Lift and Pitching Moment Characteristics. NASA TM-87631, November 1985, 21 p.
(Avail: NTIS Subject Category 08 RTOP 505-63-21)
428. Gardner, J. E.; and Dixon, S. C.: Loads and Aeroelasticity Division Research and Technology Accomplishments for FY 1984 and Plans for FY 1985. NASA TM-86356, January 1985, 170 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)

429. Hanson, P. W.: Aeroelasticity at the NASA Langley Research Center - Recent Progress, New Challenges. NASA TM-87660, December 1985, 92 p.
(Avail: NTIS Subject Category 01 RTOP 505-33-43)
430. Howlett, J. T.: Efficient Self-Consistent Viscous-Inviscid Solutions for Unsteady Transonic Flow. NASA TM-86335, January 1985, 11 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-53)
431. Macaraeg, M. G.: The Effect of Power Law Body Forces on a Thermally-Driven Flow Between Concentric Rotating Spheres. NASA TM-87596, August 1985, 11 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-33)
432. Macaraeg, M. G.: A Mixed Pseudospectral/Finite Difference Method for a Thermally Driven Fluid in a Nonuniform Gravitational Field. NASA TM-87581, July 1985, 9 p.
(Avail: NTIS Subject Category 34 RTOP 506-53-33)
433. *Mantay, W. R.; *Yeager, W. T., Jr.; Hamouda, M-N.; Cramer, R. G., Jr.; and Langston, C. W.: Aeroelastic Model Helicopter Rotor Testing in the Langley TDT. NASA TM-86440, AVSCOM TM 85-B-5, June 1985, 18 p.
(Avail: NTIS Subject Category 39 RTOP 505-42-23)
434. Murrow, H. N.: A Perspective on the Status of Measurement of Atmospheric Turbulence in the U.S. NASA TM-87610, September 1985, 37 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-10)
435. Ricketts, R. H.: Selected Topics in Experimental Aeroelasticity at the NASA Langley Research Center. NASA TM-86436, April 1985, 14 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-43)
436. Sandford, M. C.; Ricketts, R. H.; and Hess, R. W.: Recent Transonic Unsteady Pressure Measurements at the NASA Langley Research Center. NASA TM-86408, April 1985, 20 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
437. Sawyer, J. W.; and Moses, P. L.: Effects of Holes and Impact Damage on Tensile Strength of Two-Dimensional Carbon-Carbon Composites. NASA TM-86337, January 1985, 17 p.
(Avail: STIF Subject Category 24 RTOP 506-53-33)
438. Seidel, D. A.; Sandford, M. C.; and Eckstrom, C. V.: Measured Unsteady Transonic Aerodynamic Characteristics of an Elastic Supercritical Wing With an Oscillating Control Surface. NASA TM-86376, February 1985, 9 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
439. Shideler, J. L.; Sawyer, J. W.; Blosser, M. L.; and Webb, G. L.: Multiwall/RSI Concept for Local Application to Space Shuttle Body Flap. NASA TM-87589, September 1985, 29 p.
(Avail: STIF Subject Category 34 RTOP 506-63-24)

*Aerostructures Directorate, USAARTA (AVSCOM)

440. Turnock, D. L.: Two Degree-of-Freedom Flutter Solution for a Personal Computer. NASA TM-86381, February 1985, 42 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-43)
441. Webb, G. L.; Clark, R. K.; and Sharpe, E. L.: Thermal Fatigue Tests of a Radiative Heat Shield Panel for a Hypersonic Transport. NASA TM-87583, September 1985, 30 p.
(Avail: STIF Subject Category 26 RTOP 506-53-23)
442. Williams, M. H.; Bland, S. R.; and Edwards, J. W.: Flow Instabilities in Transonic Small Disturbance Theory. NASA TM-86251, January 1985, 26 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)

Contractor Reports

443. Blair, W.; Meaney, J. E.; and Rosenthal, H. A.: Fabrication of Prepackaged Superalloy Honeycomb Thermal Protection System (TPS) Panels. (NAS1-15646 Rohr Industries, Inc.) NASA CR-3755, October 1985, 188 p.
(Avail: STIF Subject Category 15 RTOP 506-53-33)
444. Buchmann, O. A.; Arefian, V. V.; Warren, H. A.; Vuigner, A. A.; and Pohlman, M. J.: Advanced Fabrication Techniques for Hydrogen-Cooled Engine Structures. (NAS1-14180 AiResearch Manufacturing Company.) NASA CR-3949, November 1985, 124 p.
(Avail: STIF Subject Category 39 RTOP 505-33-53)
445. Clayton, J. D.; and Haller, R. L.: Design and Fabrication of the NASA Decoupler Pylon for the F-16 Aircraft, Addendum I. (NAS1-16879 General Dynamics Corporation.) NASA CR-172355, January 1985, 70 p.
(Avail: STIF Subject Category 05 RTOP 505-33-43)
446. Clayton, J. D.; Haller, R. L.; and Hassler, J. M., Jr.: Design and Fabrication of the NASA Decoupler Pylon for the F-16 Aircraft. (NAS1-16879 General Dynamics Corporation.) NASA CR-172354, January 1985, 204 p.
(Avail: STIF Subject Category 05 RTOP 505-33-43)
447. Clayton, J. D.; Haller, R. L.; and Hassler, J. M., Jr.: Design and Fabrication of the NASA Decoupler Pylon for the F-16 Aircraft, Addendum II. (NAS1-16879 General Dynamics Corporation.) NASA CR-172494, February 1985, 99 p.
(Avail: STIF Subject Category 05 RTOP 505-33-43)
448. Ehlers, F. E.; Weatherill, W. H.; and Yip, E. L.: Development and Application of Algorithms for Calculating the Transonic Flow About Harmonically Oscillating Wings. (NAS1-16297 Boeing Commercial Airplane Company.) NASA CR-172376, October 1984 (Released 1985), 150 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)

449. Freedman, M. I.; Sipcic, S.; and Tseng, K.: A First-Order Green's Function Approach to Supersonic Oscillatory Flow - A Mixed Analytic and Numerical Treatment. (NAG1-276 Boston University.) NASA CR-172207, February 1985, 37 p.
(Avail: NTIS Subject Category 02 RTOP 505-36-13)
450. Freedman, M. I.; and Tseng, K.: A First-Order Time-Domain Green's Function Approach to Supersonic Unsteady Flow. (NAG1-276 Boston University.) NASA CR-172208, April 1985, 38 p.
(Avail: NTIS Subject Category 02 RTOP 505-36-13)
451. Ho, T.; and Allsup, H. C.: ACC Heat Shield Viability. (NAS1-17347 LTV Aerospace and Defense Company.) NASA CR-177934, August 1985, 132 p.
(Avail: STIF Subject Category 24 RTOP 505-53-33)
452. Levy, R.; and Lin, S-J.: Tip Vortex Computer Code SRATIP - User's Guide. (NAS1-14904 Scientific Research Associates, Inc.) NASA CR-172603, July 1985, 69 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
453. Lin, S-J.; Levy, R.; Shamroth, S. J.; and Govindan, T. R.: A Three-Dimensional Viscous Flow Analysis for the Helicopter Tip Vortex Generation Problem. (NAS1-14904 Scientific Research Associates, Inc.) NASA CR-3906, August 1985, 68 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
454. Maskew, B.; and Rao, B. M.: Unsteady Analysis of Rotor Blade Tip Flow. (NAS1-15472 Analytical Methods, Inc.) NASA CR-3868, May 1985, 56 p.
(Avail: NTIS Subject Category 02 RTOP 505-42-23)
455. Morino, L.: Scalar/Vector Potential Formulation for Compressible Viscous Unsteady Flows. (NAS1-17317 Institute for Computer Application Research and Utilization in Science, Inc.) NASA CR-3921, August 1985, 46 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
456. Rao, B. M.; and Maskew, B.: Inviscid Analysis of Unsteady Blade Tip Flow Correlation Studies. (NAS1-15472 Analytical Methods, Inc.) NASA CR-172506, February 1985, 66 p.
(Avail: NTIS Subject Category 02 RTOP 505-42-23)
457. Reed, W. H., III: An Airfoil Flutter Model Suspension System To Accommodate Large Static Transonic Airloads. (NAS1-17686 Dei-Tech, Inc.) NASA CR-177998, October 1985, 38 p.
(Avail: NTIS Subject Category 02 RTOP 505-63-21)
458. Shamroth, S. J.: User's Manual for Coordinate Generation Code "CRDSRA." (NAS1-15214 Scientific Research Associates, Inc.) NASA CR-172584, June 1985, 16 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)
459. Shamroth, S. J.: User's Manual for Airfoil Flow Field Computer Code "SRAIR." (NAS1-15214 Scientific Research Associates, Inc.) NASA CR-172585, June 1985, 59 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)

460. Shamroth, S. J.: Calculation of Steady and Unsteady Airfoil Flow Fields Via the Navier-Stokes Equations. (NAS1-15214 Scientific Research Associates, Inc.) NASA CR-3899, August 1985, 110 p.
(Avail: NTIS Subject Category 02 RTOP 505-33-43)

Journal Articles and Other Publications

461. Abel, I.; Doggett, R. V., Jr.; Newsom, J. R.; and Sandford, M. C.: Dynamic Wind-Tunnel Testing of Active Controls by the NASA Langley Research Center. AGARDograph, 1984.
(Subject Category 39 RTOP 505-33-43)
462. Avery, D. E.; Kerr, P. A.; and Wieting, A. R.: Experimental Aerodynamic Heating to Simulated Shuttle Tiles. Journal of Spacecraft and Rockets, Volume 22, No. 4, July - August 1985, p. 417-424.
(Subject Category 34 RTOP 506-51-23)
463. Bhatia, K. G.; Nagaraja, K. S.; and Ruhlman, C. L.: Winglet Effects on Transonic Flutter of Twin-Engine-Transport Type Wing. Journal of Aircraft, Volume 22, No. 7, July 1985, p. 587-594.
(Subject Category 05 RTOP 505-33-43)
464. McCain, W. E.: Measured and Calculated Airloads on a Transport Wing Model. Journal of Aircraft, Volume 22, No. 4, April 1985, p. 336-342.
(Subject Category 02 RTOP 505-33-53)
465. Newsom, J. R.; and Mukhopadhyay, V.: A Multiloop Robust Controller Design Study Using Singular Value Gradients. Journal of Guidance and Control, Volume 8, No. 4, July - August 1985, p. 514-519.
(Subject Category 63 RTOP 505-33-53)
466. Newsom, J. R.; Pototzky, A. S.; and Abel, I.: Design of a Flutter Suppression System for an Experimental Drone Aircraft. Journal of Aircraft, Volume 22, No. 5, May 1985, p. 380-386.
(Subject Category 63 RTOP 505-33-43)
467. Olsen, G. C.; and Smith, R. E.: Analysis of Aerothermal Loads on Spherical Dome Protuberances. AIAA Journal, Volume 23, No. 5, May 1985, p. 650-656.
(Subject Category 34 RTOP 506-53-53)
468. Osher, S.; Hafez, M. M.; and Whitlow, W., Jr.: Entropy Condition Satisfying Approximations for the Full Potential Equation of Transonic Flow. Mathematics of Computations, Volume 44, January 1985, p. 1-29.
(Subject Category 02 RTOP 505-33-43)
469. Shideler, J. L.; Webb, G. L.; and Pittman, C. M.: Verification Tests of Durable Thermal Protection System Concepts. Journal of Spacecraft and Rockets, Volume 22, No. 6, November - December, 1985, p. 598.
(Subject Category 18 RTOP 506-53-33)

470. Taylor, A. H.; Cerro, J. A.; Cruz, C. I.; Jackson, L. R.; Naftel, J. C.; and Wurster, K. E.: Orbit on Demand: Structural Analysis Finds Vertical Launches Weigh Less. Aerospace America, Volume 23, No. 2, February 1985, p. 58-61.
(Subject Category 20 RTOP 506-63-23)
471. Taylor, A. H.; Jackson, L. R.; Davis, R. C.; Cerro, J. A.; and Scotti, S. J.: Structural Concepts for Future Space Transportation System Orbiters. Journal of Spacecraft and Rockets, Volume 22, No. 3, May - June 1985, p. 333-339.
(Subject Category 16 RTOP 506-53-53)
472. Whitlow, W., Jr.; and Seidel, D. A.: Nonreflecting Boundary Conditions for the Complete Unsteady Transonic Small-Disturbance Equation. AIAA Journal, Volume 23, No. 2, February 1985, p. 315-317.
(Subject Category 02 RTOP 505-43-33)
473. Williams, M. H.; Bland, S. R.; and Edwards, J. W.: Flow Instabilities in Transonic Small-Disturbance Theory. AIAA Journal, Volume 23, No. 10, October 1985, p. 1491-1496.
(Subject Category 02 RTOP 505-33-53)
474. Wood, E. R.; Cline, J. H.; Powers, R. W.; and Hammond, C. E.: On Developing and Flight Testing a Higher Harmonic Control System. Journal of the American Helicopter Society, Volume 30, No. 1, 1985, p. 3-20.
(Subject Category 05 RTOP 505-42-33)

Meeting Presentations

475. Batina, J. T.: Unsteady Transonic Flow Calculations for Interfering Lifting Surface Configurations. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1711.
(Subject Category 02 RTOP 505-33-43)
476. Batina, J. T.: Unsteady Transonic Flow Calculations for Two-Dimensional Canard-Wing Configurations With Aeroelastic Applications. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0585-CP.
(Subject Category 02 RTOP 505-33-43)
477. Bennett, R. M.; Seidel, D. A.; and Sandford, M. C.: Transonic Calculations for a Flexible Supercritical Wing and Comparison With Experiment. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0665-CP.
(Subject Category 02 RTOP 505-33-43)

478. Bennett, R. M.; Wynne, E. C.; and Mabey, D. G.: Calculation of Transonic Steady and Oscillatory Pressures on a Low Aspect Ratio Model and Comparison With Experiment. Presented at the DGLR/DFVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending.
(Subject Category 02 RTOP 505-33-43)
479. Berry, H. M.; Batina, J. T.; and Yang, T. Y.: Viscous Effects on Transonic Airfoil Stability and Response. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0586-CP.
(Subject Category 02 RTOP 505-33-43)
480. Bey, K. S.; Thornton, E. A.; Dechaumphai, P.; and Ramakrishnan, R.: A New Finite Element Approach for Prediction of Aerothermal Loads - Progress in Inviscid Flow Computations. Presented at the AIAA 7th Computational Fluid Dynamics Conference, July 15-17, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1533-CP.
(Subject Category 34 RTOP 506-53-33)
481. Blosser, M. L.: Carbon Carbon Structural Concepts for AOTV. Presented at the Institute for Defense Analysis Inter-Agency Planning Group on Carbon-Carbon Composites, September 17-18, 1985, Falls Church, Virginia. Proceedings pending.
(Subject Category 15 RTOP 506-43-31)
482. Blosser, M. L.; Scotti, S. J.; Cerro, J. A.; Powell, R. W.; Jackson, L. R.; Cruz, C. I.: Design Study of a Slant-Nose-Cylinder Aeroassisted Orbital Transfer Vehicle. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0966.
(Subject Category 34 RTOP 506-53-33)
483. Chipman, R.; Rauch, F.; Rimer, M.; Muniz, B.; and Ricketts, R. H.: Transonic Test of a Forward-Swept-Wing Configuration Exhibiting Body Freedom Flutter. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0689-CP.
(Subject Category 05 RTOP 505-33-43)
484. Cole, S. R.: Exploratory Flutter Test in a Cryogenic Wind Tunnel. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0736-CP.
(Subject Category 39 RTOP 505-33-43)
485. Dixon, S. C.; Tenney, D. R.; Rummler, D. R.; Wieting, A. R.; and Bader, R. M.: Structures and Materials Technology Issues for Reusable Launch Vehicles. Presented at the IEEE 18th Annual Electronics and Aerospace Systems Conference (EASCON 85), October 29, 1985, Washington, DC.
(Subject Category 16 RTOP 506-53-33)

486. Eckstrom, C. V.: Prediction of Wing Aeroelastic Effects on Aircraft Lift and Pitching Moment Characteristics. Presented at the Navy Aircraft Flight Loads Technology Transfer Conference, October 16-17, 1985, Washington, DC. Proceedings pending.
(Subject Category 04 RTOP 505-33-43)
487. Howlett, J. T.: Efficient Self-Consistent Viscous-Inviscid Solutions for Unsteady Transonic Flow. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0482.
(Subject Category 02 RTOP 505-33-43)
488. Kandil, O. A.; and Yates, E. C., Jr.: Computation of Transonic Vortex Flows Past Delta Wings - Integral Equation Method. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1582.
(Subject Category 02 RTOP 505-33-43)
489. Macaraeg, M. G.: A Mixed Pseudospectral/Finite Difference Method for a Thermally Driven Fluid in a Nonuniform Gravitational Field. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1661.
(Subject Category 34 RTOP 506-53-33)
490. McWithey, R. R.; and Jackson, L. R.: Structures for Mach 5, Reuseable, Hydrocarbon Fueled Ramjet Engines. Presented at the 1985 JANNAF Propulsion Meeting, April 9-12, 1985, San Diego, California. In Proceedings, CPIA No. 425, Volume 1-6.
(Subject Category 07 RTOP 505-43-83)
491. Pearson, R. M.; Giesing, J. P.; Nomura, J. K.; and Ruhlin, C. L.: Transonic Flutter Model Study of a Multi-jet Aircraft Wing With Winglets. Presented at the AIAA/ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0738-CP.
(Subject Category 05 RTOP 505-33-43)
492. Piette, D. S.; Crooks, O. J.; McCreary, W. E.; and Cazier, F. W., Jr.: Experimental Transonic Steady State and Unsteady Pressure Measurements on a Supercritical Wing During Flutter and Forced Discrete Frequency Oscillations. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0664-CP.
(Subject Category 02 RTOP 505-33-43)
493. Pototzky, A. S.; and Perry, B., III: Dynamic Loads Analyses of Flexible Airplanes - New and Existing Techniques. Presented at the AIAA/ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0808-CP.
(Subject Category 39 RTOP 505-33-43)

494. Ricketts, R. H.: Selected Topics in Experimental Aeroelasticity at the NASA Langley Research Center. Presented at the DGLR/DFVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending.
(Subject Category 02 RTOP 505-33-43)
495. Runyan, H. L.; and Tai, H.: Application of a Lifting Surface Theory for a Helicopter in Forward Flight. Presented at the Eleventh European Rotorcraft Forum, September 10-13, 1985, London, England. In Proceedings, p. 24-1 - 18.
(Subject Category 02 RTOP 505-42-23)
496. Sandford, M. C.; Ricketts, R. H.; and Hess, R. W.: Recent Studies on Transonic Unsteady Pressure Measurements at NASA Langley Research Center. Presented at the DGLR/DFVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending.
(Subject Category 02 RTOP 505-33-43)
497. Sawyer, J. W.: Experimental Evaluation of Mechanical Joints in 2-Dimensional Carbon-Carbon Material at Room and Elevated Temperatures. Presented at the Seventh JANNAF Rocket Nozzle Technology Meeting, November 13-15, 1985, Monterey, California. Proceedings pending.
(Subject Category 18 RTOP 505-43-83)
498. Sawyer, J. W.; and Moses, P. L.: Effect of Holes and Impact Damage on Tensile Strength of Two-Dimensional Carbon-Carbon Composites. Presented at the DOD/NASA Advanced Composite Materials Working Group, January 23-25, 1985, Cocoa Beach, Florida. In NASA CP-2406, p. 245-260.
(Subject Category 24 RTOP 506-53-43)
499. Sawyer, J. W.; and Prabhakaran, R.: A Photoelastic Investigation of Asymmetric Four Point Bend Shear Test for Composite Materials. Presented at the Paisley College of Technology 3rd International Conference on Composite Structures, September 9-11, 1985, Paisley, Scotland. Proceedings pending.
(Subject Category 24 RTOP 506-53-43)
500. Seidel, D. A.; Sandford, M. C.; and Eckstrom, C. V.: Measured Unsteady Transonic Aerodynamic Characteristics of an Elastic Supercritical Wing With an Oscillating Control Surface. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0598-CP.
(Subject Category 02 RTOP 505-33-43)
501. Shore, C. P.: Approximate Thermal Analysis of Complex Aerospace Structures Via a Reduction Method. Presented at the AIAA/ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida.
(Subject Category 34 RTOP 506-53-53)

502. Spigel, B. S.; Sawyer, J. W.; and Prabhakaran, R.: An Investigation of the Iosipescu and Asymmetrical Four-Point Bend Tests for Composite Material. Presented at the SESA 1985 Spring Conference on Experimental Mechanics, June 9-13, 1985, Las Vegas, Nevada. In Proceedings.
(Subject Category 24 RTOP 506-53-43)

Technical Talks

503. Dixon, S. C.: NASA R&T for Aerospace Plane Vehicles - Progress and Plans. Presented at the 1985 SAE Aerospace Vehicle Requirements Conference, May 20-23, 1985, Washington, DC.
(Subject Category 16 RTOP 506-53-33)
504. Macaraeg, M. G.; and Streett, C. L.: Improvements in Spectral Collocation Discretization Through a Multiple-Domain Technique. Presented at the AIAA 7th Computational Fluid Dynamics Conference, July 15-17, 1985, Cincinnati, Ohio.
(Subject Category 64 RTOP 506-53-33)
505. Murrow, H. N.: A Perspective on the Status of Measurement of Atmospheric Turbulence in the U.S. Presented at the Fall AGARD/SMP 61st Panel Meeting and Specialists Meeting, September 9-13, 1985, Oberammergau, Germany.
(Subject Category 47 RTOP 505-45-10)
506. Taylor, A. H.: Design Considerations for Reusable Flightweight Cryogenic Propellant Tanks. Presented at the JANNAF Composite Overwrapped Metal Lined Pressure Vessels Workshop, August 28, 1985, El Segundo, California.
(Subject Category 15 RTOP 506-43-31)
507. Yates, E. C., Jr.: Preliminary Report on Candidates for AGARD Standard Aeroelastic Configurations. Presented at the Fall AGARD/SMP 61st Panel Meeting and Specialists Meetings, September 9-13, 1985, Oberammergau, Germany.
(Subject Category 39 RTOP 505-33-43)

Computer Programs

No computer programs.

Tech Briefs

508. Davis, R. C. (Langley Research Center); and Moses, P. L. (PRC Kentron, Inc.): Joint Design for Improved Fatigue Life of Diffusion Bonded Box Stiffened Panels. NASA Tech Brief LAR-13460.

Patents

509. Jackson, L. R.; Davis, R. C.; and Taylor, A. H.: Daze Fasteners. U.S. Patent 4,512,699. Issued April 23, 1985.
(Subject Category 37)

510. Jackson, L. R.; and Taylor, A. H.: Aerospace Vehicle. U.S. Patent
4,557,444. Issued December 10, 1985.
(Subject Category 06)

PUBLICATIONS FOR INTERDISCIPLINARY RESEARCH OFFICE

Formal Reports

511. Iott, J.; Haftka, R. T.; and Adelman, H. M.: Selecting Step Sizes in Sensitivity Analysis by Finite Differences. NASA TM-86382, August 1985, 12 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-53)

Quick-Release Technical Memorandums

512. Haftka, R. T.; and Adelman, H. M.: The Effect of Sensor and Actuator Errors on Static Shape Control for Large Space Structures. NASA TM-86446, June 1985, 27 p.
(Avail: NTIS Subject Category 18 RTOP 506-53-53)
513. Rogers, J. L., Jr.; and Barthelemy, J-F.: An Expert System for Choosing the Best Combination of Options in a General-Purpose Program for Automated Design Synthesis. NASA TM-86329, March 1985, 7 p.
(Avail: NTIS Subject Category 61 RTOP 506-83-43)
514. Rogers, J. L., Jr.; and Sobieszczanski-Sobieski, J.: Exploiting Parallel Computing With Limited Program Changes Using a Network of Microcomputers. NASA TM-86387, February 1985, 15 p.
(Avail: NTIS Subject Category 61 RTOP 505-33-53)
515. Sobieszczanski-Sobieski, J.; and Barthelemy, J-F.: Improving Engineering System Design by Formal Decomposition, Sensitivity Analysis, and Optimization. NASA TM-86377, February 1985, 9 p.
(Avail: NTIS Subject Category 66 RTOP 505-33-53)
516. Sobieszczanski-Sobieski, J.; James, B. B.; and Riley, M. F.: Structural Optimization by Generalized, Multilevel Decomposition. NASA TM-87605, October 1985, 17 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)

Contractor Reports

517. Lust, R. V.; and Schmit, L. A.: Alternative Approximation Concepts for Space Frame Synthesis. (NSG-1490 University of California, Los Angeles.) NASA CR-172526, March 1985, 430 p.
(Avail: NTIS Subject Category 05 RTOP 506-53-53)
518. Radovcich, N. A.; Dreim, D.; O'Keefe, D. A.; Linner, L.; Pathak, S. K.; Reaser, J. S.; Richardson, D.; Sweers, J.; and Conner, F.: Study for the Optimization of a Transport Aircraft Wing for Maximum Fuel Efficiency, Volume I - Methodology, Criteria, Aeroelastic Model Definition, and Results. (NAS1-16794 Lockheed-California Company.) NASA CR-172551, January 1985, 355 p.
(Avail: NTIS Subject Category 05 RTOP 505-33-53)

519. Vanderplaats, G. N.: ADS - A FORTRAN Program for Automated Design Synthesis - Version 1.10. (NAG1-567 University of California - Santa Barbara.) NASA CR-177985, September 1985, 47 p.
(Avail: NTIS Subject Category 61 RTOP 505-33-53)
520. Walker, R. A.; Lehman, L. L.; and Gupta, N. K.: Engineering Workstations for Distributed Parameter Systems. (NAS1-17580 Integrated Systems, Inc.) NASA CR-172453, May 1985, 63 p.
(Avail: STIF Subject Category 61 RTOP 324-01-00)

Journal Articles and Other Publications

521. Haftka, R. T.; and Adelman, H. M.: Selection of Actuator Locations for Static Shape Control of Large Space Structures by Heuristic Integer Programming. Computers and Structures, Volume 20, No. 1-3, 1985, p. 575-582.
(Subject Category 18 RTOP 506-53-53)
522. Haftka, R. T.; and Adelman, H. M.: An Analytical Investigation of Shape Control of Large Space Structures by Applied Temperatures. AIAA Journal, Volume 23, No. 3, March 1985, p. 450-457.
(Subject Category 18 RTOP 506-53-53)
523. Sobieszczanski-Sobieski, J.; James, B. B.; and Dovi, A. R.: Structural Optimization by Multilevel Decomposition. AIAA Journal, Volume 23, No. 11, November 1985, p. 1775-1782.
(Subject Category 05 RTOP 505-33-53)
524. Sobieszczanski-Sobieski, J.; and Rogers, J. L., Jr.: A Programming System for Research and Applications in Structural Optimization. Book entitled: New Directions in Optimum Structural Design, Edited by E. Atrek, R. H. Gallagher, et al., 1984, p. 563-585.
(Subject Category 05 RTOP 505-33-63)

Meeting Presentations

525. Haftka, R. T.; and Adelman, H. M.: The Effect of Sensor and Actuator Errors on Static Shape Control for Large Space Structures. Presented at the Fifth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, June 12-14, 1985, Blacksburg, Virginia. Proceedings pending.
(Subject Category 18 RTOP 506-53-53)
526. Rogers, J. L., Jr.; and Barthelemy, J-F.: An Expert System for Choosing the Best Combination of Options in a General Purpose Program for Automated Design Synthesis. Presented at the 1985 ASME International Computers in Engineering Conference and Exhibition, August 4-8, 1985, Boston, Massachusetts. In Proceedings, Volume Two, p. 255-260.
(Subject Category 61 RTOP 505-33-53)

527. Rogers, J. L., Jr.; and Sobieszczanski-Sobieski, J.: Exploiting Parallel Computing With Limited Program Changes Using a Network of Microcomputers. Presented at the Advances in Engineering Software and Engineering Analysis Fourth International Conference and Exhibition on Engineering Software, June 18-20, 1985, London, England. Published in Engineering Software IV, p. 10-61 - 10-74.
(Subject Category 62 RTOP 505-33-53)
528. Sobieszczanski-Sobieski, J.; and Barthelemy, J-F.: Improving Engineering System Design by Formal Decomposition, Sensitivity Analysis, and Optimization. Presented at the VDI Society for Design Engineering and Development, International Conference on Engineering Design, August 26-28, 1985, Hamburg, Germany. Published in Proceedings of ICED '85, Volume 1, p. 314.
(Subject Category 59 RTOP 505-33-53)
529. Sobieszczanski-Sobieski, J.; James, B. B.; and Riley, M. F.: Structural Optimization by Generalized, Multilevel Optimization. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0697-CP.
(Subject Category 59 RTOP 505-33-53)
530. Tolson, R. H.; and Sobieszczanski-Sobieski, J.: Multidisciplinary Analysis and Synthesis: Needs and Opportunities. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0584-CP.
(Subject Category 64 RTOP 505-33-53)
531. Walsh, J. L.; Bingham, G. J.; and Riley, M. F.: Optimization Methods Applied to the Aerodynamic Design of Helicopter Rotor Blades. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0644-CP.
(Subject Category 05 RTOP 532-06-13)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

532. Rogers, J. L., Jr.: Programming Structural Synthesis System. NASA Tech Brief LAR-13408.

Patents

No patents.

PUBLICATIONS FOR MATERIALS DIVISION

Formal Reports

533. Bigelow, C. A.: A Cracked, Orthotropic Sheet Stiffened by a Semi-Infinite Orthotropic Sheet. NASA TP-2455, July 1985, 24 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)
534. Dries, G. A.; and Tompkins, S. S.: Thermal Processing of Graphite-Reinforced Aluminum To Minimize Thermal Strain Hysteresis. NASA TP-2402, March 1985, 17 p.
(Avail: STIF Subject Category 24 RTOP 506-53-23)
535. *Farley, G. L.: Effect of Low-Velocity or Ballistic Impact Damage on the Strength of Thin Composite and Aluminum Shear Panels. NASA TP-2441, AVSCOM TR 85-B-1, May 1985, 39 p.
(Avail: NTIS Subject Category 24 RTOP 505-42-23)
536. Long, E. R., Jr.; and Long, S. A. T.: Spectroscopic Analysis of Radiation-Generated Changes in Tensile Properties of a Polyetherimide Film. NASA TP-2429, May 1985, 36 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
537. Royster, D. M.; Davis, R. C.; Shinn, J. M., Jr.; Bales, T. T.; and Wiant, H. R.: Fabrication and Evaluation of Superplastically Formed/Weld-Brazed Corrugated Compression Panels With Beaded Webs. NASA TP-2512, November 1985, 29 p.
(Avail: NTIS Subject Category 26 RTOP 505-43-43)
538. St. Clair, A. K.; St. Clair, T. L.; and Graybeal, J. D.: NASA LDTM-1016, October 1985.

Quick-Release Technical Memorandums

539. Bigelow, C. A.: Nonlinear Adhesive Behavior Effects in a Cracked Orthotropic Sheet Stiffened by a Semi-Infinite Orthotropic Sheet. NASA TM-87584, August 1985, 34 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)
540. Bigelow, C. A.: Fatigue of Graphite/Epoxy Buffer Strip Panels With Center Cracks. NASA TM-87595, August 1985, 31 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)
541. Burks, H. D.; St. Clair, T. L.; and Progar, D. J.: Synthesis and Characterization of Copolyimides With Varying Flexibilizing Groups. NASA TM-86416, July 1985, 32 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)

*Aerostructures Directorate, USAARTA (AVSCOM)

542. Dezern, J. F.; and Young, P. R.: Characterization of a Thermoplastic Polyimidesulfone. NASA TM-86358, February 1985, 36 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
543. Dries, G. A.; and Tompkins, S. S.: The Effect of Matrix Chemistry on the Thermal Expansion Behavior of Graphite/Aluminum Composites. NASA TM-86445, June 1985, 15 p.
(Avail: STIF Subject Category 24 RTOP 506-53-23)
544. Johnson, W. S.; and Mall, S.: Influence of Interface Ply Orientation on Fatigue Damage of Adhesively Bonded Composite Joints. NASA TM-86443, June 1985, 22 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-33)
545. Johnson, W. S.; and Mangalgiri, P. D.: Influence of the Resin on Interlaminar Mixed-Mode Fracture. NASA TM-87571, July 1985, 38 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
546. Mall, S.; and Johnson, W. S.: Characterization of Mode I and Mixed-Mode Failure of Adhesive Bonds Between Composite Adherends. NASA TM-86355, February 1985, 26 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
547. Nelson, J. B.: Long-Term Thermal Aging of Celion/V378A Composite Materials. NASA TM-86362, June 1985, 36 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
548. *O'Brien, T. K.; Johnston, N. J.; Raju, I. S.; Morris, D. H.; and Simonds, R. A.: Comparisons of Various Configurations of the Edge Delamination Test for Interlaminar Fracture Toughness. NASA TM-86433, AVSCOM TM 85-B-3, July 1985, 49 p.
(Avail: STIF Subject Category 24 RTOP 534-06-23)
549. *O'Brien, T. K.; Raju, I. S.; and Garber, D. P.: Residual Thermal and Moisture Influences on the Strain Energy Release Rate Analysis of Edge Delamination. NASA TM-86437, AVSCOM TM 85-B-4, June 1985, 49 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
550. Poe, C. C., Jr.; Illg, W.; and Garber, D. P.: A Program to Determine the Effect of Low-Velocity Impacts on the Strength of the Filament-Wound Rocket Motor Case for the Space Shuttle. NASA TM-87588, September 1985, 81 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
551. Progar, D. J.: Adhesive Evaluation of LARC-TPI and a Water-Soluble Version of LARC-TPI. NASA TM-86428, May 1985, 30 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
552. Progar, D. J.; and St. Clair, T. L.: STPI/LARC: A 200°C Polyimide Adhesive. NASA TM-86447, July 1985, 30 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)

*Aerostructures Directorate, USAARTA (AVSCOM)

553. Raju, I. S.; and Newman, J. C., Jr.: Stress-Intensity Factors for Circumferential Surface Cracks in Pipes and Rods Under Tension and Bending Loads. NASA TM-87594, August 1985, 35 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
554. St. Clair, A. K.; and Slemple, W. S.: Evaluation of Colorless Polyimide Film for Thermal Control Coating Applications. NASA TM-86341, January 1985, 20 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
555. St. Clair, A. K.; St. Clair, T. L.; Slemple, W. S.; and Ezzell, K. S.: Optically Transparent/Colorless Polyimides. NASA TM-87650, December 1985, 40 p.
(Avail: NTIS Subject Category 27 RTOP 505-63-91)
556. Tenney, D. R.; and Dexter, H. B.: Advances in Composites Technology. NASA TM-86353, January 1985, 32 p.
(Avail: NTIS Subject Category 24 RTOP 505-42-23)
557. Tompkins, S. S.: Thermal Expansion of Selected Graphite Reinforced Polyimide-, Epoxy-, and Glass-Matrix Composite. NASA TM-87572, July 1985, 19 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)
558. Wakelyn, N. T.: Crystallinity Determination by Curvefit Procedure for a Semi-Crystalline Polymer. NASA TM-86412, May 1985, 34 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
559. Witte, W. G., Jr.: Manual for LDEF Tensile Tests. NASA TM-87624, October 1985, 39 p.
(Avail: NTIS Subject Category 24 RTOP 506-53-23)

Contractor Reports

560. Adams, D. F.; and Mahishi, J. M.: Delamination Micromechanics Analysis. (NAG1-454 University of Wyoming.) NASA CR-172598, May 1985, 152 p.
(Avail: NTIS Subject Category 24 RTOP 534-06-23)
561. Aksel, B.; and Erdogan, F.: Interaction of Part-Through Cracks in a Flat Plate. (NGR 39-007-011 Lehigh University.) NASA CR-177926, April 1985, 113 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
562. Aksel, G. N.; and Erdogan, F.: Elasticity Solution of an Adhesively Bonded Cover Plate of Various Geometries. (NGR 39-007-011 Lehigh University.) NASA CR-177923, January 1985, 109 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
563. Biermann, T. F.; and Hopper, L. C.: Development of a Heterogeneous Laminating Resin System. (NAS1-16798 Narmco Materials Inc.) NASA CR-172459, January 1985, 43 p.
(Avail: NTIS Subject Category 27 RTOP 534-03-13)

564. Chase, V. A.; and Harrison, E. S.: Develop and Demonstrate Manufacturing Processes for Fabricating Graphite Filament Reinforced Polyimide (Gr/PI) Composite Structural Elements. (NAS1-14784 General Dynamics, Convair Division.) NASA CR-172497, February 1985, 226 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
565. Chellman, D. J.: Development of 2XXX Series Al/SiC Composite Materials for High Temperature Aircraft Structural Applications. (NAS1-16048 Lockheed-California Company.) NASA CR-172522, April 1985, 82 p.
(Avail: STIF Subject Category 24 RTOP 505-33-13)
566. Chellman, D. J.: Development of Powder Metallurgy 2XXX Series Al Alloy Plate and Sheet Materials for High Temperature Aircraft Structural Applications. (NAS1-16048 Lockheed-California Company.) NASA CR-172521, April 1985, 80 p.
(Avail: STIF Subject Category 26 RTOP 505-33-13)
567. Chung, T-S.: Exploratory Development of Foams From Liquid Crystal Polymers. (NAS1-17290 Celanese Research Company.) NASA CR-172510, January 1985, 57 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
568. Coggeshall, R. L.: 737 Graphite Composite Flight Spoiler Flight Service Evaluation - Eighth Annual Report. (NAS1-11668 Boeing Commercial Airplane Company.) NASA CR-172600, July 1985, 81 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
569. Coggeshall, R. L.: Environmental Exposure Effects on Composite Materials for Commercial Aircraft. (NAS1-15148 Boeing Commercial Airplane Company.) NASA CR-177929, November 1985, 80 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
570. Davidson, D. L.; Hudak, S. J., Jr.; and Dexter, R. J.: Measurement and Analysis of Critical Crack Tip Processes During Fatigue Crack Growth. (NAS1-17641 Southwest Research Institute.) NASA CR-172597, June 1985, 112 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
571. Delale, F.: Fracture Analysis of Notched Composites. (NAG1-480 Drexel University.) NASA CR-172563, February 1985, 36 p.
(Avail: NTIS Subject Category 24 RTOP 534-06-23)
572. Delano, C. B.; and Kiskiras, C. J.: Development of an Impact- and Solvent-Resistant Thermoplastic Composite Matrix - Phase III. (NAS1-16808 Acurex Corporation.) NASA CR-172568, June 1985, 88 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
573. Erdogan, F.: Crack Problems for Bonded Nonhomogeneous Materials Under Antiplane Shear Loading. (NGR 39-007-011 Lehigh University.) NASA CR-172532, February 1985, 19 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)

574. Goree, J. G.; and Wolla, J. M.: Longitudinal Splitting in Unidirectional Composites, Analysis and Experiments. (NSG-1297 Clemson University.) NASA CR-3881, April 1985, 114 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
575. Harris, C. E.; and Morris, D. H.: Preliminary Report on Tests of Tensile Specimens With a Part-Through Surface Notch for a Filament Wound Graphite/Epoxy Material. (NAG1-343 Virginia Polytechnic Institute and State University.) NASA CR-172545, March 1985, 34 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
576. Hendricks, C. L.; Hill, S. G.; and Hale, J. N.: Evaluation of High Temperature Structural Adhesives for Extended Service - Phase IV. (NAS1-15605 Boeing Aerospace Company.) NASA CR-177936, October 1985, 55 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
577. Hou, T. H.: Chemoviscosity Modeling for Thermosetting Resins - II. (NAS1-18000 PRC Kentron, Inc.) NASA CR-177958, August 1985, 37 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
578. Hou, T. H.: Autoclave Processing for Composite Material Fabrication - I. An Analysis of Resin Flows and Fiber Compactions for Thin Laminates. (NAS1-18000 PRC Kentron, Inc.) NASA CR-178011, November 1985, 34 p.
(Avail: NTIS Subject Category 24 RTOP 505-63-01)
579. Hyer, M. W.; and Chastain, P. A.: Effects of Load Proportioning on the Capacity of Multiple-Hole Composite Joints. (NAG1-343 Virginia Polytechnic Institute and State University.) NASA CR-178019, November 1985, 178 p.
(Avail: NTIS Subject Category 39 RTOP 505-63-01)
580. James, W. F.: Mechanical Properties of Inconel 718 and Nickel 201 Alloys After Thermal Histories Simulating Brazing and High Temperature Service. (NAS1-18000 Kentron International, Inc.) NASA CR-177940, September 1985, 27 p.
(Avail: STIF Subject Category 26 RTOP 505-43-43)
581. Lowry, D. W.; Krebs, N. E.; and Dobyns, A. L.: Design, Fabrication and Test of Composite Curved Frames for Helicopter Fuselage Structure. (NAS1-16826 United Technologies Corporation, Sikorsky Aircraft.) NASA CR-172438, October 1984 (Released 1985), 112 p.
(Avail: NTIS Subject Category 24 RTOP 505-42-23)
582. Mall, S.; Rezaizadeh, M. A.; and Ramamurthy, G.: Interaction of Mixed Mode Loading on Cyclic Debonding in Adhesively Bonded Composite Joints. (NAG1-425 University of Missouri.) NASA CR-177990, October 1985, 8 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)

583. Meschter, P. J.; Lederich, R. J.; O'Neal, J. E.; and Pao, P. S.: Study on Effects of Powder and Flake Chemistry and Morphology on the Properties of Al-CU-Mg-X-X-X Powder Metallurgy Advanced Aluminum Alloys. (NAS1-17107 McDonnell Douglas Research Laboratories.) NASA CR-177946, November 1985, 105 p.
(Avail: NTIS Subject Category 26 RTOP 505-33-13)
584. Post, D.; Czarnek, R.; Joh, D.; Jo, J.; and Guo, Y.: Elastic-Plastic Deformation of a Metal-Matrix Composite Coupon With a Central Slot. (NAG1-343 Virginia Polytechnic Institute and State University.) NASA CR-178013, November 1985, 48 p.
(Avail: NTIS Subject Category 27 RTOP 506-43-11)
585. Rezaizadeh, M. A.; and Mall, S.: Mixed-Mode Cyclic Debonding of Adhesively Bonded Composite Joints. (NAG1-425 University of Missouri.) NASA CR-177991, October 1985, 60 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)
586. Rich, M. J.; and Lowry, D. W.: Flight Service Evaluation of Composite Helicopter Components - Second Annual Report, May 1982 Through September 1983. (NAS1-16542 United Technologies Corporation, Sikorsky Aircraft.) NASA CR-172562, April 1985, 111 p.
(Avail: NTIS Subject Category 24 RTOP 505-42-23)
587. Rothman, M. F.: Development of Improved Low-Strain Creep Strength in CABOT[®] Alloy No. R-41 Sheet. (NAS1-15975 Cabot Corporation.) NASA CR-172392, August 1984 (Released 1985), 90 p.
(Avail: NTIS Subject Category 26 RTOP 506-53-33)
588. Smith, P. J.; and Wilson, R. D.: Damage Tolerant Composite Wing Panels for Transport Aircraft. (NAS1-16863 Boeing Commercial Airplane Company.) NASA CR-3951, December 1985, 60 p.
(Avail: IAC Subject Category 24 RTOP 534-06-13)
589. Stone, R. H.: Flight Service Evaluation of Advanced Composite Ailerons on the L-1011 Transport Aircraft (Third Annual Flight Service Report). (NAS1-15069 Lockheed-California Company.) NASA CR-177960, July 1985, 9 p.
(Avail: NTIS Subject Category 24 RTOP 534-06-13)
590. Tang, R.; and Erdogan, F.: A Clamped Rectangular Plate Containing a Crack. (NGR 39-007-011 Lehigh University.) NASA CR-177925, March 1985, 27 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
591. Tennyson, R. C.; and Wharram, G. E.: Evaluation of Failure Criterion for Graphite/Epoxy Fabric Laminates. (NSG-7409 University of Toronto.) NASA CR-172547, February 1985, 45 p.
(Avail: NTIS Subject Category 24 RTOP 505-42-23)
592. Xue-Hui, L.; and Erdogan, F.: Interaction Between a Crack and a Soft Inclusion. (NGR 39-007-011 Lehigh University.) NASA CR-172533, February 1985, 23 p.
(Avail: NTIS Subject Category 39 RTOP 506-53-23)

593. Xue-Hui, L.; and Erdogan, F.: Stress Intensity Factor in a Tapered Specimen. (NGR 39-007-011 Lehigh University.) NASA CR-177924, April 1985, 26 p.
(Avail: NTIS Subject Category 39 RTOP 505-33-23)
594. Zimmerman, R. S.; and Adams, D. F.: Mechanical Properties Testing of Candidate Polymer Matrix Materials for Use in High Performance Composites. (NAG1-277 University of Wyoming.) NASA CR-177970, December 1985, 301 p.
(Avail: NTIS Subject Category 24 RTOP 505-33-33)

Journal Articles and Other Publications

595. Burks, H. D.; and St. Clair, T. L.: Processable Aromatic Polyimides. Journal of Applied Polymer Science, Volume 30, 1985, p. 2401-2411.
(Subject Category 27 RTOP 505-33-33)
596. Crews, J. H., Jr.: A Survey of Strength Analysis Methods for Laminates With Holes. The Journal of the Aeronautical Society of India, Volume 36, No. 4, November 1984, p. 287-303.
(Subject Category 24 RTOP 505-33-33)
597. DeVilbiss, T. A.; Messick, D. A.; Progar, D. J.; and Wightman, J. P.: SEM/XPS Analysis of Fractured Adhesively Bonded Graphite Fiber Reinforced Polyimide Composites. Composites, Volume 16, No. 3, July 1985, p. 207-219.
(Subject Category 24 RTOP 505-33-33)
598. Freeman, W. T., Jr.; and Stein, B. A.: Filament Winding: Walking the Sleeping Giant. Aerospace America, Volume 24, No. 10, October 1985, p. 44-49.
(Subject Category 24 RTOP 505-33-33)
599. Hanky, A. O.; St. Clair, T. L.; and Maudgal, S.: Semi-2-Interpenetrating Polymer Networks of High Temperature Systems. SAMPE Journal, Volume 21, No. 4, July - August 1985, p. 40-45.
(Subject Category 27 RTOP 505-33-33)
600. Havens, S. J.; and Hergenrother, P. M.: Synthesis of Arylacetylenes by the Sodium Hydride Catalyzed Cleavage of 4-Aryl-2-Methyl-3-Butyn-2-ols. Journal of Organic Chemistry, Volume 50, 1985, p. 1763-1765.
(Subject Category 27 RTOP 505-33-33)
601. Hergenrother, P. M.: High Temperature Adhesives. Adhesive Chemistry, Polymer Science and Technology Series, Volume 29, edited by L. H. Lee, Plenum Publishing Corp., 1984, p. 447-466.
(Subject Category 27 RTOP 505-33-33)
602. Hergenrother, P. M.: Acetylene-Terminated Prepolymers. Encyclopedia of Polymer Science and Engineering, Volume 1, 2nd Edition, 1985, p. 61-86.
(Subject Category 27 RTOP 505-33-33)

603. Hergenrother, P. M.: High Temperature Polymers From Thermally Curable Oligomers. Reactive Oligomers, ACS Symposium Series 282, edited by F. W. Harris and H. J. Spinelli, 1985, p. 1-16.
(Subject Category 27 RTOP 505-33-33)
604. *Hodges, W. T.; St. Clair, T. L.; Pratt, J. R.; and Ficklin, R. A.: Evaluation of Experimental Epoxy Monomers. SAMPE Quarterly, Volume 17, No. 1, October 1985, p. 21-25.
(Subject Category 27 RTOP 505-33-33)
605. Jensen, B. J.; and Hergenrother, P. M.: Sulfone/Ester Polymers Containing Pendent Ethynyl Groups. Journal of Polymer Science, Volume 23, 1985, p. 2233-2246.
(Subject Category 27 RTOP 505-33-33)
606. Kelkar, A.; Elber, W.; and Raju, I. S.: Large Deflections of Circular Isotropic Membranes Subjected to Arbitrary Axisymmetric Loading. Computers and Structures, Volume 21, No. 3, 1985, p. 413-421.
(Subject Category 39 RTOP 505-33-33)
607. Maudgal, S.; Pratt, J. R.; Wakelyn, N. T.; and St. Clair, T. L.: Synthesis and Properties of Copoly(Carbonate Imides). Polymer Engineering and Science, Volume 25, No. 4, March 1985, p. 245-249.
(Subject Category 27 RTOP 505-33-33)
608. *O'Brien, T. K.: Interlaminar Fracture of Composites. The Journal of the Aeronautical Society of India, Volume 37, No. 1, February 1985, p. 61-69.
(Subject Category 24 RTOP 534-06-23)
609. Rustgi, M. L.; Leung, P. T.; and Long, S. A. T.: Stopping Power for Neutrinos and Antineutrinos in Polymers. Nuovo Cimento, Volume 44, No. 2, September 16, 1985, p. 103-105.
(Subject Category 24 RTOP 506-43-21)
610. Shivakumar, K. N.; Elber, W.; and Illg, W.: Analysis of Progressive Damage in Thin Circular Laminates Due to Static-Equivalent Impact Loads. AIAA Journal, Volume 23, No. 3, March 1985, p. 442-449.
(Subject Category 24 RTOP 505-33-33)
611. Shivakumar, K. N.; Elber, W.; and Illg, W.: Prediction of Impact Force and Duration Due to Low-Velocity Impact of Circular Composite Laminates. Journal of Applied Mechanics, Volume 52, September 1985, p. 674-680.
(Subject Category 24 RTOP 506-53-23)
612. Shivakumar, K. N.; and Whitcomb, J. D.: Buckling of a Sublaminates in a Quasi-Isotropic Composite Laminates. Journal of Composite Materials, Volume 19, January 1985, p. 2-18.
(Subject Category 24 RTOP 534-06-23)

613. St. Clair, A. K.; and Slemp, W. S.: Evaluation of Colorless Polyimide Film for Thermal Control Coating Applications. SAMPE Journal, Volume 21, No. 4, July - August 1985, p. 28-33.
(Subject Category 27 RTOP 505-33-33)
614. St. Clair, T. L.; and Maudgal, S.: Preparation and Properties of Silane End-Capped Polyimide Adhesives. International Journal of Adhesion and Adhesives, Volume 4, No. 3, July 1984, p. 129-132.
(Subject Category 27 RTOP 505-33-33)
615. Swann, R. T.; and Esterling, D. M.: Chemical Feasibility of Lithium as a Matrix for Structural Composites. Composites, Volume 15, October 1984, p. 305-309.
(Subject Category 24 RTOP 506-53-33)
616. Swann, R. T.; Wood, G. M., Jr.; Brown, R. D.; Upchurch, B. T.; and Allen, G. J.: Non-Catalytic Surfaces for Metallic Heat. Progress in Astronautics and Aeronautics, Volume 96, Thermal Design of Aeroassisted Orbital Transfer Vehicles, edited by H. F. Nelson, 1985, p. 538-558.
(Subject Category 16 RTOP 307-04-02)
617. Whitcomb, J. D.: A Simple Calculation of Strain-Energy Release Rate for a Nonlinear Double Cantilever Beam. Composites Technology and Research, Volume 7, No. 2, Summer 1985, p. 64-66.
(Subject Category 24 RTOP 534-06-23)

Meeting Presentations

618. Ard, K.; Tompkins, S. S.; and Sharp, G.: An Investigation of the Thermal Response of Selected Graphite/Glass Composite Laminates. Presented at the Seventh DOD/NASA Conference on Fibrous Composites in Structural Design, June 17-20, 1985, Denver, Colorado. Proceedings pending.
(Subject Category 24 RTOP 506-53-23)
619. Bass, R. G.; Connell, J. W.; Sinsky, M. S.; and Hergenrother, P. M.: Polypyrazoles From Automatic Dipropynones and Aromatic Dihydrazines. Presented at the National Meeting of the American Chemical Society, September 8-13, 1985, Chicago, Illinois. Published in Polymer Preprints, Volume 26, No. 2, 1985, p. 172.
(Subject Category 27 RTOP 505-33-33)
620. Brewer, W. D.: A Review of NASA Research on Metal-Matrix Composites. Presented at the DOD Sixth Metal Matrix Composites Technology Conference, May 14-17, 1985, Monterey, California. In Proceedings, p. 4-1 - 4-20.
(Subject Category 24 RTOP 505-33-33)
621. Burks, H. D.; St. Clair, T. L.; and Progar, D. J.: Synthesis and Characterization of Copolyimides With Varying Flexibilizing Groups. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In Proceedings, p. 529-559. To be published in book form.
(Subject Category 27 RTOP 505-33-33)

622. Clark, R. K.; and Cunnington, G. R., Jr.: Emittance and Catalysis Enhancement of Superalloys. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 26 RTOP 506-53-33)
623. Clark, R. K.; Cunnington, G. R., Jr.; and Robinson, J. C.: Vapor Deposited Emittance/Catalysis Coatings for Superalloys in Heatshield Applications. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0403.
(Subject Category 26 RTOP 506-53-33)
624. Clark, R. K.; Unnam, J.; and Stroud, C. W.: Residual Mechanical Properties of Ti-6Al-2Sn-4Zr-2Mo After Simulated Space Shuttle Reentry. Presented at the 30th National SAMPE Symposium/Exhibition, March 19-21, 1985, Anaheim, California. Published in Advancing Technology in Materials and Processes, SAMPE Volume 30, p. 982-993.
(Subject Category 26 RTOP 505-53-33)
625. Crews, J. H., Jr.; Shivakumar, K. N.; and Raju, I. S.: An Elastic Stress Analysis of the Debond Front in DCB Specimens. Presented at the AFSC/WPAFB Eleventh Annual Mechanics of Composites Review, October 22-24, 1985, Dayton, Ohio. Abstract in proceedings, p. 42.
(Subject Category 24 RTOP 534-06-23)
626. Domack, M. S.: Critical Assessment of Precracked Specimen Configuration and Experimental Test Variables for Stress Corrosion Testing of 7075-T6 Aluminum Alloy Plate. Presented at the ASM, ASNE, et al., International Conference and Exhibition on Fatigue, Corrosion Cracking, Fracture Mechanics and Failure Analysis, December 2-6, 1985, Salt Lake City, Utah. Proceedings pending.
(Subject Category 26 RTOP 505-33-13)
627. Egli, A. H.; and St. Clair, T. L.: Enhancement of Molecular Weight Build Up in Polyimides Using Ether Solvents. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 394-412. To be published in book form.
(Subject Category 27 RTOP 505-33-33)
628. *Farley, G. L.: Effect of Fiber and Matrix Maximum Strain on the Energy Absorption of Composite Materials. Presented at the AHS 41st Annual Forum and Technology Display, May 15-17, 1985, Ft. Worth, Texas. In Proceedings, p. 583-593.
(Subject Category 24 RTOP 505-42-23)
629. *Farley, G. L.: Strength Reduction of Thin Composite and Aluminum Shear Panels as a Result of Low Velocity or Ballistic Impact. Presented at the Seventh DOD/NASA Conference on Fibrous Composites in Structural Design, June 17-20, 1985, Denver, Colorado. Proceedings pending.
(Subject Category 24 RTOP 505-42-23)

630. Freeman, W. T., Jr.: Technology for Large Filament Wound Aerospace Structures. Presented at the SME Filament Winding Technology Meeting, September 10-12, 1985, Anaheim, California. In Book of Technical Papers. (Subject Category 24 RTOP 505-33-33)
631. Funk, J. G.; Dexter, H. B.; and Lubowinski, S. J.: Experimental Evaluation of Stitched Graphite/Epoxy Composites. Presented at the Navy/NASA Working Group Meeting on 3-D Composite Materials, November 5-7, 1985, Annapolis, Maryland. NASA CP pending. (Subject Category 24 RTOP 505-63-01)
632. Guynn, E. G.; and *O'Brien, T. K.: The Influence of Lay-Up and Thickness on Composite Impact Damage and Compression Strength. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0646-CP. (Subject Category 24 RTOP 505-33-33)
633. Hanky, A. O.; and St. Clair, T. L.: Semi-2-Interpenetrating Polymer Networks of High Temperature Systems. Presented at the 30th National SAMPE Symposium/Exhibition, March 19-21, 1985, Anaheim, California. Published in Advancing Technology in Materials and Processes, SAMPE Volume 30, p. 912-924. (Subject Category 27 RTOP 505-33-33)
634. Harris, C. E.; Morris, D. H.; and Poe, C. C., Jr.: The Fracture Behavior of Filament Wound Cylinders With Surface Flaws. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0650-CP. (Subject Category 24 RTOP 505-33-33)
635. Hergenrother, P. M.: Status of Heat Resistant Polymers. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 1. To be published in book form. (Subject Category 27 RTOP 505-33-33)
636. Hergenrother, P. M.; Jensen, B. J.; and Havens, S. J.: Poly(arylene Ethers) From Bis-1,3 and 1,4-(4-Chlorobenzoyl) benzene. Presented at the National Meeting of the American Chemical Society, September 8-13, 1985, Chicago, Illinois. Published in Polymer Preprints, Volume 26, No. 2, 1985, p. 174. (Subject Category 27 RTOP 505-33-33)
637. *Hodges, W. T.; Tyeryar, J. R.; and Berry, M.: Bonding and Nondestructive Evaluation of Graphite/PEEK Composite and Titanium Adherends With Thermoplastic Adhesives. Presented at the SME Fabricating Composites Conference and Tabletop Exhibits, June 11-13, 1985, Hartford, Connecticut. SME Paper No. MF85-511. In Proceedings, 1985, p. MF85-511-1 - MF85-513. (Subject Category 24 RTOP 505-33-33)

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638. Hunston, D. L.; Bascom, W. D.; Moulton, R. J.; and Johnston, N. J.: Matrix Resin Effects in Composite Delaminations: Mode I Fracture Aspects. Presented at the ASTM Symposium on Toughened Composites, March 13-15, 1985, Houston, Texas. ASTM STP pending.
(Subject Category 24 RTOP 534-06-23)
639. Johnson, W. S.; and Mangalgi, P. D.: Influence of the Resin on Interlaminar Mixed-Mode Fracture. Presented at the ASTM Symposium on Toughened Composites, March 13-15, 1985, Houston, Texas. ASTM STP pending.
(Subject Category 24 RTOP 505-33-33)
640. Kelkar, A.; Elber, W.; and Raju, I. S.: Large Deflection Behavior of Quasi-Isotropic Laminates Under Low-Velocity Impact Type Point Loading. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0723-CP.
(Subject Category 24 RTOP 505-33-33)
641. Long, S. A. T.; Funk, J. G.; and Long, E. R., Jr.: Effects of Ozone and Heat on Elastomer-Toughened Graphite/Epoxy Composites. Presented at the American Physical Society Division of High-Polymer Physics Meeting, March 25-29, 1985, Baltimore, Maryland. Abstract published in APS Bulletin, Volume 30, No. 3, March 1985, p. 433.
(Subject Category 24 RTOP 505-33-33)
642. Long, S. A. T.; and Long, E. R., Jr.: Comparison of Electron-Radiation Damage Effects in a Polyimide and a Polyetherimide. Presented at the American Physical Society Division of High-Polymer Physics Meeting, March 25-29, 1985, Baltimore, Maryland. Abstract published in APS Bulletin, Volume 30, No. 3, March 1985, p. 498.
(Subject Category 24 RTOP 506-53-23)
643. Maahs, H. G.; and Ransone, P. O.: Mechanical Property Evaluation of 2-D Carbon-Carbon Panels Fabricated From a Specialty-Weave Fabric. Presented at the DOD/NASA Advanced Composites Working Group, January 23-25, 1985, Cocoa Beach, Florida. In NASA CP-2406, p. 261-276.
(Subject Category 24 RTOP 506-53-33)
644. Maahs, H. G.; Ransone, P. O.; and Ohlhorst, C. W.: Carbon-Carbon Materials Research at Langley Research Center. Presented at the Office of Naval Research Workshop on Carbon-Carbon Composites, November 20, 1985, El Segundo, California. Proceedings pending.
(Subject Category 24 RTOP 506-43-81)
645. Maudgal, S.; and St. Clair, T. L.: Siloxane Containing Polyimides With Improved Processability. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 47-73. To be published in book form.
(Subject Category 27 RTOP 505-33-33)

646. Milkovich, S. M.; Sykes, G. F., Jr.; and Herakovich, C. T.: Fracture Surfaces of Irradiated Composites. Presented at the ASTM Symposium on Fractography of Modern Engineering Materials, November 18-19, 1985, Nashville, Tennessee. ASTM STP pending.
(Subject Category 27 RTOP 506-43-21)
647. *Murri, G. B.: Testing Methods for Damage Resistance and Effect of Damage on Mechanical Behavior of Composites. Presented at the Paisley College of Technology 3rd International Conference on Composite Structures, September 9-11, 1985, Paisley, Scotland. Proceedings pending.
(Subject Category 24 RTOP 534-06-23)
648. *Murri, G. B.; and Guynn, E. G.: Analysis of Delamination Growth From Matrix Cracks in Laminates Subjected to Bending Loads. Presented at the AFSC/WPAFB Eleventh Annual Mechanics of Composites Review, October 22-24, 1985, Dayton, Ohio. Abstract in proceedings, p. 49.
(Subject Category 24 RTOP 505-33-33)
649. *Murri, G. B.; and *O'Brien, T. K.: Interlaminar G_{IIC} Evaluation of Toughened-Resin Matrix Composites Using the End-Notched Flexure Test. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0647-CP.
(Subject Category 24 RTOP 505-33-33)
650. Naik, R. A.; and Crews, J. H., Jr.: Stress Analysis Method for a Clearance Fit Bolt Under Bearing Loads. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0746-CP.
(Subject Category 39 RTOP 505-33-33)
651. Newman, J. C., Jr.: The Crack-Tip-Opening Displacement (V_R) Resistance Curve Method. Presented at the GKSS/Institut Fur Werkstofftechnologie, Crack Tip Opening Displacement Workshop, April 23-25, 1985, Hamburg, West Germany. Proceedings by Springer-Verlag, Heidelberg.
(Subject Category 39 RTOP 505-33-23)
652. Newman, J. C., Jr.; Booth, B. C.; and Shivakumar, K. N.: An Elastic-Plastic Finite-Element Analysis of the J-Resistance Curve Using a CTOD Criterion. Presented at the ASTM Eighteenth National Symposium on Fracture Mechanics, June 24-27, 1985, Boulder, Colorado. In Book of Abstracts, June 24-27, 1985, p. 49. ASTM STP pending.
(Subject Category 39 RTOP 505-33-23)
653. Newman, J. C., Jr.; McNeil, S. R.; and Sutton, M. A.: Application of V_R Resistance Curve to Fracture of Various Crack Configurations. Presented at the ASTM Eighteenth National Symposium on Fracture Mechanics, June 24-27, 1985, Boulder, Colorado. In Book of Abstracts, June 24-27, 1985, p. 8. ASTM STP pending.
(Subject Category 39 RTOP 505-33-23)

*Aerostructures Directorate, USAARTA (AVSCOM)

654. *O'Brien, T. K.; Johnston, N. J.; Raju, I. S.; Morris, D. H.; and Simonds, R. A.: Comparisons of Various Configurations of the Edge Delamination Test for Interlaminar Fracture Toughness. Presented at the ASTM Symposium on Toughened Composites, March 13-15, 1985, Houston, Texas. ASTM STP pending. (Subject Category 24 RTOP 506-53-23)
655. Ohlhorst, C. W.; and Ransone, P. O.: Effects of Thermal Cycling on Thermal Expansion and Mechanical Properties of Advanced Carbon-Carbon Composites. presented at the DOD/NASA Advanced Composites Working Group, January 23-25, 1985, Cocoa Beach, Florida. In NASA CP-2406, p. 277-288. (Subject Category 24 RTOP 506-53-33)
656. Poe, C. C., Jr.; Illg, W.; and Garber, D. P.: Hidden Impact Damage in Thick Composites Effect of Low-Velocity Impacts on the Strength of the Filament-Wound Rocket Motor Case for the Space Shuttle. Presented at the Center for Advanced NDE Review of Progress in Quantitative NDE, June 23-28, 1985, Williamsburg, Virginia. Proceedings pending. (Subject Category 39 RTOP 505-33-33)
657. Progar, D. J.; and St. Clair, T. L.: A Thermoplastic Copolyimide. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 575-604. To be published in book form. (Subject Category 27 RTOP 505-33-33)
658. Ransone, P. O.; and Maahs, H. G.: Effect of Processing on Microstructure and Mechanical Properties of 3-D Carbon-Carbon. Presented at the DOD/NASA Advanced Composites Working Group, January 23-25, 1985, Cocoa Beach, Florida. In NASA CP-2406, p. 289-303. (Subject Category 24 RTOP 506-53-33)
659. Santos-Mason, B.: Preliminary Results of SMM Exposed Aluminized Kapton and Silvered Teflon. Presented at the GSFC Solar Max Repair Mission Degradation Study Workshop, May 9-10, 1985, Greenbelt, Maryland. In Proceedings, GSFC 408-SMRM-79-0001, p. 273-286. (Subject Category 27 RTOP 506-53-23)
660. Slomp, W. S.; Santos-Mason, B.; Sykes, G. F., Jr.; and Witte, W. G., Jr.: Effects of STS-8 Atomic Oxygen Exposure on Composites, Polymeric Films and Coatings. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0421. (Subject Category 27 RTOP 506-53-23)
661. St. Clair, T. L.; and Maudgal, S.: Siloxane Containing Polyimides With Improved Processability. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 47-73. To be published in book form. (Subject Category 27 RTOP 505-33-33)

662. St. Clair, A. K.; St. Clair, T. L.; Slemple, W. S.; and Ezzell, K. S.: Optically Transparent/Colorless Polyimides. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 333-334. To be published in book form.
(Subject Category 27 RTOP 505-33-33)
663. St. Clair, A. K.; and Slemple, W. S.: Evaluation of Colorless Polyimide Film for Thermal Control Coating Applications. Presented at the 30th National SAMPE Symposium/Exhibition, March 19-21, 1985, Anaheim, California. Published in Advancing Technology in Materials and Processes, SAMPE Volume 30, p. 28-41.
(Subject Category 27 RTOP 505-33-33)
664. Stein, B. A.; *Hodges, W. T.; and Tyeryar, J. R.: Rapid Adhesive Bonding of Advanced Composites and Titanium. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0750-CP.
(Subject Category 24 RTOP 505-33-33)
665. Stein, B. A.; and Johnston, N. J.: Carbon Fiber Composites Technology: Issues and Approaches. Presented at the ASTM Symposium on Toughened Composites, March 13-15, 1985, Houston, Texas. ASTM STP pending.
(Subject Category 24 RTOP 505-33-33)
666. Stoakley, D. M.; Shillady, D. D.; *Vallarino, L. M.; Gootee, W. A.; and Smailes, D. L.: Selected Spectroscopic and Magnetic Properties of Lanthanide Complexes in Polyimide XU-218. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 605-616. To be published in book form.
(Subject Category 27 RTOP 505-33-33)
667. Stoakley, D. M.; and St. Clair, A. K.: Lanthanide-Containing Polyimides. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 368-371. To be published in book form.
(Subject Category 27 RTOP 505-33-33)
668. Sykes, G. F., Jr.; Milkovich, S. M.; and Herakovich, C. T.: Simulated Space Radiation Effects on a Graphite Epoxy Composite. Presented at the 1985 National American Chemical Society Meeting, April 28 - May 3, 1985, Miami Beach, Florida. In Proceedings, Volume 52, 1985, p. 598.
(Subject Category 27 RTOP 506-53-23)
669. Sykes, G. F., Jr.; and Slemple, W. S.: Space Radiation Effects on an Elastomer-Toughened Epoxy-Graphite Composite. Presented at the 30th National SAMPE Symposium/Exhibition, March 19-21, 1985, Anaheim, California. Published in Advancing Technology in Materials and Processes, SAMPE Volume 30, p. 1356-1368.
(Subject Category 27 RTOP 506-53-23)

*Aerostructures Directorate, USAARTA (AVSCOM)

670. Tan, P. W.; Raju, I. S.; and Newman, J. C., Jr.: Boundary-Force Method for Analyzing Two-Dimensional Cracked Bodies. Presented at the ASTM Eighteenth National Symposium on Fracture Mechanics, June 24-27, 1985, Boulder, Colorado. In Book of Abstracts, June 24-27, 1985, p. 21. ASTM STP pending.
(Subject Category 39 RTOP 505-33-23)
671. Tenney, D. R.; Sykes, G. F., Jr.; and Bowles, D. E.: Materials for Space Structures. Presented at the European Space Agency Third European Symposium on Spacecraft Materials in Space Environment, October 1-4, 1985, Noordwijk, The Netherlands. Proceedings pending.
(Subject Category 24 RTOP 506-53-23)
672. Tompkins, S. S.: Thermal Expansion of Selected Graphite Reinforced Polyimide-, Epoxy- and Glass-Matrix Composites. Presented at the ASME/NBS 9th Symposium on Thermophysical Properties, June 24-27, 1985, Boulder, Colorado. Proceedings pending.
(Subject Category 24 RTOP 506-53-23)
673. Tompkins, S. S.; and Dries, G. A.: Thermal Expansion Measurements of Metal-Matrix Composites. Presented at the ASTM Testing Technology of Metal Matrix Composites: 1st Symposium, November 18-20, 1985, Nashville, Tennessee. ASTM STP pending.
(Subject Category 24 RTOP 506-53-23)
674. Tompkins, S. S.; Sykes, G. F., Jr.; and Bowles, D. E.: The Thermal and Mechanical Stability of Composite Materials for Space Structures. Presented at the IEEE/ASM, et al., Space Tech Conference & Exhibition, September 23-25, 1985, Anaheim, California. Paper No. EM-85 979, p. 979-1 - 979-17.
(Subject Category 24 RTOP 506-53-23)
675. Unnam, J.; Shenoy, R. N.; Wiedemann, K. E.; and Clark, R. K.: Use of Aluminum as an Oxidation Barrier for Titanium. Presented at the 30th National SAMPE Symposium/Exhibition, March 19-21, 1985, Anaheim, California. Published in Advancing Technology in Materials and Processes, SAMPE Volume 30, p. 1005-1016.
(Subject Category 26 RTOP 505-53-33)
676. Wagner, J. A.: Mechanical Behavior of 18 Ni 200 Grade Maraging Steel at Cryogenic Temperature. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0704-CP.
(Subject Category 25 RTOP 505-31-53)
677. Whitcomb, J. D.: Simple Rectangular Element for Analysis of Laminated Composite Materials. Presented at the AFSC/WPAFB Eleventh Annual Mechanics of Composites Review, October 22-24, 1985, Dayton, Ohio. Abstract in proceedings, p. 84.
(Subject Category 24 RTOP 505-33-23)

678. Wiedemann, K. E.; Clark, R. K.; and Unnam, J.: The Emittance and Oxidation Characteristics of Incoloy Alloy MA 956 and Cabot Alloy No. 214 in Heat Shield Applications. Presented at the 1985 TMS-AIME Fall Meeting, October 13-17, 1985, Toronto, Canada. TMS Paper No. F85-13.
(Subject Category 26 RTOP 506-53-33)
679. Young, P. R.; and Chang, A. C.: Polyimide Analysis Using Diffuse Reflectance-FTIR. Presented at the 30th National SAMPE Symposium/Exhibition, March 19-21, 1985, Anaheim, California. Published in Advancing Technology in Materials and Processes, SAMPE Volume 30, p. 889-902.
(Subject Category 27 RTOP 505-33-33)
680. Young, P. R.; Wakelyn, N. T.; and Chang, A. C.: Characterization of a Soluble Polyimide. Presented at the SPE Second International Conference on Polyimides, October 30 - November 1, 1985, Ellenville, New York. In proceedings, p. 414-425. To be published in book form.
(Subject Category 27 RTOP 505-33-33)

Technical Talks

681. Bales, T. T.; Royster, D. M.; and Wiant, H. R.: Brazed Borsic®/Aluminum Structural Panels. Presented at the SME Fabricating Composites Conference and Tabletop Exhibits, June 11-13, 1985, Hartford, Connecticut.
(Subject Category 26 RTOP 505-43-43)
682. Baucom, R. M.: NASA/UVA Composite Wheelchair. Presented at the University of Virginia, Research Triangle Institute, NASA Composite Wheelchair Conference, June 11, 1985, Charlottesville, Virginia.
(Subject Category 24 RTOP 141-20-20)
683. Baucom, R. M.: Composite Applications to the Biomedical Field. Presented at the George Washington University School of Medicine Health Care Expo '85, August 18-24, 1985, Washington, DC.
(Subject Category 24 RTOP 141-20-20)
684. Bigelow, C. A.: Parametric Study of Stress-Intensity Factors in Bonded Composite Stringer Panels. Presented at the ASME Winter Annual Meeting, November 17-22, 1985, Miami Beach, Florida.
(Subject Category 39 RTOP 506-53-23)
685. Cooper, D. E.; Cohen, D.; Rousseau, C. Q.; Hyer, M. W.; and Tompkins, S. S.: Thermal Induced Stresses and Deformations in Layered Composite Tubes. Presented at the 1985 Annual Review of the Virginia Tech Center for Composite Materials and Structures, April 22-24, 1985, Blacksburg, Virginia.
(Subject Category 24 RTOP 506-53-23)
686. Crews, J. H., Jr.: Improving Interlaminar Fracture Toughness - A Research Program Review. Presented at the ASTM Symposium on Toughened Composites, March 13-15, 1985, Houston, Texas.
(Subject Category 24 RTOP 505-33-33)

687. Davis, J. G., Jr.: Development of Composites Technology for Transport Aircraft. Presented at the AIAA, ASCE, et al., International Air Transportation Conference, June 26-28, 1985, Norfolk, Virginia.
(Subject Category 24 RTOP 534-06-13)
688. Dexter, H. B.: Composite Applications to Aircraft. Presented at the Raset Flight Research Laboratory Third Applied Composite Structure Design and Fabrication Short Course, March 4-8, 1985, Mississippi State, Mississippi.
(Subject Category 24 RTOP 505-42-23)
689. Dries, G. A.; and Tompkins, S. S.: The Effects of Matrix Chemistry on the Thermal Expansion Behavior of Graphite/Aluminum Composites. Presented at the 17th National SAMPE Technical Conference, October 22-24, 1985, Kiamesha Lake, New York.
(Subject Category 24 RTOP 506-53-23)
690. Elber, W.; and *O'Brien, T. K.: Failure Mechanics Studies in Composites. Presented at the AFWAL International Conference: Post Failure Analysis Techniques for Fiber Reinforced Composites, July 1-3, 1985, Dayton, Ohio.
(Subject Category 24 RTOP 506-33-33)
691. *Farley, G. L.: Crash Energy Absorption of Composite Material and Sub-Floor Structure. Presented at the AIAA 12th Annual General Aviation Technologyfest, November 15-16, 1985, Wichita, Kansas.
(Subject Category 24 RTOP 505-63-01)
692. Freeman, W. T., Jr.: Filament Winding for Aerospace Structures. Presented at the University of Delaware Symposium on Manufacturing Issues in Composite Materials, July 24, 1985, Newark, Delaware.
(Subject Category 24 RTOP 505-33-33)
693. Hergenrother, P. M.: High Performance Adhesives. Presented at the DARPA Workshop on Advances and Opportunities in Polymer Research, July 15-17, 1985, La Jolla, California.
(Subject Category 27 RTOP 505-33-33)
694. Hergenrother, P. M.: Acetylene-Containing Prepolymers. Presented at the 1985 Gordon Conference on Thermosetting Polymers, July 28 - August 2, 1985, New London, New Hampshire.
(Subject Category 27 RTOP 505-33-33)
695. Hergenrother, P. M.: High Temperature Adhesives. Presented at the State University of New York Short Course on Fundamentals in Adhesion Science, October 7-9, 1985, New Paltz, New York.
(Subject Category 27 RTOP 506-43-11)
696. Hergenrother, P. M.: Status of High Temperature Adhesives. Presented at the Plastics Institute of America Short Course on Advances in Adhesion Science and Adhesives, October 28-30, 1985, Boston, Massachusetts.
(Subject Category 27 RTOP 506-43-11)

697. Hergenrother, P. M.; Jensen, B. J.; and Havens, S. J.: Polyarylene Ethers From 1,3- and 1,4-Bis(4-chlorobenzoyl)-benzene and Bisphenols. Presented at the American Chemical Society Central Regional Meeting, June 5-7, 1985, Akron, Ohio.
(Subject Category 27 RTOP 505-33-33)
698. Johnson, W. S.; and Everett, R. A., Jr.: Overview of Aerospace Adhesive Applications: An Industry Survey. Presented at the Virginia Polytechnic Institute & State University Third Annual Center for Adhesion Science Program Review/Workshop, May 19-22, 1985, Blacksburg, Virginia.
(Subject Category 27 RTOP 505-33-33)
699. Johnston, N. J.: Fracture Toughness Properties of Thermoplastic Composites. Presented at the ACS Winter Symposium on Composite Structures: From Molecular to Load Bearing, December 2-4, 1985, Seattle, Washington.
(Subject Category 24 RTOP 534-06-23)
700. Johnston, N. J.: The Chemistry of Tough Matrix Composites. Presented at the Gordon Research Conference on Composites, January 14-18, 1985, Santa Barbara, California.
(Subject Category 24 RTOP 505-33-33)
701. Johnston, N. J.: High Performance Composites. Presented at the DARPA Workshop on Advances and Opportunities in Polymer Research, July 15-17, 1985, La Jolla, California.
(Subject Category 24 RTOP 505-33-33)
702. Johnston, N. J.: Resin Property-Composite Property Relationships. Presented at the Society for the Advancement of Material and Process Engineering Technical Seminar, September 5, 1985, Chicago, Illinois.
(Subject Category 24 RTOP 534-06-23)
703. Maahs, H. G.: Langley Research Center Basic Research Perspectives in Carbon-Carbon. Presented at the Air Force Office of Scientific Research Basic Research Funding Strategy Meeting for Carbonaceous Materials, May 14, 1985, Bolling Air Force Base, Washington, DC.
(Subject Category 24 RTOP 506-53-33)
704. Pacheco, M. D.; Long, S. A. T.; and Stoakley, D. M.: Electron Paramagnetic Resonance Characterization of Metal-Containing Epoxies. Presented at the American Chemical Society First Pan American Chemical Congress, October 13-19, 1985, San Juan, Puerto Rico.
(Subject Category 24 RTOP 506-43-21)
705. Poe, C. C., Jr.: A Fracture Mechanics Analysis of Impact Damage in a Thick Composite Laminate. Presented at the 1985 Annual Review of the Virginia Tech Center for Composite Materials & Structures, April 22-24, 1985, Blacksburg, Virginia.
(Subject Category 24 RTOP 505-33-33)

706. Progar, D. J.: Adhesive Evaluation of LaRC-TPI and a Water-Soluble Version of LaRC-TPI. Presented at the 1985 Gordon Research Conference on the Science of Adhesion, August 19-23, 1985, New Hampton, New Hampshire. (Subject Category 27 RTOP 505-33-33)
707. St. Clair, A. K.: Aerospace Applications for High-Temperature Polymers. Presented at the State University of New York Short Course on High-Temperature Polymers: Synthesis, Properties and Applications, June 19-21, 1985, New Paltz, New York. (Subject Category 27 RTOP 505-33-33)
708. St. Clair, T. L.: Polymer Research at NASA-LaRC. Presented at the DOD/NASA High Temple Workshop V, March 5-7, 1985, Monterey, California. (Subject Category 27 RTOP 505-33-33)
709. St. Clair, T. L.: Linear Thermoplastic Polyimides. Presented at the State University of New York Short Course on High-Temperature Polymers: Synthesis, Properties and Applications, June 19-21, 1985, New Paltz, New York. (Subject Category 27 RTOP 505-33-33)
710. St. Clair, T. L.: Semi Interpenetrating Polyimide. Presented at the State University of New York Short Course on High-Temperature Polymers: Synthesis, Properties and Applications, June 19-21, 1985, New Paltz, New York. (Subject Category 27 RTOP 505-33-33)
711. St. Clair, T. L.: Polyimides for Structural Applications. Presented at the Polymer Division of the American Chemical Society Interdisciplinary Workshop on the Chemistry and Properties of Polyimides, June 25-28, 1985, Reno, Nevada. (Subject Category 27 RTOP 505-33-33)
712. St. Clair, T. L.: Semi-Interpenetrating Polymer Networks. Presented at the Army Research Office Workshop on Adhesives for Hostile Environments, October 15-16, 1985, Raleigh, North Carolina. (Subject Category 27 RTOP 506-43-11)
713. Tenney, D. R.: Composite Applications for Spacecraft and Aircraft. Presented at the University of Tennessee Space Institute Short Course on Design and Fabrication of Aircraft and Space Structures Using Composite Materials, November 4-8, 1985, Tullahoma, Tennessee. (Subject Category 24 RTOP 505-63-01)
714. Tenney, D. R.: Advanced Composite Materials: Applications and Technology Needs. Presented at the Metal Properties Council, Inc., Technical Advisory Committee Meeting, December 5, 1985, Miami, Florida. (Subject Category 24 RTOP 482-53-23)
715. Vosteen, L. F.: A Perspective of NASA Composites Research. Presented at the Southeastern Universities Research Association National Forum on Composite Materials Technology and Research, May 1, 1985, Blacksburg, Virginia. (Subject Category 24 RTOP 534-06-23)

716. Wagner, J. A.: Correlation of Mechanical Properties With Metallurgical Structure for 18 Ni 200 Grade Maraging Steel at Room and Cryogenic Temperatures. Presented at the 1985 Cryogenic Engineering Conference and International Cryogenic Materials Conference (CEC/ICMC), August 12-16, 1985, Boston, Massachusetts.
(Subject Category 26 RTOP 505-31-53)
717. Young, P. R.: Diffuse Reflectance-FTIR Analysis of Adhesives. Presented at the Virginia Polytechnic Institute and State University Third Annual Center for Adhesion Science Program Review/Workshop, May 19-22, 1985, Blacksburg, Virginia.
(Subject Category 27 RTOP 505-33-33)
718. Young, P. R.: FTIR Characterization of Polyimide Films, Prepregs, and Composites. Presented at the Polymer Division of the American Chemical Society Interdisciplinary Workshop on the Chemistry and Properties of Polyimides, June 25-28, 1985, Reno, Nevada.
(Subject Category 27 RTOP 505-33-33)

Computer Programs

719. Stroud, C. W.; Howser, L. M.; and Brinkley, K. L.: Advanced Investigation of Thermal Protection Systems for Entry (CHAP III). Program No. LAR-13502.

Tech Briefs

720. Bell, V. L., Jr.: Novel Polyether-Polyester Graft Copolymers. NASA Tech Brief LAR-13447.
721. Blackburn, L. B.: Microstructure-Mechanical Property Relationships for Various Thermal Treatments of Al-Cu-Mg-X PM Aluminum Alloys. NASA Tech Brief LAR-13298.
722. Grana, D. C.: Continuously Variable Transmission. NASA Tech Brief LAR-12844.
723. Hergenrother, P. M. (Langley Research Center); and Bass, R. G.; Sinsky, M. S.; and Connell, J. W. (Virginia Commonwealth University): Polyenamides From Aromatic Diacetylenic Diketones and Aromatic Diamines. NASA Tech Brief LAR-13444.
724. Newman, J. C., Jr.: FASTRAN - Fatigue Crack-Growth Structural Analysis. NASA Tech Brief LAR-13412.
725. Progar, D. J.; and St. Clair, T. L.: STPI/LARC: A High Temperature Polyimide Adhesive. NASA Tech Brief LAR-13509.
726. St. Clair, A. K.; and Hinkley, J. A. (Langley Research Center); and Ezzell, S. A. (VPI&SU): Improved Tear Resistance of Polyimide Film. NASA Tech Brief LAR-13491.

727. St. Clair, A. K.; and St. Clair, T. L. (Langley Research Center); and Ezzell, S. A. (VPI&SU): Processable Polyimides Containing ATBN Elastomers. NASA Tech Brief LAR-13178.
728. St. Clair, T. L.; and Burks, H. D.: Melt-Flow/Toughness Modified Polyimide. NASA Tech Brief LAR-13135.
729. St. Clair, T. L. (Langley Research Center); and Maudgal, S. (ICASE): Acetylene (Ethyne) Terminated Polyimide Siloxanes. NASA Tech Brief LAR-13318.
730. Vontell, J. H.; and Pike, R. A. (United Technologies Corporation); and Stoakley, D. M. (Langley Research Center): Homogeneous Metal Chelate/Amine Catalysts. NASA Tech Brief LAR-13343.
731. Wichorek, G. R.: Technique for Measuring Hole Elongation in a Bolted Joint. NASA Tech Brief LAR-13453.

Patents

732. Blackburn, L. B.; and Ellingsworth, J. R.: Tensile Testing Apparatus. U.S. Patent 4,535,636. Issued August 20, 1985.
(Subject Category 35)
733. Hergenrother, P. M.: Phenoxy Resins Containing Pendent Ethynyl Groups and Cured Resins Obtained Therefrom. U.S. Patent 4,510,296. Issued April 9, 1985.
(Subject Category 27)
734. St. Clair, A. K.; and St. Clair, T. L.: Elastomer Toughened Polyimide Adhesives. U.S. Patent 4,497,935. Issued February 5, 1985.
(Subject Category 27)
735. St. Clair, A. K.; and St. Clair, T. L.: High Temperature Polyimide Film Laminates and Process for Preparation Thereof. U.S. Patent 4,543,295. Issued September 24, 1985.
(Subject Category 27)
736. St. Clair, A. K.; Stoakley, D. M.; and St. Clair, T. L.: Process for Improving Moisture Resistance of Epoxy Resins by Addition of Chromium. U.S. Patent 4,510,277. Issued April 9, 1985.
(Subject Category 27)
737. St. Clair, T. L.; and Burks, H. D.: Process of End Capping a Polyimide System. U.S. Patent 4,552,931. Issued November 12, 1985.
(Subject Category 27)

PUBLICATIONS FOR ACOUSTICS DIVISION

Formal Reports

738. Childress, O. S., Jr. (Compiler): Helicopter Noise Reduction Program - 1984. NASA CP-2375, June 1985, 401 p.
(Avail: STIF Subject Category 71 RTOP 532-06-13)
739. *Conner, D. A.: NASA LDTM-1015, December 1985.
740. DeLoach, R.; and Preisser, J. S.: Acoustic Source Location Using a Phase Slope Method. NASA TP-2505, November 1985, 47 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-90)
741. Parrott, T. L.; Schein, D. B.; and Gridley, D.: Analytical Study of Acoustic Response of a Semireverberant Enclosure With Application to Active Noise Control. NASA TP-2472, December 1985, 46 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-90)
742. Roussos, L. A.: Noise Transmission Loss of a Rectangular Plate in an Infinite Baffle. NASA TP-2398, March 1985, 34 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
743. Schoenster, J. A.: Fluctuating Pressures on Fan Blades of a Turbofan Engine--Flight Test Investigation. NASA TP-2381, February 1985, 24 p.
(Avail: NTIS Subject Category 71 RTOP 505-31-33)
744. Seiner, J. M.; and Ponton, M. K.: Aeroacoustic Data for High Reynolds Number Supersonic Axisymmetric Jets. NASA TM-86296, January 1985, 68 p.
(Avail: NTIS Subject Category 71 RTOP 505-31-33)
745. Watson, W. R.: A Method for Determining Acoustic-Liner Admittance in Ducts With Sheared Flow in Two Cross-Sectional Directions. NASA TP-2518, October 1985, 37 p.
(Avail: NTIS Subject Category 71 RTOP 505-31-33)
746. Willis, C. M.; Mayes, W. H.; and Daniels, E. F.: Effects of Propeller Rotation Direction on Airplane Interior Noise Levels. NASA TP-2444, July 1985, 32 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)

Quick-Release Technical Memorandums

747. Fields, J. M.; and Powell, C. A.: A Community Survey of Helicopter Noise Annoyance Conducted Under Controlled Noise Exposure Conditions. NASA TM-86400, March 1985, 186 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)

*Aerostructures Directorate, USAARTA (AVSCOM)

748. McCurdy, D. A.: Comparison of Advanced Turboprop and Conventional Jet and Propeller Aircraft Flyover Noise Annoyance: Preliminary Results. NASA TM-87637, November 1985, 30 p.
(Avail: NTIS Subject Category 71 RTOP 535-03-12)
749. Patrick, H. V. L.: Investigation of Composite Material Property Requirements for Sonic Fatigue Research. NASA TM-87601, August 1985, 36 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
750. Willshire, W. L., Jr.: Long Range Downwind Propagation of Low-Frequency Sound. NASA TM-86409, April 1985, 20 p.
(Avail: NTIS Subject Category 71 RTOP 505-31-33)

Contractor Reports

751. Abrahamson, A. L.: An Evaluation of Proposed Acoustic Treatments for the NASA LaRC 4- x 7-Meter Wind Tunnel. (L-64517B Comtek.) NASA CR-172577, April 1985, 37 p.
(Avail: NTIS Subject Category 71 RTOP 532-06-13)
752. Anderson, G. S.; Hayden, R. E.; Thompson, A. R.; and Madden, R.: Evaluation of the Feasibility of Scale Modeling to Quantify Wind and Terrain Effects on Low-Angle Sound Propagation. (NAS1-16521 Bolt Beranek and Newman Inc.) NASA CR-172488, January 1985, 124 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-90)
753. Burton, D. E.; Schlinker, R. H.; and Shenoy, R. K.: The Status of Analytical Helicopter Noise Prediction Methods. (NAS1-17146 United Technologies Research Center and Sikorsky Aircraft Division.) NASA CR-172606, August 1985, 125 p.
(Avail: STIF Subject Category 71 RTOP 532-06-13)
754. Fields, J. M.: Research on the Effect of Noise at Different Times of Day: Models, Methods, and Findings. (NAS1-16978 The Bionetics Corporation.) NASA CR-3888, April 1985, 82 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
755. Fields, J. M.: Data on Noise Environments at Different Times of Day Around Airports. (NAS1-16978 The Bionetics Corporation.) NASA CR-172612, June 1985, 55 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
756. Fields, J. M.: The Timing of Noise-Sensitive Activities in Residential Areas. (NAS1-16978 The Bionetics Corporation.) NASA CR-177937, July 1985, 52 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)
757. Hayden, R. E.; Remington, P. J.; Theobald, M. A.; and Wilby, J. F.: Methods for Designing Treatments to Reduce Interior Noise of Predominant Sources and Paths in a Single Engine Light Aircraft. (NAS1-16138 Bolt Beranek and Newman Inc.) NASA CR-172546, March 1985, 302 p.
(Avail: IAC Subject Category 71 RTOP 505-33-53)

758. Hellman, R. P.: Contribution of Tonal Components to the Overall Loudness, Annoyance, and Noisiness of Noise: Relation Between Single Tones and Noise Spectral Shape. (NSG-1644 Boston University.) NASA CR-3892, May 1985, 150 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
759. Huff, D. L.; and Shenoy, R. K.: Investigation of the Transonic Blade-Vortex Interaction Characteristics of Airfoil Sections Using ATRAN-2 and Euler Codes. (NAS1-17146 Sikorsky Aircraft, United Technologies Corporation.) NASA CR-172604, July 1985, 124 p.
(Avail: STIF Subject Category 71 RTOP 532-06-13)
760. Lepicovsky, J.; Ahuja, K. K.; Brown, W. H.; and Burrin, R. H.: Coherent Large-Scale Structures in High Reynolds Number Supersonic Jets. (NAS1-17442 Lockheed-Georgia Company.) NASA CR-3952, December 1985, 108 p.
(Avail: NTIS Subject Category 71 RTOP 505-31-33)
761. Liu, N-S.; and Shamroth, S. J.: On the Application of a Hairpin Vortex Model of Wall Turbulence to Trailing Edge Noise Prediction. (NAS1-17249 Scientific Research Associates, Inc.) NASA CR-177938, August 1985, 56 p.
(Avail: NTIS Subject Category 71 RTOP 542-23-08)
762. Mahan, J. R.; and Fuller, C. R.: An Improved Source Model for Aircraft Interior Noise Studies. (NAG1-493 Virginia Polytechnic Institute and State University.) NASA CR-172517, January 1985, 29 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
763. May, D. N.; Plotkin, K. J.; Selden, R. G.; and Sharp, B. H.: Lightweight Sidewalls for Aircraft Interior Noise Control. (NAS1-17263 McDonnell Douglas Corporation.) NASA CR-172490, February 1985, 160 p.
(Avail: STIF Subject Category 71 RTOP 505-33-53)
764. Reich, F. R.; and Coleman, W. J.: Feasibility of an Optical Slip-Ring for High-Density-Data Communication Links. (NAS1-17930 Flow Industries, Inc.) NASA CR-172611, July 1985, 46 p.
(Avail: STIF Subject Category 71 RTOP 324-01-00)
765. Shepherd, K. P.: Detection of Low Frequency Impulsive Noise From Large Wind Turbine Generators. (NAS1-16978 The Bionetics Corporation.) NASA CR-172511, January 1985, 23 p.
(Avail: NTIS Subject Category 71 RTOP 776-33-41)
766. Shepherd, K. P.; and Hubbard, H. H.: Sound Propagation Studies for a Large Horizontal Axis Wind Turbine. (NAS1-16978 The Bionetics Corporation and NAG1-166 The College of William and Mary.) NASA CR-172564, March 1985, 44 p.
(Avail: NTIS Subject Category 71 RTOP 776-33-41)
767. Tomberlin, T. J.: Statistical Methods for Efficient Design of Community Surveys of Response to Noise: Random Coefficients Regression Models. (NAS1-16978 The Bionetics Corporation; Subcontractor: Thomas J. Tomberlin, Consultant.) NASA CR-177933, July 1985, 25 p.
(Avail: NTIS Subject Category 71 RTOP 505-35-13)

768. Vaicaitis, R.; and Slazak, M.: Design of Sidewall Treatment for Cabin Noise Control of a Twin-Engine Turboprop Aircraft. (NAS1-16117 Modern Analysis, Inc.) NASA CR-172245, December 1983 (Released 1985), 87 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
769. Wilby, E. G.; and Pope, L. D.: Propeller Aircraft Interior Noise Model - Users' Manual for Computer Program. (NAS1-15782 Bolt Beranek and Newman Inc.) NASA CR-172425, January 1985, 58 p.
(Avail: IAC Subject Category 71 RTOP 505-33-53)
770. Wilby, J. F.; McDaniel, C. D.; and Wilby, E. G.: In-Flight Acoustic Measurements on a Light Twin-Engine Turboprop Airplane. (NAS1-16521 BBN Laboratories Incorporated.) NASA CR-178004, November 1985, 230 p.
(Avail: NTIS Subject Category 71 RTOP 505-33-53)
771. Yates, J. E.: Analysis of the Surface Load and Radiated Sound of a Vibrating Airfoil With Application to the Experiment of Brooks. (NAS1-17003 Aeronautical Research Associates of Princeton, Inc.) NASA CR-3864, January 1985, 144 p.
(Avail: NTIS Subject Category 71 RTOP 532-06-13)

Journal Articles and Other Publications

772. Beyer, T. B.; Powell, C. A.; Daniels, E. F.; and Pope, L. D.: Effects of Acoustic Treatment on the Interior Noise of a Twin-Engine Propeller Airplane. Journal of Aircraft, Volume 22, No. 9, September 1985, p. 784-788.
(Subject Category 71 RTOP 505-33-53)
773. Block, P. J. W.: Noise Radiation Patterns of Counter-Rotation and Unsteadily Loaded Single-Rotation Propellers. Journal of Aircraft, Volume 22, No. 9, September 1985, p. 776-783.
(Subject Category 71 RTOP 535-03-12)
774. Brooks, T. F.; and Marcolini, M. A.: Scaling of Airfoil Self-Noise Using Measured Flow Parameters. AIAA Journal, Volume 23, No. 2, February 1985, p. 207-213.
(Subject Category 71 RTOP 505-31-33)
775. Dash, S. M.; Wolf, D. E.; Seiner, J. M.: Analysis of Turbulent Underexpanded Jets Part I: Parabolized Navier-Stokes Model, SCIPVIS. AIAA Journal, Volume 23, No. 4, April 1985, p. 505-514.
(Subject Category 71 RTOP 505-31-33)
776. Eversman, W.; Parrett, A. V.; Preisser, J. S.; and Silcox, R. J.: Contributions to the Finite Element Solution of the Fan Noise Radiation Problem. Journal of Vibration, Acoustics, Stress, and Reliability in Design, Volume 107, April 1985, p. 216-223.
(Subject Category 71 RTOP 505-31-33)

777. Farassat, F.; and Myers, M. K.: Some Qualitative Results on the Thickness and Loading Noise of Rotating Blades. Journal of Sound and Vibration, Volume 101, No. 2, 1985, p. 262-266.
(Subject Category 71 RTOP 535-03-11)
778. Fuller, C. R.: Monopole Excitation of Vibrations in an Infinite Cylindrical Elastic Shell Filled With Fluid. Journal of Sound and Vibration, Volume 96, No. 1, 1984, p. 101-110.
(Subject Category 71 RTOP 505-31-33)
779. Grosveld, F. W.; and Mixson, J. S.: Noise Transmission Through an Acoustically Treated and Honeycomb-Stiffened Aircraft Sidewall. Journal of Aircraft, Volume 22, No. 5, May 1985, p. 434-440.
(Subject Category 71 RTOP 505-33-53)
780. Hardin, J. C.; and Mason, J. P.: A New Look at Sound Generation by Blade/Vortex Interaction. Journal of Vibration, Acoustics, Stress, and Reliability and Design, Volume 107, April 1985, p. 224-228.
(Subject Category 71 RTOP 505-31-33)
781. Hariharan, S. I.; and Lester, H. C.: Acoustic Shocks in a Variable Area Duct Containing Near Sonic Flows. Journal of Computational Physics, Volume 58, No. 1, March 1985, p. 134-145.
(Subject Category 71 RTOP 505-31-33)
782. Martin, R. M.; Brooks, T. F.; and *Hoad, D. R.: Reduction of Background Noise Induced by Wind Tunnel Jet Exit Vanes. AIAA Journal, Volume 23, No. 10, October 1985, p. 1631-1632.
(Subject Category 71 RTOP 532-06-13)
783. Mixson, J. S.; and Powell, C. A.: Review of Recent Research on Interior Noise of Propeller Aircraft. Journal of Aircraft, Volume 22, No. 11, November 1985, p. 931.
(Subject Category 71 RTOP 505-33-53)
784. Padula, S. L.; and Block, P. J. W.: Predicted Changes in Advanced Turboprop Noise With Shaft Angle of Attack. Journal of Propulsion and Power, Volume 1, No. 5, September - October 1985, p. 381-387.
(Subject Category 71 RTOP 535-03-12)
785. Preisser, J. S.; Silcox, R. J.; Eversman, W.; and Parrett, A. V.: Flight Study of Induced Turbofan Inlet Acoustic Radiation With Theoretical Comparisons. Journal of Aircraft, Volume 22, No. 1, January 1985, p. 57-62.
(Subject Category 71 RTOP 505-33-90)
786. Seiner, J. M.; Dash, S. M.; and Wolf, D. E.: Analysis of Turbulent Underexpanded Jets, Part II: Shock Noise Features Using SCIPVIS. AIAA Journal, Volume 23, No. 5, May 1985, p. 669-677.
(Subject Category 71 RTOP 505-31-33)

*Aerostructures Directorate, USAARTA (AVSCOM)

787. Tam, C. K. W.; Jackson, J. A.; and Seiner, J. M.: A Multiple-Scales Model of the Shock Cell Structure of Imperfectly Expanded Supersonic Jets. Journal of Fluid Mechanics, Volume 153, May 1985, p. 123-149.
(Subject Category 71 RTOP 505-31-33)
788. Vaicaitis, R.; Grosveld, F. W.; and Mixson, J. S.: Noise Transmission Through Aircraft Panels. Journal of Aircraft, Volume 22, No. 4, April 1985, p. 303-310.
(Subject Category 71 RTOP 535-03-12)
789. Vaicaitis, R.; and Mixson, J. S.: Theoretical Design of Acoustic Treatment for Noise Control in a Turboprop Aircraft. Journal of Aircraft, Volume 22, No. 4, April 1985, p. 318-324.
(Subject Category 71 RTOP 505-33-53)
790. Wood, J. J.; and Leatherwood, J. D.: Meter Measures Ride Comfort. Automotive Engineering -- Testing and Instrumentation Issue, Volume 93, No. 6, June 1985, p. 50-56.
(Subject Category 53 RTOP 141-20-14)
791. Yu, J. C.; and Fratello, D. J.: Measurement of Acoustic Shielding by a Turbulent Jet. Journal of Sound and Vibration, Volume 98, No. 2, 1985, p. 183-212.
(Subject Category 71 RTOP 505-61-11)
792. Zaman, K. B. M. Q.: Far-Field Noise of a Subsonic Jet Under Controlled Excitation. Journal of Fluid Mechanics, Volume 152, March 1985, p. 83-112.
(Subject Category 71 RTOP 532-06-13)
793. Zaman, K. B. M. Q.; and Yu, J. C.: Power Spectral Density of Subsonic Jet Noise. Journal of Sound and Vibration, Volume 98, February 22, 1985, p. 519-537.
(Subject Category 71 RTOP 505-31-33)

Meeting Presentations

794. Adelman, J. L.; and Hardin, J. C.: Vortex Studies Relating to Boundary Layer Turbulence and Noise. Presented at the ASME Winter Annual Meeting, November 17-22, 1985, Miami Beach, Florida. Abstract published in NASA CP-2404, p. 25-28.
(Subject Category 71 RTOP 532-06-13)
795. Block, P. J. W.: Acoustics for Advanced Turboprop Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 71 RTOP 535-03-12)
796. Farassat, F.: The Ffowcs Williams-Hawkings Equation - Fifteen Years of Research. Presented at the IUTAM Symposium on Aero- and Hydro-Acoustics, July 3-6, 1985, Lyon, France. To be published by Springer Verlag.
(Subject Category 71 RTOP 532-06-13)

797. Grosveld, F. W.; and Metcalf, V. L.: Random Response and Noise Transmission of Composite Panels. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0789-CP.
(Subject Category 71 RTOP 535-03-12)
798. Hardin, J. C.; and Lamkin, S. L.: Computational Aeroacoustics - Present Status and Future Promise. Presented at the IUTAM Symposium on Aero- and Hydro-acoustics, July 3-6, 1985, Lyon, France. To be published by Springer Verlag.
(Subject Category 71 RTOP 505-31-33)
799. Kayten, G. G.; Wander, S. M.; and Stephens, D. G.: NASA Aeronautical Noise Research. Presented at the 110th Meeting of the Acoustical Society of America, November 4-8, 1985, Nashville, Tennessee. Abstract published in the Journal of the Acoustical Society of America, Volume 78, Supplement 1, p. 44.
(Subject Category 71 RTOP 505-61-11)
800. McCurdy, D. A.: Comparison of Advanced Turboprop and Conventional Jet and Propeller Aircraft Flyover Noise Annoyance: Preliminary Results. Presented at the 110th Meeting of the Acoustical Society of America, November 4-8, 1985, Nashville, Tennessee. Abstract published in the Journal of the Acoustical Society of America, Volume 78, Supplement 1, p. 32.
(Subject Category 71 RTOP 535-03-12)
801. *Metcalf, V. L.; and Grosveld, F. W.: Noise Transmission Characteristics of Aircraft Type Composite Panels. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850878.
(Subject Category 71 RTOP 534-06-23)
802. Preisser, J. S.: Current Research in Acoustic Propagation at the NASA Langley Research Center. Presented at the University of Mississippi Symposium/Workshop on the Physics of Long Distance Sound Propagation and Coupling Into the Ground, February 13-16, 1985, New Orleans, Louisiana. In Proceedings, Volume 1, p. 156-175.
(Subject Category 71 RTOP 505-31-33)
803. Schein, D. B.; and Parrott, T. L.: Effects of Source Separation and Phasing on Acoustic Power in a Semi-Reverberant Space With Applications to Active Noise Control. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-32.
(Subject Category 71 RTOP 505-33-90)

*Aerostructures Directorate, USAARTA (AVSCOM)

804. Silcox, R. J.; and Elliott, S. J.: Applicability of Superposition and Source Impedance Models of Active Noise Control Systems. Presented at the International Institute of Noise Control Engineering International Conference on Noise Control Engineering, September 18-20, 1985, Munich, Germany. In Proceedings, Volume 1, 1985, p. 587-590.
(Subject Category 71 RTOP 505-33-53)
805. Vaicaitis, R.; and Mixson, J. S.: Review of Research on Structureborne Noise and Vibration in Flight Structures. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0786-CP.
(Subject Category 06 RTOP 505-33-53)
806. Wilby, J. F.; Mixson, J. S.; and O'Neal, R. L.: Flight Investigation of Cabin Noise Control Treatments for a Light Turboprop Aircraft. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850876.
(Subject Category 71 RTOP 505-33-53)
807. Willshire, W. L., Jr.: Long Range Downwind Propagation of Low Frequency Noise. Presented at the University of Mississippi Symposium/Workshop on the Physics of Long Distance Sound Propagation and Coupling Into the Ground, February 13-16, 1985, New Orleans, Louisiana. In Proceedings, Volume 1, p. 176-194.
(Subject Category 71 RTOP 776-33-41)
808. Willshire, W. L., Jr.: Long Range Downwind Propagation of Low Frequency Noise. Presented at the 109th Meeting of the Acoustical Society of America, April 8-12, 1985, Austin, Texas. Abstract published in Journal of Acoustical Society of America, Volume 77, Supplement 1, Spring 1985, p. S-91.
(Subject Category 71 RTOP 505-31-33)
809. Wood, J. J.; and Leatherwood, J. D.: A New Ride Quality Meter. Presented at the SAE Vehicle Noise and Vibration Conference, May 15-17, 1985, Traverse City, Michigan. In Proceedings of Vehicle Noise and Vibration Conference, Paper No. 850981, p. 177-183.
(Subject Category 53 RTOP 141-20-14)
810. Wood, J. J.; and Leatherwood, J. D.: A New Ride Quality Meter. Presented at the 1985 SAE International Off-Highway & Powerplant Congress & Exposition, September 9-12, 1985, Milwaukee, Wisconsin.
(Subject Category 53 RTOP 141-20-14)
811. Wood, J. J.; and Leatherwood, J. D.: A New Ride Quality Meter. Presented at the 85th SAE Truck and Bus Meeting -- Exposition, December 9-12, 1985, Chicago, Illinois.
(Subject Category 53 RTOP 141-20-14)

Technical Talks

812. Booth, E. R., Jr.: Flow Visualization in an Unsteady, Periodic, Flowfield - The Two Dimensional Blade-Vortex Interaction Experiment. Presented at the NASA 21st Annual Subsonic Aerodynamic Testing Association (SATA) Meeting, May 14-16, 1985, Williamsburg, Virginia.
(Subject Category 71 RTOP 505-42-23)
813. Childress, O. S., Jr.: 500E Flight Test to Provide Data Base for Evaluating ROTONET Predictions: Requirements, Plans and Status. Presented at the Meeting of the Government/Industry Working Group on Rotorcraft Noise, April 18-19, 1985, Washington, D.C.
(Subject Category 71 RTOP 532-06-01)
814. Golub, R. A.: ROTONET Implemented Capabilities, Planned Capabilities and Status. Presented at the Meeting of the Government/Industry Working Group on Rotorcraft Noise, April 18-19, 1985, Washington, DC.
(Subject Category 71 RTOP 505-61-51)
815. Golub, R. A.: ROTONET Update. Presented at the NASA/AHS Helicopter Noise Reduction Program 3rd Annual Review, October 8-10, 1985, Stratford, Connecticut.
(Subject Category 71 RTOP 505-61-51)
816. Lamkin, S. L.; and Hardin, J. C.: Aeroacoustic Computation of Free Shear Layer Flow. Presented at the SIAM Fall Meeting, October 28-30, 1985, Tempe, Arizona.
(Subject Category 71 RTOP 532-06-13)
817. Martin, R. M.: Main Rotor/Tail Rotor Interaction Noise Experiment. Presented at the NASA/AHS Helicopter Noise Reduction Program 3rd Annual Review, October 8-10, 1985, Stratford, Connecticut.
(Subject Category 71 RTOP 505-61-51)
818. Morgan, H. G.: Noise Control Technology for Business Aircraft. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-18, 1985, Wichita, Kansas.
(Subject Category 71 RTOP 532-06-13)
819. Morgan, H. G.: NASA Langley Research Center Planned Rotorcraft Acoustics Research. Presented at the NASA/AHS Helicopter Noise Reduction Program 3rd Annual Review, October 8-10, 1985, Stratford, Connecticut.
(Subject Category 71 RTOP 505-61-51)
820. Pao, S. P.: Rotorcraft Source Noise Research in the Aeroacoustics Branch. Presented at the NASA/AHS Helicopter Noise Reduction Program 3rd Annual Review, October 8-10, 1985, Stratford, Connecticut.
(Subject Category 71 RTOP 505-61-51)
821. Stephens, D. G.: Aircraft Interior Noise Reduction. Presented at the 1985 EAA Oshkosh Fly-In and Convention, July 26 - August 2, 1985, Oshkosh, Wisconsin.
(Subject Category 71 RTOP 505-33-53)

822. Yu, J. C.: Acoustic Treatment Feasibility Study of NASA LaRC 4- by 7-Meter Wind Tunnel for Rotorcraft Aeroacoustics Testing. Presented at the NASA 21st Annual Subsonic Aerodynamic Testing Association (SATA) Meeting, May 14-16, 1985, Williamsburg, Virginia.
(Subject Category 71 RTOP 505-42-23)
823. Yu, J. C.: DNW Main Rotor Noise Experiment. Presented at the NASA/AHS Helicopter Noise Reduction Program 3rd Annual Review, October 8-10, 1985, Stratford, Connecticut.
(Subject Category 71 RTOP 505-61-51)
824. Yu, J. C.: Acoustic Treatment Feasibility Study of Langley 4- by 7-Meter Wind Tunnel. Presented at the NASA/AHS Helicopter Noise Reduction Program 3rd Annual Review, October 8-10, 1985, Stratford, Connecticut.
(Subject Category 71 RTOP 505-61-51)

Computer Programs

No computer programs.

Tech Briefs

825. Watson, W. R.: Acoustic-Liner Admittance in a Rectangular Duct With Grazing Flow. NASA Tech Brief LAR-13399.

Patents

No patents.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR AERONAUTICS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR TRANSONIC AERODYNAMICS DIVISION

Formal Reports

826. Abeyounis, W. K.; and Patterson, J. C., Jr.: Effect of Underwing Aft-Mounted Nacelles on the Longitudinal Aerodynamic Characteristics of a High-Wing Transport Airplane. NASA TP-2447, December 1985, 137 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-20)
827. Allison, D. O.; and Bobbitt, P. J.: Semiempirical Method for Predicting Vortex-Induced Rolling Moments. NASA TM-87579, November 1985, 17 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-90)
828. Berrier, B. L.; Leavitt, L. D.; and Bangert, L. S.: Operating Characteristics of the Multiple Critical Venturi System and Secondary Calibration Nozzles Used for Weight-Flow Measurements in the Langley 16-Foot Transonic Tunnel. NASA TM-86405, September 1985, 72 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
829. Britcher, C. P.: Effect of Superconducting Solenoid Model Cores on Spanwise Iron Magnet Roll Control. NASA TM-86378, June 1985, 23 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
830. Capone, F. J.; and Carson, G. T., Jr.: Effects of Empennage Surface Location on Aerodynamic Characteristics of a Twin-Engine Afterbody Model With Nonaxisymmetric Nozzles. NASA TP-2392, February 1985, 77 p.
(Avail: STIF Subject Category 02 RTOP 505-43-90)
831. Chu, J.; Lamar, J. E.; and Luckring, J. M.: Longitudinal Test and Evaluation of Six 58° Cambered and Twisted Thick Delta Wings at High Subsonic Speeds. NASA TM-85786, March 1985, 108 p.
(Avail: STIF Subject Category 02 RTOP 505-31-23)
832. Dress, D. A.: Computer Program for Calculating Flow Parameters and Power Requirements for Cryogenic Wind Tunnels. NASA TM-87609, November 1985, 41 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
833. Henderson, W. P.; and Abeyounis, W. K.: Aerodynamic Characteristics of a High-Wing Transport Configuration With an Over-the-Wing Nacelle-Pylon Arrangement. NASA TP-2497, December 1985, 91 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
834. Jacobs, P. F.: Effect of Aileron Deflections on the Aerodynamic Characteristics of a Semispan Model of a Subsonic Energy-Efficient Transport. NASA TP-2478, October 1985, 342 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-23)
835. Johnson, W. G., Jr.; and Hill, A. S.: Pressure Distributions From High Reynolds Number Tests of a Boeing BAC I Airfoil in the Langley 0.3-Meter Transonic Cryogenic Tunnel. NASA TM-87600, December 1985, 270 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)

836. Johnson, W. G., Jr.; Hill, A. S.; and Eichmann, O.: High Reynolds Number Tests of a NASA SC(3)-0712(B) Airfoil in the Langley 0.3-Meter Transonic Cryogenic Tunnel. NASA TM-86371, June 1985, 167 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
837. Johnson, W. G., Jr.; Hill, A. S.; and Eichmann, O.: Pressure Distributions From High Reynolds Number Tests of a NASA SC(3)-0712(B) Airfoil in the Langley 0.3-Meter Transonic Cryogenic Tunnel. NASA TM-86370, July 1985, 410 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
838. Lamb, M.; Abeyounis, W. K.; and Patterson, J. C., Jr.: Nacelle/Pylon/Wing Integration on a Transport Model With a Natural Laminar Flow Nacelle. NASA TP-2439, July 1985, 59 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
839. Lawing, P. L.; Dress, D. A.; and Kilgore, R. A.: Description of the Insulation System for the Langley 0.3-Meter Transonic Cryogenic Tunnel. NASA TM-86274, January 1985, 25 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
840. Leavitt, L. D.: Static Internal Performance of a Two-Dimensional Convergent Nozzle With Thrust-Vectoring Capability up to 60°. NASA TP-2391, February 1985, 68 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-90)
841. Leavitt, L. D.; and Burley, J. R., II: Static Internal Performance of a Single-Engine Nonaxisymmetric-Nozzle Vaned-Thrust-Reverser Design With Thrust Modulation Capabilities. NASA TP-2519, December 1985, 107 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
842. Lee, E. E., Jr.; and Pendergraft, O. C., Jr.: Installation Effects of Long-Duct Pylon-Mounted Nacelles on a Twin-Jet Transport Model With Swept Supercritical Wing. NASA TP-2457, December 1985, 143 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
843. Mason, M. L.; and Berrier, B. L.: Static Investigation of Several Yaw Vectoring Concepts on Nonaxisymmetric Nozzles. NASA TP-2432, June 1985, 217 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
844. Mercer, C. E.; and Burley, J. R., II: Performance Characteristics of an Isolated Coannular Plug Nozzle at Transonic Speeds. NASA TM-87606, December 1985, 146 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
845. Patterson, J. C., Jr.; and Flechner, S. G.: Exploratory Wind-Tunnel Investigation of a Wingtip-Mounted Vortex Turbine for Vortex Energy Recovery. NASA TP-2468, June 1985, 22 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-43)

846. Reubush, D. E.; and Bare, E. A.: Investigation of a Supersonic Cruise Fighter Model Flow Field. NASA TM-86361, November 1985, 148 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
847. Salas, M. D.; Jameson, A.; and Melnik, R. E.: A Comparative Study of the Nonuniqueness Problem of the Potential Equation. NASA TP-2385, January 1985, 21 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-03)
848. Tuttle, M. H.; Kilgore, R. A.; and McGuire, P. D.: Cryogenic Wind Tunnels - A Selected, Annotated Bibliography. NASA TM-86346, April 1985, 69 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
849. Yaros, S. F.: Theoretical and Experimental Flow Fields for a Supersonic Cruise Fighter Forebody. NASA TM-86450, November 1985, 41 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)

Quick-Release Technical Memorandums

850. Gumbert, C. R.: User Manual for 0.3-M TCT Wall-Interference Assessment/Correction Procedure: 8- by 24-Inch Airfoil Test Section. NASA TM-87582, September 1985, 48 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
851. Lawing, P. L.: The Construction of Airfoil Pressure Models by the Bonded Plate Method: Achievements, Current Research, Technology Development and Potential Applications. NASA TM-87613, September 1985, 31 p.
(Avail: NTIS Subject Category 09 RTOP 505-61-01)
852. Morgan, H. L., Jr.; Sewall, W. G.; Schumacher, M. C.; and Boyd, C. N.: Compilation of Data From Tests of Five Boeing Integrated Technology (IT) Airfoils in the Langley 6- by 28-Inch Transonic Tunnel. NASA TM-86419, Part 1, July 1985, 473 p.
(Avail: STIF Subject Category 02 RTOP 505-31-23)
853. Morgan, H. L., Jr.; Sewall, W. G.; Schumacher, M. C.; and Boyd, C. N.: Compilation of Data From Tests of Five Boeing Integrated Technology (IT) Airfoils in the Langley 6- by 28-Inch Transonic Tunnel. NASA TM-86419, Part 2, July 1985, 366 p.
(Avail: STIF Subject Category 02 RTOP 505-31-23)
854. Sewall, W. G.; McGhee, R. J.; Viken, J. K.; Waggoner, E. G.; Walker, B. S.; and Millard, B. F.: Wind Tunnel Results for a High-Speed, Natural Laminar-Flow Airfoil Designed for General Aviation Aircraft. NASA TM-87602, November 1985, 72 p.
(Avail: IAC Subject Category 02 RTOP 505-31-23)

Contractor Reports

855. Arbiter, D. G.: An Investigation at Static Conditions of Nonaxisymmetric Nozzle Thrust Reverser Port Geometry Including Effects of Rounding and Rotating the Port Corner. (NAS1-17919 Vigyan Research Associates, Inc.) NASA CR-178036, November 1985, 55 p.
(Avail: NTIS Subject Category 02 RTOP 505-62-91)
856. Bartlett, G. R.: An Experimental Investigation of Propfan Installations on an Unswept Supercritical Wing at Transonic Mach Numbers. (NAS1-17826 Vigyan Research Associates.) NASA CR-172605, May 1985, 208 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-90)
857. Boom, R. W.; Eyssa, M.; McIntosh, G. E.; and Abdelsalam, M. K.: Magnetic Suspension and Balance System Advanced Study. (NAS1-17931 Madison Magnetics, Inc.) NASA CR-3937, October 1985, 126 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
858. Boppe, C. W.; and Rosen, B. S.: F-14A Aircraft High-Speed Flow Simulations. (NAS1-14732 Grumman Aerospace Corporation.) NASA CR-172559, April 1985, 205 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-63)
859. Chandrasekaran, B.: Method for the Prediction of the Installation Aerodynamics of a Propfan at Subsonic Speeds. (NAS1-16742 Vigyan Research Associates, Inc.) NASA CR-3887, April 1985, 124 p.
(Avail: NTIS Subject Category 02 RTOP 505-40-90)
860. Goodyer, M. J.: A Preliminary Investigation of the Dynamic Force-Calibration of a Magnetic Suspension and Balance System. (NSG-7523 University of Southampton.) NASA CR-172580, May 1985, 13 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
861. Goodyer, M. J.: The Generation of Rolling Moments With the Superconducting Solenoid Model. (NAS1-17919 Vigyan Research Associates, Inc.) NASA CR-172520, January 1985, 23 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
862. Goodyer, M. J.: Introduction to Cryogenic Wind Tunnels. (NAS1-17919 Vigyan Research Associates, Inc.) NASA CR-177966, September 1985, 13 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
863. Goodyer, M. J.: Derivation of Jack Movement Influence Coefficients as a Basis for Selecting Wall Contours Giving Reduced Levels of Interference in Flexible Walled Test Sections. (NAS1-16000 Kentron International, Inc.; Subcontractor: University of Southampton.) NASA CR-177992, October 1985, 13 p.
(Avail: NTIS Subject Category 02 RTOP 505-61-01)
864. Hoffler, K. D.: Investigation of the "Vortex Tab." (NCC1-46 North Carolina State University.) NASA CR-172586, May 1985, 78 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-23)

865. Lewis, M. C.: The Status of Two-Dimensional Testing at High Transonic Speeds in The University of Southampton Transonic Self-Streamlining Wind Tunnel. (NSG-7172 The University of Southampton.) NASA CR-3919, October 1985, 56 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
866. Macha, J. M.; Pare, L. A.; and Landrum, D. B.: A Theoretical Study of Non-Adiabatic Surface Effects for a Model in the NTF Cryogenic Wind Tunnel. (NAG1-417 Texas A&M Research Foundation.) NASA CR-3924, August 1985, 58 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-53)
867. Martindale, W. R.; Butler, R. W.; and Starr, R. F.: Study on Needs for a Magnetic Suspension System Operating With a Transonic Wind Tunnel. (NAS1-17423 Sverdrup Technology, Inc.) NASA CR-3900, May 1985, 120 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-53)
868. Mead, H. R.; and Melnik, R. E.: GRUMFOIL: A Computer Code for the Viscous Transonic Flow Over Airfoils. (NAS1-12426 Grumman Aerospace Corporation.) NASA CR-3806, October 1985, 76 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-13)
869. Melnik, R. E.; Chow, R. R.; Mead, H. R.; and Jameson, A.: An Improved Viscid/Inviscid Interaction Procedure for Transonic Flow Over Airfoils. (NAS1-12426 Grumman Aerospace Corporation.) NASA CR-3805, October 1985, 132 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-13)
870. Murthy, A. V.: Corrections for Attached Sidewall Boundary-Layer Effects in Two-Dimensional Airfoil Testing. (NAG1-334 Old Dominion University.) NASA CR-3873, February 1985, 38 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
871. Viken, J. K.: Design of a Natural Laminar Flow Multi-Element Airfoil for $M = 0.40$ and a Chord Reynolds Number of 10 Million. (NAS1-17950 ESCON.) NASA CR-177997, September 1985, 75 p.
(Avail: STIF Subject Category 02 RTOP 505-31-23)
872. Wahls, R. A.; and Vess, R. J.: An Exploratory Study of Apex Fence Flaps on a 74-Degree Delta Wing. (NCC1-46 North Carolina State University.) NASA CR-172463, May 1985, 29 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-53)
873. Wigley, D. A.: Technology for Pressure-Instrumented Thin Airfoil Models. (NAS1-17571 Applied Cryogenics & Materials Consultants, Inc.) NASA CR-3891, May 1985, 54 p.
(Avail: NTIS Subject Category 09 RTOP 324-01-00)
874. Wigley, D. A.: Basic Cryogenics and Materials. (NAS1-17571 Applied Cryogenics and Materials Consultants, Inc.) NASA CR-177932, June 1985, 19 p.
(Avail: NTIS Subject Category 26 RTOP 324-01-00)

875. Zalenski, M. A.; Rowe, E. L.; and McPhee, J. R.: Operational Considerations in Monitoring Oxygen Levels at the National Transonic Facility. (NAS1-16331 Wyle Laboratories.) NASA CR-3953, December 1985, 18 p.
(Avail: NTIS Subject Category 09 RTOP 505-31-63)

Journal Articles and Other Publications

876. Biringer, S.; and Maestrello, L.: Development of Spot-Like Turbulence in Plane Control Flow. Physics of Fluids, Volume 27, February 1984, p. 318-321.
(Subject Category 34)
877. Britcher, C. P.: Progress Towards Magnetic Suspension and Balance Systems for Large Wind Tunnels. Journal of Aircraft, Volume 22, No. 4, April 1985, p. 264-269.
(Subject Category 09 RTOP 505-31-53)
878. Cline, M. C.; and Wilmoth, R. G.: Computation of the Shuttle Solid Booster Nozzle Start-Up Transient Flow. Journal of Propulsion and Power, Volume 1, No. 5, September - October 1985, p. 321-328.
(Subject Category 34 RTOP 505-43-23)
879. Hall, R. M.; Dotson, E. H.; and Vennemann, D. H.: Homogeneous and Heterogeneous Condensation of Nitrogen in Transonic Flow. Rarefied Gas Dynamics, December 1985, p. 1033-1041.
(Subject Category 34 RTOP 505-31-23)
880. Hussaini, M. Y.; Kopriva, D. A.; Salas, M. D.; and Zang, T. A.: Spectral Methods for the Euler Equations: Part I - Fourier Methods and Shock Capturing. AIAA Journal, Volume 23, No. 1, January 1985, p. 64-70.
(Subject Category 02 RTOP 505-31-03)
881. Hussaini, M. Y.; Kopriva, D. A.; Salas, M. D.; and Zang, T. A.: Spectral Methods for the Euler Equations: Part II. Chebyshev Methods and Shock Fittings. AIAA Journal, Volume 23, No. 1, February 1985, p. 234-240.
(Subject Category 39 RTOP 506-53-23)
882. Hussaini, M. Y.; Salas, M. D.; and Zang, T. A.: Spectral Methods for Inviscid Compressible Flows. Recent Advances in Numerical Methods in Fluids, Volume 4, 1985, p. 875-912.
(Subject Category 64 RTOP 505-31-03)
883. Maestrello, L.; and Ting, L.: Analysis of Active Control by Surface Heating. AIAA Journal, Volume 23, No. 7, July 1985, p. 1038-1045.
(Subject Category 02 RTOP 505-31-23)
884. Reubush, D. E.; Bare, E. A.; Yaros, S. F.; and Yetter, J. A.: Flow-Field Investigation of a Supercruise Fighter Model. Journal of Aircraft, Volume 22, April 1985, p. 289-295.
(Subject Category 02 RTOP 505-40-93)

885. Salas, M. D.: Foundations for the Numerical Solution of the Euler Equations. Volume IV of Recent Advances in Numerical Methods in Fluids, Volume 4, 1985, p. 343-370.
(Subject Category 64 RTOP 505-31-03)
886. Streett, C. L.; Zang, T. A.; and Hussaini, M. Y.: Spectral Multigrid Methods With Applications to Transonic Potential Flow. Journal of Computational Physics, Volume 57, No. 1, January 15, 1985, p. 43-76.
(Subject Category 64 RTOP 505-31-03)

Meeting Presentations

887. Bayliss, A.; Maestrello, L.; Parikh, P.; and Turkel, E.: Wave Phenomena in a High Reynolds Number Compressible Boundary Layer. Presented at the ICASE/NASA Workshop on Stability of Time Dependent and Spatially Varying Flows, August 19-20, 1985, Hampton, Virginia. Proceedings pending.
(Subject Category 02 RTOP 505-31-23)
888. Bayliss, A.; Maestrello, L.; Parikh, P.; and Turkel, E.: Numerical Simulation of Boundary Layer Excitation by Surface Heating/Cooling. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0565.
(Subject Category 02 RTOP 505-31-23)
889. Bayliss, A.; Parikh, P.; Maestrello, L.; and Turkel, E.: A Fourth-Order Scheme for the Unsteady Compressible Navier-Stokes Equations. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1694.
(Subject Category 02 RTOP 505-31-23)
890. Bobbitt, P. J.; and Foughner, J. T., Jr.: Pivotal Strakes for High Angle of Attack Control. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851821.
(Subject Category 02 RTOP 505-31-23)
891. Bobbitt, P. J.; Waggoner, E. G.; Harvey, W. D.; Dagenhart, J. R.; and Viken, J. K.: A Faster "Transition" To Laminar Flow. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851855.
(Subject Category 02 RTOP 505-31-23)
892. Boyden, R. P.; Britcher, C. P.; and Tchong, P.: Status of Wind Tunnel Magnetic Suspension Research. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851898.
(Subject Category 09 RTOP 505-31-53)
893. Boyden, R. P.; and Tchong, P.: Status of Magnetic Suspension Technology. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 09 RTOP 505-31-53)

894. Bruce, W. E., Jr.: The U.S. National Transonic Facility, I. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium.
(Subject Category 09 RTOP 505-31-53)
895. Bruce, W. E., Jr.: The U.S. National Transonic Facility, II. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium.
(Subject Category 09 RTOP 505-31-53)
896. Burley, J. R., II; and Carlson, J. R.: Circular-to-Rectangular Transition Ducts for High-Aspect Ratio Nonaxisymmetric Nozzles. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1346.
(Subject Category 07 RTOP 505-43-90)
897. Campbell, J. F.; and Osborn, R. F.: Perspective of Vortex Flow Aerodynamics. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)
898. Carlson, J. R.; Pendergraft, O. C., Jr.; and Bartlett, G. R.: Comparison of Advanced Turboprop Installation on Swept and Unswept Supercritical Wings at Transonic Speeds. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1264.
(Subject Category 02 RTOP 505-40-90)
899. Clarke, D. K.; Salas, M. D.; and Hassan, H. A.: Euler Calculations for Multielement Airfoils Using Cartesian Grids. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0291.
(Subject Category 64 RTOP 505-31-03)
900. Compton, W. B., III; and Whitesides, J. L.: Boundary Layer Effects on the FlowField About Flow-Through Nacelles. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1623.
(Subject Category 02 RTOP 505-40-90)
901. Eppler, R.; and Somers, D. M.: Airfoil Design for Reynolds Numbers Between 50,000 and 500,000. Presented at the Office of Naval Research, NASA, et al., Conference on Low Reynolds Number Airfoil Aerodynamics, June 17-19, 1985, Notre Dame, Indiana. In Proceedings, p. 1-14.
(Subject Category 02 RTOP 505-31-23)
902. Finley, D. B.; and Schoonover, W. E., Jr.: Design and Wind Tunnel Evaluation of Vortex Flaps for the F-16 XL. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)

903. Frink, N. T.: Critical Evaluation of a Vortex Flap Design Concept Using a 74° Delta Configuration. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)
904. Frink, N. T.: Refinements of a Vortex Flap Design Method With Systematic Applications. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)
905. Gaffney, R. L., Jr.; Salas, M. D.; and Hassan, H. A.: Assessment of Wind Tunnel Corrections for Multielement Airfoils at Transonic Speeds. Presented at the California State University Third Symposium on Numerical and Physical Aspects of Aerodynamic Flows, January 20-24, 1985, Long Beach, California. In Proceedings, p. 4-35 - 4-41.
(Subject Category 64 RTOP 505-31-03)
906. Ghaffari, F.; and Lamar, J. E.: An Attached Flow Design of a Noninterfering Leading-Edge Extension to a Thick Delta Wing. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0350.
(Subject Category 02 RTOP 505-31-23)
907. Greene, G. C.: An Approximate Model of Vortex Decay in the Atmosphere. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1835-CP.
(Subject Category 45 RTOP 505-31-23)
908. Greene, G. C.; Kubendran, L. R.; Lamar, J. E.; and Liu, C-H.: Vortex Dynamics. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 08 RTOP 505-31-23)
909. Hafez, M. M.; Parlette, E.; and Salas, M. D.: Convergence Acceleration of Iterative Solutions of Euler Equations for Transonic Flow Computations. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1641.
(Subject Category 64 RTOP 505-31-03)
910. Hafez, M. M.; and Salas, M. D.: Vortex Breakdown Simulation Based on a Nonlinear Inviscid Model. Presented at the ICASE Symposium on Vortex Dominated Flows, July 9-11, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 64 RTOP 505-60-01)
911. Hall, R. M.: Studies of Condensation Effects on Airfoil Testing in a Transonic Cryogenic Tunnel. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0229.
(Subject Category 02 RTOP 505-31-53)
912. Hallissy, J. B.; Frink, N. T.; and Huffman, J. K.: Aerodynamic Design and Testing of Vortex-Flap Configurations for the F-106B Aircraft. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)

913. Harvey, W. D.; Harris, C. D.; Brooks, C. W., Jr.; and Bobbitt, P. J.: Experimental Results on a Swept Supercritical Airfoil With Suction in the Langley 8-Foot Transonic Pressure Tunnel. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado.
(Subject Category 02 RTOP 505-31-23)
914. Harvey, W. D.; Harris, C. D.; Brooks, C. W., Jr.; Clukey, P.; Bobbitt, P. J.; and Stack, J. P.: Design and Experimental Evaluation of a Swept Supercritical LFC Airfoil. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-31-23)
915. Henderson, W. P.: Airframe/Propulsion Integration - An Overview. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-40-90)
916. Huebner, L. D.; and Lamar, J. E.: Performance Analysis and Supersonic Design of the Wing Leading-Edge Vortex Flap for the Convair F-106B. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP Pending.
(Subject Category 02 RTOP 505-31-23)
917. Huffman, J. K.; and Fox, C. H., Jr.: Subsonic Pressure Distributions Near a Wing-Fin Junction on a Supersonic Arrow-Wing Configuration With Wing-Mounted Vertical Fins. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0276.
(Subject Category 02 RTOP 505-31-23)
918. Johnson, T. D., Jr.; and Huffman, J. K.: Effects of Leading-Edge Vortex Flaps on the Aerodynamic Characteristics of a Delta-Wing-Sweep Series at High Angle of Attack. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)
919. Kaufman, L. G., II; and Johnson, C. B.: An Overview of Some Investigations of Pressure and Thermal Distributions Induced by Trailing Edge Controls on Hypersonic Aircraft. Presented at the IUTAM Symposium on Turbulent Shear-Layer/Shock Wave Interaction, September 9-12, 1985, Palaiseau, France. Proceedings pending.
(Subject Category 34 RTOP 505-31-53)
920. Kilgore, R. A.: Other Cryogenic Wind Tunnel Projects. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium.
(Subject Category 09 RTOP 505-31-53)
921. Kilgore, R. A.: The NASA Langley 0.3-m Transonic Cryogenic Tunnel. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium.
(Subject Category 09 RTOP 505-31-53)

922. Klein, J. R.; Chu, J.; Frink, N. T.: Aerodynamic Assessment of Vortex Flaps on Two Fighter Aircraft Configurations at Transonic Speeds. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-60-21)
923. Kreis, R. I.; Thames, F. C.; and Hassan, H. A.: Application of a Variational Scheme for Generating Adaptive Grids. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0487.
(Subject Category 34 RTOP 505-31-03)
924. Kubendran, L. R.; and Harvey, W. D.: Juncture Flow Control Using Leading-Edge Fillets. Presented at the AIAA 3rd Applied Aerodynamics Conference, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-4097.
(Subject Category 02 RTOP 505-31-23)
925. Kubendran, L. R.; McMahon, H.; and Hubbartt, J.: Turbulent Flow Around a Wing-Fuselage Type Juncture. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0040.
(Subject Category 02 RTOP 505-31-23)
926. Lamar, J. E.: In-Flight and Wind-Tunnel Vortex Vapor-Screen Study on F-106B Airplane. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)
927. Lamb, M.; Abeyounis, W. K.; Patterson, J. C., Jr.; and Re, R. J.: Natural Laminar Flow Nacelle for Transport Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 18 RTOP 505-40-90)
928. Leavitt, L. D.: Summary of Nonaxisymmetric Nozzle Internal Performance From the NASA Langley Static Test Facility. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1347.
(Subject Category 07 RTOP 505-40-90)
929. Leavitt, L. D.; and Burley, J. R., II: Nozzle Afterbody Integration for High Performance Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-40-90)
930. Luckring, J. M.: A Theory for the Core of a Three-Dimensional Leading-Edge Vortex. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0108.
(Subject Category 02 RTOP 505-31-23)

931. Luckring, J. M.: A Theory for the Core Flow of Leading-Edge Vortices. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 02 RTOP 505-31-23)
932. Luckring, J. M.; Hoffler, K. D.; and Grantz, A. C.: Recent Extensions to the Free-Vortex-Sheet Theory for Expanded Convergence Capability. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending. (Subject Category 02 RTOP 505-31-23)
933. Maestrello, L.: Active Transition Fixing and Control of the Boundary Layer in Air. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0564. (Subject Category 02 RTOP 505-31-23)
934. Maestrello, L.; Bayliss, A.; Mangalam, S. M.; and Malik, M. R.: Boundary Layer Transition. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 02 RTOP 505-31-23)
935. Maestrello, L.; Bayliss, A.; Parikh, P.; and Turkel, E.: Active Control of Compressible Flows Over a Curved Surface. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851856. (Subject Category 02 RTOP 505-60-21)
936. Mangalam, S. M.; Dagenhart, J. R.; Hepner, T. E.; and Meyers, J. F.: The Gortler Instability on an Airfoil. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0491. (Subject Category 02 RTOP 505-31-23)
937. Mann, M. J.; and Mercer, C. E.: A Forward-Swept Wing Configuration Designed for High Maneuverability by Use of Three-Dimensional Transonic Theory. Presented at the AIAA 3rd Applied Aerodynamics Conference, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-4069. (Subject Category 02 RTOP 505-43-23)
938. Mann, M. J.; Mercer, C. E.; and Hallissy, J. B.: Forward-Swept Wing Technology for Maneuvering Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2. (Subject Category 02 RTOP 505-43-23)
939. McKinney, L. W.; Fuller, D. E.; and Adcock, J. B.: Preliminary Calibration and Test Results From the National Transonic Facility. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 09 RTOP 505-31-53)

940. Morgan, H. L., Jr.: High-Lift Flaps for Natural Laminar Flow Airfoils. Presented at the NASA, SAE, et al., Laminar Flow Aircraft Certification Workshop, April 15-16, 1985, Wichita, Kansas. NASA CP pending.
(Subject Category 02 RTOP 505-31-23)
941. Newman, P. A.; Mineck, R. E.; Barnwell, R. W.; and Kemp, W. B., Jr.: Wind Tunnel Wall Interference. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-31-53)
942. Patterson, J. C., Jr.; and Bartlett, G. R.: Effect of a Wing-Tip Mounted Pusher Turboprop on the Aerodynamic Characteristics of a Semi-Span Wing. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1286.
(Subject Category 02 RTOP 505-40-90)
943. Putnam, L. E.; and Bissinger, N. C.: Results of AGARD Assessment of Prediction Capabilities for Nozzle Afterbody Flows. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1464.
(Subject Category 02 RTOP 505-40-90)
944. Ram, R. B.; Vemuru, C. S.; and Harvey, W. D.: Hybrid Approach to Steady Transonic Normal Shock-Compressible Laminar Boundary Layer Interactions Over Airfoils With Suction. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0522.
(Subject Category 12 RTOP 505-31-23)
945. Re, R. J.; and Mason, M. L.: Port Geometry Effects on Thrust Reverser Static Performance. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1345.
(Subject Category 02 RTOP 505-40-90)
946. Reubush, D. E.: Particle Generation Experience in Langley's 16-Foot Transonic Tunnel. Presented at the NASA Mini-Workshop on the Development and Application of Wind Tunnel Seeding Systems for Laser Velocimeters, March 19-20, 1985, Hampton, Virginia. In NASA CP-2393, p. 149-167.
(Subject Category 09 RTOP 505-40-90)
947. Salas, M. D.: Progress Toward the Numerical Solution of the Euler Equations. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851792.
(Subject Category 64 RTOP 505-31-03)
948. Salas, M. D.; and Gumbert, C. R.: Breakdown of the Conservative Potential Equation. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1984, Reno, Nevada. AIAA Paper No. 85-0367.
(Subject Category 64 RTOP 505-31-03)

949. Salas, M. D.; and Gumbert, C. R.: Breakdown of the Conservative Potential Equation. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 64 RTOP 505-31-03)
950. Scheiman, J.; and Kubendran, L. R.: LDA Seeding System for the Langley Low Turbulence Pressure Tunnel. Presented at the NASA Mini-Workshop on the Development and Application of Wind Tunnel Seeding Systems for Laser Velocimeters, March 19-20, 1985, Hampton, Virginia. In NASA CP-2393, p. 169-178. (Subject Category 34 RTOP 505-31-23)
951. Scheiman, J.; and Kubendran, L. R.: Juncture Flow Measurements Using Laser Velocimetry. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Laser Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1612. (Subject Category 02 RTOP 505-31-23)
952. Schoonover, W. E., Jr.; and Smith, F. R.: Design and Wind-Tunnel Evaluation of Vortex Flaps for the USAF AFTI/F-111. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending. (Subject Category 02 RTOP 505-31-23)
953. Schoonover, W. E., Jr.; Yip, L. P.; Frink, N. T.; and Hallissy, J. B.: Subsonic/Transonic Development of Vortex Flaps for Fighter Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2. (Subject Category 02 RTOP 505-31-23)
954. South, J. C., Jr.; Doria, M. L.; and Green, L. L.: Finite-Volume Scheme for Transonic Potential Flow About Airfoils and Bodies in an Arbitrarily-Shaped Channel. Presented at the California State University Third Symposium on Numerical and Physical Aspects of Aerodynamic Flows, January 20-24, 1985, Long Beach, California. In Proceedings, p. 4-25 - 4-33. (Subject Category 64 RTOP 505-31-03)
955. Stainback, P. C.: A Review of Hot Wire Anemometry in Transonic Flows. Presented at the AESS/IEEE Eleventh International Congress on Instrumentation in Aerospace Simulation Facilities (ICIASF), August 26-28, 1985, Stanford, California. In IEEE Publication 85CH2210-3, p. 67-78. (Subject Category 02 RTOP 505-31-23)
956. Stainback, P. C.; Johnson, C. B.; Honaker, W. C.; Lawing, P. L.; Holmes, B. J.; Obara, C. J.; Carroway, D.; Antcliff, R. R.; Jarrett, O., Jr.; Rogers, R. C.; Meyers, J. F.; and Wilkinson, S. P.: Flow Diagnostics and Visualization in Wind Tunnels and Flight. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 02 RTOP 505-43-83)

957. Swanson, R. C.; and Turkel, E.: A Multistage Time-Stepping Scheme for the Navier-Stokes Equations. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0035. (Subject Category 34 RTOP 505-31-23)
958. Swanson, R. C.; Turkel, E.; and Vatsa, V. N.: A Multistage Time-Stepping Scheme for the Thin-Layer Navier-Stokes Equations. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 34 RTOP 505-31-03)
959. Viken, J. K.; Pfenninger, W.; and McGhee, R. J.: Advanced Natural Laminar Flow Airfoil With High L/D. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 02 RTOP 505-31-23)
960. Waggoner, E. G.: Computational Wing Design Studies Relating to Natural Laminar Flow. Presented at the NASA, SAE, et al., Laminar Flow Aircraft Certification Workshop, April 15-16, 1985, Wichita, Kansas. NASA CP pending. (Subject Category 02 RTOP 505-31-23)
961. Waggoner, E. G.; Campbell, R. L.; and Phillips, P. S.: Computational Wing Design in Support of an NLF Variable Sweep Transition Flight Experiment. Presented at the AIAA 3rd Applied Aerodynamics Conference, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-4074. (Subject Category 02 RTOP 505-31-23)
962. Waggoner, E. G.; Campbell, R. L.; Phillips, P. S.; and Viken, J. K.: Computational Design of Natural Laminar Flow Wings for Transonic Transport Application. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 02 RTOP 505-31-23)
963. Waggoner, E. G.; Phillips, P. S.; Viken, J. K.; and Davis, W. H.: Potential Flow Calculations and Preliminary Wing Design in Support of an NLF Variable Sweep Transition Flight Experiment. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0426. (Subject Category 02 RTOP 505-31-23)
964. Wornom, S. F.; and Hafez, M. M.: Relaxation Algorithms for the Euler Equations. Presented at the AIAA 7th Computational Fluid Dynamics Conference, July 15-17, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1516-CP. (Subject Category 64 RTOP 505-31-13)

Technical Talks

965. Britcher, C. P.: Status of Magnetic Suspension and Balance System Research at NASA Langley Research Center. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas. (Subject Category 09 RTOP 505-31-53)
966. Dress, D. A.: Calculation of Flow Parameters and Power Requirements for Cryogenic Wind Tunnels Using a Desktop Computer. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California. (Subject Category 09 RTOP 505-31-53)
967. Gumbert, C. R.: Incorporation of TWINTN4 Into an 0.3-m TCT Airfoil WIAC Procedure. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia. (Subject Category 02 RTOP 505-31-53)
968. Gumbert, C. R.: Sample Case Demonstration of 0.3-m TCT WIAC Procedure on Interactive Graphics Terminal. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia. (Subject Category 02 RTOP 505-31-53)
969. Harvey, W. D.; McGhee, R. J.; and Harris, C. D.: Summary of NASA Langley Advanced Low-Drag Airfoil Research. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 02 RTOP 505-31-23)
970. Johnson, C. B.; Murthy, A. V.; Ray, E. J.; and McGee, B. S.: Preliminary Validation of the Active Sidewall-Boundary Layer Removal System of the 0.3-Meter Transonic Cryogenic Tunnel. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas. (Subject Category 09 RTOP 505-31-53)
971. Kilgore, R. A.; and Dress, D. A.: A Survey of Cryogenic Wind Tunnels. Presented at the Institut Fur Luft - und Raumfahrt, Technische Universitat Berlin, October 16, 1985, Berlin, West Germany. (Subject Category 09 RTOP 505-31-53)
972. Kilgore, R. A.; and Dress, D. A.: A Survey of Cryogenic Wind Tunnels. Presented at the DFVLR Kryo-Kanal Koln/European Transonic Windtunnel Special Seminar, October 14, 1985, Koln-Porz, Germany. (Subject Category 09 RTOP 505-61-01)
973. Kubendran, L. R.: Hot-Wire Techniques in Separated Flows. Presented at the NASA 21st Annual Subsonic Aerodynamic Testing Association (SATA) Meeting, May 14-16, 1985, Williamsburg, Virginia. (Subject Category 34 RTOP 505-31-23)

974. Lamar, J. E.: Vortex Flow Visualization on the F-106B. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California.
(Subject Category 02 RTOP 307-05-01)
975. Lawing, P. L.: Cryogenic Wind Tunnels for High Reynolds Number Testing. Presented at the University of Tennessee Space Institute Short Course on Aerospace Ground Test Facilities and Flight Testing, May 8, 1985, Tullahoma, Tennessee.
(Subject Category 09 RTOP 505-61-01)
976. Lawing, P. L.: The Construction of Airfoil Models by the Bonded Plate Method. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California.
(Subject Category 02 RTOP 505-31-53)
977. Maestrello, L.: Active Boundary Layer Control. Presented at the NASA Seminar at David Taylor Naval Ship Research and Development Center, May 24, 1985, Bethesda, Maryland.
(Subject Category 02 RTOP 505-31-23)
978. Maestrello, L.; Bayliss, A.; Parikh, P.; and Turkel, E.: Active Flow Control With Pressure Gradient. Presented at the Thirty-Eighth Annual Meeting of the American Physical Society, Division of Fluid Dynamics, November 24-26, 1985, Tucson, Arizona.
(Subject Category 02 RTOP 505-31-23)
979. McKinney, L. W.: Update on NTF Calibration. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas.
(Subject Category 09 RTOP 505-31-53)
980. Melson, N. D.: Vectorizable Multigrid Algorithms for Transonic Flow Calculations. Presented at the USAF/Office of Scientific Research Second Copper Mountain Conference on Multigrid Methods, April 1-3, 1985, Copper Mountain, Colorado.
(Subject Category 34 RTOP 505-31-13)
981. Mineck, R. E.: The Adaptive Wall Test Section for the NASA Langley 0.3-m Transonic Cryogenic Tunnel. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California.
(Subject Category 02 RTOP 505-31-53)
982. Newman, P. A.: Validation of 0.3-m TCT Airfoil WIAC Procedure. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia.
(Subject Category 02 RTOP 505-31-53)
983. Newman, P. A.: Wall Interference of 8- by 24-Inch Test Section Design, Transonic Correction Philosophy, and Overview of WIAC Procedure. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia.
(Subject Category 02 RTOP 505-31-53)

984. Salas, M. D.: Breakdown of the Conservative Potential Model. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York.
(Subject Category 64 RTOP 505-31-03)
985. Salas, M. D.: Fundamentals - Mathematical and Numerical Models, Analysis of Basic Assumptions. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York.
(Subject Category 64 RTOP 505-31-03)
986. Salas, M. D.: Inviscid Separation - Effects of Vorticity and Artificial Dissipation. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York.
(Subject Category 64 RTOP 505-31-03)
987. Salas, M. D.: Multiple Steady States of Characteristic Initial Value Problems. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York.
(Subject Category 64 RTOP 505-31-03)
988. Salas, M. D.: Recent Advances on the Numerical Solution of the Euler Equations. Presented at the University of Rome Seminar on Recent Advances in Numerical Gas-Dynamics, September 16-20, 1985, Rome, Italy.
(Subject Category 64 RTOP 505-31-03)
989. Salas, M. D.: Shock Wave Stability - Analysis of Stability of Shocks. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York.
(Subject Category 64 RTOP 505-31-03)
990. Salas, M. D.: State-of-the-Art Solutions of Euler Equations in the Transonic Range. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York.
(Subject Category 64 RTOP 505-31-03)
991. Salas, M. D.: Studies on Shock-Wave Stability. Presented at the University of Rome Seminar on Recent Advances in Numerical Gas-Dynamics, September 16-20, 1985, Rome, Italy.
(Subject Category 64 RTOP 505-31-03)
992. Scheiman, J.; and Kubendran, L. R.: Laser Velocimeter Measurements in a Wing-Fuselage Type Juncture. Presented at the AESS/IEEE Eleventh International Congress on Instrumentation in Aerospace Simulation Facilities (ICIASF), August 26-28, 1985, Stanford, California.
(Subject Category 02 RTOP 505-31-23)
993. Streett, C. L.: The Effect of Finite Length on Taylor-Couette Flow. Presented at ICASE/NASA Workshop on Stability of Time Dependent and Spatially Varying Flows, August 19-20, 1985, Hampton, Virginia.
(Subject Category 02 RTOP 505-31-03)

994. Williams, L. E.: Shakedown Experience of the National Transonic Facility. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California.
(Subject Category 09 RTOP 505-31-53)

Computer Programs

No computer programs.

Tech Briefs

995. Berrier, B. L.: Performance Improvement for Nonaxisymmetric Nozzles. NASA Tech Brief LAR-13036.
996. Henne, P. A.; and Gregg, R. D. (McDonnell Douglas Corporation): Divergent Trailing-Edge Airfoil. NASA Tech Brief LAR-13374.
997. Kemp, W. B., Jr. (Virginia Associated Research Campus): Transonic Four Wall Interference Assessment in Two-Dimensional Wind Tunnels. NASA Tech Brief LAR-13394.

Patents

998. Patterson, J. C., Jr.: Wingtip Vortex Propeller. U.S. Patent 4,533,101. Issued August 6, 1985.
(Subject Category 02)

PUBLICATIONS FOR LOW-SPEED AERODYNAMICS DIVISION

Formal Reports

999. Banks, D. W.; and Paulson, J. W., Jr.: Aerodynamic Characteristics and Predicted Landing Performance of an F-15 Fighter With Two Thrust-Reverser Configurations. NASA TP-2466, April 1985, 113 p.
(Avail: STIF Subject Category 02 RTOP 505-43-93)
1000. Coe, P. L., Jr.; Gentry, G. L., Jr.; and Dunham, D. M.: Low-Speed Wind-Tunnel Tests of an Advanced Eight-Bladed Propeller. NASA TM-86364, July 1985, 47 p.
(Avail: NTIS Subject Category 02 RTOP 535-03-12)
1001. Grafton, S. B.; and Nguyen, L. T.: Wind-Tunnel Free-Flight Investigation of a Model of a Cranked-Arrow-Wing Fighter Configuration. NASA TP-2410, March 1985, 69 p.
(Avail: STIF Subject Category 08 RTOP 505-43-13)
1002. Hahne, D. E.: Free-Flight Wind Tunnel Investigation of Effects of Spanwise Blowing on the Dynamic Lateral-Directional Stability and Control Characteristics of a 0.13-Scale Model of a Swept-Wing Fighter. NASA TP-2492, October 1985, 29 p.
(Avail: STIF Subject Category 02 RTOP 533-02-33)
1003. *Hoad, D. R.; and Martin, R. M.: Background Noise Measurements From Jet Exit Vanes Designed To Reduce Flow Pulsations in an Open-Jet Wind Tunnel. NASA TM-86383, AVSCOM TM 85-B-1, June 1985, 46 p.
(Avail: NTIS Subject Category 09 RTOP 505-42-23)
1004. Holbrook, G. T.; and Dunham, D. M.: Detailed Pressure Distribution Measurements Obtained on Several Configurations of an Aspect-Ratio-7 Variable Twist Wing. NASA TM-86308, March 1985, 64 p.
(Avail: NTIS Subject Category 01 RTOP 505-31-23)
1005. Holbrook, G. T.; Dunham, D. M.; and Greene, G. C.: Vortex Wake Alleviation Studies With a Variable Twist Wing. NASA TP-2442, November 1985, 116 p.
(Avail: NTIS Subject Category 01 RTOP 505-31-23)
1006. Moul, T. M.: Determination of Corrections to Flow Direction Sensor Measurements Over an Angle-of-Attack Range From 0° to 85°. NASA TM-86402, December 1985, 50 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-43)
1007. Obara, C. J.; and Holmes, B. J.: Flight-Measured Laminar Boundary-Layer Transition Phenomena Including Stability Theory Analysis. NASA TP-2417, April 1985, 38 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-43)

*Aerostructures Directorate, USAARTA (AVSCOM)

1008. *Phelps, A. E., III; and *Berry, J. D.: Wind-Tunnel Evaluation of a 21-Percent-Scale Powered Model of a Prototype Advanced Scout Helicopter. NASA TP-2420, AVSCOM TR 85-B-2, June 1985, 74 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-43)
1009. Riley, D. R.: Simulator Study of the Stall Departure Characteristics of a Light General Aviation Airplane With and Without a Wing Leading-Edge Modification. NASA TM-86309, May 1985, 84 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-43)
1010. Satran, D. R.; Gilbert, W. P.; and Anglin, E. L.: Low-Speed Stability and Control Wind-Tunnel Investigation of Effects of Spanwise Blowing on Fighter Flight Characteristics at High Angles of Attack. NASA TP-2431, May 1985, 44 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-13)
1011. Sellers, W. L., III; Applin, Z. T.; Molloy, J. K.; and Gentry, G. L., Jr.: Effect of Jet Exit Vanes on Flow Pulsations in an Open-Jet Wind Tunnel. NASA TM-86299, March 1985, 215 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-13)
1012. Stough, H. P., III; DiCarlo, D. J.; and Patton, J. M., Jr.: Flight Investigation of Stall, Spin, and Recovery Characteristics of a Low-Wing, Single-Engine, T-Tail Light Airplane. NASA TP-2427, May 1985, 96 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-23)
1013. Usry, J. W.; Dunham, R. E., Jr.; and Lee, J. T.: Comparison of Wind Velocity in Thunderstorms Determined From Measurements by a Ground-Based Doppler Radar and an F-106B Airplane. NASA TM-86348, April 1985, 37 p.
(Avail: NTIS Subject Category 03 RTOP 505-45-13)
1014. Whipple, R. D.; and White, W. L.: Spin-Tunnel Investigation of a 1/25-Scale Model of the McDonnell Douglas AV-8B V/STOL Airplane (Coord No. N-AM-238). NASA TM SX-86444, December 1985, 35 p.
(Avail: NASC Subject Category 02 RTOP 505-43-33)
1015. Yip, L. P.: Wind-Tunnel Investigation of a Full-Scale Canard-Configured General Aviation Airplane. NASA TP-2382, March 1985, 79 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-43)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

1016. Halt, D. W.; and Bristow, D. R.: Numerical Approach for the Aerodynamic Analysis of Airfoils With Laminar Separation. (NAS1-17466 McDonnell Aircraft Company.) NASA CR-172496, February 1985, 32 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-03)
1017. Hess, C. F.; and Li, F.: Optical Technique to Study the Impact of Heavy Rain on Aircraft Performance. (NAS1-17932 Spectron Development Laboratories, Inc.) NASA CR-177989, October 1985, 42 p.
(Avail: NTIS Subject Category 35 RTOP 324-01-00)
1018. Kohlman, D. L.; and Hammer, J.: Design Study of Technology Requirements for High Performance Single-Propeller-Driven Business Airplanes. (NAS1-16363 The University of Kansas Center for Research, Inc.) NASA CR-3863, January 1985, 105 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-43)
1019. Lan, C. E.: VORSTAB - A Computer Program for Calculating Lateral-Directional Stability Derivatives With Vortex Flow Effect. (NAG1-134 The University of Kansas Center for Research, Inc.) NASA CR-172501, January 1985, 258 p.
(Avail: IAC Subject Category 61 RTOP 505-43-13)
1020. Selberg, B. P.; and Cronin, D. L.: Aerodynamic-Structural Study of Canard Wing, Dual Wing, and Conventional Wing Systems for General Aviation Applications. (NAG1-26 University of Missouri-Rolla.) NASA CR-172529, February 1985, 86 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-43)
1021. Stewart, V. R.: Aerodynamic Characteristics of a Propulsive Wing/Canard Concept at STOL Speeds. (NAS1-17171 Rockwell International Corporation.) NASA CR-177982, November 1985, 422 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-03)

Journal Articles and Other Publications

1022. Banks, D. W.; and Paulson, J. W., Jr.: Approach and Landing Technologies for STOL Fighter Configurations. Journal of Aircraft, Volume 22, No. 4, April 1985, p. 277-282.
(Subject Category 02 RTOP 505-43-23)
1023. Chamberlain, J. P.; and Liu, C-H.: Navier-Stokes Calculations for Unsteady Three-Dimensional Vortical Flows in Unbounded Domains. AIAA Journal, Volume 23, No. 6, June 1985, p. 868-874.
(Subject Category 02 RTOP 505-31-03)
1024. Gunzburger, M. D.; Nicolaidis, R. A.; and Liu, C-H.: Algorithmic and Theoretical Results on Computation of Incompressible Viscous Flows by Finite Element Methods. Computers & Fluids, Volume 13, No. 3, September 1985, p. 361-373.
(Subject Category 02 RTOP 505-31-03)

1025. Hartwich, P. M.: Finite Difference Solutions of the Euler Equations in the Vicinity of Sharp Edges. AIAA Journal, Volume 23, No. 11, November 1985, p. 1820-1822.
(Subject Category 02 RTOP 505-31-03)
1026. Hastings, E. C., Jr.; and Manuel, G. S.: Scale-Model Tests of Airfoils in Simulated Heavy Rain. Journal of Aircraft, Volume 22, No. 6, June 1985, p. 536-540.
(Subject Category 02 RTOP 505-45-13)
1027. Holmes, B. J.: Natural Laminar Flow Hits Smoother Air. Aerospace America, Volume 23, No. 7, July 1985, p. 6061 & 77.
(Subject Category 02 RTOP 505-45-43)
1028. Rumsey, C. L.: Evaluation of a Stalled Airfoil Analysis Program. Journal of Aircraft, Volume 22, No. 2, February 1985, p. 156-157.
(Subject Category 02 RTOP 505-31-03)
1029. Straub, F. K.; Johnston, R. A.; Head, R. E.; and Kelley, H. L.: Design and Development of a Dynamically Scaled Model AH-64 Main Rotor. Vertica, Volume 9, No. 2, 1985, p. 165-180.
(Subject Category 02 RTOP 505-61-51)
1030. Wong, T-C.; Liu, C-H.; and Geer, J.: Comparison of Uniform Perturbation and Numerical Solutions for Some Potential Flows Past Slender Bodies. Computers and Fluids, Volume 13, No. 3, September 1985, p. 271-283.
(Subject Category 02 RTOP 505-31-03)

Meeting Presentations

1031. Anderson, W. K.; Thomas, J. L.; and van Leer, B.: A Comparison of Finite Volume Flux Vector Splittings for the Euler Equations. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0122.
(Subject Category 02 RTOP 505-31-03)
1032. Coe, P. L., Jr.; Patterson, J. C., Jr.; and Dunham, D. M.: Aerodynamic Integration for Advanced Turboprop Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 535-03-12)
1033. Croom, C. C.; and Holmes, B. J.: Flight Evaluation of an Insect Contamination Protection System for Laminar Flow Wings. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850860.
(Subject Category 02 RTOP 505-45-43)
1034. Croom, C. C.; and Holmes, B. J.: Insect Contamination Protection for Laminar Flow Surfaces. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-45-43)

1035. Dunham, D. M.; Elliott, J. W.; and Sellers, W. L., III: Laser Velocimeter Measurements of the Flow Fields Around Single- and Counter-Rotation Propeller Models. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850870.
(Subject Category 34 RTOP 535-03-12)
1036. Dunham, R. E., Jr.; Bezos, G. M.; Gentry, G. L., Jr.; and Melson, E., Jr.: Two-Dimensional Wind Tunnel Tests of a Transport-Type Airfoil in a Water Spray. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0258.
(Subject Category 02 RTOP 505-45-13)
1037. Erickson, G. E.; and Brandon, J. M.: Low-Speed Experimental Study of the Vortex Flow Effects of a Fighter Forebody Having Unconventional Cross Section. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1798-CP.
(Subject Category 02 RTOP 505-43-13)
1038. Fisher, B. D.; Brown, P. W.; and Plumer, J. A.: NASA Storm Hazards Research in Lightning Strikes to Aircraft. Presented at the AMS Second International Conference on the Aviation Weather System, June 19-21, 1985, Montreal, Canada. In Preprints, p. 152-160.
(Subject Category 03 RTOP 505-45-13)
1039. Fisher, B. D.; Brown, P. W.; and Plumer, J. A.: Research in Lightning Swept-Stroke Attachment Patterns and Flight Conditions With the NASA F-106B Airplane. Presented at the NICG/ESA, et al., 10th International Aerospace and Ground Conference on Lightning and Static Electricity, June 10-12, 1985, Paris, France. In Proceedings, Paper No. 7A-4, p. 267-280.
(Subject Category 03 RTOP 505-45-13)
1040. Fisher, B. D.; Brown, P. W.; and Plumer, J. A.: NASA Storm Hazards Lightning Research. Presented at the Flight Safety Foundation, Inc., 30th Corporate Aviation Safety Seminar, April 14-16, 1985, Dallas/Ft. Worth Airport, Texas. In Proceedings, p. 117-155.
(Subject Category 03 RTOP 505-45-13)
1041. Gatlin, G. M.: Advanced Fighter Tested for Low-Speed Aerodynamics With Vortex Flaps. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-43-23)
1042. Gunzburger, M. D.; Nicolaidis, R. A.; and Liu, C-H.: Finite Element Discretization of the Navier-Stokes Equations For Low Speed Aerodynamic Applications. Presented at the Japan Society of Computational Fluid Dynamics International Symposium on Computational Fluid Dynamics - Tokyo, September 9-12, 1985, Tokyo, Japan. Proceedings pending.
(Subject Category 02 RTOP 505-31-03)

1043. Hastings, E. C., Jr.; and Manuel, G. S.: Measurements of Water Film Characteristics on Airfoil Surfaces From Wind-Tunnel Tests With Simulated Heavy Rain. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0259.
(Subject Category 02 RTOP 505-45-13)
1044. Holmes, B. J.: Natural Laminar Flow Flight Experiences. Presented at the NASA/SAE et al., Laminar Flow Aircraft Certification Workshop, April 15-18, 1985, Wichita, Kansas. NASA CP pending.
(Subject Category 34 RTOP 505-45-43)
1045. Holmes, B. J.; Croom, C. C.; Obara, C. J.; Hastings, E. C., Jr.; and van Dam, C. P.: Flight Research on Natural Laminar Flow. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-45-43)
1046. Holmes, B. J.; Obara, C. J.; Martin, G. L.; and Domack, C. S.: Manufacturing Tolerances for Natural Laminar Flow Airframe Surfaces. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850863.
(Subject Category 02 RTOP 505-45-43)
1047. Howard, R. M.; Miley, S. J.; and Holmes, B. J.: An Investigation of the Effects of the Propeller Slipstream on the Laminar Wing Boundary Layer. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850859.
(Subject Category 02 RTOP 505-45-43)
1048. *Kelley, H. L.; and *Wilson, J. C.: Aerodynamic Performance of a 27-Percent-Scale AH-64 Wind-Tunnel Model With Baseline/Advanced Rotor Blades. Presented at the AHS 41st Annual Forum and Technology Display, May 15-17, 1985, Ft. Worth, Texas. In Proceedings, p. 491-499.
(Subject Category 02 RTOP 505-42-23)
1049. Liu, C-H.; Krause, E.; and Ting, L.: Vortex-Dominated Flow With Viscous Core Structure. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1556.
(Subject Category 02 RTOP 505-31-03)

1050. Liu, C-H.; Ting, L.; and Weston, R. P.: Boundary Conditions for N-S Solution of the Merging of Vortex Filaments. Presented at the Japan Society of Computational Fluid Dynamics International Symposium on Computational Fluid Dynamics-Tokyo, September 9-12, 1985, Tokyo, Japan. Proceedings pending.
(Subject Category 02 RTOP 505-31-03)
1051. Margason, R. J.: Computational Methods for Subsonic Aerodynamic Flow Separation. Presented at the Thirty-Eighth Annual Meeting of the American Physical Society, Division of Fluid Dynamics, November 24-26, 1985, Tucson, Arizona. Abstract published in APS Bulletin, p. 1716.
(Subject Category 02 RTOP 505-43-13)
1052. Margason, R. J.; Kjelgaard, S. O.; Sellers, W. L., III; Morris, C. E. K., Jr.; Walkey, K. B.; and Shields, E. W.: Subsonic Panel Methods - A Comparison of Several Production Codes. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0280.
(Subject Category 02 RTOP 505-43-13)
1053. Mazur, V.; Fisher, B. D.; and Gerlach, J. C.: Lightning Strikes to a NASA Airplane Penetrating Thunderstorms at Low Altitudes. Presented at the AMS Second International Conference on the Aviation Weather System, June 19-21, 1985, Montreal, Canada. In Preprints, p. 161-167.
(Subject Category 47 RTOP 505-45-13)
1054. Mazur, V.; Fisher, B. D.; and Gerlach, J. C.: Lightning Strikes to an Airplane Penetrating Thunderstorms at Low Altitudes. Presented at the NICG/ESA, et al., 10th International Aerospace and Ground Conference on Lightning and Static Electricity, June 10-12, 1985, Paris, France. Addendum to proceedings pending.
(Subject Category 47 RTOP 505-45-13)
1055. Miley, S. J.; Howard, R. M.; and Holmes, B. J.: An Investigation of the Effects of the Propeller Slipstream on the Laminar Wing Boundary Layer. Presented at the Office of Naval Research, NASA, et al., Conference on Low Reynolds Number Airfoil Aerodynamics, June 17-19, 1985, Notre Dame, Indiana. In Proceedings, p. 335-349.
(Subject Category 34 RTOP 505-45-43)
1056. Nguyen, L. T.; Hahne, D. E.; Murri, D. G.; and Ogburn, M. E.: Advanced High Angle-of-Attack Control Concepts for Fighter Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-13)
1057. Nguyen, L. T.; Whipple, R. D.; and Brandon, J. M.: Recent Experiences of Unsteady Aerodynamic Effects on Aircraft Dynamics at High-Angles-of-Attack. Presented at the AGARD FDP/FMP Symposium on Unsteady Aerodynamics - Fundamentals and Applications to Aircraft Dynamics, May 6-9, 1985, Göttingen, Germany. Proceedings pending.
(Subject Category 08 RTOP 505-43-13)

1058. Obara, C. J.; and Holmes, B. J.: Roughness and Waviness Requirements for Laminar Flow Surfaces. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-45-43)
1059. Paulson, J. W., Jr.; Quinto, P. F.; Banks, D. W.; Kemmerly, G. T.; and Gatlin, G. M.: Powered Aerodynamics for Advanced STOL Fighter Configurations. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-23)
1060. Rumsey, C. L.: Time-Dependent Navier-Stokes Computations of Separated Flows Over Airfoils. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1684.
(Subject Category 02 RTOP 505-31-03)
1061. Satran, D. R.: Seeding Techniques Used in the Vortex Research Facility. Presented at the NASA Mini-Workshop on the Development and Application of Wind Tunnel Seeding Systems for Laser Velocimeters, March 19-20, 1985, Hampton, Virginia. In NASA CP-2393, p. 85-92.
(Subject Category 02 RTOP 505-31-23)
1062. Satran, D. R.; Neuhart, D.; Holbrook, G. T.; and Greene, G. C.: Vortex Research Facility Improvements and Preliminary Density Stratification Effects on Vortex Wakes. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0050.
(Subject Category 02 RTOP 505-31-23)
1063. Sellers, W. L., III; Dunham, R. E., Jr.; Goodman, W. L.; Howard, F. G.; Margason, R. J.; Rudy, D. H.; Rumsey, C. L.; Stough, H. P., III; and Thomas, J. L.: Separated Flow. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 533-02-03)
1064. Stewart, E. C.; and Brown, P. W.: Simulation Study of an Automatic Trim System for Reducing the Control Forces on a Light Twin After an Engine Failure. Presented at the 1985 SAE General Aviation Aircraft Meeting and Exposition, April 15-19, 1985, Wichita, Kansas. SAE Paper No. 850913.
(Subject Category 08 RTOP 505-45-43)
1065. Stough, H. P., III; Jordan, F. L., Jr.; DiCarlo, D. J.; and Glover, K. E.: Leading-Edge Design for Improved Spin Resistance of Wings Incorporating Conventional and Advanced Airfoils. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-45-23)

1066. Stough, H. P., III; Jordan, F. L., Jr.; DiCarlo, D. J.; and Glover, K. E.: Leading-Edge Design for Improved Spin Resistance of Wings Incorporating Conventional and Advanced Airfoils. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851816.
(Subject Category 02 RTOP 505-43-13)
1067. Thomas, J. L.; and Salas, M. D.: Far-Field Boundary Conditions for Transonic Lifting Solutions to the Euler Equations. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0020.
(Subject Category 02 RTOP 505-31-03)
1068. Thomas, J. L.; and Walters, R. W.: Upwind Relaxation Algorithms for the Navier-Stokes Equations. Presented at the AIAA 7th Computational Fluid Dynamics Conference, July 15-17, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1501-CP.
(Subject Category 02 RTOP 505-31-03)
1069. Thomas, J. L.; Walters, R. W.; Rudy, D. H.; and Swanson, R. C.: Upwind Relaxation Algorithms for the Euler/Navier-Stokes Equations. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 533-02-03)
1070. Thomas, J. L.; van Leer, B.; and Walters, R. W.: Implicit Flux-Split Schemes for the Euler Equations. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1680.
(Subject Category 02 RTOP 505-31-03)
1071. Weston, R. P.; Hartwich, P. M.; Chamberlain, J. P.; and Liu, C-H.: Viscous Vortex Flows. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 34 RTOP 505-31-03)
1072. Whipple, R. D.; Brandon, J. M.; Croom, M. A.; and Nguyen, L. T.: Recent Studies of Aerodynamic Effects on High Angle-of-Attack Flight Dynamics of Fighter Aircraft. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-13)
1073. Yip, L. P.: Investigation of Vortex Flaps on the F-106B Airplane Configuration in the Langley 30- by 60-Foot Wind Tunnel. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-43-13)

Technical Talks

1074. Crabill, N. L.: Storm Hazards Research (Lightning and Heavy Rain). Presented at the IATA Flight Operations Advisory Committee Meeting, December 3, 1985, Moffett Field, California.
(Subject Category 03 RTOP 505-68-01)
1075. Fisher, D. F.; and Fischer, M. C.: Laminar Flow Control Leading Edge Flight Test - Preliminary Results. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado.
(Subject Category 34 RTOP 505-60-31)
1076. Gall, P. D.; and Holmes, B. J.: A New Laminar Boundary Layer Transition Visualization Method for Flight Research. Presented at the AIAA Twelfth Annual General Aviation Technologyfest, November 15-16, 1985, Wichita, Kansas.
(Subject Category 34 RTOP 505-45-43)
1077. Gratzner, L. B.; and Wagner, R. D.: Noise Field on the 757 Wing and Its Effects on Laminar Flow. Presented at the AIAA, AHS, ASEE Aircraft Design, Systems and Operations Meeting, October 14-16, 1985, Colorado Springs, Colorado.
(Subject Category 02 RTOP 505-45-63)
1078. Holmes, B. J.: Measurement of Boundary Layer Transition Location and Mode Using Hot Film Devices. Presented at the NASA 21st Annual Subsonic Aerodynamic Testing Association (SATA) Meeting, May 14-16, 1985, Williamsburg, Virginia.
(Subject Category 02 RTOP 505-61-41)
1079. Holmes, B. J.: Progress in Laminar Viscous Drag Reduction Applications to Aircraft. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC.
(Subject Category 01 RTOP 505-45-43)
1080. Holmes, B. J.: NASA Flight Research on Laminar Flow Drag Reduction. Presented at the AIAA Twelfth Annual General Aviation Technologyfest, November 15-16, 1985, Wichita, Kansas.
(Subject Category 34 RTOP 505-45-43)
1081. Margason, R. J.: Evaluation of Panel Method Results for Five Configurations. Presented at the AIAA Professional Study Seminar on Aerodynamic Analysis Using Panel Methods, October 17-18, 1985, Colorado Springs, Colorado.
(Subject Category 02 RTOP 505-60-01)
1082. Person, L. H., Jr.: Flight Deck Technology Research in the Advanced Transport Operating Systems Program. Presented at the Flight Safety Foundation Aviation Safety Workshop, January 29-30, 1985, Taipei, Taiwan.
(Subject Category 03 RTOP 505-45-13)

1083. Stickle, J. W.: NASA Research on Aircraft Safety. Presented at the Flight Safety Foundation Aviation Safety Workshop, January 29-30, 1985, Taipei, Taiwan.
(Subject Category 03 RTOP 505-45-13)
1084. Stough, H. P., III: Wing Design for Enhanced Spin Resistance. Presented at the AIAA/FAA 10th Annual General Aviation Pilot Safety Seminar, February 2, 1985, St. Louis, Missouri.
(Subject Category 02 RTOP 505-45-23)
1085. Vijgen, P.; Dodbele, S. S.; van Dam, C. P.; and Holmes, B. J.: Design of Fuselages for Natural Laminar Flow. Presented at the AIAA Twelfth Annual General Aviation Technologyfest, November 15-16, 1985, Wichita, Kansas.
(Subject Category 34 RTOP 505-42-43)
1086. Wagner, R. D.: A Status Report on NASA Laminar Flow Flight Tests. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC.
(Subject Category 02 RTOP 505-60-31)

Computer Programs

1087. Lan, C. E. (University of Kansas Center for Research, Inc.): VORSTAB - A Computer Program for Calculating Lateral-Directional Stability Derivatives With Vortex Flow Effect. Program No. LAR-13471.
1088. Shamroth, S. J. (Scientific Research Associates, Inc.): Airfoil Flow Field Computer Code (SRAIR). Program No. LAR-13483.
1089. Shamroth, S. J. (Scientific Research Associates, Inc.): Coordinate Generation Code (CRDSRA). Program No. LAR-13484.
1090. Teske, M. E.; and Bilanin, A. J. (Continuum Dynamics, Inc.): Agricultural Dispersion Prediction Program. Program No. LAR-13432.

Tech Briefs

1091. Holmes, B. J.; Holmes, H. K.; Moore, T. C.; and Manuel, G. S. (Langley Research Center); and Carraway, D. L. (Old Dominion University): Laminar Boundary-Layer Crossflow Sensor. NASA Tech Brief LAR-13436.
1092. Lan, C. E. (University of Kansas Center for Research, Inc.): VORSTAB - Lateral-Directional Stability Derivatives With Vortex Flow Effect. NASA Tech Brief LAR-13471.
1093. Robertson, J. B.: Two-Layer Full Color Electroluminescent Display. NASA Tech Brief LAR-13407.

Patents

1094. Whipple, R. D.: Extended Moment ARM Anti-Spin Device. U.S. Patent 4,496,122. Issued January 29, 1985.
(Subject Category 05)
1095. White, W. L.: Dual Towline Spin Recovery Device. U.S. Patent 4,538,778.
Issued September 3, 1985.
(Subject Category 08)

PUBLICATIONS FOR HIGH-SPEED AERODYNAMICS DIVISION

Formal Reports

1096. Adams, M. S.; Barger, R. L.; and Burnside, W. D.: NASA LD TM-1008, March 1985.
1097. Allen, J. M.: NASA LD TM-1013, November 1985.
1098. Andrews, E. H., Jr.; Torrence, M. G.; Anderson, G. Y.; Northam, G. B.; and Mackley, E. A.: Langley Mach 4 Scramjet Test Facility. NASA TM-86277, February 1985, 54 p.
(Avail: NTIS Subject Category 09 RTOP 505-43-83)
1099. Barger, R. L.; and Adams, M. S.: NASA LD TM-1009, May 1985.
1100. Barger, R. L.; and Adams, M. S.: Semianalytic Modeling of Aerodynamic Shapes. NASA TP-2413, April 1985, 18 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
1101. Barger, R. L.; Adams, M. S.; and Burnside, W. D.: NASA LD TM-1010, June 1985.
1102. Blair, A. B., Jr.: Wind-Tunnel Investigation at Supersonic Speeds of a Remote-Controlled Canard Missile With a Free-Rolling-Tail Brake Torque System. NASA TP-2401, March 1985, 36 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1103. Blair, A. B., Jr.; and Stallings, R. L., Jr.: Supersonic Wind-Tunnel Investigation of Axial-Force Characteristics of External and Internal Store-Carriage Configurations on a Flat-Plate Wing Parent Body Airplane. NASA TM-86343, May 1985, 35 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1104. Covell, P. F.: Supersonic Aerodynamic Characteristics of Canard, Tailless, and Aft-Tail Configurations for Two Wing Planforms. NASA TP-2434, June 1985, 67 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
1105. Creel, T. R., Jr.; Beckwith, I. E.; and Chen, F.-J.: Nozzle Wall Roughness Effects on Free-Stream Noise and Transition in the Pilot Low-Disturbance Tunnel. NASA TM-86389, September 1985, 32 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-13)
1106. Darden, C. M.: Effect of Leading-Edge Load Constraints on the Design and Performance of Supersonic Wings. NASA TP-2446, July 1985, 77 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
1107. Darden, C. M.: First Derivatives of Flow Quantities Behind Two-Dimensional, Nonuniform Supersonic Flow Over a Convex Corner. NASA TM-86272, January 1985, 14 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-23)

1108. Johnson, S. K.; and Weidner, J. P.: Experimental and Theoretical Investigation of a Parametric Set of Cruise Configurations at High Supersonic Speeds. NASA TP-2490, August 1985, 164 p.
(Avail: STIF Subject Category 02 RTOP 505-43-90)
1109. Keyes, J. W.: Modifications to the Nozzle Test Chamber To Extend Nozzle Static-Test Capability. NASA TM-86368, May 1985, 33 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-90)
1110. McLain, A. G.; Jachimowski, C. J.; and Rogers, R. C.: Ignition of Mixtures of SiH₄, CH₄, O₂, and Ar or N₂ Behind Reflected Shock Waves. NASA TP-2415, April 1985, 15 p.
(Avail: NTIS Subject Category 07 RTOP 505-43-83)
1111. Miller, D. S.; and Wood, R. M.: Lee-Side Flows Over Delta Wings at Supersonic Speeds. NASA TP-2430, June 1985, 153 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
1112. Morris, O. A.; Corlett, W. A.; Wassum, D. L.; and Babb, C. D.: Vapor-Screen Technique for Flow Visualization in the Langley Unitary Plan Wind Tunnel. NASA TM-86384, July 1985, 39 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)
1113. Olinger, F. V.: NASA LD TM-1017, August 1985.
1114. Olinger, F. V.; and Keyes, J. W.: NASA LD TM-1011, June 1985.
1115. Olinger, F. V.; and Keyes, J. W.: NASA LD TM-1018, August 1985.
1116. Penland, J. A.; and Pittman, J. L.: Aerodynamic Characteristics of a Distinct Body-Wing Configuration at Mach 6 Experiment, Theory, and the Hypersonic Isolation Principle. NASA TP-2467, August 1985, 32 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-83)
1117. Shrout, B. L.; and Talcott, N. A., Jr.: Effects of Wing Sweep and Camber on Aerodynamic Characteristics of a Fighter Configuration at Supersonic Speeds. NASA TM-86427, October 1985, 118 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1118. Small, W. J.: NASA LD TM-1012, June 1985.
1119. Wilcox, F. J., Jr.: Store Carriage Drag Measurements for an Advanced Fighter Aircraft at Supersonic Speeds. NASA TP-2521, December 1985, 163 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1120. Wood, R. M.; and Covell, P. F.: Experimental and Theoretical Study of the Longitudinal Aerodynamic Characteristics of Delta and Double-Delta Wings at Mach Numbers of 1.60, 1.90, and 2.16. NASA TP-2433, July 1985, 120 p.
(Avail: NTIS Subject Category 02 RTOP 505-43-23)

1121. Wood, R. M.; Miller, D. S.; Raney, D. L.; and Roesch, M. T.: A Low-Lift Wing Camber Design Approach for Fighter Aircraft. NASA TP-2465, August 1985, 257 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

1122. Anderson, O. L.; and Power, G. D.: Investigation of Parabolic Computational Techniques for Internal High-Speed Viscous Flows. (NAS1-17561 United Technologies Research Center.) NASA CR-172555, April 1985, 39 p.
(Avail: NTIS Subject Category 34 RTOP 505-43-83)
1123. Bonner, E.: Nonlinear Aerodynamic Wing Design. (NAS1-15820 Rockwell International Corporation.) NASA CR-3950, December 1985, 80 p.
(Avail: STIF Subject Category 02 RTOP 505-31-23)
1124. Carlson, H. W.: The Design and Analysis of Simple Low Speed Flap Systems With the Aid of Linearized Theory Computer Programs. (NAS1-16000 Kentron International, Inc.) NASA CR-3913, August 1985, 54 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1125. Cassidy, M. D.: Performance Sensitivities of a High Altitude Mach 5 Penetrator Aircraft Concept. (NAS1-16439 Lockheed-California Company.) NASA CR-3932, September 1985, 103 p.
(Avail: STIF Subject Category 05 RTOP 505-43-83)
1126. Chinitz, W.: Theoretical Studies of the Ignition and Combustion of Silane-Hydrogen-Air Mixtures. (NAG1-18 Cooper Union Research Foundation.) NASA CR-3876, February 1985, 44 p.
(Avail: NTIS Subject Category 25 RTOP 505-43-83)
1127. Davis, G. W.: Evaluation of Structural Design Concepts for High Speed Aircraft. (NAS1-16439 Lockheed-California Company.) NASA CR-3931, September 1985, 157 p.
(Avail: STIF Subject Category 05 RTOP 505-43-83)
1128. Dillenius, M. F. E.: Program LRCDM2, Improved Aerodynamic Prediction Program for Supersonic Canard-Tail Missiles With Axisymmetric Bodies. (NAS1-16770 Nielsen Engineering and Research, Inc.) NASA CR-3883, April 1985, 418 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1129. Jackson, J. S.: Optimization of Wing Flap and Canard Deflections for Trimmed Maneuvering Flight at Supersonic Speeds. (NCC1-24 George Washington University.) NASA CR-3938, October 1985, 120 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)

1130. Johnson, M. E.: A Design and Analysis of Maneuver Wing Flaps at Supersonic Speeds With Attainable Leading-Edge Thrust. (NCC1-24 George Washington University.) NASA CR-3939, October 1985, 112 p.
(Avail: STIF Subject Category 02 RTOP 505-43-23)
1131. Kinney, R. B.; Taslim, M. E.; and Hung, S. C.: Numerical Study of Large-Eddy Breakup and Its Effect on the Drag Characteristics of Boundary Layers. (NAG1-141 University of Arizona.) NASA CR-3884, March 1985, 90 p.
(Avail: NTIS Subject Category 34 RTOP 505-31-13)
1132. Miller, L. D.: NASA LDCR-1003, June 1985.
1133. Miller, L. D.: NASA LDCR-1005, June 1985.
1134. Moretti, G.: Numerical Studies of Two-Dimensional Flows. (NAS1-17262 GMAF, Inc.) NASA CR-3930, September 1985, 22 p.
(Avail: NTIS Subject Category 02 RTOP 505-31-03)
1135. Shankar, V.; and Szema, K. Y.: Nonlinear Potential Analysis Techniques for Supersonic Aerodynamic Design. (NAS1-15820 Rockwell International.) NASA CR-172507, March 1985, 147 p.
(Avail: IAC Subject Category 02 RTOP 505-43-23)

Journal Articles and Other Publications

1136. Antcliff, R. R.; Jarrett, O., Jr.; and Rogers, R. C.: CARS System for Turbulent Flame Measurements. Journal of Propulsion and Power, Volume 1, No. 3, May - June 1985, p. 205-209.
(Subject Category 25 RTOP 505-43-83)
1137. Carlson, H. W.; Shrout, B. L.; and Darden, C. M.: Wing Design With Attainable Leading-Edge Thrust Considerations. Journal of Aircraft, Volume 22, No. 3, March 1985, p. 244-248.
(Subject Category 02 RTOP 505-43-83)
1138. Darden, C. M.: The Influence of Leading-Edge Load Alleviation on Supersonic Wing Design. Journal of Aircraft, Volume 22, No. 1, January 1985, p. 71-77.
(Subject Category 02 RTOP 505-43-23)
1139. DiCarlo, D. J.; Glover, K. E.; Stewart, E. C.; and Stough, H. P., III: Discontinuous Wing Leading Edge to Enhance Spin Resistance. Journal of Aircraft, Volume 22, No. 4, April 1985, p. 283-288.
(Subject Category 05 RTOP 505-45-43)
1140. Drummond, J. P.: Numerical Study of a Ramjet Dump Combustor Flowfield. AIAA Journal, Volume 23, No. 4, April 1985, p. 604-611
(Subject Category 02 RTOP 505-43-83)

1141. Gatski, T. B.: Vortex Motion in Wall-Bounded Viscous Flow. Proceedings of the Royal Society of London, Series A, Volume 397, No. 1813, February 8, 1985, p. 397-414.
(Subject Category 34 RTOP 505-31-13)
1142. Gatski, T. B.; and Grosch, C. E.: Embedded Cavity Drag in Steady Laminar Flow. AIAA Journal, Volume 23, No. 7, July 1985, p. 1028-1037.
(Subject Category 34 RTOP 505-31-13)
1143. Goodman, W. L.: Emmons Spot Forcing for Turbulent Drag Reduction. AIAA Journal, Volume 23, No. 1, January 1985, p. 155-157.
(Subject Category 34 RTOP 505-31-13)
1144. Howard, F. G.; and Goodman, W. L.: Axisymmetric Bluff-Body Drag Reduction Through Geometrical Modification. Journal of Aircraft, Volume 22, No. 6, June 1985, p. 516-522.
(Subject Category 34 RTOP 505-31-13)
1145. Hussaini, M. Y.; Kopriva, D. A.; Salas, M. D.; and Zang, T. A.: Spectral Methods for the Euler Equations: Part I - Fourier Methods and Shock Capturing. AIAA Journal, Volume 23, No. 1, January 1985, p. 64-70.
(Subject Category 02 RTOP 505-31-03)
1146. Hussaini, M. Y.; Kopriva, D. A.; Salas, M. D.; and Zang, T. A.: Spectral Methods for Euler Equations: Part II - Chebyshev Methods and Shock Fitting. AIAA Journal, Volume 23, No. 2, February 1985, p. 234-240.
(Subject Category 02 RTOP 505-31-03)
1147. Jachimowski, C. J.: A Simplified Hydrocarbon Reaction Mechanism for Combustion Applications. Journal of Propulsion and Power, Volume 1, No. 5, September - October 1985, p. 329-335
(Subject Category 25 RTOP 505-43-83)
1148. Jones, K. M.; Talcott, N. A., Jr.; and Shankar, V.: Full Potential Solutions of Three-Dimensional Supersonic Flows. Journal of Aircraft, Volume 22, No. 10, October 1985, p. 881-887.
(Subject Category 02 RTOP 505-31-23)
1149. Kumar, A.; and Salas, M. D.: Euler and Navier-Stokes Solutions for Supersonic Shear Flow Past a Circular Cylinder. AIAA Journal, Volume 23, No. 4, April 1985, p. 583-587.
(Subject Category 02 RTOP 505-31-03)
1150. Lindemann, A. M.: Turbulent Reynolds Analogy Factors for Nonplanar Surface Microgeometries. Journal of Spacecraft and Rockets, Volume 22, No. 5, September - October 1985, p. 581-582.
(Subject Category 34 RTOP 505-31-13)
1151. McInville, R. M.; Gatski, T. B.; and Hassan, H. A.: Analysis of Large Vortical Structures in Shear Layers. AIAA Journal, Volume 23, No. 8, August 1985, p. 1165-1171.
(Subject Category 34 RTOP 505-31-13)

1152. Citation deleted because of duplication.
1153. Talcott, N. A., Jr.; and Kumar, A.: Two-Dimensional Viscous Simulation of Inlet/Diffuser Flows With Terminal Shocks. Journal of Propulsion and Power, Volume 1, No. 2, March - April 1985, p. 103-108.
(Subject Category 02 RTOP 505-31-23)
1154. Wilkinson, S. P.; and Malik, M. R.: Stability Experiments in the Flow Over a Rotating Disk. AIAA Journal, Volume 23, No. 4, April 1985, p. 588-595.
(Subject Category 34 RTOP 505-31-13)
1155. Wood, R. M.; and Miller, D. S.: Assessment of Preliminary Prediction Techniques for Wing Leading-Edge Vortex Flows at Supersonic Speeds. Journal of Aircraft, Volume 22, No. 6, June 1985, p. 473-478.
(Subject Category 02 RTOP 505-43-23)
1156. Wood, R. M.; and Miller, D. S.: Impact of Fuselage Incidence on the Supersonic Aerodynamics of Two Fighter Configurations. Journal of Aircraft, Volume 22, No. 5, May 1985, p. 423-428.
(Subject Category 02 RTOP 505-43-23)
1157. Wood, R. M.; and Miller, D. S.: Fundamental Aerodynamic Characteristics of Delta Wings With Leading-Edge Vortex Flows. Journal of Aircraft, Volume 22, No. 6, June 1985, p. 479-485.
(Subject Category 02 RTOP 505-43-23)

Meeting Presentations

1158. Allen, J. M.; and Townsend, J. C.: Application of the SWINT Code to Wing/Body/Tail Geometries. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1811-CP.
(Subject Category 02 RTOP 505-43-23)
1159. Anders, J. B., Jr.: Airfoil Large-Eddy Breakup Devices at Low Chord Reynolds Numbers. Presented at the Thirty-Eighth Meeting of the American Physical Society, Division of Fluid Dynamics, November 24-26, 1985, Tucson, Arizona. Abstract published in APS Bulletin, p. 1711.
(Subject Category 34 RTOP 505-31-13)
1160. Anders, J. B., Jr.; and Watson, R. D.: Airfoil Large-Eddy Breakup Devices for Turbulent Drag Reduction. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0520.
(Subject Category 34 RTOP 505-31-13)
1161. Anders, J. B., Jr.; and Watson, R. D.: Airfoil Large-Eddy Breakup Devices for Turbulent Drag Reduction. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 34 RTOP 505-31-13)

1162. Antcliff, R. R.; and Jarrett, O., Jr.: CARS System for Simultaneous Measurement of Temperature and Nitrogen and Oxygen Densities. Presented at the QEAS/IEEE, et al., Conference on Lasers and Electro-Optics, CLEO '85, May 21-24, 1985, Baltimore, Maryland. Paper No. 0043. Proceedings pending.
(Subject Category 25 RTOP 505-43-83)
1163. Antcliff, R. R.; and Jarrett, O., Jr.: Coherent Anti-Stokes Raman Spectroscopy Application to Combustion Diagnostics. Presented at the 12th Annual Meeting of the Federation of Analytical Chemistry & Spectroscopy Societies (FACSS), September 29 - October 4, 1985, Philadelphia, Pennsylvania. In Proceedings, Abstract No. 396.
(Subject Category 25 RTOP 505-43-83)
1164. Beach, H. L., Jr.: Propulsion at Hypersonic Speeds: An Overview. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-83)
1165. Beckwith, I. E.; Applin, Z. T.; Stainback, P. C.; and Maestrello, L.: Low-Disturbance Wind Tunnels. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 34 RTOP 505-31-13)
1166. Brown, E. F.; and Rogers, R. C.: Initial Conditions for Parabolic Calculations of Reacting Flows. Presented at the AIAA/ASME et al., 21st Joint Propulsion Meeting, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1251.
(Subject Category 34 RTOP 505-43-83)
1167. Bushnell, D. M.: Turbulent Drag Reduction for External Flows, II. Presented at the AGARD von Karman Institute for Fluid Dynamics, Lecture Series on Aircraft Drag Prediction and Reduction, May 20-24, 1985, Brussels, Belgium.
(Subject Category 34 RTOP 505-31-13)
1168. Bushnell, D. M.; and Malik, M. R.: Application of Stability Theory to Laminar Flow Control - Progress and Requirements. Presented at the ICASE/NASA Workshop on Stability of Time Dependent and Spatially Varying Flows, August 19-20, 1985, Hampton, Virginia. Proceedings pending.
(Subject Category 34 RTOP 505-31-13)
1169. Campbell, B. A.; and Riebe, G. D.: A Subsonic Maneuver Investigation of a Cranked Supersonic Fighter Wing. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-43-23)

1170. Carlson, H. W.; and Darden, C. M.: Attached Flow Numerical Methods for the Aerodynamic Design and Analysis of "Vortex Flaps". Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending.
(Subject Category 02 RTOP 505-43-23)
1171. Cavalleri, R. J.; Ciaponi, A. J.; Wittmeyer, R. E.; and Keyes, J. W.: Experimental Study of Forward Located Jet Interaction Nozzles. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0454.
(Subject Category 34 RTOP 505-43-83)
1172. Chen, F-J.; Malik, M. R.; and Beckwith, I. E.: Instabilities and Transition in the Wall Boundary Layers of Low-Disturbance Supersonic Nozzles. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1573.
(Subject Category 34 RTOP 505-31-13)
1173. Chen, F-J.; and Beckwith, I. E.: Comparison of Hot-Wire Measurement Technique in a Mach 3 Pilot Quiet Tunnel. Presented at the AESS/IEEE Eleventh International Congress on Instrumentation in Aerospace Simulation Facilities (ICIASF), August 26-28, 1985, Stanford, California. In IEEE Publication 85CH2210-3, p. 79-85.
(Subject Category 34 RTOP 505-31-13)
1174. Chitsomboon, T.; Kumar, A.; and Tiwari, S. N.: A Second-Order Accurate Parabolized Navier-Stokes Algorithm for High-Speed Internal Flow. Presented at the AIAA, ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1411.
(Subject Category 02 RTOP 505-31-03)
1175. Drummond, J. P.; Hussaini, M. Y.; and Zang, T. A.: Spectral Methods for Modeling Supersonic Chemically Reacting Flow Fields. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0302.
(Subject Category 34 RTOP 505-31-03)
1176. Dwoyer, D. L.; and Hussaini, M. Y.: Three-Dimensional Flow-Field Analysis on Supercomputers. Presented at the 11th IMACS World Congress on Simulation and Scientific Computation, August 5-9, 1985, Oslo, Norway. Proceedings pending.
(Subject Category 02 RTOP 505-31-03)
1177. Eidson, T. M.; Zang, T. A.; and Hussaini, M. Y.: Data Analysis of Turbulent Flow Simulations. Presented at the Technical University of Munich Direct and Large Eddy Simulation of Turbulent Flows Meeting, September 30 - October 1, 1985, Munich, West Germany. Proceedings pending.
(Subject Category 02 RTOP 505-31-03)
1178. Erlebacher, G.: Finite Difference Operators on Unstructured Triangular Meshes. Presented at the Los Alamos National Lab., Conference on State-of-the-Art Free-Lagrangian Methods, March 4-6, 1985, Hilton Head Island, South Carolina. Proceedings pending.
(Subject Category 02 RTOP 505-31-03)

1179. Erlebacher, G.; Kumar, A.; Anderson, E. C.; Rogers, R. C.; Dwoyer, D. L.; Salas, M. D.; and Harris, J. E.: A Computational Design Procedure for Actively Cooled Hypersonic Wind-Tunnel Nozzles Subject to Wall Shape Constraints. Presented at the University of Tennessee Space Institute CFD in Aerospace Design Workshop, June 4-6, 1985, Tullahoma, Tennessee. In Workshop Proceedings, UTSI No. EO2-4005-029-85, p. 10.1-10.33. (Subject Category 02 RTOP 505-31-03)
1180. Gatski, T. B.: Drag Characteristics of Unsteady Perturbed, Boundary Layer Flows. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0551. (Subject Category 34 RTOP 505-31-13)
1181. Gatski, T. B.: Unsteady Vortex Dynamics in the Presence of a Passive Porous Wall. Presented at the Thirty-Eighth Annual Meeting of the American Physical Society, Division of Fluid Dynamics, November 24-26, 1985, Tucson, Arizona. Abstract published in APS Bulletin, p. 1717. (Subject Category 34 RTOP 505-31-13)
1182. Gatski, T. B.; and Grosch, C. E.: Numerical Experiments on Boundary-Layer Receptivity. Presented at the ICASE/NASA Workshop on Stability of Time Dependent and Spatially Varying Flows, August 19-20, 1985, Hampton, Virginia. Proceedings pending. (Subject Category 34 RTOP 505-31-13)
1183. Goodman, W. L.: The Effect of Opposing-Unsteady Vorticity on the Turbulent Structures in Wall Flow. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0550. (Subject Category 34 RTOP 505-31-13)
1184. Goodman, W. L.; Morrisette, E. L.; Hussaini, M. Y.; and Bushnell, D. M.: Control Plate for Shock-Boundary Layer Interactions. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0523. (Subject Category 34 RTOP 505-31-13)
1185. Guy, R. W.; Andrews, E. H., Jr.; and Pinckney, S. Z.: Effect of Airflow Total Temperature Variations on Scramjet Performance. Presented at the 22nd JANNAF Combustion Meeting, October 7-11, 1985, Pasadena, California. Proceedings pending. (Subject Category 07 RTOP 505-43-83)
1186. Guy, R. W.; Pinckney, S. Z.; and Andrews, E. H., Jr.: A Summary of Test Results From NASA Langley's Scramjet Program. Presented at the 1985 JANNAF Propulsion Meeting, April 9-12, 1985, San Diego, California. In Proceedings, Volume 1-6, CPIA No. 425. (Subject Category 07 RTOP 505-43-83)
1187. Guy, R. W.; Pinckney, S. Z.; and Andrews, E. H., Jr.: Status of Hydrogen-Fueled Scramjet Engine Tests. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2. (Subject Category 07 RTOP 505-43-83)

1188. Hefner, J. N.: Overview of the Langley Viscous Drag Reduction Program. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-31-13)
1189. Hussaini, M. Y.; Collier, F.; and Bushnell, D. M.: Turbulence Alteration Due to Shock Motion. Presented at the IUTAM Symposium on Turbulent Shear-Layer/Shock Wave Interactions, September 9-12, 1985, Palaiseau, France. Proceedings pending.
(Subject Category 02 RTOP 505-31-13)
1190. Hussaini, M. Y.; and Zang, T. A.: Numerical Experiments on Stability and Transition in a Controlled Boundary Layer. Presented at the 22nd Annual Meeting of the Society of Engineering Science, October 7-9, 1985, University Park, Pennsylvania. Abstract to be published.
(Subject Category 02 RTOP 505-60-31)
1191. Jarrett, O., Jr.; Antcliff, R. R.; and Rogers, R. C.: CARS System for Simultaneous Measurement of Temperature, Nitrogen, and Oxygen Densities in a Turbulent Flame. Presented at the 22nd JANNAF Combustion Meeting, October 7-11, 1985, Pasadena, California. Proceedings pending.
(Subject Category 25 RTOP 505-43-83)
1192. Johnston, P. J.; Sawyer, W. C.; and Marcum, D. C., Jr.: Summary of the Langley Hypersonic Missile Task Team Study. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-23)
1193. Jones, K. M.; and Talcott, N. A., Jr.: Application of a Full Potential Method for Analysis of Complex Aircraft Geometries. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-43-23)
1194. Kumar, A.: Numerical Simulation of Flow Through Scramjet Inlets Using a Three-Dimensional Navier-Stokes Code. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1664.
(Subject Category 02 RTOP 505-31-03)
1195. Kumar, A.; and Trexler, C. A.: Analysis and Performance Prediction of Scramjet Inlets Utilizing a Three-Dimensional Navier-Stokes Code. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. NASA CP-2397, Volume 1.
(Subject Category 02 RTOP 505-31-03)
1196. McClinton, C. R.; and Northam, G. B.: Comparison of Combustion Characteristics of Hydrogen and Gaseous Hydrocarbon Fuels in a Mach 2 Flow. Presented at the 22nd JANNAF Combustion Meeting, October 7-11, 1985, Pasadena, California. Proceedings pending.
(Subject Category 07 RTOP 505-43-83)

1197. McGinley, C. B.; and Beeler, G. B.: Large-Eddy Substitution Via Vortex Cancellation for Wall-Turbulence Control. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0549. (Subject Category 34 RTOP 505-31-13)
1198. McInville, R. M.; Goodman, W. L.; and Hassan, H. A.: Mixing Layer Control for Tangential Slot Injection in Turbulent Flows. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0541. (Subject Category 34 RTOP 505-31-13)
1199. Miller, D. S.; and Covell, P. F.: New Considerations in Supersonic Wing Design. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2. (Subject Category 02 RTOP 505-43-23)
1200. Miller, D. S.; and Wood, R. M.: Aerodynamic Design Considerations for Efficient High-Lift Supersonic Wings. Presented at the AIAA 3rd Applied Aerodynamics Conference, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-4076. (Subject Category 02 RTOP 505-43-23)
1201. Miller, D. S.; Wood, R. M.; and Covell, P. F.: An Overview of Fundamental Aerodynamics Branch's Research Activities in Wing Leading Edge Vortex Flows at Supersonic Speeds. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending. (Subject Category 02 RTOP 505-43-23)
1202. Napolitano, M.; and Walters, R. W.: An Incremental Block-Line-Gauss-Seidel Method for the Navier-Stokes Equations. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0033. (Subject Category 02 RTOP 505-31-03)
1203. Newsome, R. W.: A Comparison of Euler and Navier-Stokes Solutions for Supersonic Flow Over a Conical Delta Wing. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0111. (Subject Category 02 RTOP 505-31-03)
1204. Northam, G. B.: Workshop Report: Combustion in Supersonic Flow. Presented at the 22nd JANNAF Combustion Meeting, October 7-11, 1985, Pasadena, California. Proceedings pending. (Subject Category 07 RTOP 505-62-81)
1205. Northam, G. B.; and McLain, A. G.: Supersonic Combustion of a Silane Methane Mixture. Presented at the 22nd JANNAF Combustion Meeting, October 7-11, 1985, Pasadena, California. Proceedings pending. (Subject Category 07 RTOP 505-43-83)

1206. Pellett, G. L.; and Adams, B. R.: Molecular Beam/MS of Silane-Hydrocarbon Oxidation in a Discharge-Flow Reactor. Presented at the American Society for Mass Spectrometry 33rd Annual Conference on Mass Spectrometry and Allied Topics, May 26-31, 1985, San Diego, California. ASME Paper No. WPA-11.
(Subject Category 25 RTOP 505-43-83)
1207. Small, W. J.; Shrout, B. L.; Riebe, G. D.; Hom, K. W.; Campbell, B. A.; Darden, C. M.; Carlson, H. W.; Jackson, J. S.; and Johnson, M. E.: Studies of Several Advanced Supersonic Wing Designs for Subsonic and Supersonic Maneuver. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-23)
1208. Stallings, R. L., Jr.; Wilcox, F. J., Jr.; Blair, A. B., Jr.; and Monta, W. J.: Store Carriage Drag and Separation at Supersonic Speeds. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-23)
1209. Stoy, S. L.; Dillon, J. L.; and Roman, A. P.: Correlation and Analysis of Oil Flow Data for an Air-Breathing Missile Model. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0452.
(Subject Category 02 RTOP 505-43-23)
1210. Walsh, M. J.: Riblets for Aircraft Skin-Friction Reduction. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 34 RTOP 505-31-13)
1211. Walters, R. W.; and Dwoyer, D. L.: An Efficient Iteration Strategy Based on Upwind/Relaxation Schemes for the Euler Equations. Presented at the AIAA 7th Computational Fluid Dynamics Conference, July 15-17, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1529-CP.
(Subject Category 02 RTOP 505-31-03)
1212. Watts, J. D.; Olinger, F. V.; Weidner, J. P.; Sanders, B. W.; Johnson, S. K.; and Keyes, J. W.: Mach 5 Cruise Aircraft Research. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2.
(Subject Category 02 RTOP 505-43-83)
1213. Weinstein, L. M.; Beeler, G. B.; and Lindemann, A. M.: High-Speed Holographic Velocimeter for Studying Turbulent Flow Control Physics. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0526.
(Subject Category 34 RTOP 505-31-13)
1214. Wilkinson, S. P.: Wall Turbulence Control. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1.
(Subject Category 34 RTOP 505-31-13)

1215. Wilkinson, S. P.; and Balasubramanian, R.: Turbulent-Burst Control Through Phase-Locked, Traveling Surface Depressions. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. AIAA Paper No. 85-0536. (Subject Category 34 RTOP 505-31-13)
1216. Wood, R. M.; and Miller, D. S.: Impact of Airfoil Profile on the Supersonic Aerodynamics of Delta Wings. Presented at the AIAA 3rd Applied Aerodynamics Conference, October 14-16, 1985, Colorado Springs, Colorado. AIAA Paper No. 85-4073. (Subject Category 02 RTOP 505-43-23)
1217. Wood, R. M.; Rose, O. J.; and McMillin, S. N.: Multi-Body Aircraft: Old Concept--New Application. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2398, Volume 2. (Subject Category 02 RTOP 505-43-23)
1218. Zang, T. A.; and Hussaini, M. Y.: Numerical Experiments on Subcritical Transition Mechanism. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0296. (Subject Category 02 RTOP 505-31-03)
1219. Zang, T. A.; and Hussaini, M. Y.: Numerical Experiments on the Stability of Controlled Shear Flows. Presented at the AIAA 18th Fluid Dynamics, Plasma Dynamics, and Lasers Conference, July 16-18, 1985, Cincinnati, Ohio. AIAA Paper No. 85-1698. (Subject Category 02 RTOP 505-31-03)
1220. Zang, T. A.; and Hussaini, M. Y.: Numerical Simulations of a Controlled Boundary Layer. Presented at the NASA Langley Symposium on Aerodynamics, April 23-25, 1985, Hampton, Virginia. In NASA CP-2397, Volume 1. (Subject Category 02 RTOP 505-31-03)

Technical Talks

1221. Anders, J. B., Jr.: Low Reynolds Number Airfoils in a Turbulent Boundary Layer. Presented at the Office of Naval Research, NASA, et al., Conference on Low Reynolds Number Airfoil Aerodynamics, June 17-19, 1985, Notre Dame, Indiana. (Subject Category 34 RTOP 505-31-13)
1222. Anders, J. B., Jr.: Low Reynolds Number LEBU Performance. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1223. Antcliff, R. R.; and Jarrett, O., Jr.: CARS System for Simultaneous Measurement of Temperature and Nitrogen and Oxygen Densities. Presented at the Third Gordon Research Conference on the Physics and Chemistry of Laser Diagnostics in Combustion, July 15-19, 1985, New London, New Hampshire. (Subject Category 25 RTOP 505-43-83)

1224. Beach, H. L., Jr.; and Coltrin, R. E.: Propulsion Capabilities for a Future Hypersonics Research Program: NASA's Views. Presented at the 1985 SAE Aerospace Vehicle Requirements Conference, May 20-23, 1985, Washington, DC. (Subject Category 02 RTOP 505-43-83)
1225. Beckwith, I. E.; Creel, T. R., Jr.; and Morrisette, E. L.: Effects on Transition of Roughness Elements on Swept Cylinders and Wall Waviness on Cones in a Mach 3.5 Quiet Wind Tunnel. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1226. Beeler, G. B.; and Weinstein, L. M.: Holocinematographic Velocimeter for Turbulent Flow Diagnostics. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1227. Bushnell, D. M.: Turbulent Drag Reduction in External Flows. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. (Subject Category 34 RTOP 505-31-13)
1228. Gatski, T. B.: A Second-Order Closure Model for Flows With Strong Streamline Curvature. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1229. Gatski, T. B.: Surface Drag Calculations in Unsteady Flow Fields Using a Vorticity-Velocity Numerical Solution Algorithm. Presented at the Pennsylvania State University Computational Fluid Dynamics Seminar Series, October 7-9, 1985, University Park, Pennsylvania. (Subject Category 34 RTOP 505-31-13)
1230. Goodman, W. L.: Passive Separation Control for Laminar Shock-Boundary Layer Interaction. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1231. McGinley, C. B.: Direct Vorticity Control Downstream of Intersections. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1232. Pellett, G. L.; and Adams, B. R.: Kinetics of Methylperoxy Radical Destruction by NO, Using DFMS. Presented at the National Bureau of Standards International Conference on Chemical Kinetics, June 17-19, 1985, Gaithersburg, Maryland. (Subject Category 25 RTOP 505-43-83)
1233. Schultz, A. E.: A Wind Tunnel Reborn. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas. (Subject Category 02 RTOP 505-43-23)

1234. Walsh, M. J.; and Anders, J. B., Jr.: Riblets Optimized for Flight Application. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1235. Watson, R. D.: LEBU Tests at High Reynolds Numbers. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1236. Wilkinson, S. P.: Turbulent Flow Measurements Over a Flat Plate With Various Near-Wall Flow-Aligned Elements. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 34 RTOP 505-60-31)
1237. Zang, T. A.; and Hussaini, M. Y.: Spectral Multigrid Methods for the Time-Dependent Navier-Stokes Equations. Presented at the USAF, Office of Scientific Research, et al., Second Copper Mountain Conference on Multigrid Methods, April 1-3, 1985, Copper Mountain, Colorado. (Subject Category 02 RTOP 505-31-03)

Computer Programs

1238. Darden, C. M. (Langley Research Center); and Ting, L. (New York University): MMOC--Modified Method of Characteristics Sonic Boom Extrapolation. Program No. LAR-13473.
1239. Dillenius, M. F. E. (Nielsen Engineering and Research, Inc.): LRCDM2--Improved Aerodynamic Prediction Program for Supersonic Canard-Tail Missiles With Axisymmetric Bodies. Program No. LAR-13527.
1240. Kumar, A.: NASCRIN--Numerical Analysis of Scramjet Inlet (Scalar Version, FORTRAN). Program No. LAR-13559.
1241. Shankar, V.; and Szema, K. Y. (Rockwell International Corporation): Nonlinear Supersonic Full Potential Analysis Program. Program No. LAR-13413.

Tech Briefs

1242. Adams, B. R. (Kentron International, Inc.): Low Cost Hardware/Software Expansion of Tektronix 4010-1 Display Terminal and CPU. NASA Tech Brief LAR-13350.
1243. Carlson, H. W.; and Walkley, K. B. (Kentron International, Inc.): WINGDES--Design of Wing Surfaces at Subsonic or Supersonic Speeds. NASA Tech Brief LAR-13315.
1244. Clever, W. C. (Rockwell International Corporation): Second Order Potential Analysis and Optimization. NASA Tech Brief LAR-13314.

- 1245. Mendenhall, M. R.; and Perkins, S. C., Jr. (Nielsen Engineering and Research, Inc.): Prediction of Vortex Shedding From Circular and Noncircular Bodies in Supersonic Flow. NASA Tech Brief LAR-13375.
- 1246. Shankar, V.; and Szema, K. Y. (Rockwell International Corporation): Nonlinear Supersonic Full Potential Analysis. NASA Tech Brief LAR-13413.
- 1247. Weinstein, L. M.: Analog Video Image Enhancement Device. NASA Tech Brief LAR-13336.
- 1248. Weinstein, L. M.: Ice Detector. NASA Tech Brief LAR-13403.

Patents

- 1249. Weinstein, L. M.: Continuous Laminar Smoke Generator. U.S. Patent 4,493,211. Issued January 15, 1985.
(Subject Category 09)

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR SPACE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

1250. Nunamaker, R. R.: Orbit-on-Demand--Prospects and Opportunities. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California.
(Subject Category 16 RTOP 506-51-13)

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR SPACE STATION OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

1251. Breckenridge, R. A.: Smart Sensors for Rendezvous and Proximity Operations. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume IV, p. 10-2 - 10-25.
(Subject Category 33 RTOP 480-52-02)
1252. Breckenridge, R. A.; and Russell, R. A.: Space Station Technology Experiments. Presented at the NASA Satellite Services Workshop II, November 6-8, 1985, Lyndon B. Johnson Space Center, Houston, Texas. Proceedings pending.
(Subject Category 31 RTOP 480-51-06)
1253. Breckenridge, R. A.; and Russell, R. A.: Space Station Technology Experiments and Uses. Presented at the 32nd National Symposium of the American Vacuum Society, November 18-22, 1985, Houston, Texas. To be published in proceedings issue of The Journal of Vacuum Science and Technology.
(Subject Category 31 RTOP 480-51-06)
1254. Pritchard, E. B.; Huckins, E. K., III; and Katzberg, S. J.: Potential Space Station Evolution and Growth Modes. Presented at the 36th International Astronautical Federation Congress Conference, October 7-12, 1985, Stockholm, Sweden. IAF Paper No. 85-484. Proceedings pending.
(Subject Category 12 RTOP 483-32-13)

1255. Willshire, K. F.: Human Productivity of Space Station. Presented at the 1985 Human Factors Society Annual Meeting, September 29 - October 3, 1985, Baltimore, Maryland. In Proceedings, p. 843-845.
(Subject Category 33 RTOP 483-32-13)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR ATMOSPHERIC SCIENCES DIVISION

Formal Reports

1256. Browell, E. V.; Shipley, S. T.; Butler, C. F.; and Ismail, S.: Airborne Lidar Measurements of Aerosols, Mixed Layer Heights, and Ozone During the 1980 PEPE/NEROS Summer Field Experiment. NASA RP-1143, December 1985, 198 p.
(Avail: NTIS Subject Category 45 RTOP 176-40-04)
1257. McCormick, M. P.: SAGE Aerosol Measurements, Volume I - February 21, 1979, to December 31, 1979. NASA RP-1144, October 1985, 372 p.
(Avail: NTIS Subject Category 46 RTOP 619-12-20)
1258. McCormick, M. P.; and Brandl, D.: SAM II Measurements of the Polar Stratospheric Aerosol, Volume V - October 1980 to April 1981. NASA RP-1140, May 1985, 78 p.
(Avail: NTIS Subject Category 46 RTOP 665-10-40)
1259. McCormick, M. P.; and Brandl, D.: SAM II Measurements of the Polar Stratospheric Aerosol, Volume VI - April 1981 to October 1981. NASA RP-1141, May 1985, 78 p.
(Avail: NTIS Subject Category 46 RTOP 665-10-40)
1260. McCormick, M. P.; and Osborn, M. T.: Airborne Lidar Measurements of El Chichon Stratospheric Aerosols - October 1982 to November 1982. NASA RP-1136, February 1985, 120 p.
(Avail: NTIS Subject Category 46 RTOP 672-21-14)
1261. McCormick, M. P.; and Osborn, M. T.: Airborne Lidar Measurements of El Chichon Stratospheric Aerosols - January 1983 to February 1983. NASA RP-1148, October 1985, 89 p.
(Avail: NTIS Subject Category 46 RTOP 672-21-14)
1262. Smith, M. A. H. (Editor): Review of Spectroscopic Parameters for Upper Atmospheric Measurements. NASA CP-2396, October 1985, 27 p.
(Avail: NTIS Subject Category 72 RTOP 147-44-02)

Quick-Release Technical Memorandums

1263. Whitlock, C. H.; Suttles, J. T.; and LeCroy, S. R.: Phase Function, Backscatter, Extinction, and Absorption for Standard Radiation Atmosphere and El Chichon Aerosol Models at Visible and Near-Infrared Wavelengths. NASA TM-86379, March 1985, 56 p.
(Avail: NTIS Subject Category 47 RTOP 672-40-04)

Contractor Reports

1264. Arduini, R. F.: Solar Radiance Models for Determination of ERBE Scanner Filter Factors. (NAS1-17425 Information and Control Systems, Inc.) NASA CR-172595 May 1985, 46 p.
(Avail: NTIS Subject Category 47 RTOP 619-12-30)
1265. Gordley, L. L.; and Marshall, B. T.: LIMS Data Analysis Program. (NAS1-15891 Systems and Applied Sciences Corporation.) NASA CR-172509, January 1985, 25 p.
(Avail: NTIS Subject Category 46 RTOP 665-10-40)
1266. Kent, G. S.; and Deepak, A.: Data Analysis for Lidar and Quartz Crystal Microbalance Systems. (NAS1-16253 Institute for Atmospheric Optics and Remote Sensing.) NASA CR-172601, June 1985, 183 p.
(Avail: NTIS Subject Category 46 RTOP 665-10-40)
1267. Klainer, S. M.; and Milanovich, F. P.: The Analysis of Micrometer and Submicrometer Atmospheric Aerosols. (NAS1-17943 ST&E Technical Services, Inc.) NASA CR-177964, June 1985, 58 p.
(Avail: NTIS Subject Category 46 RTOP 672-40-04)
1268. Vemury, S.: Validation of the ERBE Scanner Scene Identification Methodology: Analysis With Nimbus-7 ERB Data. (L-67978B S M Systems and Research Corporation.) NASA CR-172596, March 1985, 68 p.
(Avail: NTIS Subject Category 47 RTOP 619-12-30)
1269. Wang, P-H.; and Deepak, A.: Development of Algorithms for Using Satellite and Meteorological Data Sets to Study Global Transport of Stratospheric Aerosols and Ozone. (NAS1-16362 Science and Technology Corporation.) NASA CR-172540, March 1985, 121 p.
(Avail: NTIS Subject Category 46 RTOP 619-12-20)

Journal Articles and Other Publications

1270. Bartlett, K. B.; Harriss, R. C.; and Sebach, D. I.: Methane Flux From Coastal Salt Marshes. Journal of Geophysical Research, Volume 90, No. D3, June 20, 1985, p. 5710-5720.
(Subject Category 46 RTOP 199-30-26)
1271. Benner, D. C.; and Rinsland, C. P.: Identification and Intensities of the "Forbidden" $3\nu_2^3$ Band of $^{12}\text{C}^{16}\text{O}_2$. Journal of Molecular Spectroscopy, Volume 112, 1985, p. 18-25.
(Subject Category 72 RTOP 618-21-00)
1272. Boughner, R. E.: Comparison of Band Model Calculations of Upper Atmospheric Cooling Rates for the 15-Micrometer Carbon Dioxide Band. Journal of Geophysical Research, Volume 90, No. D5, August 20, 1985, p. 8011-8018.
(Subject Category 42 RTOP 673-62-02)

1273. Brewer, D. A.; Ogliaruso, M. A.; Augustsson, T. R.; and Levine, J. S.: The Oxidation of Isoprene in the Troposphere: Mechanism and Model Calculations. Atmospheric Environment, Volume 18, No. 12, 1984, p. 2723-2744.
(Subject Category 45 RTOP 176-20-02)
1274. Browell, E. V.; Ismail, S.; and Shipley, S. T.: Ultraviolet DIAL Measurements of O₃ Profiles in Regions of Spatially Inhomogeneous Aerosols. Applied Optics, Volume 24, No. 17, September 1, 1985, p. 2827-2836.
(Subject Category 47 RTOP 176-40-04)
1275. Callis, L. B.; Alpert, J. C.; and Geller, M. A.: An Assessment of Thermal, Wind, and Planetary Wave Changes in the Middle and Lower Atmosphere Due to 11-Year UV Flux Variations. Journal of Geophysical Research, Volume 90, No. D1, February 1985, p. 2273-2282.
(Subject Category 47 RTOP 147-31-05)
1276. Callis, L. B.; Natarajan, M.; and Russell, J. M., III: Estimates of the Stratospheric Distribution of Odd Nitrogen From the LIMS Data. Geophysical Research Letters, Volume 12, May 1985, p. 259-262.
(Subject Category 46 RTOP 673-62-02)
1277. Casadevall, T. J.; Rose, W. I., Jr.; Fuller, W. H.; Hunt, W. H.; Woods, D. C.; Hart, M. A.; Moyers, J. L.; Chuan, R. L.; and Friend, J. P.: Sulfur Dioxide and Particles in Quiescent Volcanic Plumes From Poas, Arenal, and Colima Volcanoes, Costa Rica and Mexico. Journal of Geophysical Research, Volume 89, October 20, 1984, p. 9633-9641.
(Subject Category 46)
1278. Charlock, T. P.; and Ramanathan, V.: The Albedo Field and Cloud Radiative Forcing Produced by a General Circulation Model With Internally Generated Cloud Optics. Journal of the Atmospheric Sciences, Volume 42, No. 13, July 1, 1985, p. 1408-1429.
(Subject Category 47 RTOP 672-40-05)
1279. Chu, W. P.: Convergence of Chahine's Nonlinear Relaxation Inversion Method Used for Limb Viewing Remote Sensing. Applied Optics, Volume 24, No. 4, February 15, 1985, p. 445-447.
(Subject Category 46 RTOP 665-40-40)
1280. Cicerone, R.; Delwiche, C. C.; Harriss, R. C.; and Dickinson, R.: Biological and Surface Sources. Global Tropospheric Chemistry, 1984, p. 55-68.
(Subject Category 45 RTOP 199-30-26)
1281. Cofer, W. R., III; Bendura, R. J.; Sebacher, D. I.; Pellett, G. L.; Gregory, G. L.; and Maddrea, G. L., Jr.: Airborne Measurements of Space Shuttle Exhaust Constituents. AIAA Journal, Volume 23, No. 2, February 1985, p. 283-287.
(Subject Category 45 RTOP 925-81-01)

1282. Cofer, W. R., III; Collins, V. G.; and Talbot, R. W.: An Improved Aqueous Scrubber for Collection of Soluble Atmospheric Trace Gases. Environmental Science and Technology, Volume 19, No. 6, 1985, p. 557-560.
(Subject Category 45 RTOP 307-04-02)
1283. Coffey, M. T.; Mankin, W. G.; Goldman, A.; Rinsland, C. P.; Harvey, G. A.; Devi, V. M.; and Stokes, G. M.: Infrared Measurements of Atmospheric Ethane (C_2H_6) From Aircraft and Ground-Based Solar Absorption Spectra in the 3000 cm^{-1} Region. Geophysical Research Letters, Volume 12, No. 4, April 1985, p. 199-202.
(Subject Category 45 RTOP 147-44-02)
1284. Coleman, R. A.; Cofer, W. R., III; and Edahl, R. A., Jr.: A General, Cryogenically-Based Analytical Technique for the Determination of Trace Quantities of Volatile Organic Compounds in the Atmosphere. Journal of Atmospheric and Oceanic Technology, Volume 2, No. 3, September 1985, p. 273-277.
(Subject Category 45 RTOP 561-81-01)
1285. Devi, V. M.; Rinsland, C. P.; Smith, M. A. H.; and Benner, D. C.: Measurements of $^{12}CH_4$ ν_4 Band Halfwidths Using a Tunable Diode Laser System and a Fourier Transform Spectrometer. Applied Optics, Volume 24, No. 17, September 1, 1985, p. 2788-2791.
(Subject Category 72 RTOP 147-23-11)
1286. Devi, V. M.; Rinsland, C. P.; Smith, M. A. H.; and Benner, D. C.: Tunable Diode Laser Measurements of Widths of Air- and Nitrogen-Broadened Lines in the ν_4 Band of $^{13}CH_4$. Applied Optics, Volume 24, No. 20, October 1985, p. 3321-3322.
(Subject Category 72 RTOP 147-23-11)
1287. Ghazi, A.; Wang, P-H.; and McCormick, M. P.: On Radiative Damping of Planetary Waves Using Stratospheric Observations. Journal of the Atmospheric Sciences, Volume 42, No. 19, October 1, 1985, p. 2032-2042.
(Subject Category 46 RTOP 665-40-40)
1288. Goldman, A.; Rinsland, C. P.; Murcray, F. J.; Murcray, D. G.; Coffey, M. T.; and Mankin, W. G.: Balloon-Borne and Aircraft Infrared Measurements of Ethane (C_2H_6) in the Upper Troposphere and Lower Stratosphere. Journal of Atmospheric Chemistry, Volume 2, No. 2, 1984, p. 211-221.
(Subject Category 45 RTOP 147-44-02)
1289. Gupta, S. K.; Tiwari, S. N.; Vemuru, C. S.; and Suttles, J. T.: Infrared Limb-Darkening Effects for the Earth-Atmosphere System. AIAA Journal, Volume 23, No. 3, March 1985, p. 405-409.
(Subject Category 47 RTOP 619-12-30)
1290. Harriss, R. C.; Gorham, E.; Sebacher, D. I.; Bartlett, K. B.; and Flebbe, P. A.: Methane Flux From Northern Peatlands. Nature, Volume 315, No. 6021, June 1985, p. 652-654.
(Subject Category 45 RTOP 199-30-26)

1291. Harriss, R. C.; and Niki, H.: Sulfur Cycle. Global Tropospheric Chemistry, 1984, p. 117-121.
(Subject Category 45 RTOP 199-30-26)
1292. Keating, G. M.; Brasseur, G.; Nicholson, J. Y., III; and De Rudder, A.: Detection of the Response of Ozone in the Middle Atmosphere to Short-Term Solar-Ultraviolet Variations. Geophysical Research Letters, Volume 12, July 1985, p. 449-452.
(Subject Category 46 RTOP 673-41-07)
1293. Keating, G. M.; Craven, J. D.; Frank, L. A.; Young, D. F.; and Bhartia, P. K.: Initial Results From the DE-I Ozone Imaging Instrumentation. Geophysical Research Letters, Volume 12, No. 9, September 1985, p. 593-596.
(Subject Category 46 RTOP 673-41-02)
1294. Keating, G. M.; and Young, D. F.: Interim Reference Ozone Models for the Middle Atmosphere. Middle Atmosphere Program Handbook for MAP, Volume 16, July 1985, p. 205-229. Available: SCOSTEP University of Illinois.
(Subject Category 46 RTOP 673-41-07)
1295. Kent, G. S.; Trepte, C. R.; Farrukh, U. O.; and McCormick, M. P.: Variation in the Stratospheric Aerosol Associated With the North Cyclonic Polar Vortex as Measured by the SAM II Satellite Sensor. Journal of the Atmospheric Sciences, Volume 42, No. 14, July 15, 1985, p. 1536-1552.
(Subject Category 46 RTOP 665-40-40)
1296. Larsen, J. C.; Rinsland, C. P.; Goldman, A.; Murcray, D. G.; and Murcray, F. J.: Upper Limits for Stratospheric H₂O₂ and HOCl From High Resolution Balloon-Borne Infrared Solar Absorption Spectra. Geophysical Research Letters, Volume 12, No. 10, October 1985, p. 663-666.
(Subject Category 46 RTOP 147-44-02)
1297. Lee, R. B., III; Barkstrom, B. R.; and Luther, M. R.: An Overview: Earth Radiation Budget Experiment (ERBE) Solar Monitor. National Technical Association Journal, Volume 59, No. 2, 1985, p. 90-93.
(Subject Category 92 RTOP 619-12-20)
1298. Leovy, C. B.; Sun, C-R.; Hitchman, M. H.; Remsberg, E. E.; Russell, J. M., III; Gordley, L. L.; Gille, J. C.; and Lyjak, L. V.: Transport of Ozone in the Middle Stratosphere: Evidence for Planetary Wave Breaking. Journal of the Atmospheric Sciences, Volume 42, February 1, 1985, p. 230-244.
(Subject Category 46 RTOP 673-41-10)
1299. Levine, J. S.: The Photochemistry of the Early Atmosphere. Chapter in Book entitled The Photochemistry of Atmospheres: Earth, the Other Planets, and Comets, Published by Academic Press Inc., Harcourt Brace Jovanovich, Orlando, Florida, 1985, p. 3-38.
(Subject Category 46 RTOP 199-50-16)

1300. Levine, J. S.; and Augustsson, T. R.: The Photochemistry of Biogenic Gases in the Early and Present Atmosphere. Origins of Life, Volume 15, No. 4, 1985, p. 299-318.
(Subject Category 46 RTOP 199-50-16)
1301. Levine, J. S.; Rinsland, C. P.; and Tennille, G. M.: The Photochemistry of Methane and Carbon Monoxide in the Troposphere in 1950 and 1985. Nature, Volume 318, No. 6043, November 21, 1985, p. 254-257.
(Subject Category 46 RTOP 176-20-02)
1302. McCormick, M. P.; Hamill, P.; and Farrukh, U. O.: Characteristics of Polar Stratospheric Clouds as Observed by SAM II, SAGE, and Lidar. Journal of the Meteorological Society of Japan, Volume 63, No. 2, April 1985, p. 001-010.
(Subject Category 46 RTOP 665-40-40)
1303. Nagatani, R. M.; McCormick, M. P.; and McMaster, L. R.: A Comparison of SAGE I Data During the Stratospheric Warming of February-March, 1979. Journal of the Meteorological Society of Japan, Volume 63, No. 2, April 1985, p. 311-319.
(Subject Category 46 RTOP 665-40-40)
1304. Remsberg, E. E.; Russell, J. M., III; Gordley, L. L.; Gille, J. C.; and Bailey, P. L.: Implications of the Stratospheric Water Vapor Distribution as Determined From the NIMBUS 7 LIMS Experiment. Journal of the Atmospheric Sciences, Volume 41, No. 19, October 1984, p. 2934-2945.
(Subject Category 46 RTOP 673-41-10)
1305. Rinsland, C. P.; Benner, D. C.; and Devi, V. M.: Measurements of Absolute Line Intensities in Carbon Dioxide Bands Near 5.2 μ m. Applied Optics, Volume 24, No. 11, June 1, 1985, p. 1644-1650.
(Subject Category 72 RTOP 618-21-00)
1306. Rinsland, C. P.; Devi, V. M.; Flaud, J. M.; Camy-Peyret, C.; Smith, M. A. H.; and Stokes, G. M.: Identification of ¹⁸O-Isotopic Lines of Ozone in Infrared Ground-Based Solar Absorption Spectra. Journal of Geophysical Research, Volume 90, No. D6, October 20, 1985, p. 10,719 - 10,725.
(Subject Category 45 RTOP 147-44-02)
1307. Rinsland, C. P.; Goldman, A.; Murcray, D. G.; Murcray, F. J.; Bonomo, F. S.; Blatherwick, R. D.; Devi, V. M.; Smith, M. A. H.; and Rinsland, P. L.: Tentative Identification of the 780-cm⁻¹ ν_4 Band Q Branch of Chlorine Nitrate in High-Resolution Solar Absorption Spectra of the Stratosphere. Journal of Geophysical Research, Volume 90, No. D5, August 20, 1985, p. 7931-7943.
(Subject Category 45 RTOP 147-44-02)
1308. Rinsland, C. P.; Goldman, A.; and Stokes, G. M.: Identification of Atmospheric C₂H₂ Lines in the 3230-3340-cm⁻¹ Region of High Resolution Solar Absorption Spectra Recorded at the National Solar Observatory. Applied Optics, Volume 24, No. 14, July 15, 1985, p. 2044-2046.
(Subject Category 45 RTOP 147-44-02)

1309. Rinsland, C. P.; and Levine, J. S.: Free Tropospheric Carbon Monoxide Concentrations in 1950 and 1951 Deduced From Infrared Total Column Amount Measurements. Nature, Volume 318, No. 6043, November 21, 1985, p. 250-254.
(Subject Category 46 RTOP 147-44-02)
1310. Rinsland, C. P.; Levine, J. S.; and Miles, T.: Concentration of Methane in the Troposphere Deduced From 1951 Infrared Solar Spectra. Nature, Volume 318, No. 6043, November 21, 1985, p. 245-249.
(Subject Category 46 RTOP 147-44-02)
1311. Rossow, W. B.; Moser, F.; Kinsella, E.; Arking, A.; et al.: ISCCP Cloud Algorithm Intercomparison. Journal of Climate and Applied Meteorology, Volume 24, No. 9, September 1985, p. 877-903.
(Subject Category 47 RTOP 672-22-04)
1312. Sebacher, D. I.: Nondispersive Infrared Absorption Monitors for Trace Gases. Chapter in Book entitled Infrared Methods for Gaseous Measurements: Theory and Practice, Joda Wormhoudt, Ed., Marcel Dekker Inc., July 1985, p. 247-274.
(Subject Category 35 RTOP 199-30-36)
1313. Sebacher, D. I.; Harriss, R. C.; and Bartlett, K. B.: Methane Emissions to the Atmosphere Through Aquatic Plants. Journal of Environmental Quality, Volume 14, No. 1, January-February 1985, p. 40-46.
(Subject Category 45 RTOP 199-30-36)
1314. Sebacher, D. I.; Harriss, R. C.; Cofer, W. R., III; and Browell, E. V.: Influence of Meteorological Conditions on Aerosol Vertical Distribution and Composition Off the Northeast American Coastline. Atmospheric Environment, Volume 19, No. 3, 1985, p. 423-428.
(Subject Category 45 RTOP 199-30-26)
1315. Smith, M. A. H.; and Rinsland, C. P.: Spectroscopic Measurements of Atmospheric HCN at Northern and Southern Latitudes. Geophysical Research Letters, Volume 12, January 1985, p. 5-8.
(Subject Category 46 RTOP 147-44-02)
1316. Smith, M. A. H.; Rinsland, C. P.; Rao, K. N.; and Fridovich, B.: Intensities and Collision Broadening Parameters From Infrared Spectra. Chapter in Molecular Spectroscopy: Modern Research, Volume III, Chapter 3, 1985, p. 112-248.
(Subject Category 72 RTOP 147-30-01)
1317. Staylor, W. F.: Reflection and Emission Models for Clouds Derived From Nimbus 7 Earth Radiation Budget Scanner Measurements. Journal of Geophysical Research, Volume 90, No. D5, August 20, 1985, p. 8075-8079.
(Subject Category 47 RTOP 619-12-30)
1318. Stuhlmann, R.; Minnis, P.; and Smith, G. L.: A Comparison of Experimental and Theoretical Bidirectional Reflectance Functions. Applied Optics, Volume 24, February 1, 1985, p. 396-401.
(Subject Category 47 RTOP 619-12-30)

1319. Vukovich, F. M.; Fishman, J.; and Browell, E. V.: The Reservoir of Ozone in the Boundary Layer of the Eastern United States and Its Potential Impact on the Global Tropospheric Ozone Budget. Journal of Geophysical Research, Volume 90, No. D3, June 20, 1985, p. 5687-5698.
(Subject Category 47 RTOP 176-10-05)
1320. Wang, P-H.; and McCormick, M. P.: Behavior of Zonal Mean Aerosol Extinction Ratio and Its Relationship With Zonal Mean Temperature During the Winter 1978-1979 Stratospheric Warming. Journal of Geophysical Research, Volume 90, No. C2, February 20, 1985, p. 2360-2364.
(Subject Category 46 RTOP 665-40-40)
1321. Wang, P-H.; and McCormick, M. P.: Variations in Stratospheric Aerosol Optical Depth During Northern Warmings. Journal of Geophysical Research, Volume 90, No. C10, October 20, 1985, p. 10,597 - 10,606.
(Subject Category 46 RTOP 665-40-40)
1322. Welch, R. M.; and Wielicki, B. A.: Cumulus Cloud Field Reflected Fluxes: The Effect of Cloud Shape. Journal of the Atmospheric Sciences, Volume 41, No. 21, November 1, 1984, p. 3085-3103.
(Subject Category 47 RTOP 307-03-02)
1323. Woods, D. C.; Chuan, R. L.; and Rose, W. I., Jr.: Halite Particles Injected Into the Stratosphere by the 1982 El Chichon Eruption. Science, Volume 230, October 11, 1985, p. 170-172.
(Subject Category 46 RTOP 672-21-13)
1324. Yang, S-K.; and Smith, G. L.: Further Study of Atmospheric Lapse Rate Regimes. Journal of the Atmospheric Sciences, Volume 42, May 1, 1985, p. 961-965.
(Subject Category 47 RTOP 672-40-05)
1325. Yue, G. K.; and Deepak, A.: Latitudinal and Altitudinal Variation of Size Distribution of Stratospheric Aerosols Inferred From SAGE Aerosol Extinction Coefficient Measurements at Two Wavelengths. Geophysical Research Letters, Volume 11, October 1984, p. 999-1002.
(Subject Category 46 RTOP 619-12-30)

Meeting Presentations

1326. Anderson, I. C.; and Levine, J. S.: Field Measurements of Biogenic NO and N₂O Fluxes. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 819.
(Subject Category 46 RTOP 176-20-02)
1327. Anderson, I. C.; and Levine, J. S.: Nitric and Nitrous Oxide Emissions Under Field and Laboratory Conditions. Presented at the 85th Annual Meeting of the American Society for Microbiology, March 3-8, 1985, Las Vegas, Nevada. Published in Abstracts of the Annual Meeting of the American Society for Microbiology, 1985, p. 226. ISSN 0067-2777.
(Subject Category 46 RTOP 176-20-02)

1328. Barkstrom, B. R.; and Lee, R. B., III: Earth Radiation Budget Determinations Using Absolute Radiometry. Presented at the Atmospheric and Environmental Research, Inc., Advances in Absolute Radiometry Meeting, June 24-25, 1985, Cambridge, Massachusetts. In Proceedings, Advances in Absolute Radiometry, 1985, p. 26-29.
(Subject Category 47 RTOP 619-12-20)
1329. Bartlett, D. S.: Wetland Research and NASA: Towards a Planetary Ecological Perspective. Presented at the New England Estuarine Research Society and the University of New Hampshire Marine Program Eighth Biennial International Estuarine Research Conference, July 28 - August 2, 1985, Durham, New Hampshire. Abstract published in Journal of Estuarine Research Federation, p. 4A.
(Subject Category 43 RTOP 199-30-36)
1330. Bartlett, D. S.; and Johnson, R. W.: Remote Sensing for Ecological Assessment of Wetlands. Presented at the New England Estuarine Research Society and the University of New Hampshire Marine Program Eighth Biennial International Estuarine Research Conference, July 28 - August 2, 1985, Durham, New Hampshire. Abstract published in Journal of Estuarine Research Federation, p. 7A.
(Subject Category 42 RTOP 199-30-36)
1331. Bartlett, K. B.; Bartlett, D. S.; Sebacher, D. I.; and Harriss, R. C.: Variation in Wetland Methane Emissions Along a Salinity Gradient. Presented at the New England Estuarine Research Society and the University of New Hampshire Marine Program Eighth Biennial International Estuarine Research Conference, July 28 - August 2, 1985, Durham, New Hampshire. Abstract published in Journal of Estuarine Research Federation, p. 6A.
(Subject Category 46 RTOP 199-30-36)
1332. Bartlett, K. B.; Bartlett, D. S.; Sebacher, D. I.; Harriss, R. C.; and Brannon, D. P.: Sources of Atmospheric Methane From Wetlands. Presented at the 36th International Astronautical Federation Congress Conference, October 7-12, 1985, Stockholm, Sweden. IAF Paper No. 85-12. Proceedings pending.
(Subject Category 46 RTOP 199-30-26)
1333. Benner, D. C.; Devi, V. M.; and Rinsland, C. P.: Molecular Parameters for Carbon Dioxide Bands in the 2.86 - 3.18 μm Spectral Region. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 57.
(Subject Category 72 RTOP 618-21-00)
1334. Brasseur, G.; Keating, G. M.; De Rudder, A.; and Nicholson, J. Y., III: Theoretical Investigations of the Ozone and Temperature Response to Short-Term UV Variability. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 1010.
(Subject Category 46 RTOP 673-41-07)

1335. Browell, E. V.: Airborne Lidar Measurements of Atmospheric Gases and Aerosols. Presented at the OSA Topical Meeting on Remote Sensing of the Atmosphere, January 15-18, 1985, Incline Village, Nevada. In Technical Digest No. WB1.
(Subject Category 47 RTOP 176-40-04)
1336. Browell, E. V.; and Carter, A. F.: Lasers & Optoelectronics for Earth Observations. Presented at the Laser 85 Optoelectronics Conference, July 1-5, 1985, Munich, Germany. To be published by Springer Publishing House.
(Subject Category 36 RTOP 176-40-04)
1337. Browell, E. V.; Harriss, R. C.; Talbot, R. W.; Gregory, G. L.; and Garstang, M. A.: Airborne Lidar Studies of Aerosols and Ozone in the Tropical Atlantic Troposphere. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 237.
(Subject Category 42 RTOP 176-40-04)
1338. Browell, E. V.; Ismail, S.; Danielsen, E. F.; Gregory, G. L.; and Beck, S. M.: Airborne Lidar Investigations of Tropopause Fold Events. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 235.
(Subject Category 42 RTOP 176-40-04)
1339. Browell, E. V.; Ismail, S.; McCormick, M. P.; and Swissler, T. J.: Spaceborne Lidar System for Measurements of Atmospheric Water Vapor and Aerosols. Presented at the AIAA/NASA Earth Observing System (EOS) Conference, October 8-10, 1985, Virginia Beach, Virginia. AIAA Paper No. 85-2091.
(Subject Category 47 RTOP 146-74-01)
1340. Callis, L. B.; Natarajan, M.; and Gordley, L. L.: A Case Study of Stratospheric Mesospheric Coupling During the 11-Year Solar Cycle by Means of Polar Night NO_x. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 1009.
(Subject Category 46 RTOP 673-62-02)
1341. Charlock, T. P.; and Cattany-Carnes, K. M.: Short-Time and Space Scale Fluctuations of Physical Variables in General Circulation Models and Satellite Data. Presented at the AMS Ninth Conference on Probability and Statistics in Atmospheric Sciences, October 9-11, 1985, Virginia Beach, Virginia. Published in Preprints, 1985, p. 467-473.
(Subject Category 47 RTOP 146-74-04)
1342. Chuan, R. L.; and Woods, D. C.: Characterization of an Arctic Haze Episode in January, 1984. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 239.
(Subject Category 46 RTOP 672-21-13)

1343. Connors, V. S.; Shipley, S. T.; Reichle, H. G., Jr.; and Newell, R. E.: The Origin of a Carbon Monoxide Enriched Tropospheric Air Mass Observed Over the Eastern Mediterranean by a Satellite-Borne Remote Sensor. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 240.
(Subject Category 46 RTOP 618-22-31)
1344. Devi, V. M.; Smith, M. A. H.; Rinsland, C. P.; and Benner, D. C.: Measurements of CH_4 ν_4 Halfwidths Using Two High Resolution Techniques. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 1.57.
(Subject Category 72 RTOP 147-23-11)
1345. Fishman, J.; Minnis, P.; and Taylor, M. Z.: Ozone Emissions From Tropical Forrest and Savannah Fires Deduced From Satellite Observations. Presented at the AMS/SAF Eighth National Conference on Fire and Forest Meteorology, April 29 - May 3, 1985, Detroit, Michigan. In Proceedings, p. 73-80.
(Subject Category 46 RTOP 176-10-05)
1346. Flaud, J-M.; Camy-Peyret, C.; Perrin, A.; Devi, V. M.; Rinsland, C. P.; and Smith, M. A. H.: The ν_3 and ν_1 Bands of the $^{16}\text{O}^{16}\text{O}^{18}\text{O}$ and $^{16}\text{O}^{18}\text{O}^{16}\text{O}$ Isotopic Species of Ozone. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 52.
(Subject Category 72 RTOP 147-44-02)
1347. Gregory, G. L.; Hinton, R. R.; Browell, E. V.; and Beck, S. M.: Ozone and Carbon Monoxide Distributions in the Tropical North Atlantic Troposphere. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 238.
(Subject Category 45 RTOP 176-20-21)
1348. Harriss, R. C.: The NASA Atmospheric Boundary Layer Experiment (ABLE), Barbados, 1984. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 237.
(Subject Category 45 RTOP 176-20-13)
1349. Hinton, R. R.; and Harriss, R. C.: Carbon Monoxide Flux to the Marine Boundary Layer. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 238.
(Subject Category 45 RTOP 175-20-21)
1350. Hipskind, R. S.; Gregory, G. L.; Sachse, G. W.; Hill, G. F.; and Danielsen, E. F.: Correlations Between Ozone and Carbon Monoxide in the Lower Stratosphere, Folded Tropopause, and Maritime Troposphere. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 235.
(Subject Category 45 RTOP 176-20-21)

1351. Johnson, R. W.; and Bartlett, D. S.: Remote Sensing in Large Scale Biogeochemical Research. Presented at the IEEE 1985 International Geoscience and Remote Sensing Symposium (IGARSS 1985), October 7-9, 1985, Amherst, Massachusetts. Abstract published in proceedings, Volume 2, p. 993.
(Subject Category 43 RTOP 199-30-36)
1352. Keating, G. M.; Craven, J. D.; Frank, L. A.; Young, D. F.; Bressette, W. E.; and Bhartia, P. K.: Remote Sensing of Large Scale Synoptic Ozone Distributions. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0063.
(Subject Category 46 RTOP 673-41-07)
1353. Keating, G. M.; Nicholson, J. Y., III; Brasseur, G.; and De Rudder, A.: Ozone Response to Short-Term Solar Ultraviolet Variations. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 318.
(Subject Category 46 RTOP 673-41-07)
1354. Keating, G. M.; Nicholson, J. Y., III; Young, D. F.; Brasseur, G.; and De Rudder, A.: Response of Stratospheric and Mesospheric Ozone to Solar Variability. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 1010.
(Subject Category 46 RTOP 683-41-07)
1355. Kent, G. S.; and McCormick, M. P.: Stratospheric Aerosol Observations Following the Eruption of El Chichon. Presented at the International MAP Workshop on Ozone Variations on Climatological Time Scales, August 19-22, 1985, Salzburg, Austria. Proceedings pending.
(Subject Category 46 RTOP 672-21-14)
1356. Larsen, J. C.; and Chu, W. P.: The Sensitivity of the SAGE II .94 μ m Band Water Vapor Retrievals to Uncertainties in Absorption Line Parameters. Presented at the OSA Topical Meeting on Remote Sensing of the Atmosphere, January 15-18, 1985, Incline Village, Nevada. In Technical Digest No. WC23.
(Subject Category 46 RTOP 619-12-20)
1357. Lawrence, G. F.; Robbins, J. L.; and Gibson, G. G.: Orbital and Cloud Cover Sampling Analyses for Space Lidar Missions. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0432.
(Subject Category 43 RTOP 673-53-01)
1358. Levine, J. S.; Tennille, G. M.; Towe, K. M.; and Khanna, R. K.: The Production of Trace Gases by Photochemistry and Lightning in the Early Atmosphere. Presented at the NASA Second Symposium on Chemical Evolution and the Origin and Evolution of Life, July 23-26, 1985, Moffett Field, California. In NASA Abstract Volume, p. 23. NASA CP pending.
(Subject Category 46 RTOP 199-50-16)

1359. McCormick, M. P.: El Chichon: Lidar and Satellite Measurements Versus Time and Latitude. Presented at the OSA Topical Meeting on Remote Sensing of the Atmosphere, January 15-18, 1985, Incline Village, Nevada. In Technical Digest No. TUA2.
(Subject Category 46 RTOP 672-21-14)
1360. McCormick, M. P.: Stratospheric Aerosols. Presented at the IEEE 1985 International Geoscience and Remote Sensing Symposium (IGARSS '85), October 7-9, 1985, Amherst, Massachusetts. Abstract published in proceedings, Volume 1, p. 198.
(Subject Category 46 RTOP 665-40-40)
1361. McCormick, M. P.: Stratospheric Aerosols: A Global Climatology. Presented at the Third NASA/NOAA Infrared Lidar Backscatter Workshop, January 14, 1985, Incline Village, Nevada. Abstract In Compilation of Workshop Presentation Materials, January 14, 1985, p. 43.
(Subject Category 46 RTOP 665-40-40)
1362. Minnis, P.; and Harrison, E. F.: A Seasonal Cloud Parameter Data Base From GOES East. Presented at the Department of the Air Force Third Annual Tri-Service Cloud Modeling Workshop, June 6-7, 1985, Hanscom AFB, Massachusetts. Proceedings pending.
(Subject Category 47 RTOP 672-22-06)
1363. Reichle, H. G., Jr.: Results of a Tropospheric CO Measurement Experiment Flown on the Space Shuttle. Presented at the OSA Topical Meeting on Remote Sensing of the Atmosphere, January 15-18, 1985, Incline Village, Nevada. In Technical Digest No. WC3.
(Subject Category 47 RTOP 618-22-31)
1364. Rinsland, C. P.; Devi, V. M.; Flaud, J-M.; Camy-Peyret, C.; Smith, M. A. H.; and Stokes, G. M.: Identification of ¹⁸O-Isotopic Lines of Ozone in Infrared Ground-Based Solar Absorption Spectra. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 52.
(Subject Category 45 RTOP 147-44-02)
1365. Sebacher, D. I.; Harriss, R. C.; Bartlett, K. B.; Crill, P. M.; Wilson, J. O.; Melack, J. M.; and Smith, L.: Atmospheric Methane Sources: Amazon River Floodplain. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 822.
(Subject Category 45 RTOP 199-30-26)
1366. Shipley, S. T.; Shim, S-G.; and Carmichael, G. R.: Chemical Simulation of Diurnal Boundary Layer Aerosol and Ozone Transport Observed by Airborne DIAL Lidar. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 238.
(Subject Category 45 RTOP 307-04-02)

1367. Smith, G. L.: Spatial Spectra From a Satellite Scanning Radiometer. Presented at the AMS Ninth Conference on Probability and Statistics in Atmospheric Sciences, October 9-11, 1985, Virginia Beach, Virginia. Published in Preprints, 1985, p. 360-367. (Subject Category 47 RTOP 619-12-30)
1368. Vemury, S. K.; Wielicki, B. A.; and Suttles, J. T.: Scene Identification Using Maximum Likelihood Estimation (MLE). Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS, Volume 66, No. 18, April 30, 1985, p. 240. (Subject Category 47 RTOP 619-12-30)
1369. Wallio, H. A.; Gormsen, B. B.; and Reichle, H. G., Jr.: Results of a Feasibility Study of a Spaceborne Multi-Level Tropospheric CO Measurement System. Presented at the 1985 American Geophysical Union Fall Meeting, December 9-13, 1985, San Francisco, California. Abstract published in EOS Transactions, Volume 66, No. 46, p. 818. (Subject Category 35 RTOP 618-22-31)
1370. Whitlock, C. H.; Suttles, J. T.; Barkstrom, B. R.; and LeCroy, S. R.: Determination of Spectral Properties of the Earth Radiation Budget at Selected Sites. Presented at the OSA Topical Meeting on Remote Sensing of the Atmosphere, January 15-18, 1985, Incline Village, Nevada. In Technical Digest No. TUC12. (Subject Category 47 RTOP 672-40-04)
1371. Young, D. F.; and Keating, G. M.: Models of Ozone Climatology Based on Satellite Data. Presented at the 1985 American Geophysical Union Spring Meeting, May 27-31, 1985, Baltimore, Maryland. Abstract published in EOS Transactions, Volume 66, No. 18, April 30, 1985, p. 237. (Subject Category 46 RTOP 673-41-07)

Technical Talks

1372. Bartlett, D. S.: Remote Sensing of Tidal Wetlands. Presented at the NOAA Workshop on Estuarine Remote Sensing, December 3, 1985, Washington, DC. (Subject Category 43 RTOP 199-30-36)
1373. Bartlett, D. S.; and Johnson, R. W.: Remote Sensing of Wetland Parameters Related to Carbon Cycling. Presented at the NASA Symposium on Biospheric Research, March 13-14, 1985, Moffett Field, California. (Subject Category 43 RTOP 199-30-36)
1374. Barkstrom, B. R.; and the ERBE Science Team: Initial Data From the Earth Radiation Budget Experiment (ERBE). Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 619-12-30)
1375. Blackshear, W. T.; and Grose, W. L.: Dynamics of a Sudden Stratospheric Warming Simulated by a Primitive Equation Atmospheric Model. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 47 RTOP 673-64-02)

1376. Butchart, N.; and Remsberg, E. E.: Area Diagnostics for the Northern Hemisphere Middle Stratosphere. Presented at the AMS Fifth Conference on the Meteorology of the Stratosphere and Mesosphere, April 23-26, 1985, Boulder, Colorado.
(Subject Category 46 RTOP 673-41-10)
1377. Callis, L. B.: Mechanisms and Models: Radiation and Photochemistry. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 673-62-02)
1378. Callis, L. B.; Boughner, R. E.; and Natarajan, M.: Middle Atmospheric Transport Derived From the LIMS, SAMS, and SBUV Data. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 673-62-02)
1379. Charlock, T. P.; and Cattany-Carnes, K. M.: Comparison of Space-Time Infrared Radiation Statistics From Satellite Observations and General Circulation Models. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. Paper No. JS4-07.
(Subject Category 47 RTOP 146-74-04)
1380. Cofer, W. R., III: Airborne Shuttle Exhaust Cloud Measurements at Vandenberg AFB, CA. Presented at the JANNAF Safety & Environmental Protection Subcommittee Workshop on "Atmospheric Transport and Diffusion Modeling," June 11-13, 1985, Los Angeles, California.
(Subject Category 45 RTOP 569-81-91)
1381. Ferebee, M. T.: Color Contouring for Atmospheric Data Sets. Presented at the National Technical Association (NTA) 1985 Conference, July 22-26, 1985, Houston, Texas.
(Subject Category 60 RTOP 619-12-20)
1382. Fishman, J.: The Contribution of Local and Regional Chemical Processes to the Global Tropospheric Ozone Budget. Presented at the AAAS Gordon Conference on Environmental Science - Air, June 24-28, 1985, New Hampton, New Hampshire.
(Subject Category 46 RTOP 176-10-05)
1383. Fishman, J.; Minnis, P.; Reichle, H. G., Jr.; Taylor, M. Z.; Krueger, A. J.; and Delany, A. C.: An Investigation of Trace Gas Emissions in the Tropics Using Space-Based Instrumentation. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii.
(Subject Category 46 RTOP 176-10-05)
1384. Grose, W. L.: Ertel's Potential Vorticity Inferred From Satellite Temperature Data as a Diagnostic for Studying Stratospheric Dynamics and Transport. Presented at the AMS Fifth Conference on the Meteorology of the Stratosphere and Mesosphere, April 23-26, 1985, Boulder, Colorado.
(Subject Category 47 RTOP 673-64-02)

1385. Grose, W. L.; and O'Neill, A.: Application of LIMS and SSU Global Satellite to Studies of Stratospheric Dynamics. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 47 RTOP 673-64-02)
1386. Grose, W. L.; Turner, R. E.; and Nealy, J. E.: Coupling Between Photochemistry and Transport: Simulations With a 3-D Model. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 47 RTOP 673-64-02)
1387. Harrison, E. F.; and Minnis, P.: Cloud Cover Derived From ISCCP Data Using a Hybrid Bi-Spectral Threshold Technique. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii.
(Subject Category 47 RTOP 672-22-04)
1388. Keating, G. M.; and Brasseur, G.: Observed and Predicted Response of Middle Atmosphere to Short-Term Solar UV Variations. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 673-41-07)
1389. Keating, G. M.; Nicholson, J. Y., III; Brasseur, G.; and De Rudder, A.: Review of Recent Evidence of Solar Activity Effects in the Middle Atmosphere From Large Data Sets. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 673-41-07)
1390. Keating, G. M.; and Young, D. F.: Interim Reference Ozone Models for CIRA. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 673-41-07)
1391. Kent, G. S.; and McCormick, M. P.: Global Stratospheric Aerosol Climatology From Satellite Occultation and Lidar Measurements. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 665-40-40)
1392. Lawrence, J. D., Jr.: Remote Sensing of the Atmosphere. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada.
(Subject Category 45 RTOP 146-74-01)
1393. LeCroy, S. R.; Whitlock, C. H.; and Suttles, J. T.: Characterization of Aerosol Types by Their Extinction to Backscatter Cross Section Ratio. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii.
(Subject Category 47 RTOP 672-40-04)

1394. Lee, R. B., III; and Barkstrom, B. R.: A Review of NASA Space-Borne, Total Optical Solar Irradiance Detectors. Presented at the National Technical Association (NTA) 1985 Conference, July 22-26, 1985, Houston, Texas. (Subject Category 14)
1395. Levine, J. S.: Earth Atmosphere Evolution/Earth Science Instrumentation. Presented at the IEEE 18th Annual Electronics and Aerospace Systems Conference (EASCON 85), October 28-30, 1985, Washington, DC. (Subject Category 46 RTOP 176-20-02)
1396. Levine, J. S.: The Earth's Atmosphere: Past, Present, and Future. Presented at the Agricultural Research Institute Conference on Improving Agrochemical and Fertilizer Application Technology, February 27 - March 1, 1985, Chevy Chase, Maryland. (Subject Category 46 RTOP 176-20-02)
1397. McDougal, D. S.: Project FIRE: A New U.S. Cloud Climatology Research Program. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-10)
1398. Miles, T.; and Grose, W. L.: Wave Activity in the Summer Stratosphere Observed by LIMS. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 47 RTOP 673-64-02)
1399. Minnis, P.; and Harrison, E. F.: Zenith Angle Dependence of Cloud Fraction Retrieval From Satellite. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-04)
1400. Nealy, J. E.; Turner, R. E.; Blackshear, W. T.; and Grose, W. L.: Ozone Transport During a Stratosphere Warming - A 3-D Model Simulation. Presented at the AMS Fifth Conference on the Meteorology of the Stratosphere and Mesosphere, April 23-26, 1985, Boulder, Colorado. (Subject Category 47 RTOP 673-64-02)
1401. Park, J. H.; and Carli, B.: Retrieval of Stratospheric Minor Constituents From Atmospheric Emission Spectra in the Submillimeter Region. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 8-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 147-44-02)
1402. Parker, L.; Welch, R. M.; Musil, D. J.; and Wielicki, B. A.: Spatial Inhomogeneities in Clouds. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-10)
1403. Reichle, H. G., Jr.: The Distribution of Middle Tropospheric Carbon Monoxide as Observed by a Satellite Borne Remote Sensor. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 46 RTOP 618-22-31)

1404. Reichle, H. G., Jr.; Taylor, L. V.; and Casas, J. C.: Results of a Feasibility Study for a Spaceborne Global Carbon Monoxide Measurement System for the 1990's. Presented at the AIAA/NASA Earth Observing (EOS) Conference, October 8-10, 1985, Virginia Beach, Virginia.
(Subject Category 46 RTOP 618-22-31)
1405. Remsberg, E. E.; and Butchart, N.: Diagnostics of the Winter Polar Vortex Using Ozone and Water Vapor From the Nimbus 7 LIMS Experiment. Presented at the AMS Fifth Conference on the Meteorology of the Stratosphere and Mesosphere, April 23-26, 1985, Boulder, Colorado.
(Subject Category 46 RTOP 673-41-10)
1406. Rinsland, C. P.; Goldman, A.; Murcray, D. G.; Murcray, F. J.; Bonomo, F. S.; and Devi, V. M.: Tentative Spectroscopic Identification of Stratospheric Chlorine Nitrate. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 45 RTOP 147-44-02)
1407. Russell, J. M., III: The Halogen Occultation Experiment (HALOE). Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia.
(Subject Category 46 RTOP 673-41-10)
1408. Russell, J. M., III: Remote Sensing of Upper Atmosphere Composition From Space. Presented at the AIAA/NASA Earth Observing System (EOS) Conference, October 8-10, 1985, Virginia Beach, Virginia.
(Subject Category 46 RTOP 673-41-10)
1409. Russell, J. M., III: The LIMS and HALOE Retrieval Methods. Presented at the 1985 Annual Meeting of the Optical Society of America, October 14-18, 1985, Washington, D.C.
(Subject Category 46 RTOP 673-41-10)
1410. Shipley, S. T.; Connors, V. S.; Reichle, H. G., Jr.; and Newell, R. E.: Analysis of Upper Tropospheric Carbon Monoxide Observed Downwind of the Amazon Basin. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii.
(Subject Category 45 RTOP 176-20-06)
1411. Smith, M. A. H.: Infrared Spectroscopy for Upper Atmospheric Measurements. Presented at the Ohio State University 40th Molecular Spectroscopy Symposium, June 17-21, 1985, Columbus, Ohio.
(Subject Category 72 RTOP 147-23-11)
1412. Welch, R. M.; and Wielicki, B. A.: The Stratocumulus Nature of Fog. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii.
(Subject Category 47 RTOP 672-22-10)
1413. Wielicki, B. A.; and Suttles, J. T.: Stratocumulus Cloud Radiative Properties. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii.
(Subject Category 47 RTOP 672-22-10)

1414. Woods, D. C.: Atmospheric Aerosol Sampling in the Arctic. Presented at the National Technical Association (NTA) 1985 Conference, July 22-26, 1985, Houston, Texas.
(Subject Category 46 RTOP 672-22-10)

Computer Programs

No computer programs.

Tech Briefs

1415. Browell, E. V.: Airborne DIAL System for Remote Tropospheric Sensing. NASA Tech Brief LAR-13002.
1416. Kane, T. J.; and Byer, R. L. (Stanford University): Monolithic Isolated Single-Mode Ring Laser. NASA Tech Brief LAR-13191.

Patents

No patents.

PUBLICATIONS FOR SPACE SYSTEMS DIVISION

Formal Reports

1417. Bernot, P. T.: Exploratory Investigation of the Aerodynamic Characteristics of a Biwing Vehicle at Mach 20.3. NASA TM-86314, February 1985, 31 p.
(Avail: NTIS Subject Category 18 RTOP 506-51-13)
1418. Crisp, V. K.; Rehder, J. J.; and Schwing, J. L.: Intersection of Three-Dimensional Geometric Surfaces. NASA TP-2454, July 1985, 31 p.
(Avail: NTIS Subject Category 59 RTOP 506-63-23)
1419. Cucinotta, F. A.; and Wilson, J. W.: Computer Subroutines for Estimation of Human Exposure to Radiation in Low Earth Orbit. NASA TM-86324, February 1985, 24 p.
(Avail: NTIS Subject Category 54 RTOP 506-53-23)
1420. Gupta, R. N.; Scott, C. D.; and Moss, J. N.: Slip-Boundary Equations for Multicomponent Nonequilibrium Airflow. NASA TP-2452, November 1985, 58 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-13)
1421. Hagaman, J. A.: A Survey of Structural Material Issues for a Space Station. NASA TM-86385, August 1985, 22 p.
(Avail: NTIS Subject Category 15 RTOP 506-64-13)
1422. McCandless, R. S.: Hypersonic Characteristics of an Advanced Aerospace Plane at Mach 20.3. NASA TM-86435, December 1985, 26 p.
(Avail: NTIS Subject Category 02 RTOP 506-51-13)
1423. Midden, R. E.; and Miller, C. G., III: Description and Calibration of the Langley Hypersonic CF₄ Tunnel - A Facility for Simulating Low γ Flow as Occurs for a Real Gas. NASA TP-2384, March 1985, 76 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-13)
1424. Miller, C. G., III; Micol, J. R.; and Gnoffo, P. A.: Laminar Heat-Transfer Distributions on Bionics at Incidence in Hypersonic-Hypervelocity Flows. NASA TP-2213, January 1985, 144 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-13)
1425. Norbury, J. W.; Townsend, L. W.; and Deutchman, P. A.: A T-Matrix Theory of Galactic Heavy-Ion Fragmentation. NASA TP-2363, January 1985, 27 p.
(Avail: NTIS Subject Category 73 RTOP 199-20-76)
1426. Powell, R. W.; and Scallion, W. I.: Effect of Canards on the Landing Characteristics of the Space Shuttle Orbiter. NASA TM-86305, January 1985, 145 p.
(Avail: STIF Subject Category 16 RTOP 506-51-13)
1427. Scallion, W. I.; and Phillips, W. P.: Space Shuttle Orbiter Trimmed Center-of-Gravity Extension Study - Summary Report. NASA TP-2284, March 1985, 51 p.
(Avail: NTIS Subject Category 15 RTOP 506-51-13)

1428. Scallion, W. I.; Spencer, B., Jr.; Ware, G. M.; Phillips, W. P.; Powell, R. W.; Young, J. C.; Gentry, G. L., Jr.; and Applin, Z. T.: Study of Several Factors Affecting Crew Escape Trajectories From the Space Shuttle Orbiter at Low-Subsonic Speeds. NASA TM-86303, February 1985, 69 p.
(Avail: NTIS Subject Category 16 RTOP 506-51-13)
1429. Stone, H. W.; and Powell, R. W.: Effect of Aerodynamic and Angle-of-Attack Uncertainties on the May 1979 Entry Flight Control System of the Space Shuttle From Mach 8 to 1.5. NASA TP-2365, January 1985, 136 p.
(Avail: NTIS Subject Category 16 RTOP 506-51-13)
1430. Townsend, L. W.; and Norbury, J. W.: Charge-to-Mass Dispersion Methods for Abrasion-Ablation Fragmentation Models. NASA TM-86340, March 1985, 7 p.
(Avail: NTIS Subject Category 73 RTOP 199-22-76)
1431. Townsend, L. W.; and Wilson, J. W.: Tables of Nuclear Cross Sections for Galactic Cosmic Rays: Absorption Cross Sections. NASA RP-1134, May 1985, 31 p.
(Avail: NTIS Subject Category 73 RTOP 199-22-76)

Quick-Release Technical Memorandums

1432. De Young, R. J.: Scaling Blackbody Laser to High Powers. NASA TM-86395, March 1985, 15 p.
(Avail: NTIS Subject Category 36 RTOP 506-55-73)
1433. De Young, R. J.; and Chen, K. Y. (Editors): Lasant Materials for Blackbody-Pumped Lasers. NASA TM-87616, September 1985, 179 p.
(Avail: NTIS Subject Category 36 RTOP 506-55-73)
1434. Freeman, D. C., Jr.: NASA TM-86401, March 1985, 46 p.
1435. Friesen, W. J.: Some Observations of Heated Gallium Arsenide Heteroface Solar Cells. NASA TM-86388, March 1985, 53 p.
(Avail: NTIS Subject Category 20 RTOP 506-55-73)
1436. Goslee, J. W.; Hinson, W. F.; and Davis, W. T.: Electrostatic Forming and Testing of Polymer Films on a 16-Foot Diameter Test Fixture. NASA TM-86328, February 1985, 34 p.
(Avail: NTIS Subject Category 33 RTOP 506-62-23)
1437. Gupta, R. N.; Scott, C. D.; and Moss, J. N.: Surface-Slip Equations for Multicomponent Nonequilibrium Air Flow. NASA TM-85820, March 1985, 96 p.
(Avail: NTIS Subject Category 34 RTOP 506-51-13)
1438. Orr, L. H.: User's Guide for Langley Research Center Orbital Lifetime Program. NASA TM-87587, September 1985, 64 p.
(Avail: NTIS Subject Category 61 RTOP 504-64-23)

1439. Phillips, W. P.; and Fournier, R. H.: Space Shuttle Orbiter Trimmed Center-of-Gravity Extension Study: Volume IX - Effects of Configuration Modifications on the Aerodynamic Characteristics of the 140A/B Orbiter at Mach Numbers of 1.5, 2.0, and 2.5. NASA TM-72661, Vol. IX, January 1985, 97 p.
(Avail: NTIS Subject Category 02 RTOP 906-65-34)
1440. Silverberg, L. M.: A Control System Design Approach for Flexible Spacecraft. NASA TM-87599, November 1985, 40 p.
(Avail: NTIS Subject Category 18 RTOP 506-49-31)
1441. Williams, M. D.; and Zapata, L. E.: Solar-Pumped Solid State Nd Lasers. NASA TM-87615, October 1985, 22 p.
(Avail: NTIS Subject Category 36 RTOP 506-55-73)

Contractor Reports

1442. Anon.: A Study of Spacecraft Technology and Design Concepts - Volume I. (NAS1-17758 Rockwell International Corporation.) NASA CR-172579, March 1985, 225 p.
(Avail: NTIS Subject Category 18 RTOP 506-62-23)
1443. Anon.: A Study of Spacecraft Technology and Design Concepts - Volume II, Appendices. (NAS1-17758 Rockwell International Corporation.) NASA CR-172579, March 1985, 132 p.
(Avail: NTIS Subject Category 18 RTOP 506-62-23)
1444. Bachtell, E. E.; Bettadapur, S. S.; and Coyner, J. V.: Box Truss Analysis and Technology Development, Task 1 - Mesh Analysis and Control. (NAS1-17551 Martin Marietta Aerospace.) NASA CR-172570, August 1985, 115 p.
(Avail: NTIS Subject Category 66 RTOP 506-62-23)
1445. Bachtell, E. E.; Bettadapur, S. S.; Schartel, W. A.; and Karanian, L. A.: Operational Fitness of Box Truss Antennas in Response to Dynamic Slewing. (NAS1-17551 Martin Marietta Aerospace.) NASA CR-172470, January 1985, 97 p.
(Avail: NTIS Subject Category 18 RTOP 506-62-23)
1446. Calleson, R. E.: Application of the Adams Program to Deployable Space Truss Structures. (NAS1-18000 Kentron International, Inc.) NASA CR-177927, July 1985, 42 p.
(Avail: NTIS Subject Category 39 RTOP 506-62-23)
1447. Hall, D. W.; Watson, D. A.; Tuttle, R. P.; and Hall, S. A.: Mission Analysis of Solar Powered Aircraft. (NAS1-16975 Lockheed Missiles and Space Company, Inc.) NASA CR-172583, July 1985, 60 p.
(Avail: NTIS Subject Category 12 RTOP 506-63-23)

1448. Kelly, G. M.; Heck, M. L.; McConnell, J. G.; and Findlay, J. T.: Post-Flight Results for Shuttle Discovery Flight 51-D (STS-23). (NAS1-17707 Analytical Mechanics Associates, Inc.) NASA CR-177976, November 1985, 141 p.
(Avail: STIF Subject Category 16 RTOP 506-40-11)
1449. Kelly, G. M.; Heck, M. L.; McConnell, J. G.; Waters, L. A.; Troutman, P. A.; and Findlay, J. T.: Challenger STS-17 (41-G) Post-Flight Best Estimate Trajectory Products - Development and Summary Results. (NAS1-17707 Analytical Mechanics Associates, Inc.) NASA CR-172548, March 1985, 113 p.
(Avail: STIF Subject Category 16 RTOP 506-51-13)
1450. Kelly, G. M.; McConnell, J. G.; Heck, M. L.; Troutman, P. A.; and Findlay, J. T.: Trajectory Reconstruction and Aerodynamic Results From the First Discovery Flight, STS-14(41-D). (NAS1-17707 Analytical Mechanics Associates, Inc.) NASA CR-172492, February 1985, 122 p.
(Avail: STIF Subject Category 16 RTOP 506-51-13)
1451. Kelly, G. M.; McConnell, J. G.; Heck, M. L.; Troutman, P. A.; Waters, L. A.; and Findlay, J. T.: Post-Flight BET Products for the Second Discovery Entry, STS-19 (51-A). (NAS1-17707 Analytical Mechanics Associates, Inc.) NASA CR-172572, April 1985, 148 p.
(Avail: STIF Subject Category 16 RTOP 506-51-13)
1452. Mead, G. H.; Peercy, R. L., Jr.; and Raasch, R. F.: Space Station Crew Safety Alternatives Study - Final Report, Volume V - Space Station Safety Plan. (NAS1-17242 Rockwell International.) NASA CR-3858, June 1985, 116 p.
(Avail: NTIS Subject Category 15 RTOP 906-54-02)
1453. Mihora, D. J.: Data Appendix: F-Number = 1.0 EMR With a Flexible Back Electrode. (NAS1-16133 General Research Corporation.) NASA CR-172477, August 1984 (Released 1985), 72 p.
(Avail: NTIS Subject Category 33 RTOP 506-62-23)
1454. Peercy, R. L., Jr.; Raasch, R. F.; and Rockoff, L. A.: Space Station Crew Safety Alternatives Study - Final Report, Volume I - Final Summary Report. (NAS1-17242 Rockwell International.) NASA CR-3854, June 1985, 146 p.
(Avail: NTIS Subject Category 15 RTOP 906-54-02)
1455. Peercy, R. L., Jr.; Raasch, R. F.; and Rockoff, L. A.: Space Station Crew Safety Alternatives Study - Final Report, Volume IV - Appendices. (NAS1-17242 Rockwell International.) NASA CR-3857, June 1985, 112 p.
(Avail: NTIS Subject Category 15 RTOP 906-54-02)
1456. Raasch, R. F.; Peercy, R. L., Jr.; and Rockoff, L. A.: Space Station Crew Safety Alternatives Study - Final Report, Volume II - Threat Development. (NAS1-17242 Rockwell International.) NASA CR-3855, June 1985, 238 p.
(Avail: NTIS Subject Category 15 RTOP 906-54-02)

1457. Rockoff, L. A.; Raasch, R. F.; and Peercy, R. L., Jr.: Space Station Crew Safety Alternatives Study - Final Report, Volume III - Safety Impact of Human Factors. (NAS1-17242 Rockwell International.) NASA CR-3856, June 1985, 74 p.
(Avail: NTIS Subject Category 15 RTOP 906-54-02)

Journal Articles and Other Publications

1458. Blanchard, R. C.; and Rutherford, J. F.: Shuttle Orbiter High Resolution Accelerometer Package Experiment: Preliminary Flight Results. Journal of Spacecraft and Rockets, Volume 22, No. 4, July - August 1985, p. 474-480.
(Subject Category 19 RTOP 506-63-43)
1459. Dunham, E. W.; Baron, R. L.; Conner, S.; Dunham, D. W.; Dunham, J. B.; Schneider, G.; Cohen, H. L.; Helms, V. T., III; Croom, M.; and Saftka, J.: Results From the Occultation of 14 Piscium by (51) Nemausa. Astronomical Journal, Volume 89, November 1984, p. 1755-1758.
(Subject Category 89)
1460. Gnoffo, P. A.: Complete Flowfields Over Low- and Wide-Angle AOTV Conceptual Configurations. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 54-84.
(Subject Category 34 RTOP 506-51-13)
1461. Gupta, R. N.; Gnoffo, P. A.; and MacCormack, R. W.: Viscous Shock-Layer Flowfield Analysis by an Explicit-Implicit Method. AIAA Journal, Volume 23, No. 5, May 1985, p. 723-732.
(Subject Category 34 RTOP 506-51-13)
1462. Gupta, R. N.; Scott, C. D.; and Moss, J. N.: Surface-Slip Equations for Low-Reynolds-Number Multicomponent Gas Flows. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles. Vol. 96, 1985, p. 465-490.
(Subject Category 34 RTOP 506-51-15)
1463. Heck, M. L.; Findlay, J. T.; Kelly, G. M.; and Compton, H. R.: Adaptation of a Strapdown Formulation for Processing Inertial Platform Data. Aeronautics/Space Technology, Volume 3, No. 3, March 1985, p. 127.
(Subject Category 17 RTOP 506-40-11)
1464. Hook, W. R.: Historical Review. Journal of Engineering for Industry, Volume 106, No. 4, November 1984, p. 276-286.
(Subject Category 15 RTOP 506-62-23)
1465. Lee, J. H.; Wilson, J. W.; Enderson, T.; Humes, D. H.; Weaver, W. R.; and Tabibi, B. M.: Threshold Kinetic Processes for $t\text{-C}_4\text{F}_9\text{I}$. Optics Communications, Volume 53, No. 6, April 15, 1985, p. 367-370.
(Subject Category 36 RTOP 506-55-73)

1466. MacConochie, I. O.; Breiner, C. A.; Mackley, E. A.; Morris, S. J., Jr.; Phillips, W. P.; and Scotti, S. J.: Orbit on Demand: Will Cost Determine Best Design. Aerospace America, Volume 23, No. 2, February 1985, p. 50-53.
(Subject Category 20 RTOP 506-63-23)
1467. MacConochie, I. O.; Davis, R. B.; and LeMessurier, R. W.: Alternative Designs of Integral Tanks for Advanced Space Transportation Systems. Journal of Spacecraft and Rockets, Volume 22, No. 4, July - August 1985, p. 425-431.
(Subject Category 18 RTOP 506-51-13)
1468. Martin, J. A.: Effects of Tripropellant Engines on Earth-to-Orbit Vehicles. Journal of Spacecraft and Rockets, Volume 22, No. 6, November - December 1985, p. 620-625.
(Subject Category 20 RTOP 506-51-13)
1469. Martin, J. A.: Orbit on Demand: In This Century If Pushed. Aerospace America, Volume 23, No. 2, February 1985, p. 46-48.
(Subject Category 20 RTOP 506-63-23)
1470. Martin, J. A.: Shock-Fitting Solution of the Supersonic Flowfield in a Rounded Internal Corner. AIAA Journal, Volume 23, No. 2, February 1985, p. 193-200.
(Subject Category 02 RTOP 506-51-13)
1471. Martin, J. A.: Vertical Ascent From Earth to Geosynchronous Orbit. Journal of Propulsion and Power, Volume 1, No. 1, January - February 1985, p. 77-82.
(Subject Category 20 RTOP 506-51-13)
1472. Miller, C. G., III: Refinement of an "Alternate" Method for Measuring Heating Rates in Hypersonic Wind Tunnels. AIAA Journal, Volume 23, No. 5, May 1985, p. 810-812.
(Subject Category 34 RTOP 506-51-13)
1473. Moss, J. N.; and Bird, G. A.: Direct Simulation of Transitional Flow for Hypersonic Reentry Conditions. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 113-139.
(Subject Category 34 RTOP 506-51-13)
1474. Naftel, J. C.; and Powell, R. W.: Flight Analysis for a Two-Stage Launch Vehicle With a Glideback Booster. Journal of Guidance, Control, and Dynamics, Volume 8, No. 3, May - June 1985, p. 340-343.
(Subject Category 13 RTOP 506-63-23)
1475. Norbury, J. W.; Cucinotta, F. A.; Deutchman, P. A.; and Townsend, L. W.: Spectral Distributions and Total Cross Sections for Neutral Subthreshold Pion Production in Carbon-Carbon Collisions. Physical Review Letters, Volume 55, August 12, 1985, p. 681-683.
(Subject Category 73 RTOP 199-22-76)

1476. Norbury, J. W.; Deutchman, P. A.; and Townsend, L. W.: A Particle-Hole Calculation for Pion Production in Relativistic Heavy-Ion Collisions. Nuclear Physics A, Volume A433, 1985, p. 691-712.
(Subject Category 73 RTOP 199-20-76)
1477. Norbury, J. W.; Townsend, L. W.; and Deutchman, P. A.: A Complex T-Matrix Derivation of a Resonance Amplitude. Physics Letters A, Volume 109A, No. 6, June 3, 1985, p. 261-264.
(Subject Category 70 RTOP 199-20-76)
1478. Outlaw, R. A.; and Heinbockel, J. H.: Atomistic Simulation of Thin Film Nucleation and Growth of Au/NaCl(100). Journal of Vacuum Science and Technology. Volume 3, No. 3, May - June 1985, p. 820-821.
(Subject Category 31 RTOP 506-55-73)
1479. Outlaw, R. A.; and Heinbockel, J. H.: Simulation of the Initial Stages of Nucleation and Growth of Au/NaCl(100). Thin Solid Films, Volume 123, 1985, p. 159-172.
(Subject Category 31 RTOP 506-55-73)
1480. Outlaw, R. A.; Hopson, P., Jr.; Walker, G. H.; Crouch, R. K.; and Jesser, W. A.: Preparation of Free-Standing Ge(100) Thin Films Using Plasma-Enhanced Chemical Vapor Deposition. Journal of Vacuum Science and Technology, Volume 3, No. 3, May - June 1985, p. 692-693.
(Subject Category 31 RTOP 506-55-43)
1481. Powell, R. W.; and Freeman, D. C., Jr.: Aerodynamic Control of the Space Shuttle Orbiter with Tip-Fin Controllers. Journal of Spacecraft and Rockets, Volume 22, No. 5, September-October 1985, p. 536.
(Subject Category 15 RTOP 506-51-13)
1482. Powell, R. W.; Stone, H. W.; and Naftel, J. C.: Performance Evaluation of the Atmospheric Phase of Two Aeromaneuvering Orbital Transfer Vehicles. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 143-164.
(Subject Category 08 RTOP 506-51-13)
1483. Rehder, J. J.: Multiple Pass Trajectories for an Aeroassisted Orbital Transfer Vehicle. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 186-197.
(Subject Category 15 RTOP 506-51-13)
1484. Shinn, J. L.; and Jones, J. J.: Chemical Nonequilibrium Effects on Flowfields for Aeroassisted Orbital Transfer Vehicles. Journal of Spacecraft and Rockets, Volume 22, No. 1, January - February 1985, p. 54-59.
(Subject Category 34 RTOP 506-51-13)

1485. Shinn, J. L.; and Simmonds, A. L.: Comparison of Viscous Shock-Layer Heating Analysis With Shuttle Flight Data in Slip Flow Regime. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 491-510.
(Subject Category 34 RTOP 506-51-13)
1486. Sutton, K.: Air Radiation Revisited. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 419-441.
(Subject Category 34 RTOP 506-51-13)
1487. Talay, T. A.; and Morris, W. D.: Space Station Orbit Selection. Journal of the Astronautical Sciences, Volume 32, No. 4, October - November 1984, p. 377-392.
(Subject Category 16 RTOP 506-63-23)
1488. Talay, T. A.; Morris, W. D.; and LeMessurier, R. W.: Orbit-on-Demand Vehicles: Missions Possible, But One-Day Turnaround?" Aerospace America, Volume 23, No. 2, February 1985, p. 54-57.
(Subject Category 20 RTOP 506-63-23)
1489. Talay, T. A.; White, N. H.; and Naftel, J. C.: Impact of Atmospheric Uncertainties and Viscous Interaction Effects on the Performance of Aero-Assisted Orbital Transfer Vehicles. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 198-229.
(Subject Category 15 RTOP 506-51-13)
1490. Throckmorton, D. A.; and Hartung, L. C.: Shock-Interaction-Induced Heat Transfer to the Orbiter Wing Lower Surface. Journal of Spacecraft and Rockets, Volume 22, No. 5, September - October 1985, p. 516-522.
(Subject Category 34 RTOP 506-51-13)
1491. Townsend, L. W.; Wilson, J. W.; and Norbury, J. W.: A Simplified Optical Model Description of Heavy Ion Fragmentation. Canadian Journal of Physics, Volume 63, No. 2, 1985, p. 135-138.
(Subject Category 73 RTOP 199-20-76)
1492. Walberg, G. D.: A Survey of Aeroassisted Orbit Transfer. Journal of Spacecraft and Rockets, Volume 22, No. 1, January - February 1985, p. 3-18.
(Subject Category 16 RTOP 506-51-13)
1493. Weilmuenster, K. J.: Comparison of Inviscid Flow Computations With Flight Data for the Shuttle Orbiter. Journal of Spacecraft and Rockets, Volume 22, No. 3, May - June 1985, p. 297.
(Subject Category 34 RTOP 506-51-13)
1494. Wells, W. L.: Heating Measurements on Space Shuttle Orbiter Models With Differentially Deflected Elevons. Journal of Spacecraft and Rockets, Volume 22, No. 2, March - April 1985, p. 126-133.
(Subject Category 34 RTOP 506-51-13)

1495. Wilhite, A. W.; Arrington, J. R.; and McCandless, R. S.: Performance Aerodynamics of Aero-Assisted Orbital Transfer Vehicles. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 165-185.
(Subject Category 15 RTOP 506-51-13)
1496. Wilson, J. W.; and Khandelwal, G. S.: Proton Dosimeter Design for Distributed Body Organs. Nuclear Technology, Volume 69, June 1985, p. 393-394.
(Subject Category 52 RTOP 199-20-76)
1497. Wong, M.; Schimmerling, W.; Howard, J.; Rapkin, M.; Wilson, J. W.; Townsend, L. W.; and Bidasaria, H. B.: The Passage of High-Energy Ions Through Extended Matter: Transport Studies. Lawrence Berkeley Laboratory Report, LBL 18393, April 1985, p. 92-96.
(Subject Category 73 RTOP 199-22-76)
1498. Xu, Y. J.; Khandelwal, G. S.; and Wilson, J. W.: Proton Stopping Cross Sections of Liquid Water. The Physical Review A, Volume 32, July 1985, p. 629-632.
(Subject Category 73 RTOP 506-53-23)
1499. Zapata, L. E.; and De Young, R. J.: Efficient Flashlamp Pumped-IBr Laser. Journal of Applied Physics, Volume 57, No. 3, February 1, 1985, p. 760-773.
(Subject Category 36 RTOP 506-55-73)
1500. Zoby, E. V.; Gupta, R. N.; and Simmonds, A. L.: Temperature-Dependent Reaction Rate Expressions for Oxygen Recombination. AIAA Progress in Astronautics and Aeronautics Series - 1984 Thermophysics Volume on Aeroassisted Orbital Transfer Vehicles, Volume 96, 1985, p. 445-464.
(Subject Category 34 RTOP 506-51-13)
1501. Zoby, E. V.; and Simmonds, A. L.: Engineering Flowfield Method With Angle-of-Attack Applications. Journal of Spacecraft and Rockets, Volume 22, No. 4, July - August 1985, p. 398-404.
(Subject Category 34 RTOP 506-51-13)

Meeting Presentations

1502. Andersen, G. C.; Garrett, L. B.; and Calleson, R. E.: Comparative Analysis of On-Orbit Dynamic Performance of Several Large Antenna Concepts. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0818-CP.
(Subject Category 39 RTOP 506-62-23)
1503. Blanchard, R. C.; and Buck, G. M.: Determination of Rarefied-Flow Aerodynamics of the Shuttle Orbiter From Measurements on STS-6 and STS-7. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0347.
(Subject Category 02 RTOP 506-63-43)

1504. Brewer, D. A.; and Hall, J. B., Jr.: Space Station Trace Contaminant Environmental Analysis Model. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 54 RTOP 506-64-14)
1505. Brock, F. J.; Hueser, J. E.; Melfi, L. T.; and Bird, G. A.: Rocket Nozzle Lip Flow by Direct Simulation Monte Carlo Method. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0995.
(Subject Category 34 RTOP 506-51-13)
1506. Buck, W. W.; Norbury, J. W.; Townsend, L. W.; and Wilson, J. W.: Optical Potential Calculations of Antideuteron Absorptive Cross Sections. Presented at the American Physical Society 1985 Fall Meeting of the Division of Nuclear Physics, October 28-30, 1985, Pacific Grove, California. Abstract in Bulletin of APS, Volume 30, No. 9, September 1985, p. 1269.
(Subject Category 73 RTOP 199-22-76)
1507. Conway, E. J.; and De Young, R. J.: Progress in Solar-Pumped Laser Research. Presented at the Society for Optical and Quantum Electronics 8th International Conference on Lasers '85, December 2-6, 1985, Las Vegas, Nevada. Proceedings pending.
(Subject Category 36 RTOP 506-55-73)
1508. Conway, E. J.; and De Young, R. J.: Solar Pumped Laser Research. Presented at the QEAS/IEEE, et al., Conference on Lasers and Electro-Optics, CLEO '85, May 21-24, 1985, Baltimore, Maryland. Paper No. 0328.
(Subject Category 36 RTOP 506-55-73)
1509. Cucinotta, F. A.; Townsend, L. W.; and Norbury, J. W.: Frictional Spectator Interaction Effects in Relativistic Argon Fragmentation by Carbon. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 73 RTOP 199-22-76)
1510. Cunningham, M. J.: Aerodynamics for an Entry Research Vehicle. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1793-CP.
(Subject Category 02 RTOP 506-63-24)
1511. DeJarnette, F. R.; and Hamilton, H. H.: A Review of Some Approximate Methods Used in Aerodynamic Heating Analyses. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0906.
(Subject Category 34 RTOP 506-51-13)

1512. Deutchman, P. A.; Buvel, R. L.; Norbury, J. W.; and Townsend, L. W.: A Possible Quantum Signature in Heavy Ion Coherent Pion Production. Presented at the American Physical Society 1985 Fall Meeting of the Division of Nuclear Physics, October 28-30, 1985, Pacific Grove, California. Abstract in Bulletin of APS, Volume 30, No. 9, September 1985, p. 1282.
(Subject Category 73 RTOP 199-22-76)
1513. De Young, R. J.: Solar Pumped Lasing of $n\text{-C}_4\text{F}_9\text{I}$ and $i\text{-C}_3\text{F}_7\text{I}$. Presented at the American Physical Society Thirty-Eighth Annual Gaseous Electronics Conference, October 15-18, 1985, Monterey, California. Abstract published in proceedings, p. 100.
(Subject Category 36 RTOP 506-55-73)
1514. Eide, D. G.: Interaction Between the Space Transportation Systems and the Space Station Architecture and Operations and Technology Requirements. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume III, p. 8-13 - 8-45.
(Subject Category 16 RTOP 506-63-23)
1515. Farmer, J. T.; and Wright, R. L.: Thermal Analysis of a Large Deployable Truss Antenna. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science.
(Subject Category 18 RTOP 506-62-23)
1516. Ferebee, M. J., Jr.: Optimization of Mass Placement for Space Station Applications. Presented at the SAWE Forty-Fourth Annual Conference on Mass Properties Engineering, May 20-22, 1985, Arlington, Texas. SAWE No. 1672.
(Subject Category 66 RTOP 506-62-23)
1517. Freeman, D. C., Jr.; Powell, R. W.; Naftel, J. C.; and Wurster, K. E.: Definition of an Entry Research Vehicle. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0969.
(Subject Category 15 RTOP 506-63-24)
1518. Hall, J. B., Jr.; Ferebee, M. J., Jr.; and Sage, K. H.: Environmental Control and Life Support Systems Technology Options for Space Station Application. Presented at the AIAA, ASME, et al., Fifteenth Intersociety Conference on Environmental Systems, July 15-17, 1985, San Francisco, California. Published in SAE Technical Paper Series, No. 851376.
(Subject Category 54 RTOP 506-64-13)
1519. Hamilton, H. H.; DeJarnette, F. R.; and Weilmuenster, K. J.: Application of Axisymmetric Analogue for Calculating Heating in Three-Dimensional Flows. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0245.
(Subject Category 34 RTOP 506-51-13)

1520. Heck, M. L.; DeRyder, L. J.; and Orr, L. H.: Articulated Space Station Controllability Assessment. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0024. (Subject Category 15 RTOP 506-64-13)
1521. Jain, A. C.: Hypersonic Merged Layer Flow Over a Sphere. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-1031. (Subject Category 34 RTOP 506-51-13)
1522. Khan, F.; Khandelwal, G. S.; and Wilson, J. W.: Systematic Polarizabilities of Alkali and Alkaline Earth Atoms. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science. (Subject Category 73 RTOP 199-22-76)
1523. Kipp, H. W.; and Helms, V. T., III: Some Observations on the Occurrence of Striation Heating. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0324. (Subject Category 15 RTOP 506-51-13)
1524. Lakdawala, V. K.; Ko, S. T.; and Lee, J. H.: An Experimental Investigation of Pulsed Multichannel Discharge Across Solid Insulators. Presented at the IEEE Eighth International Conference on Gas Discharges and Their Applications, September 16-20, 1985, Oxford, England. In Proceedings. (Subject Category 33 RTOP 506-90-23)
1525. Lee, J. H.; Weaver, W. R.; and Tabibi, B. M.: Characteristics of t-Perfluoro-Tertiary-Butyliodide as a Solar-Pumped Laser Material. Presented at the QEAS/IEEE, et al., Conference on Lasers and Electro-Optics, CLEO '85, May 21-24, 1985, Baltimore, Maryland. Paper No. WM1. (Subject Category 36 RTOP 506-55-73)
1526. MacConochie, I. O.: Transportation - Space Station Interface. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume II, p. 5A-54 - 5A-84. (Subject Category 18 RTOP 506-52-23)
1527. MacConochie, I. O.; Martin, J. A.; Breiner, C. A.; and Cerro, J. A.: Weights Assessment for Orbit-on-Demand Vehicles. Presented at the SAWE Forty-Fourth Conference on Mass Properties Engineering, May 20-22, 1985, Arlington, Texas. SAWE No. 1674. (Subject Category 18 RTOP 506-63-23)
1528. Martin, J. A.; Naftel, J. C.; and Turriziani, R. V.: Propulsion Evaluation for Orbit-on-Demand Vehicles. Presented at the AIAA/ASME, et al., 21st Joint Propulsion Conference, July 8-10, 1985, Monterey, California. AIAA Paper No. 85-1161. (Subject Category 20 RTOP 506-63-23)
1529. McCandless, R. S.; and Cruz, C. I.: Hypersonic Characteristics of an Advanced Aerospace Plane. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0346. (Subject Category 34 RTOP 506-51-13)

1530. Micol, J. R.; and Weilmuenster, K. J.: Experimental Aerodynamic Coefficients on a Shuttle-Like Vehicle at Mach 6 and 10 and Comparison to Prediction. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1796. (Subject Category 02 RTOP 506-51-13)
1531. Miller, C. G., III; Wilder, S. E.; Gnoffo, P. A.; and Wright, S. A.: Measured and Predicted Vortex-Induced Leeward Heating a Biconic at Mach 6 and 10. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-1061. (Subject Category 34 RTOP 506-51-13)
1532. Morris, W. D.; Rehder, J. J.; Talay, T. A.; and White, N. H.: Impact of Transportation Operations on Space Station Traffic Levels. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume II, p. 4-39 - 4-79. (Subject Category 16 RTOP 506-63-23)
1533. Moss, J. N.; and Bird, G. A.: Monte Carlo Simulations in Support of the Shuttle Upper Atmospheric Mass Spectrometer Experiment. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0968. (Subject Category 34 RTOP 506-51-13)
1534. Myrick, D. L.; and Throckmorton, D. A.: Comprehensive Analysis of Shuttle Orbiter Leeward Surface Infrared Imagery Obtained During Atmospheric Entry. Presented at Thermosense VIII, An International Conference on Thermal Infrared Sensing for Diagnostics and Control, September 17-20, 1985, Cambridge, Massachusetts. SPIE Paper No. 581-24. Proceedings pending. (Subject Category 34 RTOP 506-63-34)
1535. Norbury, J. W.; Deutchman, P. A.; and Townsend, L. W.: Cross Section Calculations of Subthreshold Pions in Coincidence With Giant Resonance Photons in Nucleus-Nucleus Collisions. Presented at the 1985 Spring Meeting of the American Physical Society, April 24-27, 1985, Crystal City, Virginia. Abstract published in APS Bulletin, Volume 30, No. 6, June 1985, p. 1160. (Subject Category 73 RTOP 199-22-76)
1536. Orr, L. H.: Atmospheric Density Effects in Space Station Orbital Lifetime and Controllability Studies. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science. (Subject Category 18 RTOP 483-36-13)
1537. Schuster, G. L.; Lee, J. H.; and Choi, S. H.: Inverse Pinch Plasma Switch. Presented at the 5th IEEE Pulsed Power Conference, June 10-12, 1985, Crystal City, Virginia. Proceedings pending. (Subject Category 75 RTOP 506-55-73)

1538. Scott, A. D., Jr.; and Ferebee, M. J., Jr.: Rigid-Body Controllability and Thermal Analysis of a 15-Foot Bay Erectable and a 9-Foot Bay Deployable Space Station Reference Configuration. Presented at the 1985 Annual Meeting of the Virginia Academy of Science, May 14-17, 1985, Williamsburg, Virginia. Abstract to be published in the Virginia Journal of Science. (Subject Category 18 RTOP 483-36-23)
1539. Siemers, P. M., III; Wood, G. M., Jr.; Wolf, H.; Flanagan, P. F.; and Henry, M. W.: The Definition of the Shuttle Tethered Aerothermodynamic Research Facility. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1794-CP. (Subject Category 19 RTOP 906-70-16)
1540. Stith, J. J.; and Wilson, J. W.: Microscopic Defect Structures and Equivalent Electron Fluence Concepts. Presented at the Eighteenth IEEE Photovoltaic Specialists' Conference, October 21-25, 1985, Las Vegas, Nevada. In Proceedings. (Subject Category 73 RTOP 309-00-00)
1541. Thompson, R. A.: Three-Dimensional Viscous-Shock-Layer Applications for the Space Shuttle Orbiter. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0246. (Subject Category 34 RTOP 506-51-13)
1542. Throckmorton, D. A.; Zoby, E. V.; and Kantsios, A. G.: The Shuttle Infrared Leaside Temperature Sensing (SILTS) Experiment. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0328. (Subject Category 34 RTOP 506-63-34)
1543. Townsend, L. W.; Wilson, J. W.; Cucinotta, F. A.; and Norbury, J. W.: A Preliminary Analysis of Abrasion Model Differences in Heavy Ion Fragmentation Cross Sections. Presented at the APA 1985 Fall Meeting of the Division of Nuclear Physics, October 28-30, 1985, Pacific Grove, California. Abstract in Bulletin of the American Physical Society, Volume 30, No. 9, September 1985, p. 1282. (Subject Category 73 RTOP 199-22-76)
1544. Wells, W. L.; MacConochie, I. O.; Helms, V. T., III; and Raney, D.: Heating Rate Distributions at Mach 10 on a Circular Body Earth-to-Orbit Transport Vehicle. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia. AIAA Paper No. 85-0974. (Subject Category 34 RTOP 506-51-13)
1545. Wilson, J. W.; Heinbockel, J. H.; and Outlaw, R. A.: Refined Potentials for Rate Gas Atom Absorption on Rare Gas and Alkali-Halide Surfaces. Presented at the 32nd National Symposium of the American Vacuum Society, November 18-22, 1985, Houston, Texas. To be published in proceedings issue of the Journal of Vacuum Science and Technology. (Subject Category 70 RTOP 506-55-73)

1546. Wilson, J. W.; Townsend, L. W.; Schimmerling, W.; Norbury, J. W.; Wong, M.; and Badavi, F.: A Simple Theory of LET Spectra of Heavy Ions. Presented at the Radiation Research Society 33rd Annual Scientific Meeting, May 5-9, 1985, Los Angeles, California. Abstract published in Radiation Research. (Subject Category 93 RTOP 199-22-76)
1547. Yanosy, J. L.; and Rowell, L. F.: Utility of an Emulation Simulation Computer Model for ARS Hardware Design, Development and Test. Presented at the AIAA, ASME, et al., Fifteenth Intersociety Conference on Environmental Systems, July 15-17, 1985, San Francisco, California. Published in SAE Technical Paper Series, No. 851377. (Subject Category 54 RTOP 483-36-13)
1548. Young, J. C.; and Findlay, J. T.: An Analysis of the Space Shuttle Hypersonic Entry Trim Anomaly. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1764-CP. (Subject Category 02 RTOP 307-04-02)

Technical Talks

1549. Farmer, J. T.: Technology Impact Study of a Solar Dynamic Power Generation System for Space Station. Presented at the AIAA/ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. (Subject Category 20 RTOP 506-64-13)
1550. Freeman, D. C., Jr.: Proposed Entry Research Flight Test Vehicle Experiment. Presented at the 1985 SAE Aerospace Vehicle Requirements Conference, May 20-23, 1985, Washington, DC. (Subject Category 34 RTOP 506-63-24)
1551. Lee, J. H.; Lee, M. H.; Weaver, W. R.; Humes, D. H.; and Williams, M. D.: Solar-Pumped Photodissociation Iodine Laser. Presented at the APS International Laser Science Conference, November 18-22, 1985, Dallas, Texas. (Subject Category 36 RTOP 506-41-41)
1552. MacConochie, I. O.; Wilson, M. L.; and LeMessurier, R. W.: Novel Composite Pultrusion Technique. Presented at the Association for Unmanned Vehicle Systems 1985 Symposium on Very Long Endurance Aircraft, October 30 - November 1, 1985, Menlo Park, California. (Subject Category 16 RTOP 506-49-11)
1553. Martin, J. A.: The Orbit-on-Demand Vehicle Study. Presented at the 1985 SAE Aerospace Vehicle Requirements Conference, May 20-23, 1985, Washington, DC. (Subject Category 15 RTOP 506-63-23)
1554. Miller, C. G., III: Hypersonic-Hypervelocity Aerothermodynamic Testing. Presented at the AIAA Technical Committee for Ground Testing, November 18-22, 1985, Tullahoma, Tennessee. (Subject Category 02 RTOP 506-40-11)

1555. Norbury, J. W.; Townsend, L. W.; and Deutchman, P. A.: A T-Matrix Derivation of the Abrasion-Ablation Fragmentation Model. Presented at the IUPAP, EPS, et al., Second International Conference on Nucleus-Nucleus Collisions, June 10-14, 1985, Visby, Sweden.
(Subject Category 73 RTOP 199-22-76)
1556. Norbury, J. W.; Townsend, L. W.; and Deutchman, P. A.: Particle-Hole Calculations of Cross Sections for the Exclusive Production of Subthreshold Pions and Giant Resonance Photons in Peripheral Heavy Ion Collisions. Presented at the IUPAP, EPS, et al., Second International Conference on Nucleus-Nucleus Collisions, June 10-14, 1985, Visby, Sweden.
(Subject Category 73 RTOP 199-22-76)
1557. Scott, A. D., Jr.: Interactive Systems Analysis of the Space Station Reference Configuration. Presented at the AIAA/ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida.
(Subject Category 03 RTOP 506-62-23)
1558. Walberg, G. D.: Entry Vehicles of the Twenty-First Century. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado.
(Subject Category 15 RTOP 506-51-13)
1559. Walberg, G. D.: Entry Vehicles of the Twenty-First Century. Presented at the Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt e.V. (DFVLR), October 14, 1985, Göttingen, Germany.
(Subject Category 15 RTOP 506-51-13)
1560. Wilson, J. W.; Townsend, L. W.; and Seltzer, S.: Space Radiations and Their Interactions. Presented at the 30th Annual Health Physics Society Meeting, May 26-31, 1985, Chicago, Illinois.
(Subject Category 73 RTOP 199-22-76)

Computer Programs

1561. Orr, L. H.: Orbital Lifetime Program. Program No. LAR-13557.

Tech Briefs

1562. Witcofski, R. D.: Telescoping Space Station Modules. NASA Tech Brief LAR-13330.

Patents

1563. Outlaw, R. A.; and Baugh, B. T.: Precision Manipulator Heating and Cooling Apparatus for Use in UHV Systems With Sample Transfer Capability. U.S. Patent 4,516,435. Issued May 14, 1985.
(Subject Category 35)

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR FLIGHT SYSTEMS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

ADVANCED TRANSPORT OPERATING SYSTEMS PROGRAM OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

1564. Schoen, M. L.; Preston, O. W.; Summers, L. G.; Nelson, B. A.;
Vanderlinden, L.; and McReynolds, M. C.: Probabilistic Computer Model of
Optimal Runway Turnoffs. (NAS1-16202 McDonnell Douglas Corporation.) NASA
CR-172549, April 1985, 60 p.
(Avail: NTIS Subject Category 09 RTOP 505-45-33)

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR INFORMATION SYSTEMS DIVISION

Formal Reports

1565. Anon.: Peer Review of a Formal Verification/Design Proof Methodology. NASA CP-2377, June 1985, 55 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1566. Barker, L. K.; Houck, J. A.; and Carzoo, S. W.: Kinematic Rate Control of Simulated Robot Hand at or Near Wrist Singularity. NASA TP-2440, May 1985, 26 p.
(Avail: NTIS Subject Category 63 RTOP 506-54-63)
1567. Bowker, D. E.; Davis, R. E.; Myrick, D. L.; Stacy, K.; and Jones, W. T.: Spectral Reflectances of Natural Targets for Use in Remote Sensing Studies. NASA RP-1139, June 1985, 184 p.
(Avail: NTIS Subject Category 43 RTOP 619-12-30)
1568. Hart, M. M.: An Image Compression Survey and Algorithm Switching Based on Scene Activity. NASA TP-2458, August 1985, 18 p.
(Avail: NTIS Subject Category 32 RTOP 506-58-13)
1569. Johnson, S. C.: Efficient Implementation of Real-Time Programs Under the VAX/VMS Operating System. NASA TM-86354, May 1985, 22 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1570. Lee, L. D.: Reliability Bounds for Fault-Tolerant Systems With Competing Responses to Component Failures. NASA TP-2409, April 1985, 14 p.
(Avail: NTIS Subject Category 38 RTOP 505-34-13)
1571. Palumbo, D. L.; and Butler, R. W.: Measurement of SIFT Operating System Overhead. NASA TM-86322, April 1985, 26 p.
(Avail: NTIS Subject Category 62 RTOP 505-34-13)
1572. Voigt, S. J. (Editor): Space Station Software Recommendations. NASA CP-2394, December 1985, 144 p.
(Avail: NTIS Subject Category 61 RTOP 482-58-13)
1573. Voigt, S. J.; and Beskenis, S. O. (Editors): Space Station Software Issues. NASA CP-2361, February 1985, 64 p.
(Avail: NTIS Subject Category 61 RTOP 482-58-13)
1574. Wall, S. D.; and Ashmore, T. C.: Conclusion of Viking Lander Imaging Investigation - Picture Catalog of Experiment Data Record. NASA RP-1137, March 1985, 211 p.
(Avail: NTIS Subject Category 91 RTOP 506-54-13)

Quick-Release Technical Memorandums

1575. Bavuso, S. J.; and Petersen, P. L.: CARE III Model Overview and User's Guide (First Revision). NASA TM-86404, April 1985, 149 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1576. Butler, R. W.: An Abstract Specification Language for Markov Reliability Models. NASA TM-86423, April 1985, 16 p.
(Avail: NTIS Subject Category 65 RTOP 505-34-13)
1577. Eckhardt, D. E., Jr.; and Lee, L. D.: A Theoretical Basis for the Analysis of Redundant Software Subject to Coincident Errors. NASA TM-86369, January 1985, 39 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1578. Fales, C. L.; and Huck, F. O.: Electroacoustical Imaging Technique for Encoding Incoherent Radiance Fields As Gabor Elementary Signals. NASA TM-86372, March 1985, 15 p.
(Avail: NTIS Subject Category 35 RTOP 307-04-02)
1579. Foudriat, E. C.: A New Taxonomy for Distributed Computer Systems Based Upon Operating System Structure. NASA TM-86438, June 1985, 20 p.
(Avail: NTIS Subject Category 62 RTOP 505-37-03)
1580. Hart, M. M.: Analog FM/FM vs. Digital Color TV Transmission Aboard Space Station. NASA TM-87578, October 1985, 15 p.
(Avail: NTIS Subject Category 32 RTOP 506-58-13)
1581. Hayes, P. J.; Looney, K. T.; and Nichols, C. D.: Bubble Memory Module for Spacecraft Application. NASA TM-86411, April 1985, 106 p.
(Avail: IAC Subject Category 33 RTOP 506-58-13)
1582. Kyrala, A.: Mathematical Physics Approaches to Lightning Discharge Problems. NASA TM-86349, January 1985, 43 p.
(Avail: NTIS Subject Category 47 RTOP 505-34-13)
1583. Palumbo, D. L.: The SIFT Hardware/Software Systems - Volume I: A Detailed Description. NASA TM-87574, September 1985, 35 p.
(Avail: STIF Subject Category 61 RTOP 505-34-13)
1584. Palumbo, D. L.: The SIFT Hardware/Software Systems - Volume II: Software Listings. NASA TM-87575, September 1985, 70 p.
(Avail: STIF Subject Category 61 RTOP 505-34-13)
1585. Robinson, D. M.; Fales, C. L.; and Skolaut, M. W., Jr.: Wavelength Error Analysis in a Multiple-Beam Fizeau Laser Wavemeter Having a Linear Diode Array Readout. NASA TM-87614, December 1985, 45 p.
(Avail: NTIS Subject Category 74 RTOP 618-32-33)
1586. Thomas, M. E.: 1983 Direct Strike Lightning Data. NASA TM-86426, Part 1, August 1985, 438 p.
(Avail: STIF Subject Category 47 RTOP 505-45-13)

1587. Thomas, M. E.: 1983 Direct Strike Lightning Data. NASA TM-86426, Part 2, August 1985, 446 p.
(Avail: STIF Subject Category 47 RTOP 505-45-13)
1588. Thomas, M. E.: 1983 Direct Strike Lightning Data. NASA TM-86426, Part 3, August 1985, 449 p.
(Avail: STIF Subject Category 47 RTOP 505-45-13)
1589. Will, R. W.: TRICCS: A Proposed Teleoperator/Robot Integrated Command and Control System for Space Applications. NASA TM-87577, July 1985, 30 p.
(Avail: NTIS Subject Category 61 RTOP 506-54-63)
1590. Will, R. W.; and Grantham, C.: M68000 RNF Text Formatter User's Manual. NASA TM-86327, March 1985, 109 p.
(Avail: NTIS Subject Category 61 RTOP 505-37-03)
1591. Zaepfel, K. P.; Fisher, B. D.; and Ott, M. S.: Direct-Strike Lightning Photographs, Swept-Flash Attachment Patterns, and Flight Conditions for Storm Hazards '82. NASA TM-86347, February 1985, 248 p.
(Avail: NTIS Subject Category 47 RTOP 505-45-13)

Contractor Reports

1592. Anon.: Advanced Torque Converters for Robotics and Space Applications. (NAS1-17938 Talandic Research Corporation.) NASA CR-177987, July 1985, 59 p.
(Avail: NTIS Subject Category 37 RTOP 324-01-00)
1593. Anon.: Software Engineering Support System. (NAS1-17936 Optimization Technology, Inc.) NASA CR-178007, August 1985, 105 p.
(Avail: STIF Subject Category 61 RTOP 324-01-00)
1594. Barber, P. G.: The Use of Moments of Momentum To Account for Crystal Habits. (NAG1-498 Longwood College.) NASA CR-3907, July 1985, 48 p.
(Avail: NTIS Subject Category 23 RTOP 694-80-70)
1595. Bryant, L. A.; and Stiffler, J. J.: CARE III, Version 4 Enhancements. (NAS1-17476 Sequoia Systems, Inc.) NASA CR-177963, November 1985, 141 p.
(Avail: NTIS Subject Category 59 RTOP 505-34-13)
1596. Carlin, D. B.; and Ettenberg, M.: AlGaAs Constricted Double Heterojunction Lasers. (NAS1-17441 RCA Laboratories.) NASA CR-172616, July 1985, 35 p.
(Avail: STIF Subject Category 36 RTOP 506-58-23)
1597. Carlson, F. M.: Bridgman Growth of Semiconductors. (NAS1-16721 Scientific Concepts, Inc.) NASA CR-177971, September 1985, 33 p.
(Avail: NTIS Subject Category 34 RTOP 694-80-70)
1598. Clune, E.; Segall, Z.; and Siewiorek, D.: Fault-Free Behavior of Reliable Multiprocessor Systems: FTMP Experiments in Airlab. (NAG1-190 Carnegie-Mellon University.) NASA CR-177967, August 1985, 32 p.
(Avail: NTIS Subject Category 62 RTOP 505-34-13)

1599. Conrad, C. L.; Ingogly, W. F.; McBride, S. E.; and Pierce, J. L.: CARE III User Friendly Interface User's Guide. (NAS1-16489 Research Triangle Institute.) NASA CR-172608, May 1985, 72 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1600. Cronin, M. J.; Hays, A. P.; Green, F. B.; Radovcich, N. A.; Helsley, C. W.; and Rutchik, W. L.: Integrated Digital/Electric Aircraft Concepts Study. (NAS1-17529 Lockheed-California Company.) NASA CR-3841, January 1985, 480 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-73)
1601. Dunham, J. R.; and McBride, S. E.: AUTOSIM: An Automated Repetitive Run Software Testing Tool. (NAS1-16489 Research Triangle Institute.) NASA CR-177930, September 1985, 97 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1602. Dunham, J. R.; and Pierce, J. L.: An Experiment in Software Reliability. (NAS1-16489 Research Triangle Institute.) NASA CR-172553, March 1985, 61 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1603. Gergis, I. S.; Manasevit, H. M.; Lin, A. L.; and Jones, A. B.: Investigation of Superlattice Device Structures. (NAS1-16102 Rockwell International Corporation.) NASA CR-3903, June 1985, 80 p.
(Avail: NTIS Subject Category 33 RTOP 506-54-13)
1604. Ingogly, W. F.; McBride, S. E.; Pierce, J. L.; and Roberts, A. M.: CARE3 Menu Maintenance Manual. (NAS1-16489 Research Triangle Institute.) NASA CR-172609, May 1985, 44 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1605. Kryder, M. H.; Rasky, P. H. L.; and Greve, D. W.: Advanced Detectors and Signal Processing for Bubble Memories. (NAG1-395 Carnegie-Mellon University.) NASA CR-172534, April 1985, 77 p.
(Avail: NTIS Subject Category 33 RTOP 506-58-13)
1606. McGough, J. G.; and Nemeroff, S.: The Development of an Interim Generalized Gate Logic Software Simulator. (NAS1-15946 Allied/Bendix Aerospace.) NASA CR-177939, December 1985, 178 p.
(Avail: NTIS Subject Category 59 RTOP 505-34-13)
1607. Miller, D. R.: Exponential Order Statistic Models of Software Reliability Growth. (NAG1-179 The George Washington University.) NASA CR-3909, July 1985, 82 p.
(Avail: NTIS Subject Category 61 RTOP 505-34-13)
1608. Nelson, G. L.; Krahn, D. R.; et al.: Feasibility of Self-Structured Current Accessed Bubble Devices in Spacecraft Recording Systems. (NAS1-16911 Sperry Corporation.) NASA CR-172554, April 1985, 282 p.
(Avail: NTIS Subject Category 33 RTOP 506-58-13)
1609. Potter, J. L.: Robot Environment Expert System. (NAG1-341 Kent State University.) NASA CR-3915, August 1985, 60 p.
(Avail: NTIS Subject Category 62 RTOP 506-54-63)

1610. Rubin, B.: A Study of Information Processing Requirements of the NASA Advanced Mission Set for the Years 1990 and Beyond To Identify Candidates for VHSIC Insertion. (NAS1-17765 Nichols Research Corporation.) NASA CR-3934, September 1985, 82 p.
(Avail: STIF Subject Category 33 RTOP 506-58-12)
1611. Rudolph, T. H.; Perala, R. A.; McKenna, P. M.; and Parker, S. L.: Investigations Into the Triggered Lightning Response of the F106B Thunderstorm Research Aircraft. (NAS1-16984 Electro Magnetic Applications, Inc.) NASA CR-3902, June 1985, 203 p.
(Avail: IAC Subject Category 47 RTOP 505-34-13)
1612. Shin, K. G.; and Lee, Y-H.: Integrated Analysis of Error Detection and Recovery. (NAG1-296 University of Michigan.) NASA CR-172571, October 1985, 115 p.
(Avail: NTIS Subject Category 62 RTOP 505-34-13)
1613. Shin, K. G.; Woodbury, M. H.; and Lee, Y-H.: Modeling and Measurement of Fault-Tolerant Multiprocessors. (NAG1-296, NAG1-492, and NGT 23-005-801 University of Michigan.) NASA CR-3920, August 1985, 64 p.
(Avail: NTIS Subject Category 62 RTOP 505-34-13)
1614. White, A. L.: Synthetic Bounds for Semi-Markov Reliability Models. (NAS1-18000 PRC Kentron, Inc.) NASA CR-178008, November 1985, 11 p.
(Avail: NTIS Subject Category 66 RTOP 505-34-13)

Journal Articles and Other Publications

1615. Barber, P. G.; and Crouch, R. K.: Electrochemical Etching of the Semiconductor Lead-Tin-Telluride. Journal of the Electrochemical Society, Volume 131, No. 12, December 1984, p. 2803-2805.
(Subject Category 23 RTOP 694-80-70)
1616. Bowker, D. E.; and LeCroy, S. R.: Bright Spot Analysis of Ocean-Dump Plumes Using LANDSAT MSS. International Journal of Remote Sensing, Volume 6, No. 5, 1985, p. 759-771.
(Subject Category 35 RTOP 506-58-13)
1617. Carlson, F. M.; Crouch, R. K.; and Fripp, A. L.: Thermal Convection During Bridgman Crystal Growth. Journal of Crystal Growth, Volume 68, 1984, p. 747-756.
(Subject Category 27 RTOP 694-80-70)
1618. Caulfield, J.; Verber, C.; and Stermer, R. L.: Efficient Matrix Partitioning for Optical Computing. Optics Communications, Volume 51, September 1984, p. 213-216.
(Subject Category 74 RTOP 506-54-13)
1619. Ejim, T. I.; Jesser, W. A.; and Fripp, A. L.: Solidification Behavior of Low and High Thermal Conductivity Materials in a Bridgman-Stockbarger Furnace. Journal of Crystal Growth, Volume 69, 1984, p. 509-514.
(Subject Category 27 RTOP 694-80-70)

1620. Holt, H. M.; Holden, D. G.; and Lupton, A. O.: Airlab: A Laboratory for Flight-Crucial Electronics System Research. AGARDograph, AGARD-AG-262, December 1984, p. 12-1 - 12-12.
(Subject Category 05 RTOP 505-34-13)
1621. Huck, F. O.; Fales, C. L.; Halyo, N.; Samms, R. W.; and Stacy, K.: Image Gathering and Processing: Information and Fidelity. Journal of the Optical Society of America, Volume 2, No. 10, October 1985, p. 1644-1666.
(Subject Category 35 RTOP 307-04-02)
1622. Krishna, C. M.; Shin, K. G.; and Butler, R. W.: Ensuring Fault-Tolerance of Phase-Locked Clocks. IEEE Transactions on Computers, Volume C-34, August 1985, p. 752-756.
(Subject Category 62 RTOP 505-34-13)
1623. Meredith, B. D.; Murray, N. D.; LaBaugh, R. J.; and Aanstoos, J. V.: Evaluation of an Experimental System for Spaceborne Processing of Multispectral Image Data. Optical Engineering, Volume 24, January - February 1985, p. 189-196.
(Subject Category 60 RTOP 506-58-13)
1624. Taylor, J. V.: A Synchronization Monitor for a Software-Implemented Fault-Tolerance (SIFT) Computer. Journal of the National Technical Association, Volume 59, No. 1, 1985, p. 23-26.
(Subject Category 08 RTOP 505-34-13)

Meeting Presentations

1625. Benz, H. F.; Rubin, B.; Smith, D. B.: VHSIC Processors for Remote Sensing. Presented at the AIAA/NASA Earth Observing System (EOS) Conference, October 8-10, 1985, Virginia Beach, Virginia. AIAA Paper No. 85-3014.
(Subject Category 33 RTOP 506-58-12)
1626. Benz, H. F.; Smith, D. B.; and Wallgren, K.: Signal Processing Elements and Computers for Proximity Operations. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume IV, p. 11-107 - 11-119.
(Subject Category 33 RTOP 506-58-12)
1627. Brunelle, J. E.; and Eckhardt, D. E., Jr.: Fault-Tolerant Software: Experiment With the SIFT Operating System. Presented at the AIAA, NASA, et al., Computers in Aerospace V Conference, October 21-23, 1985, Long Beach, California. AIAA Paper No. 85-6016-CP.
(Subject Category 61 RTOP 505-34-13)
1628. Butler, R. W.; Palumbo, D. L.; and Johnson, S. C.: Application of a Clock Synchronization Validation Methodology to the SIFT Computer System. Presented at the IEEE Fifteenth International Symposium on Fault-Tolerant Computing, June 19-21, 1985, Ann Arbor, Michigan. IEEE Paper No. 64.
(Subject Category 62 RTOP 505-34-13)

1629. Caglayan, A. K.; and Eckhardt, D. E., Jr.: Systems Approach to Software Fault Tolerance. Presented at the AIAA, NASA, et al., Computers in Aerospace V Conference, October 21-23, 1985, Long Beach, California. AIAA Paper No. 85-6018-CP.
(Subject Category 61 RTOP 505-37-13)
1630. Eckhardt, D. E., Jr.; and Lee, L. D.: A Model for the Analysis of Coincident Errors in Redundant Software. Presented at the ASA, IMS, et al., 1985 Joint Statistical Meetings, August 5-8, 1985, Las Vegas, Nevada. Published in Abstracts, 1985, p. 220.
(Subject Category 61 RTOP 505-34-13)
1631. Eckhardt, D. E., Jr.; and Lee, L. D.: An Analysis of the Effects of Coincident Errors on Multi-Version Software. Presented at the AIAA, NASA, et al., Computers in Aerospace V Conference, October 21-23, 1985, Long Beach, California. AIAA Paper No. 85-6019-CP.
(Subject Category 59 RTOP 505-34-39)
1632. Eckhardt, D. E., Jr.; and Lee, L. D.: A Model for the Analysis of Coincident Errors in Redundant Software. Presented at the ASA, IMS, et al., 1985 Joint Statistical Meetings, August 5-8, 1985, Las Vegas, Nevada.
(Subject Category 61 RTOP 505-34-13)
1633. Foudriat, E. C.: Structural Requirements for Distributed Computer Operating Systems. Presented at the Korea Advanced Institute of Science and Technology Pacific Computer Communication Symposium, October 22-24, 1985, Seoul, Republic of Korea. Proceedings pending.
(Subject Category 59 RTOP 505-37-03)
1634. Fripp, A. L.; Crouch, R. K.; Debnam, W. J.; Clark, I. O.; Carlson, F. M.; and Barber, P. G.: Preparation for Microgravity Science Investigation of Compound Semiconductor Crystals. Presented at the 36th International Astronautical Federation Congress Conference, October 7-12, 1985, Stockholm, Sweden. IAF Paper No. 85-270. Proceedings pending.
(Subject Category 76 RTOP 694-80-70)
1635. Huck, F. O.; Fales, C. L.; Park, S. K.; and Skeens, K. M.: Image-Gathering System Design for Information and Fidelity. Presented at the Society of Photographic Scientists and Engineers 25th Fall Symposium - Imaging, November 17-22, 1985, Arlington, Virginia. In proceedings, p. 149-152.
(Subject Category 36 RTOP 506-54-73)
1636. Huck, F. O.; Fales, C. L.; and Stacy, K.: Image-Plane Processing: Information, Fidelity, and Edge Detection. Presented at the OSA Winter '85 Topical Meeting on Machine Vision, March 20-22, 1985, Incline Village, Nevada. Summary in Technical Digest ThC5-1 - 4.
(Subject Category 36 RTOP 307-04-02)
1637. Murray, N. D.; and Hendricks, H. D.: High Performance Networks for Combined Video, Voice, and Data. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume IV, p. 11-57 - 11-83.
(Subject Category 32 RTOP 506-58-13)

1638. Pitts, F. L.: Transient Upset Phenomena in VLSI Devices. Presented at the NASA In-Space Research, Technology and Engineering Conference, October 8-10, 1985, Williamsburg, Virginia. Proceedings pending.
(Subject Category 33 RTOP 505-66-21)

Technical Talks

1639. Bavuso, S. J.; and Petersen, P. L.: Reliability Modeling Technology Development at Langley Research Center. Presented at the IEEE Workshop on Reliability/Availability Modeling Tools and Their Applications, February 5-7, 1985, San Juan, Puerto Rico.
(Subject Category 59 RTOP 505-34-13)
1640. Butler, R. W.: Fault-Tolerant Systems Technology: Analysis and Verification. Presented at the American Nuclear Society 1985 Annual Meeting, June 9-14, 1985, Boston, Massachusetts.
(Subject Category 62 RTOP 505-34-13)
1641. Crouch, R. K.; Schuszler, A., II; Simchick, R.; and Barber, P. G.: Correspondence of the Composition of the Compound Semiconductor Lead Tin Telluride and Its Etch Pattern. Presented at the 167th Meeting of the Electrochemical Society, May 12-17, 1985, Toronto, Canada.
(Subject Category 23 RTOP 694-80-70)
1642. Dove, B. L.: Fault-Tolerant Systems Technology: Evolution and Overview. Presented at the American Nuclear Society 1985 Annual Meeting, June 9-14, 1985, Boston, Massachusetts.
(Subject Category 62 RTOP 505-34-13)
1643. Eckhardt, D. E., Jr.; and Lee, L. D.: A Model for the Analysis of Coincident Errors in Redundant Software. Presented at the Annual Meeting of the Virginia Chapter of the American Statistical Association, May 16-17, 1985, Williamsburg, Virginia.
(Subject Category 61 RTOP 505-34-13)
1644. Meintel, A. J., Jr.; and Will, R. W.: Space Teleoperation Research. Presented at the ANS Executive Conference on Remote Operations and Robotics in the Nuclear Industry, April 21-24, 1985, Pine Mountain, Georgia.
(Subject Category 63 RTOP 506-54-63)

Computer Programs

1645. Pierce, J. L. (Research Triangle Institute); Bavuso, S. J. (Langley Research Center); Petersen, P. L. (Kentron International, Inc.); and Roberts, A. (Tesserract Systems): CARE III User-Friendly Interface (CARE 3 MENU). Program No. LAR-13514.

Tech Briefs

- 1646. Barber, P. G.; and Simpson, N. R. (Longwood College): Clarification Procedure for Gels. NASA Tech Brief LAR-13476.
- 1647. Bavuso, S. J. (Langley Research Center); Stiffler, J. J.; and Bryant, L. A. (Sequoia Systems, Inc.); and Petersen, P. L. (Kentron International, Inc.): Computer-Aided Reliability Estimation. NASA Tech Brief LAR-13349.
- 1648. Huck, F. O. (Langley Research Center); and Stacy, K. (Computer Sciences Corporation): Combined Optical Design and Signal Processing Algorithm for Machine Vision. NASA Tech Brief LAR-13416.
- 1649. Jobson, D. J.: Detector Arrays With Image Plane Processing. NASA Tech Brief LAR-13391.
- 1650. Carreno, V. A.: Single-Frequency Multitransmitter Telemetry. NASA Tech Brief LAR-13006.
- 1651. Wallace, R. S. (Carnegie-Mellon University); and Orlando, N. E.; and Palmer, M. T. (Langley Research Center): An Expert System Engine With Operative Probabilities. NASA Tech Brief LAR-13382.

Patents

- 1652. Debnam, W. J.; Fripp, A. L.; and Crouch, R. K.: Reusable Thermal Cycling Clamp. U.S. Patent 4,491,427. Issued January 1, 1985.
(Subject Category 37)

PUBLICATIONS FOR GUIDANCE AND CONTROL DIVISION

Formal Reports

1653. Arbuckle, P. D.; and Sliwa, S. M.: Parametric Study of a Canard Configured Transport Using Conceptual Design Optimization. NASA TP-2400, March 1985, 26 p.
(Avail: NTIS Subject Category 05 RTOP 505-34-03)
1654. Arbuckle, P. D.; Sliwa, S. M.; Roy, M-L.; and Tiffany, S. H.: FIT: Computer Program That Interactively Determines Polynomial Equations for Data Which Are a Function of Two Independent Variables. NASA TM-86413, October 1985, 19 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1655. Belcastro, C. M.; and Ostroff, A. J.: Total Energy-Rate Feedback for Automatic Glide-Slope Tracking During Wind-Shear Penetration. NASA TP-2412, May 1985, 72 p.
(Avail: NTIS Subject Category 08 RTOP 505-45-33)
1656. Delnore, V. E.; Bahn, G. S.; Grantham, W. L.; Harrington, R. F.; and Jones, W. L.: Active and Passive Microwave Measurements in Hurricane Allen. NASA TM-86390, November 1985, 145 p.
(Avail: NTIS Subject Category 43 RTOP 506-58-23)
1657. Grantham, W. D.; Person, L. H., Jr.; Brown, P. W.; Becker, L. E.; Hunt, G. E.; Rising, J. J.; Davis, W. J.; Willey, C. S.; Weaver, W. A.; and Cokeley, R.: Handling Qualities of a Wide-Body Transport Airplane Utilizing Pitch Active Control Systems (PACS) for Relaxed Static Stability Application. NASA TP-2482, December 1985, 107 p.
(Avail: IAC Subject Category 08 RTOP 505-34-03)
1658. Grantham, W. D.; Smith, P. M.; Neely, W. R., Jr.; Deal, P. L.; and Yenni, K. R.: Ground-Based and In-Flight Simulator Studies of Flight Characteristics of a Twin-Fuselage Passenger Transport Airplane During Approach and Landing. NASA TP-2451, September 1985, 53 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1659. Hamer, H. A.; Johnson, K. G.; and Young, J. W.: Decoupled and Linear Quadratic Regulator Control of a Large, Flexible Space Antenna With an Observer in the Control Loop. NASA TP-2484, November 1985, 72 p.
(Avail: NTIS Subject Category 18 RTOP 506-57-13)
1660. Hearn, C. P.: The Role of Amplitude-to-Phase Conversion in the Generation of Oscillator Flicker Phase Noise. NASA TM-87590, October 1985, 10 p.
(Avail: NTIS Subject Category 33 RTOP 506-58-23)
1661. Hearn, C. P.: Linearity Optimization in a Class of Analog Phase Modulators. NASA TM-86420, November 1985, 22 p.
(Avail: NTIS Subject Category 33 RTOP 506-58-23)

1662. Kendall, B. M.; Blume, H-J. C.; and Cross, A. E.: Development of a UHF Radiometer. NASA TP-2504, December 1985, 56 p.
(Avail: NTIS Subject Category 33 RTOP 506-58-23)
1663. Klein, V.; and Batterson, J. G.: Aerodynamic Characteristics of a Fighter Airplane Determined From Flight and Wind Tunnel Data. NASA TP-2483, September 1985, 74 p.
(Avail: STIF Subject Category 08 RTOP 505-34-03)
1664. Lallman, F. J.: Relative Control Effectiveness Technique With Application to Airplane Controls Coordination. NASA TP-2416, April 1985, 16 p.
(Avail: NTIS Subject Category 05 RTOP 505-34-03)
1665. Lallman, F. J.: Preliminary Design Study of a Lateral-Directional Control System Using Thrust Vectoring. NASA TM-86425, November 1985, 49 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1666. Price, D. B.; Calise, A. J.; and Moerder, D. D.: Piloted Simulation of an Algorithm for Onboard Control of Time-Optimal Intercept. NASA TP-2445, June 1985, 47 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1667. Sundararajan, N.; Montgomery, R. C.; and Williams, J. P.: Adaptive Identification and Control of Structural Dynamics Systems Using Recursive Lattice Filters. NASA TP-2371, January 1985, 50 p.
(Avail: NTIS Subject Category 18 RTOP 506-57-13)

Quick-Release Technical Memorandums

1668. Bailey, M. C.: Broad-Band UHF Dipole Array. NASA TM-86373, February 1985, 46 p.
(Avail: NTIS Subject Category 32 RTOP 146-40-13)
1669. Bundick, W. T.: A Preliminary Evaluation of the Generalized Likelihood Ratio for Detecting and Identifying Control Element Failures in a Transport Aircraft. NASA TM-87620, September 1985, 93 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1670. Bundick, W. T.: A Preliminary Evaluation of a Failure Detection Filter for Detecting and Identifying Control Element Failures in a Transport Aircraft. NASA TM-87576, July 1985, 84 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1671. Cockrell, C. R.: Angular Power Spectrums and Their Relationship to Autocorrelation Functions of Aperture Antennas. NASA TM-87630, October 1985, 12 p.
(Avail: NTIS Subject Category 32 RTOP 506-58-23)
1672. Poppen, W. A., Jr.: A Method for Estimating the Rolling Moment Due to Spin Rate for Arbitrary Planform Wings. NASA TM-86365, January 1985, 22 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)

1673. Robertson, D. K.: Three-Dimensional Vibration Analysis of a Uniform Beam With Offset Inertial Masses at the Ends. NASA TM-86393, September 1985, 70 p.
(Avail: NTIS Subject Category 39 RTOP 506-57-13)

1674. Stanley, W. D.; and Hearn, C. P.: A Study of the Effects of Interference-Rejection Filters on Feedback Radiometer Sensitivity. NASA TM-87651, December 1985, 94 p.
(Avail: NTIS Subject Category 32 RTOP 506-58-23)

Contractor Reports

1675. Athans, M.: Research on Optimal Control, Stabilization, and Computational Algorithms for Aerospace Applications. (NGL 22-009-124 Massachusetts Institute of Technology.) NASA CR-172528, May 1985, 66 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)

1676. Balakrishnan, A. V.: A Mathematical Formulation of the SCOLE Control Problem: Part I. (NAG1-464 University of California, Los Angeles.) NASA CR-172581, May 1985, 42 p.
(Avail: NTIS Subject Category 18 RTOP 506-57-13)

1677. Burke, P. R.; and Coronato, P. A.: A Gimbal Sizing Analysis for an IPACS Rotating Assembly. (NAS1-17658 Allied Bendix Aerospace.) NASA CR-172524, May 1985, 55 p.
(Avail: NTIS Subject Category 20 RTOP 506-57-13)

1678. Caglayan, A. K.; and Godiwala, P. M.: Evaluation of a Fault Tolerant System for an Integrated Avionics Sensor Configuration With TSRV Flight Data. (NAS1-17719 Charles River Analytics, Inc.) NASA CR-172589, June 1985, 100 p.
(Avail: NTIS Subject Category 04 RTOP 505-34-13)

1679. Caglayan, A. K.; and Zacharias, G. L.: Study of Fault Tolerant Software Technology for Dynamic Systems. (NAS1-17705 Charles River Analytics, Inc.) NASA CR-172618, September 1985, 95 p.
(Avail: NTIS Subject Category 61 RTOP 505-37-13)

1680. Lancaster, R. E.: FINDS: A Fault Inferring Nonlinear Detection System-- Programmer's Manual, Version 3.0. (NAS1-16579 BBN Laboratories, Inc.) NASA CR-177986, December 1985, 173 p.
(Avail: NTIS Subject Category 06 RTOP 505-34-13)

1681. Looze, D. P.; Krolewski, S.; Weiss, J. L.; Barrett, N. M.; and Eterno, J. S.: Automatic Control Design Procedures for Restructurable Aircraft Control. (NAS1-17411 ALPHATECH, Inc.) NASA CR-172489, January 1985, 70 p.
(Avail: NTIS Subject Category 63 RTOP 505-34-13)

1682. Mielke, R. R.; Tung, L. J.; and Carraway, P. I., III: Design of Multivariable Feedback Control Systems Via Spectral Assignment Using Reduced-Order Models and Reduced-Order Observers. (NSG-1650 Old Dominion University.) NASA CR-3889, April 1985, 148 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1683. Motyka, P.; Bonnice, W.; Hall, S.; and Wagner, E.: The Evaluation of Failure Detection and Isolation Algorithms for Restructurable Control. (NAS1-17556 The Charles Stark Draper Laboratory, Inc.) NASA CR-177983, November 1985, 205 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1684. Oglevie, R. E.; and Eisenhaure, D. B.: Advanced Integrated Power and Attitude Control System (IPACS) Study. (NAS1-17633 Rockwell International Corporation and The Charles Stark Draper Laboratory, Inc.) NASA CR-3912, November 1985, 174 p.
(Avail: NTIS Subject Category 20 RTOP 506-64-13)
1685. Rynaski, E. G.: The Interpretation of Flying Qualities Requirements for Flight Control System Design. (L-65611B Arvin/Calspan Advanced Technology Center.) NASA CR-177942, August 1985, 88 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1686. Sellers, J. M.: Impact of Structural Flexibility on ASPS Performance. (NAS1-16909 Sperry Flight Systems.) NASA CR-172481, February 1985, 65 p.
(Avail: NTIS Subject Category 18 RTOP 506-57-13)
1687. Volakis, J. L.; Peters, L., Jr.; and Burnside, W. D.: NASA LDCR-1004, May 1985.
1688. Waszak, M. R.; and Schmidt, D. K.: Analysis of Flexible Aircraft Longitudinal Dynamics and Handling Qualities, Volume I - Analysis Methods. (NAG1-254 Purdue University.) NASA CR-177943, June 1985, 108 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1689. Waszak, M. R.; and Schmidt, D. K.: Analysis of Flexible Aircraft Longitudinal Dynamics and Handling Qualities, Volume II - Data. (NAG1-254 Purdue University.) NASA CR-177943, June 1985, 240 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)
1690. Weston, A. R.; Menon, P. K. A.; Bilimoria, K. D.; Cliff, E. M.; and Kelley, H. J.: Optimal Symmetric Flight Studies. (NAG1-203 Virginia Polytechnic Institute and State University.) NASA CR-172508, February 1985, 227 p.
(Avail: NTIS Subject Category 08 RTOP 505-34-03)

Journal Articles and Other Publications

1691. Bailey, M. C.; and Deshpande, M. D.: Analysis of Elliptical and Circular Microstrip Antennas Using Moment Method. IEEE Transactions on Antennas and Propagation, Volume AP-33, September 1985, p. 954-959.
(Subject Category 32 RTOP 506-58-23)

1692. Hunter, M. Y.: Development of the Pushbroom Microwave Radiometer. Journal of the National Technical Association, Volume 59, No. 1, 1985, p. 38-46.
(Subject Category 33 RTOP 506-54-23)
1693. Joshi, S. M.: Robustness of Velocity Feedback Controllers for Flexible Spacecraft. IEEE Transactions on Aerospace and Electronic Systems, Volume 21, No. 1, January 1985, p. 2-7.
(Subject Category 18 RTOP 506-57-13)
1694. Montgomery, R. C.; and Sundararajan, N.: Identification of the Dynamics of a Two-Dimensional Grid Structure Using Least Squares Lattice Filters. Journal of the Astronautical Sciences, Volume 33, No. 1, January - March 1985, p. 35-47.
(Subject Category 76 RTOP 506-57-13)
1695. Montgomery, R. C.; and Vander Velde, W. E.: Reliability Considerations in the Placement of Control System Components. Journal of Guidance, Control, and Dynamics, Volume 8, No. 3, May - June 1985, p. 411-413.
(Subject Category 13 RTOP 506-57-13)
1696. Schroeder, L. C.; Grantham, W. L.; Bracalente, E. M.; Britt, C. L.; Shanmugam, K. S.; Wentz, F. J.; Wylie, D. P.; and Hinton, B. B.: Removal of Ambiguous Wind Directions for a Ku-Band Scatterometer Using Three Different Azimuth Angles. IEEE Transactions on Geoscience and Remote Sensing, Volume GE-23, No. 2, March 1985, p. 91-100.
(Subject Category 48 RTOP 146-40-05)
1697. Sundararajan, N.; and Montgomery, R. C.: Experiments Using Lattice Filters to Identify the Dynamic of a Flexible Beam. Journal of Dynamic Systems, Measurement, and Control, Volume 107, No. 3, September 1985, p. 187-191.
(Subject Category 18 RTOP 506-57-13)
1698. Sundararajan, N.; Williams, J. P.; and Montgomery, R. C.: Adaptive Modal Control of Structural Dynamic Systems Using Recursive Lattice Filters. Journal of Guidance, Control, and Dynamics, Volume 8, No. 2, March - April 1985, p. 223-229.
(Subject Category 18 RTOP 506-57-13)

Meeting Presentations

1699. Adams, W. M., Jr.; and Tiffany, S. H.: Development of a Flutter Suppression Control Law by Use of Linear Quadratic Gaussian and Constrained Optimization Design Techniques. Presented at the DGLR/DFVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending.
(Subject Category 08 RTOP 505-34-03)
1700. Batterson, J. G.; and Klein, V.: On the Identification of a Highly Augmented Airplane. Presented at the 7th IFAC Symposium on Identification and System Parameter Estimation, July 3-7, 1985, York, England. In Preprints, Volume I, 1985, p. 499-504. Proceedings pending.
(Subject Category 08 RTOP 506-57-13)

1701. Caglayan, A. K.; Godiwala, P. M.; and Morrell, F. R.: Performance Analysis of a Fault Inferring Nonlinear Detection System Algorithm With Integrated Avionics Flight Data. Presented at the AIAA, NASA, et al., Computers in Aerospace V Conference, October 21-23, 1985, Long Beach, California. AIAA Paper No. 85-6022-CP.
(Subject Category 04 RTOP 505-45-33)
1702. Campbell, T. G.: The Development of the 15-Meter Hoop Column Deployable Antenna System With Final Structural and Electromagnetic Performance Results. Presented at the IEEE 1985 International Geoscience and Remote Sensing Symposium (IGARSS '85), October 7-9, 1985, Amherst, Massachusetts. Abstract published in proceedings, Volume 2, p. 658.
(Subject Category 15 RTOP 506-62-43)
1703. Fontana, A.; and Hanks, B. R.: Control of Flexible Structures (COFS) Flight Experiment Program. Presented at the Fifth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, June 12-14, 1985, Blacksburg, Virginia. Proceedings pending.
(Subject Category 31 RTOP 506-57-13)
1704. Harrington, R. F.; and Lawrence, R. W.: An Airborne Multiple Beam 1.4 GHz Pushbroom Microwave Radiometer. Presented at the IEEE 1985 International Geoscience and Remote Sensing Symposium (IGARSS '85), October 7-9, 1985, Amherst, Massachusetts. In Proceedings, Volume 2, p. 601-606.
(Subject Category 33 RTOP 505-34-93)
1705. Harrington, R. F.; Lawrence, R. W.; Levine, J. S.; and Delnore, V. E.: The Pushbroom Microwave Radiometer and Aircraft Measurement of Soil Moisture. Presented at the AIAA/NASA Earth Observing System (EOS) Conference, October 8-10, 1985, Virginia Beach, Virginia. AIAA Paper No. 85-2088.
(Subject Category 43 RTOP 506-58-23)
1706. Hueschen, R. M.: The Design, Development, and Flight Testing of a Modern-Control-Designed Autoland System. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. In Proceedings, Volume 3, June 1985, p. 1481-1488.
(Subject Category 08 RTOP 505-45-33)
1707. Jackson, T. J.; Hawley, M. E.; Shuie, J.; Delnore, V. E.; O'Neill, P. E.; and Lawrence, R. W.: Assessment of Preplanting Soil Moisture Using Airborne Microwave Sensors. Presented at the World Meteorological Organization International Association of Hydrological Sciences International Workshop on Hydrological Applications of Space Technology, August 18-23, 1985, Cocoa Beach, Florida.
(Subject Category 33 RTOP 506-58-23)
1708. Joshi, S. M.: Design of Failure-Accommodating Multi-Loop LQG Regulators. Presented at the IEEE 24th Conference on Decision and Control, December 11-13, 1985, Ft. Lauderdale, Florida. IEEE Paper No. 5-019. Proceedings pending.
(Subject Category 63 RTOP 506-57-13)

1709. Joshi, S. M.: Robust State Estimation With Imperfect Sensors. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. In Proceedings, Volume 1, June 1985, p. 427-432. (Subject Category 63 RTOP 506-57-13)
1710. Keckler, C. R.; and Groom, N. J.: An Overview of Integrated Flywheel Technology for Aerospace Applications. Presented at the SAE 20th Intersociety Energy Conversion Engineering Conference (IECEC), August 18-23, 1985, Miami Beach, Florida. In Proceedings, Volume 2, p. 2.331 - 2.337. (Subject Category 20 RTOP 506-57-13)
1711. Lindner, D. K.; and Montgomery, R. C.: Analyzing Interconnected Systems Using the Dual Generalized Hessenberg Representation (GAR). Presented at the IEEE/University of Illinois Twenty-Third Annual Allerton Conference on Communication, Control, and Computing, October 2-4, 1985, Monticello, Illinois. Proceedings pending. (Subject Category 13 RTOP 506-57-13)
1712. Montgomery, R. C.; and Williams, J. P.: Testing of a Failure Accommodation System on a Highly Flexible Grid. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. In Proceedings, Volume 2, June 1985, p. 984-989. (Subject Category 13 RTOP 506-57-13)
1713. Oertel, G. F.; Delnore, V. E.; Jones, W. L.; and Kendall, B. M.: Microwave-Scatterometer Detection of Non-Thermal Water Mass Boundaries. Presented at the IEEE 1985 International Geoscience and Remote Sensing Symposium (IGARSS '85), October 7-9, 1985, Amherst, Massachusetts. Abstract published in proceedings, Volume 2, p. 986. (Subject Category 32 RTOP 506-58-23)
1714. Oglevie, R. E.; Eisenhaure, D. B.; and Keckler, C. R.: Energy and Momentum Management of the Space Station Using Magnetically Suspended Composite Rotors. Presented at the SAE 20th Intersociety Energy Conversion Engineering Conference (IECEC), August 18-23, 1985, Miami Beach, Florida. In Proceedings, Volume 1, p. 1.197 - 1.204. (Subject Category 20 RTOP 506-57-13)
1715. Ostroff, A. J.: Techniques for Accommodating Control Effector Failures on a Mildly Statically Unstable Airplane. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. In Proceedings, Volume 2, June 1985, p. 906-913. (Subject Category 08 RTOP 505-34-03)
1716. Schy, A. A.; and Giesy, D. P.: Multiobjective Insensitive Computer-Aided Design of Aerospace Control Systems. Presented at the Fifth IFAC Workshop on Control Applications of Nonlinear Programming and Optimization, June 11-14, 1985, Capri, Italy. Proceedings pending. (Subject Category 63 RTOP 506-57-13)

1717. Singh, S. N.; and Schy, A. A.: Decomposition and State Variable Feedback Control of Elastic Robotic Systems. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. In Proceedings, Volume 1, June 1985, p. 375-380.
(Subject Category 63 RTOP 506-57-13)
1718. Singh, S. N.; and Schy, A. A.: Robust Torque Control of an Elastic Robotic Arm Based on Invertibility and Feedback Stabilization. Presented at the 24th IEEE Conference on Decision and Control, December 11-13, 1985, Ft. Lauderdale, Florida. Proceedings pending.
(Subject Category 63 RTOP 506-57-13)
1719. Suit, W. T.; and Schiess, J. R.: Supplement to the Shuttle Aerodynamic Data Base Using Discovery Flight Tests. Presented at the AIAA 12th Atmospheric Flight Mechanics Conference, August 19-21, 1985, Snowmass, Colorado. AIAA Paper No. 85-1765-CP.
(Subject Category 18 RTOP 505-34-03)
1720. Taylor, L. W., Jr.: On-Orbit Systems Identification for Flexible Spacecraft. Presented at the 7th IFAC Symposium on Identification and Systems Parameter Estimation, July 3-7, 1985, York, England. In Preprints, Volume 1, 1985, p. 511-516. Proceedings pending.
(Subject Category 18 RTOP 506-57-13)
1721. Taylor, L. W., Jr.; and Dunning, R. S.: Using a Life-Cycle-Cost Criterion for Multi-Disciplinary Design Studies for the Manned Space Station. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0221.
(Subject Category 15 RTOP 506-57-13)
1722. Trew, R. J.; Hearn, C. P.; and Bradshaw, E. S.: Minimum-Loss Dielectric Resonator Filters for Earth-Sensing Radiometer Applications. Presented at the Telebras Research and Development Center 1985 International Symposium on Microwave Technology in Industrial Development - Brazil, July 22-25, 1985, Campinas, Brazil. In Proceedings, 1985, p. 331-335.
(Subject Category 43 RTOP 506-58-23)
1723. Wang, J. R.; Shiue, J. C.; Schmutz, T. J.; Engman, E. T.; Mo, T.; and Lawrence, R. W.: Microwave Backscatter and Emission Observed From Shuttle Imaging Radar B and an Airborne 1.4 GHz Radiometer. Presented at the IEEE 1985 International Geoscience and Remote Sensing Symposium (IGARSS '85), October 7-9, 1985, Amherst, Massachusetts. In Proceedings, Volume 2, p. 607-612.
(Subject Category 33 RTOP 677-22-28)
1724. Williams, J. P.; and Montgomery, R. C.: Failure Detection and Accommodation in Structural Dynamics Systems Using Analytic Redundancy. Presented at the IEEE 24th Conference on Decision and Control, December 11-13, 1985, Ft. Lauderdale, Florida. Proceedings pending.
(Subject Category 13 RTOP 506-57-13)

Technical Talks

1725. Hood, R. V.: A Summary of the Energy Efficient Transport Program Results. Presented at the AIAA, ASCE, et al., 1985 International Air Transportation Conference, June 26-28, 1985, Norfolk, Virginia.
(Subject Category 01 RTOP 534-02-13)
1726. Kendall, B. M.: Millimeter Wave Integrated Circuit Feed Technology. Presented at the National Radio Astronomy Observatory (NRAO) Users Committee Spring Meeting, May 8-10, 1985, Tucson, Arizona.
(Subject Category 32 RTOP 506-58-23)
1727. Lawrence, R. W.; and Harrington, R. F.: The Pushbroom Microwave Radiometer. Presented at the National Radio Astronomy Observatory (NRAO) Users Committee Spring Meeting, May 8-10, 1985, Tucson, Arizona.
(Subject Category 32 RTOP 506-58-23)
1728. Montgomery, R. C.: The COFS Experiment Ground Test Activity. Presented at the Fifth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, June 12-14, 1985, Blacksburg, Virginia.
(Subject Category 31 RTOP 506-57-13)
1729. Montgomery, R. C.; and Sundararajan, N.: Adaptive Control of a Flexible Grid Using Lattice Filters. Presented at the 24th IEEE Conference on Decision and Control, December 11-13, 1985, Ft. Lauderdale, Florida.
(Subject Category 13 RTOP 506-57-13)
1730. Sundararajan, N.; and Montgomery, R. C.: Progress in Adaptive Control of Flexible Spacecraft Using Lattice Filters. Presented at the Fourth Yale Workshop on Applications of Adaptive Systems Theory, May 29-31, 1985, New Haven, Connecticut.
(Subject Category 13 RTOP 506-57-13)

Computer Programs

1731. Arbuckle, P. D.; Sliwa, S. M.; and Tiffany, S. H. (Langley Research Center); and Roy, M-L. (Kentron International, Inc.): FIT: A Computer Program That Interactively Determines Polynomial Equations for Data Which Are a Function of Two Independent Variables. Program No. LAR-13457.

Tech Briefs

1732. Arbuckle, P. D.; Sliwa, S. M.; and Tiffany, S. H. (Langley Research Center); and Roy, M-L. (Kentron International, Inc.): FIT: A Computer Program That Interactively Determines Polynomial Equations for Data Which Are A Function of Two Independent Variables. NASA Tech Brief LAR-13457.
1733. Burnside, W. D. (Ohio State University); and Gilreath, M. C. (Langley Research Center): Modified-Edge Compact Range Measurement System. NASA Tech Brief LAR-13352.

1734. Phillips, W. H.: Effect of Structural Flexibility on the Design of
Vibration-Isolating Mounts for Aircraft Engines. NASA Tech Brief
LAR-13305.

Patents

No patents.

PUBLICATIONS FOR FLIGHT MANAGEMENT DIVISION

Formal Reports

1735. Abbott, K. H.; and Knox, C. E.: Reference Energy-Altitude Descent Guidance - Simulator Evaluation. NASA TP-2383, January 1985, 37 p.
(Avail: NTIS Subject Category 06 RTOP 505-45-33)
1736. Abbott, T. S.: A Cockpit-Display Concept for Executing a Multiple Glide-Slope Approach for Wake-Vortex Avoidance. NASA TP-2386, February 1985, 42 p.
(Avail: NTIS Subject Category 06 RTOP 505-35-13)
1737. Harris, R. L., Sr.; and Glover, B. J.: Effects of Digital Altimetry on Pilot Workload. NASA TM-86424, November 1985, 18 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-13)
1738. Knox, C. E.; Vicroy, D. D.; and Simmon, D. A.: Planning Fuel-Conservative Descents in an Airline Environment Using a Small Programmable Calculator - Algorithm Development and Flight Test Results. NASA TP-2393, May 1985, 75 p.
(Avail: NTIS Subject Category 06 RTOP 505-45-33)

Quick-Release Technical Memorandums

1739. Bogart, E. H.; and Waller, M. C.: Users Guide: The LaRC Human-Operator-Simulator-Based Pilot Model. NASA TM-86367, April 1985, 46 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-33)
1740. Williams, A. J.; and Harris, R. L., Sr.: Factors Affecting Dwell Times on Digital Displays. NASA TM-86406, April 1985, 34 p.
(Avail: NTIS Subject Category 53 RTOP 505-35-13)
1741. Williams, D. H.; and Wells, D. C.: Traffic Scenario Generation Technique for Piloted Simulation Studies. NASA TM-86397, April 1985, 45 p.
(Avail: IAC Subject Category 03 RTOP 505-35-13)

Contractor Reports

1742. Baron, S.; and Feehrer, C.: An Analysis of the Application of AI to the Development of Intelligent Aids for Flight Crew Tasks. (NAS1-17335 Bolt Beranek and Newman, Inc.) NASA CR-17335, October 1985, 116 p.
(Avail: NTIS Subject Category 03 RTOP 505-35-13)
1743. DeJarnette, F. R.: Effects of Aircraft and Flight Parameters on Energy-Efficient Profile Descents in Time-Based Metered Traffic. (NAS1-17023 Research Triangle Institute.) NASA CR-172338, Addendum, November 1984 (Released 1985), 18 p.
(Avail: NTIS Subject Category 04 RTOP 505-45-33)

1744. Goka, T.: Analysis of Estimation Algorithms for CDTI and CAS Applications. (NAS1-16135 Analytical Mechanics Associates, Inc.) NASA CR-172444, April 1985, 219 p.
(Avail: NTIS Subject Category 06 RTOP 505-35-13)
1745. Jones, D. H.: An Error-Dependent Model of Instrument-Scanning Behavior in Commercial Airline Pilots. (NGT 47-003-801 Old Dominion University.) NASA CR-3908, July 1985, 192 p.
(Avail: NTIS Subject Category 53 RTOP 505-45-33)
1746. Tagge, G. E.; Irish, L. A.; and Bailey, A. R.: Systems Studies for an Integrated Digital/Electric Aircraft (IDEA). (NAS1-17528 Boeing Commercial Airplane Company.) NASA CR-3840, January 1985, 222 p.
(Avail: NTIS Subject Category 05 RTOP 505-45-73)
1747. Tagge, G. E.; Irish, L. A.; and Bailey, A. R.: Systems Study for an Integrated Digital/Electric Aircraft (IDEA). (NAS1-17528 Boeing Commercial Airplane Company.) NASA CR-3840 (Supplement), February 1985, 92 p.
(Avail: NTIS Subject Category 05 RTOP 505-34-13)
1748. White, R. W.; and Parks, D. L.: Study To Determine Potential Flight Applications and Human Factors Design Guidelines for Voice Recognition and Synthesis Systems. (NAS1-17367 Boeing Commercial Airplane Company.) NASA CR-172590, July 1985, 139 p.
(Avail: NTIS Subject Category 06 RTOP 534-04-13)

Journal Articles and Other Publications

1749. Bergeron, H. P.; and Hinton, D. A.: Aircraft Automation: The Problem of the Pilot Interface. Aviation, Space, and Environmental Medicine, Volume 56, No. 2, February 1985, p. 144-148.
(Subject Category 06 RTOP 505-35-13)
1750. Frost, W.; and Bowles, R. L.: Wind Shear Terms in the Equations of Aircraft Motion. Journal of Aircraft, Volume 21, No. 11, November 1984, p. 866-872.
(Subject Category 08 RTOP 505-35-33)
1751. Knox, C. E.: A Flight Management Algorithm and Guidance for Fuel-Conservative Descents in a Time-Based Metered Air Traffic Environment: Development and Flight Test Results. AGARDograph, AG-262, December 1984, p. 6-1 - 6-17.
(Subject Category 06 RTOP 505-45-33)
1752. Ricard, G. L.; and Parrish, R. V.: Pilot Differences and Motion Cuing Effects on Simulated Helicopter Hover. Human Factors, Volume 26, June 1984, p. 249-256.
(Subject Category 54)

Meeting Presentations

1753. Harris, R. L., Sr.; and Spady, A. A., Jr.: Visual Scanning Behavior. Presented at the IEEE/AESS NAECON 85 Conference, May 20-24, 1985, Dayton, Ohio. Paper No. 216. In Proceedings. (Subject Category 53 RTOP 506-54-63)
1754. Parrish, R. V.; Hatfield, J. J.; and Montoya, R. J.: Advanced R&T Base Control/Display Technology With Potential for Rendezvous and Proximity Operations. Presented at the NASA Rendezvous and Proximity Operations Workshop, February 19-22, 1985, Houston, Texas. In Proceedings, Volume III, p. 7-31 - 7-72. (Subject Category 06 RTOP 505-34-33)
1755. Schutte, P. C.; Cate, K. H.; and Young, S. D.: A Dynamic Pressure Calibration Standard. Presented at the ISA 31st International Instrumentation Symposium, May 6-9, 1985, San Diego, California. Paper No. A122. (Subject Category 35 RTOP 505-31-53)
1756. Spitzer, C. R.: A New Direction in Energy Conversion: The All-Electric Aircraft. Presented at the SAE 20th Intersociety Energy Conversion Engineering Conference (IECEC), August 18-23, 1985, Miami Beach, Florida. SAE Paper No. 851813. In Proceedings, Volume 1, p. 1-388-394. (Subject Category 05 RTOP 505-45-73)
1757. Vicroy, D. D.: A Preliminary Study of the Basic Display/Guidance Requirements for Flying Near Optimal Trajectories. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. In Proceedings, Volume 2, June 1985, p. 669-674. (Subject Category 06 RTOP 505-45-33)

Technical Talks

1758. Abbott, K. H.: Automated Onboard Aircraft Engine Fault Diagnosis Using Expert Systems Concepts. Presented at the 1985 American Control Conference, June 19-21, 1985, Boston, Massachusetts. (Subject Category 03 RTOP 505-35-13)
1759. Burgess, M. A.: NASA Research Related to the Evolving National Airspace System. Presented at the Virginia Department of Aviation Annual Aviation Conference, August 14-16, 1985, Lynchburg, Virginia. (Subject Category 08 RTOP 505-66-43)
1760. Burgess, M. A.: Tomorrow's Aircraft Operational Capabilities--Not Very Far Away. Presented at the North Carolina Department of Transportation 1985 North Carolina Airports Conference, February 4-6, 1985, Pinehurst, North Carolina. (Subject Category 01 RTOP 505-45-33)
1761. Garner, H. D.: Micros in the Cockpit. Presented at the 1985 EAA Oshkosh Fly-In and Convention, July 26 - August 2, 1985, Oshkosh, Wisconsin. (Subject Category 06 RTOP 505-34-33)

1762. Knox, C. E.: MLS Advanced Applications Study. Presented at the IATA Flight Operations Advisory Committee Meeting, December 3, 1985, Moffett Field, California.
(Subject Category 06 RTOP 505-66-41)
1763. Parrish, R. V.; Busquets, A. M.; Murray, R. F.; and Hatfield, J. J.: Electronic Control/Display Interface Technology. Presented at the NASA Computer Sciences and Data Systems Technical Symposium, April 16-18, 1985, Leesburg, Virginia.
(Subject Category 19 RTOP 482-58-13)
1764. Pope, A. T.: Computers in Aircrew Workload Research. Presented at the APA Computers in Psychology: Cost Effectiveness in Public Service Settings, August 23-27, 1985, Los Angeles, California.
(Subject Category 54 RTOP 505-35-33)

Computer Programs

No computer programs.

Tech Briefs

1765. Knox, C. E., and Vicroy, D. D. (Langley Research Center); and Simmon, D. A. (United Airlines, Inc.): Fuel-Conservative Descents in an Airline Environment. NASA Tech Brief LAR-13492.

Patents

No patents.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR SYSTEMS ENGINEERING AND OPERATIONS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR FABRICATION DIVISION

Formal Reports

1766. Buckley, J. D. (Editor): Metal Matrix, Carbon and Ceramic Matrix Composites - 1985. NASA CP-2406, December 1985, 341 p.
(Avail: STIF Subject Category 24 RTOP 506-53-33)
1767. Buckley, J. D.; and Stein, B. A. (Editors): Welding, Bonding, and Fastening - 1984. NASA CP-2387, September 1985, 494 p.
(Avail: NTIS Subject Category 23 RTOP 505-42-23)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journals articles and other publications.

Meeting Presentations

1768. Buckley, J. D.; Fox, R. L.; and Johnston, D. F.: Rapid Nondestructive Evaluation of Composites. Presented at the American Society for Metals/Engineering Society of Detroit Advanced Composites Conference, December 3-4, 1985, Dearborn, Michigan. Proceedings pending.
(Subject Category 24 RTOP 505-42-23)
1769. Buckley, J. D.; Fox, R. L.; and Johnston, D. F.: Equipment and Techniques for Rapid Bonding of Composites. Presented at the American Society for Metals/Engineering Society of Detroit Advanced Composites Conference, December 3-4, 1985, Dearborn, Michigan. Proceedings pending.
(Subject Category 24 RTOP 505-42-23)
1770. Buckley, J. D.; Fox, R. L.; and Swaim, R. J.: Toroid Joining Gun. Presented at the 1985 SAE International Congress & Exposition, Detroit, Michigan, February 25 - March 1, 1985. SAE Paper No. 850408. In Proceedings, SAE Technical Paper Series, 1985, p. 1-11.
(Subject Category 23)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

- 1771. Bryan, C. F., Jr.: Lightning Sacrificial Tip. NASA Tech Brief LAR-13470.
- 1772. Vasquez, P.; and Hutto, W. R.: Pressure Rig Casting. NASA Tech Brief LAR-13485.
- 1773. Wilson, M. L.; Johnson, G. S.; and MacConochie, I. O.: Flexural Properties of Kevlar Reinforced Pultrusions. NASA Tech Brief LAR-13442.
- 1774. Wilson, M. L.; and Miserentino, R.: Pultrusion Fabrication Process for Long Space Boom Models. NASA Tech Brief LAR-13441.
- 1775. Zumbrun, H. N.; and Croom, D. R., Jr.: Extended Nozzle for Safety Air Gun. NASA Tech Brief LAR-13366.

Patents

- 1776. Berry, R. F.: Ultrasonic Angle Beam Standard Reflector. U.S. Patent 4,558,585. Issued December 17, 1985.
(Subject Category 71)
- 1777. Buckley, J. D.; Swaim, R. J.; and Fox, R. L.: Induction Heating Gun. U.S. Patent 4,521,659. Issued June 4, 1985.
(Subject Category 31)

PUBLICATIONS FOR SYSTEMS ENGINEERING DIVISION

Formal Reports

1778. Bement, L. J.; and Schimmel, M. L.: Advanced Emergency Openings for Commercial Aircraft. NASA TM-87580, November 1985, 16 p.
(Avail: NTIS Subject Category 03 RTOP 505-42-23)
1779. Petley, D. H.; Alexander, W., Jr.; Wright, A. S., Jr.; and Vallas, M.: Calibration of Sonic Valves for the Laminar Flow Control, Leading-Edge Flight Test. NASA TP-2423, May 1985, 51 p.
(Avail: NTIS Subject Category 02 RTOP 505-45-63)

Quick-Release Technical Memorandums

1780. Bement, L. J.; and Schimmel, M. L.: Approach for Service Lift Extension of Explosive Devices for Aircraft Escape Systems. NASA TM-86323, February 1985, 22 p.
(Avail: NTIS Subject Category 05 RTOP 505-42-23)
1781. Rush, H. F.; and Firth, G. C.: Initial Investigation of Cryogenic Wind Tunnel Model Filler Materials. NASA TM-86363, January 1985, 22 p.
(Avail: NTIS Subject Category 27 RTOP 505-33-33)
1782. Watson, N. D.; Miller, J. B.; Taylor, L. V.; Lovell, J. B.; Cox, J. W.; Fedors, J. C.; Kopia, L. P.; Holloway, R. M.; and Bradley, O. H., Jr.: Earth Radiation Budget Experiment (ERBE) Scanner Instrument Anomaly Investigation. NASA TM-87636, October 1985, 86 p.
(Avail: NTIS Subject Category 35 RTOP 619-12-01)

Contractor Reports

1783. Bhat, G. K.: The Manufacturing and Procurement Procedure of Fe-12Ni Alloy Steel Plates and Bars Supplied to NASA Langley Research Center. (NAS1-17216 Mellon Institute.) NASA CR-177996, December 1985, 37 p.
(Avail: STIF Subject Category 26 RTOP 505-61-01)
1784. Wigley, D. A.: A Systematic Plan for the Continued Study of Dimensional Stability of Metallic Alloys Considered for the Fabrication of Cryogenic Wind Tunnel Models. (NAS1-16000 Kentron International, Inc.; Subcontractor: Cryo Support Services, Inc.) NASA CR-172449, June 1985, 18 p.
(Avail: NTIS Subject Category 26 RTOP 505-31-53)
1785. Wigley, D. A.: Machining - Induced Deformation in Stepped Specimens of PH 13-8 Mo, 18 Nickel Maraging Steel Grade 200T1 and Grain-Refined HP 9-4-20. (NAS1-16000 Kentron International, Inc.; Subcontractor: Cryo Support Services, Inc.) NASA CR-172450, June 1985, 33 p.
(Avail: NTIS Subject Category 26 RTOP 505-31-53)

1786. Wigley, D. A.: Materials and Techniques for Model Construction. (NAS1-16000 Kentron International, Inc.; Subcontractor: Applied Cryogenics and Materials Consultants, Inc.) NASA CR-172620, June 1985, 20 p.
(Avail: NTIS Subject Category 26 RTOP 505-31-53)

Journal Articles and Other Publications

1787. Gray, C. E., Jr.; Decha-Umphai, K.; and Mei, C.: Large Deflection, Large Amplitude Vibrations and Random Response of Symmetrically Laminated Rectangular Plates. Journal of Aircraft, Volume 22, No. 11, November 1985, p. 929.
(Subject Category 39 RTOP 618-32-33)

Meeting Presentations

1788. Allen, B. B.; and Butler, D. H.: Hoop/Column Antenna Deployment Mechanism Overview. Presented at the NASA/CIT, et al., 19th Aerospace Mechanisms Symposium, May 1-3, 1985, Moffett Field, California. In NASA CP-2371, p. 23-38.
(Subject Category 33 RTOP 506-62-43)
1789. Bement, L. J.; and Schimmel, M. L.: Advanced Emergency Openings for Commercial Aircraft. Presented at the Flight Safety Foundation, Inc., 30th Corporate Aviation Safety Seminar, April 14-16, 1985, Dallas/Ft. Worth Airport, Texas. In Proceedings, p. 156-167.
(Subject Category 05 RTOP 927-11-01)
1790. Bradley, O. H., Jr.; and Foss, R. A.: Thermal Design of the ACCESS Space Erectable Truss. Presented at the AIAA 20th Thermophysics Conference, June 19-22, 1985, Williamsburg, Virginia. AIAA Paper No. 85-1024.
(Subject Category 17 RTOP 928-50-06)
1791. Carlson, A. B.; and Petley, D. H.: A Three-Dimensional Transient Thermal Analysis of the Lidar Atmospheric Sensing Experiment. Presented at the California State University 29th Heat Transfer and Fluid Mechanics Institute, June 20-21, 1985, Sacramento, California. In Proceedings, p. 189-200.
(Subject Category 34 RTOP 618-32-33)
1792. Eichelberger, C. P.: Development of an Energy Absorbing Passenger Seat for a Transport Aircraft. Presented at the NASA/CIT, et al., 19th Aerospace Mechanisms Symposium, May 1-3, 1985, Moffett Field, California. In NASA CP-2371, p. 39-58.
(Subject Category 26 RTOP 505-33-53)
1793. Foss, R. A.; and Bradley, O. H., Jr.: Thermal Analysis of the ACCESS Space Truss. Presented at the IEEE/ASM, et al., Space Tech Conference and Exposition, September 23-25, 1985, Anaheim, California. In Proceedings, p. 7-1 - 7-10.
(Subject Category 17 RTOP 928-50-06)

1794. Foss, R. A.; Smith, D. M.; Faison, R. W.; and Spiers, R. B.: Thermal-Vacuum Testing and In-Situ Optical Alignment Measurements of the HALOE Telescope/Sun Sensor Assembly. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. AIAA Paper No. 85-0383. (Subject Category 18 RTOP 678-12-04)
1795. Gray, C. E., Jr.: Optimal Design of a Thermally Stable Composite Optical Bench. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0799-CP. (Subject Category 39 RTOP 618-32-33)
1796. Miller, J. B.; Pappa, R. S.; Brumfield, M. L.; and Adams, R. R.: Measurement of Orbital Dynamics of the OAST-1 Solar Array Using Recorded Video Images. Presented at the 36th International Astronautical Federation Congress Conference, October 7-12, 1985, Stockholm, Sweden. IAF Paper No. 85-213. Proceedings pending. (Subject Category 44 RTOP 506-62-49)
1797. Rush, H. F.: Grain Refinement of High Strength Steels to Improve Cryogenic Toughness. Presented at the AIAA, ASME, et al., 26th Structures, Structural Dynamics, and Materials Conference, April 15-17, 1985, Orlando, Florida. AIAA Paper No. 85-0749-CP. (Subject Category 26 RTOP 505-31-53)
1798. Young, C. P., Jr.: Design and Construction of Models for the National Transonic Facility - I. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium. (Subject Category 09 RTOP 505-31-53)
1799. Young, C. P., Jr.: Design and Construction of Models for the National Transonic Facility - II. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium. (Subject Category 09 RTOP 505-31-53)

Technical Talks

1800. Eichelberger, C. P.: Development of an Energy Absorbing Passenger Seat for the B-720 Test Aircraft. Presented at the AIAA Aerospace Engineering Conference and Show, February 12-14, 1985, Los Angeles, California. (Subject Category 05 RTOP 505-33-53)
1801. Kelsey, E. L.; and Cole, C. M.: Engineering Task Teams in a Quality Environment. Presented at the 1985 Fall Conference of the International Association of Quality Circles (IAQC), November 6-8, 1985, Nashville, Tennessee. (Subject Category 31)

1802. May, C. J.: On-Board Photographic System of the Controlled Impact Demonstration Test. Presented at the NASA Government/Industry Controlled Impact Demonstration (CID) Workshop, April 10, 1985, Hampton, Virginia. (Subject Category 33 RTOP 505-33-53)
1803. Pegg, R. J.: Preliminary Analysis of Flying With High Altitude Long Endurance Aircraft. Presented at the Association for Unmanned Vehicle Systems 1985 Symposium on Progress in Very Long Endurance Aircraft, October 30 - November 1, 1985, Menlo Park, California. (Subject Category 05 RTOP 505-43-53)
1804. Pride, J. D., Jr.: Preflight Hardware Tests-Development, Flight Acceptance and Qualification. Presented at the NASA Government/Industry Controlled Impact Demonstration (CID) Workshop, April 10, 1985, Hampton, Virginia. (Subject Category 08 RTOP 505-33-53)

Computer Programs

No computer programs.

Tech Briefs

1805. Bement, L. J. (Langley Research Center); and Bailey, J. W.; Perry, R.; and Finch, M. S. (PRC Kentron International, Inc.): Tool and Process for Explosive Joining of Tubes. NASA Tech Brief LAR-13309.
1806. Eichelberger, C. P.; and Alfaro-Bou, E. (Langley Research Center); and Fasanella, E. L. (Kentron International, Inc.): Energy Absorbing Passenger Seat for Transport Aircraft. NASA Tech Brief LAR-13385.
1807. Ng, G. S.: Composite Fastener. NASA Tech Brief LAR-13058.
1808. Rush, H. F.: Improved Cryogenic Toughness of High-Strength Steels. NASA Tech Brief LAR-13376.

Patents

No patents.

PUBLICATIONS FOR FACILITIES ENGINEERING DIVISION

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

1809. Dean, E. B.: Finding Cost Estimating Relationships Using Principal Components Analysis. Presented at the International Society of Parametric Analysts Seventh Annual International Conference, May 7-9, 1985, Orlando, Florida. In Proceedings, Volume IV, No. 1, p. 302-303.
(Subject Category 83 RTOP 505-89-00)
1810. Maddox, W. G.; and Kelliher, W. C.: X-Ray Fluorescence Analysis of Wear Metals in Aircraft Lubricating Oils. Presented at the University of Denver 34th Annual Denver X-Ray Conference, August 5-9, 1985, Snowmass, Colorado. Proceedings pending.
(Subject Category 38 RTOP 141-20-10)
1811. Nichols, C. E., Jr.: Experiments With Solid Particle Seeding. Presented at the NASA Mini-Workshop on the Development and Application of Wind Tunnel Seeding Systems for Laser Velocimeters, March 19-20, 1985, Hampton, Virginia. In NASA CP-2393, p. 77-84.
(Subject Category 35 RTOP 505-31-53)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR OPERATIONS SUPPORT DIVISION

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

1812. Poupard, C. A.: Portable Test and Monitoring System. NASA Tech Brief
LAR-13405.

Patents

No patents.

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR MANAGEMENT OPERATIONS

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

1813. Research Information and Applications Division (Compiler): Scientific and Technical Information Output of the Langley Research Center for Calendar Year 1984. NASA TM-86336, January 1985, 246 p.
(Avail: NTIS Subject Category 82)

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

1814. Glassman, M.; and Pinelli, T. E.: Scientific Inquiry and Technical Communication: An Introduction to the Research Process. Technical Communication, Volume 32, Number 4, 1985, pp. 8-13.
(Subject Category 82)

Meeting Presentations

1815. Pinelli, T. E.; and Cordle, V. M.: Toward the Development of Guidelines for Technical Report Preparation. Presented at the IEEE Professional Communication Society 1985 Conference, October 16-18, 1985, Williamsburg, Virginia. In Proceedings, p. 89-94.
(Subject Category 82)
1816. Pinelli, T. E.; Cordle, V. M.; and McCullough, R.: Typography and Layout of Technical Reports--Survey of Current Practices. Presented at the Society for Technical Communications 32nd International Technical Communication Conference (ITCC), May 19-22, 1985, Houston, Texas. In Proceedings, p. 115-118.
(Subject Category 82)
1817. Pinelli, T. E.; and Hubbard, H. H.: Guidelines for Improving Illustrated Technical Talks. Presented at the IEEE Professional Communication Society 1985 Conference, October 16-18, 1985, Williamsburg, Virginia. In Proceedings, p. 115-118.
(Subject Category 82)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.

PUBLICATIONS FOR AEROSTRUCTURES DIRECTORATE, USAARTA (AVSCOM)

Formal Reports

1818. Bowman, L. M.: Effect of Measured Material Properties on the Finite Element Analysis of an OH-58 Composite Tail Boom. NASA TM-86430, AVSCOM TR 85-B-5, October 1985, 25 p.
(Avail: NTIS Subject Category 24 RTOP 505-42-39)

Quick-Release Technical Memorandums

1819. Hodges, R. V.: Stress Analysis of 27% Scale Model of AH-64 Main Rotor Hub. NASA TM-87625, AVSCOM TR 85-B-8, October 1985, 48 p.
(Avail: NTIS Subject Category 39 RTOP 505-42-39)

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

1820. Smith, R. P.; Leonard, W. A.; and Kelley, H. L.: Limited Flight Investigation of Strakes Mounted on a Helicopter Tail Boom. Presented at the ARO/AHS International Conference on Rotorcraft Basic Research, February 19-21, Research Triangle Park, North Carolina. In Proceedings. (Subject Category 02 RTOP 505-42-23)

Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

APPENDIX

INDUSTRIAL APPLICATIONS CENTERS

Aerospace Research Applications Center
Indianapolis Center for Advanced Research
611 N. Capital Avenue
Indianapolis, IN 46204
(317) 264-4644

Kerr Industrial Applications Center
Southeastern Oklahoma State University
Station A, Box 2584
Durant, OK 74701
(405) 924-6822

NASA Industrial Applications Center
University of Pittsburgh
823 William Pitt Union
Pittsburgh, PA 15260
(412) 624-5211

NASA Industrial Applications Center
University of Southern California
Research Annex, Room 200
3716 South Hope Street
Los Angeles, CA 90007
(213) 743-6132

New England Research Applications Center
Mansfield Professional Park
Storrs, CT 06268
(203) 486-4533

North Carolina Science and Technology Research Center
Post Office Box 12235
Research Triangle Park, NC 27709
(919) 549-0671

Technology Applications Center
University of New Mexico
Albuquerque, NM 87131
(505) 277-3622

NASA/Florida State Technology Applications Center
State University System of Florida
307 Weil Hall
Gainesville, FL 32611
(904) 392-6626

NASA/UK Technology Applications Program
University of Kentucky
109 Kinkead Hall
Lexington, KY 40506-0057
(606) 257-6322

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