

NASA Technical Memorandum 110220  
Volume I

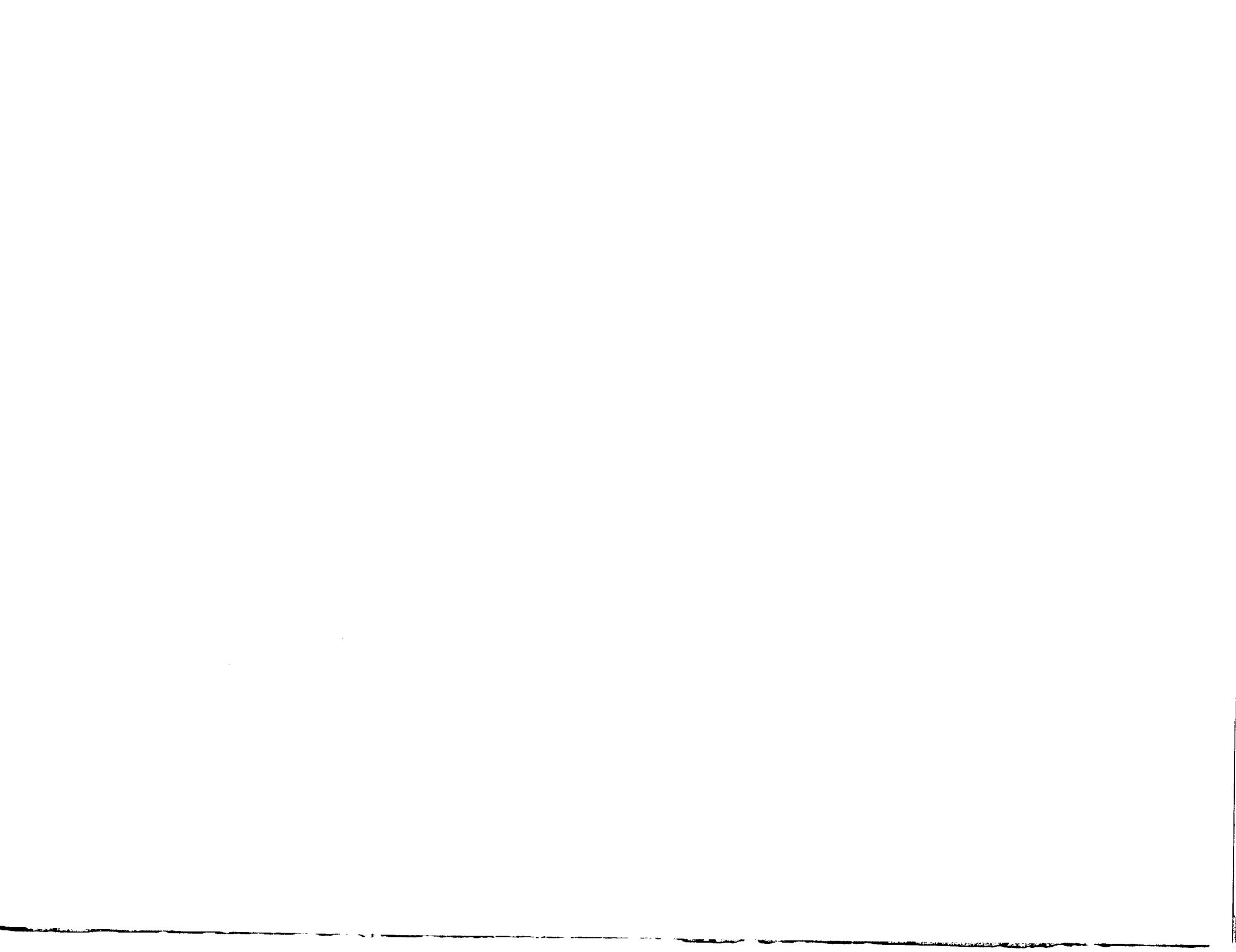
110220  
110220

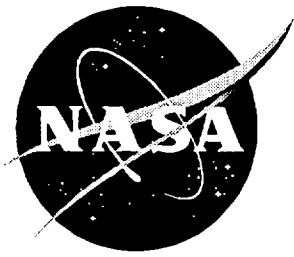
# NASA Langley Scientific and Technical Information Output—1995

---

*Susan H. Stewart and Marilou S. Phillips, Compilers*

January 1996





NASA Technical Memorandum 110220  
Volume I

# NASA Langley Scientific and Technical Information Output—1995

---

*Susan H. Stewart and Marilou S. Phillips, Compilers  
Langley Research Center • Hampton, Virginia*

---

January 1996



## Foreword

This report contains a listing of the NASA Langley Research Center's scientific and technical research output for C.Y. 1995.

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 C.Y. 1995, Langley's contributions to NASA and non-NASA literature included 111 NASA Formal Reports, 3 High-Numbered Conference Publications, 74 High-Numbered Technical Memorandums, 209 Contractor Reports, 269 Journal Articles and Other Publications, 446 Meeting Presentations, 65 Technical Talks, 17 Computer Programs, 69 Tech Briefs, 24 Patents, and 5 Special Documents. In addition, during the year, 13 conferences, symposia, and workshops were sponsored or cosponsored by Langley and held locally.



Dr. Frank Allario  
Chief, Information Systems  
and Services Division



## 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 the areas of Airframe Systems, Aerodynamics, Atmospheric Science, and Structures and Materials.

This publication is a bibliography of Langley's scientific and technical research output for 1995 which is processed through the Center's Information Systems and Services Division, an integral part of NASA's Agency-wide Scientific and Technical Information (STI) system. 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.

Many Langley reports are available electronically on the Langley Technical Report Server (LTRS) at <http://techreports.larc.nasa.gov/ltrs/ltrs.html> or the Institute for Computer Applications in Science and Engineering (ICASE) Technical Report Server (ITRS) at <http://www.icase.edu/docs/library/itrs.html> via the World Wide Web (WWW). The relative Uniform Resource Locators are noted below citations for reports available electronically.

The citations are grouped by the "Scientific and Technical Aerospace Reports" (STAR) subject categories and listed alphabetically by author or innovator. The Langley organization to which the senior author or innovator is assigned and the Research and Technology Objectives and Plans (RTOP) number are noted below citations when appropriate and included in the indexes.

Computer Programs listed are those which were submitted by Langley to COSMIC in 1995 along with some programs listed on the Langley Software Server (LSS). The electronic dissemination of Computer Programs on the WWW at <http://www.larc.nasa.gov/LSS/> has been initiated.

The NASA Tech Briefs cited were published in 1995 in "NASA Tech Briefs," a 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 10017-5391, by writing to the NASA Center for AeroSpace Information, Technology Transfer Office, P. O. Box 8757, Baltimore, Maryland 21240-0757 or on the WWW at <http://www.keds.com/ntb/subscribe.html>.

Patents listed, which are owned by Langley Research Center, have been published in issues of STAR, a NASA announcement journal for report literature. A subscription to STAR is available from the U.S. Government Printing Office (GPO) or from the NASA Center for AeroSpace Information (CASI).

Publication of some journal articles was not known at press time for the 1994 issue of this document. These articles are therefore listed in the 1995 issue.

## Conferences Sponsored or Cosponsored by Langley and Held Locally in 1995

Title of Conference	Date	Langley Contact	Langley		Non-Langley	
			Speakers	Attendees	Speakers	Attendees
1. Computational Materials Workshop	Jan 5-6	J. A. Hinkley	5	8	5	11
2. Rotor Aeroacoustics Technology Transfer Workshop	Feb 15-16	J. S. Preisser	10	24	0	23
3. ICASE/LaRC Workshop on Multidisciplinary Optimization	Mar 13-16	M. Y. Hussaini N. Alexandrov	5	31	26	79
4. NASA/Industry Workshop on Transition Prediction Tools	Apr 25-26	A. Kumar	1	10	2	20
5. NASA SAB Interior Noise Workshop	Apr 25-27	R. J. Silcox	7	22	25	62
6. 38th Meeting of the Acoustic Emission Working Group (AEWG)	May 1-4	W. H. Prosser	1	4	33	61
7. 4th Annual Workshop: Advances in Small Materials for Aerospace Applications	May 4-5	J. O. Simpson R. C. Elder	6	80	46	90
8. 3rd NASA Langley Formal Methods Workshop	May 10-12	C. M. Holloway R. W. Butler	4	14	16	72
9. 2nd Annual NASA Tire/Runway Friction Workshop	May 15-19	T. J. Yager	1	3	12	60
10. Active Control Landing Gear Workshop	July 10-11	J. A. Tanner	6	10	5	5
11. High-Speed Research Sonic Boom Workshop	Sept 11-13	D. G. Baize	3	7	24	31
12. Transportation Beyond 2000: Engineering Design for the Future	Sept 26-28	J. N. Hefner	4	187	21	40
13. Antenna Measurements and Techniques Association (AMTA) Symposium	Nov 13-17	T. G. Campbell	4	20	84	473
Totals			57	420	299	1027



## Availability

<u>Category</u>	<u>Source</u>
NASA Reports	NASA Center for AeroSpace Information (CASI) 800 Elkridge Landing Road Linthicum Heights, MD 21090-2934 (301) 621-0390  National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161-2171 (703) 487-4650
Computer Programs	Computer Software Management and Information Center (COSMIC) The University of Georgia 382 East Broad Street Athens, GA 30602-4272
Langley Tech Briefs	Technology Transfer Team Mail Stop 200 NASA Langley Research Center Hampton, VA 23681-0001 (804) 864-2556
Patents:	
Patent Application Specifications	NASA Center for AeroSpace Information (CASI)  National Technical Information Service (NTIS)
Printed Copies	Commissioner of Patents and Trademarks U.S. Patent and Trademark Office Washington, DC 20231



# Contents

Foreword . . . . .	iii
Introduction . . . . .	v
Conferences Sponsored or Cosponsored by Langley and Held Locally in 1995 . . . . .	vi
Availability . . . . .	vii

## Aeronautics

Category 01 Aeronautics (General) . . . . .	1
Category 02 Aerodynamics . . . . .	2
Category 03 Air Transportation and Safety . . . . .	13
Category 04 Aircraft Communications and Navigation . . . . .	14
Category 05 Aircraft Design, Testing and Performance . . . . .	15
Category 07 Aircraft Propulsion and Power . . . . .	20
Category 08 Aircraft Stability and Control . . . . .	21
Category 09 Research and Support Facilities (Air) . . . . .	23

## Astronautics

Category 13 Astrodynamics . . . . .	24
Category 15 Launch Vehicles and Space Vehicles . . . . .	24
Category 16 Space Transportation . . . . .	25
Category 17 Space Communications, Spacecraft Communications, Command & Tracking . . . . .	26
Category 18 Spacecraft Design, Testing and Performance . . . . .	27
Category 19 Spacecraft Instrumentation . . . . .	31
Category 20 Spacecraft Propulsion and Power . . . . .	31

## Chemistry and Materials

Category 23 Chemistry and Materials (General) . . . . .	31
Category 24 Composite Materials . . . . .	33
Category 25 Inorganic and Physical Chemistry . . . . .	41
Category 26 Metallic Materials . . . . .	42
Category 27 Nonmetallic Materials . . . . .	44
Category 29 Materials Processing . . . . .	50

## Engineering

Category 31 Engineering (General) . . . . .	50
Category 32 Communications and Radar . . . . .	51
Category 33 Electronics and Electrical Engineering . . . . .	53
Category 34 Fluid Mechanics and Heat Transfer . . . . .	54
Category 35 Instrumentation and Photography . . . . .	62
Category 36 Lasers and Masers . . . . .	65
Category 37 Mechanical Engineering . . . . .	67

Category 38 Quality Assurance and Reliability . . . . .	67
Category 39 Structural Mechanics . . . . .	68

## Geosciences

Category 43 Earth Resources and Remote Sensing . . . . .	73
Category 45 Environment Pollution . . . . .	74
Category 46 Geophysics . . . . .	75
Category 47 Meteorology and Climatology . . . . .	86

## Life Sciences

Category 51 Life Sciences (General) . . . . .	90
Category 52 Aerospace Medicine . . . . .	90
Category 53 Behavioral Sciences . . . . .	91

## Mathematical and Computer Sciences

Category 59 Mathematical and Computer Sciences (General) . . . . .	91
Category 60 Computer Operations and Hardware . . . . .	93
Category 61 Computer Programming and Software . . . . .	96
Category 62 Computer Systems . . . . .	98
Category 63 Cybernetics . . . . .	100
Category 64 Numerical Analysis . . . . .	101
Category 65 Statistics and Probability . . . . .	105
Category 66 Systems Analysis . . . . .	105

## Physics

Category 70 Physics (General) . . . . .	106
Category 71 Acoustics . . . . .	106
Category 72 Atomic and Molecular Physics . . . . .	114
Category 73 Nuclear and High-Energy Physics . . . . .	115
Category 74 Optics . . . . .	116
Category 76 Solid-State Physics . . . . .	117
Category 77 Thermodynamics and Statistical Physics . . . . .	119

## Social Sciences

Category 80 Social Sciences (General) . . . . .	119
Category 81 Administration and Management . . . . .	119
Category 82 Documentation and Information Science . . . . .	119
Category 83 Economics and Cost Analysis . . . . .	121

## Space Sciences

Category 88 Space Sciences (General) . . . . .	121
Category 90 Astrophysics . . . . .	122
Category 91 Lunar and Planetary Exploration . . . . .	122
Category 93 Space Radiation . . . . .	122

## General

Category 99 General . . . . .	124
Author Index . . . . .	127
Organization Index . . . . .	145
RTOP Index . . . . .	149



# Scientific and Technical Publications

## Aeronautics

### Category 01 Aeronautics (General)

- 1 DiCarlo, D. J.: AGATE Integrated Platforms Work Package Overview. Presented at 1995 SAE General, Corporate and Regional Aviation Meeting and Exposition, May 3-5, 1995, Wichita, Kansas.  
Organization DC RTOP 538-07-19
  
- 2 Doggett, R. V., Jr.; Rivera, J. A., Jr.; and Stewart, E. C.: *Flutter Clearance Flight Tests of an OV-10A Airplane Modified for Wake Vortex Flight Experiments*. NASA TM-109168, April 1995, 13 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm109168.ps.Z>  
Organization DS RTOP 505-63-50
  
- 3 Hueschen, R. M. (Compiler): *FAA/NASA Joint University Program for Air Transportation Research 1993-1994*. NASA CP-3305, DOT/FAA/CT-95/39, August 1995, 119 p.  
Organization DC RTOP 505-64-52
  
- 4 Jonsson, J. E.; and Ricks, W. R.: *Cognitive Models of Pilot Categorization and Prioritization of Flight-Deck Information*. NASA TP-3528, August 1995, 32 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3528.ps.Z>  
Organization DC RTOP 505-64-13
  
- 5 Riggins, D. W.; and McClinton, C. R.: Thrust Modeling for Hypersonic Engines. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6081.  
Organization J RTOP 466-05-01
  
- 6 Sleight, D. W.; and Wang, J. T.: *Buckling Analysis of Debonded Sandwich Panel Under Compression*. NASA TM-4701, December 1995, 11 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4701.ps.Z>  
Organization DS RTOP 510-02-12
  
- 7 Stuever, R. A.; Stewart, E. C.; and Rivers, R. A.: Overview of the Preparation and Use of an OV-10 Aircraft for Wake Vortex Hazards Flight Experiments. Presented at 1st AIAA Aircraft Engineering, Technology, and Operations Congress, September 19-21, 1995, Los Angeles, California. AIAA Paper No. 95-3935.  
Organization DC RTOP 505-64-13

## Category 02 Aerodynamics

- 8 Abdol-Hamid, K. S.: *Implementation of Algebraic Stress Models in a General 3-D Navier-Stokes Method (PAB3D)*. (NAS1-19831 Analytical Services & Materials, Inc.) NASA CR-4702, December 1995, 23 p.  
Organization DA RTOP 505-59-30
- 9 Abdol-Hamid, K. S.; Carlson, J. R.; and Pao, S. P.: Calculation of Turbulent Flows Using Mesh Sequencing and Conservative Patch Algorithms. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-2336.  
Organization DA RTOP 505-59-70
- 10 Abdol-Hamid, K. S.; Lakshmanan, B.; and Carlson, J. R.: *Application of Navier-Stokes Code PAB3D With  $k-\epsilon$  Turbulence Model to Attached and Separated Flows*. NASA TP-3480, January 1995, 41 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3480.ps.Z>  
Organization DA RTOP 505-59-10
- 11 Abid, R.; Gatski, T. B.; and Morrison, J. H.: Assessment of Pressure-Strain Models in Predicting Compressible, Turbulent Ramp Flows. *AIAA Journal*, Volume 33, No. 1, January 1995, p. 156-159.  
Organization DF RTOP 505-59-50
- 12 Alcorn, C. W.; Croom, M. A.; and Francis, M. S.: The X-31 Experience: Aerodynamic Impediments to Post-Stall Agility. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0362.  
Organization DC RTOP 505-64-30
- 13 Allison, D. O.; and Sewall, W. G.: *Airfoil Modification Effects on Subsonic and Transonic Pressure Distributions and Performance for the EA-6B Airplane*. NASA TP-3516, May 1995, 84 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3516.ps.Z>  
Organization DA RTOP 505-59-10
- 14 Anderson, W. K.; Bonhaus, D. L.; McGhee, R. J.; and Walker, B. S.: Navier-Stokes Computations and Experimental Comparisons for Multi-Element Airfoil Configurations. *Journal of Aircraft*, Volume 32, No. 6, November-December 1995, p. 1246.  
Organization DF RTOP 505-59-53
- 15 Anderson, W. K.; Rausch, R. D.; and Bonhaus, D. L.: Implicit/Multigrid Algorithms for Incompressible Turbulent Flows on Unstructured Grids. Presented at 12th AIAA Computational Fluid Dynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1740.  
Organization DF RTOP 505-59-53
- 16 Applin, Z. T.: *Pressure Distributions From Subsonic Tests of a NACA 0012 Semispan Wing Model*. NASA TM-110148, September 1995, 174 p.  
Organization DA RTOP 538-05-14
- 17 Applin, Z. T.; Gentry, G. L., Jr.; and Takallu, M. A.: *Wing Pressure Distributions From Subsonic Tests of a High-Wing Transport Model*. NASA TM-4583, January 1995, 440 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm4583.ps.Z>  
Organization DA RTOP 505-59-10



- 18 Asbury, S. C.; and Capone, F. J.: *Multiaxis Thrust-Vectoring Characteristics of a Model Representative of the F-18 High-Alpha Research Vehicle at Angles of Attack From 0° to 70°*. NASA TP-3531, December 1995, 174 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3531.ps.Z>  
 Organization DA RTOP 505-59-30
- 19 Asbury, S. C.; Mason, M. L.; and Lamb, M.: *Internal Performance of Highly Integrated Deployable Exhaust Nozzles Applicable to Advanced Short-Takeoff and Vertical-Landing Aircraft*. NASA TP-3542, October 1995, 278 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3542text.ps.Z>  
 Organization DA RTOP 505-59-70
- 20 Berrier, B. L.: Single-Engine Tail Interference Model. *AGARD Advisory Report Number 303*, Volume 2, August 1994, p. E3-1-E3-23.  
 Organization DA RTOP 505-62-30
- 21 Blanchard, R. C.; Nicholson, J. Y.; Ritter, J. R.; and Larman, K. T.: Orbital Acceleration Research Experiment: Calibration Measurements. *Journal of Spacecraft and Rockets*, Volume 32, No. 4, July-August 1995, p. 619.  
 Organization DG RTOP 237-02-02
- 22 Bonhaus, D. L.; Anderson, W. K.; and Mavriplis, D. J.: *Numerical Study To Assess Sulfur Hexafluoride as a Medium for Testing Multielement Airfoils*. NASA TP-3496, June 1995, 28 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3496.ps.Z>  
 Organization DF RTOP 505-59-53
- 23 Brauckmann, G. J.; Paulson, J. W., Jr.; and Weilmuenster, K. J.: Experimental and Computational Analysis of Shuttle Orbiter Hypersonic Trim Anomaly. *Journal of Spacecraft and Rockets*, Volume 32, No. 5, September-October 1995, p. 758.  
 Organization DG RTOP 232-01-04
- 24 Buck, G. M.: Simultaneous Luminescence Pressure and Temperature Measurement System for Hypersonic Wind Tunnels. *Journal of Spacecraft and Rockets*, Volume 32, No. 5, September-October 1995, p. 791.  
 Organization DG RTOP 232-01-04
- 25 Buck, G. M.: Chromatic Image Analysis for Quantitative Thermal Mapping. NASA Tech Brief LAR-14386, April 1995.  
 Organization DG
- 26 Bushnell, D. M.: Hypervelocity Scramjet Mixing Enhancement. *Journal of Propulsion and Power*, Volume 11, No. 5, September-October 1995, p. 1088.  
 Organization DG RTOP 505-59-50
- 27 Bushnell, D. M.: Longitudinal Vortex Control—Requirements and Approaches. Presented at 2nd International Workshop on Vortex Flows & Related Numerical Methods, August 20-24, 1995, Montreal, Canada.  
 Organization A
- 28 Campbell, R. L.: Efficient Constrained Design Using Navier-Stokes Codes. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1808.  
 Organization DA RTOP 505-59-10

- 29 Carlson, J. R.; Pao, S. P.; Abdol-Hamid, K. S.; and Jones, W. T.: Aerodynamic Performance Predictions of Single- and Twin-Jet Afterbodies. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-2622.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-2622.ps.Z  
Organization DA RTOP 505-59-70
- 30 Carpenter, M. H.; Gottlieb, D. I.; Abarbanel, S. A.; and Don, W. S.: The Theoretical Accuracy of Runge-Kutta Time Discretizations for the Initial Boundary Value Problem: A Careful Study of the Boundary Error. *SIAM Journal on Scientific Computing*, Volume 16, No. 6, November 1995, p. 1241-1252.  
Organization DF RTOP 505-70-62
- 31 Carpenter, M. H.; and Otto, J. C.: High-Order "Cyclo-Difference" Techniques: An Alternative to Finite Differences. *Journal of Computational Physics*, Volume 118, May 1995, p. 242-260.  
Organization DF RTOP 505-70-62
- 32 Casper, J.; and Carpenter, M. H.: *Computational Considerations for the Simulation of Shock-Induced Sound*. NASA TM-110222, December 1995, 21 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110222.ps.Z  
Organization DF RTOP 505-59-53
- 33 Casper, J. H., Jr.; and Meadows, K. R.: Using High-Order Accurate Essentially Non-Oscillatory Schemes for Aeroacoustic Applications. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0163.  
Organization DF RTOP 505-59-53
- 34 Chaffin, M. S.; and Berry, J. D.: Navier-Stokes Simulation of a Rotor Using a Distributed Pressure Disk Method. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas. In Proceedings, p. 112-136.  
Organization DA RTOP 505-59-36
- 35 Cler, D. L.: A Parametric Investigation of Nozzle Planform and Internal/External Geometry at Transonic Speeds. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-2608.  
Organization DA RTOP 505-59-30
- 36 Cockrell, C. E., Jr.; Huebner, L. D.; and Finley, D. B.: Aerodynamic Performance and Flow-Field Characteristics of Two Waverider-Derived Hypersonic Cruise Configurations. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0736.  
Organization DG RTOP 505-70-62
- 37 Cruz, C. I.; and Ware, G. M.: *Control Effectiveness and Tip-Fin Dihedral Effects for the HL-20 Lifting-Body Configuration at Mach Numbers From 1.6 to 4.5*. NASA TM-4697, December 1995, 89 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4697.ps.Z  
Organization BA RTOP 506-40-61
- 38 Darden, C. M.: Current Strategies in Sonic-Boom Research. Presented at 129th Meeting of the Acoustical Society of America, May 30-June 3, 1995, Washington, DC.  
Organization I RTOP 537-03-21

- 39 Desmarais, R. N.; and Bland, S. R.: *Tables of Properties of Airfoil Polynomials*. NASA RP-1343, September 1995, 19 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1343.ps.Z>  
 Organization DS RTOP 505-63-50
- 40 Dwoyer, D. L.; and Kjelgaard, S. O.: Re-Engineering Wind Tunnel Testing at NASA Langley Research Center. Presented at International Test and Evaluation Association 1995 Symposium, October 2-5, 1995, Huntsville, Alabama.  
 Organization D RTOP 505-63-50
- 41 Federspiel, J. F.; Bangert, L. S.; Wing, D. J.; and Hawkes, T.: Fluidic Control of Nozzle Flow—Some Performance Measurements. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-2605.  
 Organization DA RTOP 505-59-70
- 42 Finley, D. B.: *Euler Technology Assessment Program for Preliminary Aircraft Design Employing SPLITFLOW Code With Cartesian Unstructured Grid Method*. (NAS1-19000 Lockheed Fort Worth Company.) NASA CR-4649, March 1995, 100 p.  
 Organization DA RTOP 505-68-30
- 43 Finley, D. B.; and Cockrell, C. E., Jr.: Control Effectiveness and Lateral-Directional Stability for Two Waverider-Derived Hypersonic Cruise Configurations. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1831.  
 Organization DG RTOP 505-70-62
- 44 Flamm, J. D.; and Wilcox, F. J., Jr.: *Drag Measurements of an Axisymmetric Nacelle Mounted on a Flat Plate at Supersonic Speeds*. NASA TM-4660, June 1995, 33 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4660.ps.Z>  
 Organization DA RTOP 505-59-20
- 45 Fremaux, C. M.; Vairo, D. M.; and Whipple, R. D.: Effect of Geometry, Static Stability, and Mass Distribution on the Tumbling Characteristics of Generic Flying-Wing Models. *Journal of Aircraft*, Volume 32, No. 2, March–April 1995, p. 404-410.  
 Organization DC RTOP 505-68-70
- 46 Frink, N. T.; Pirzadeh, S.; and Parikh, P. C.: An Unstructured-Grid Software System for Solving Complex Aerodynamic Problems. Presented at Workshop on Surface Modeling, Grid Generation, and Related Issues in CFD, May 9-11, 1995, Cleveland, Ohio. In NASA CP-3291, p. 289-308.  
 Organization DA RTOP 505-59-53
- 47 Gaffney, R. L.; White, J. A.; Girimaji, S. S.; and Drummond, J. P.: Modeling Temperature and Species Fluctuations in Turbulent, Reacting Flow. *Computing Systems in Engineering*, Volume 5, No. 2, 1994, p. 117-133.  
 Organization DG RTOP 505-62-40
- 48 Gatlin, G. M.; and McGrath, B. E.: *Low-Speed Longitudinal Aerodynamic Characteristics Through Poststall for Twenty-One Novel Planform Shapes*. NASA TP-3503, August 1995, 113 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3503.ps.Z>  
 Organization DA RTOP 505-68-70

- 49 Gatski, T. B.: Progress in the Development and Application of Higher Order Turbulence Closure Models. Presented at FIRE User Meeting, May 8, 1995, Graz, Austria.  
 Organization DF RTOP 505-59-53
- 50 Ghee, T. A.; and Kelley, H. L.: *Exploratory Flow Visualization Investigation of Mast-Mounted Sights in Presence of a Rotor*. NASA TM-4634, ATCOM TR-95-A-001, March 1995, 34 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4634.ps.Z>  
 Organization DA RTOP 505-59-36
- 51 Gorton, S. A.; Poling, D. R.; and Dadone, L.: Laser Velocimetry and Blade Pressure Measurements of a Blade-Vortex Interaction. *Journal of the American Helicopter Society*, Volume 40, No. 2, April 1995, p. 15-23.  
 Organization DA RTOP 505-59-36
- 52 Hanebutte, U. R.; Joslin, R. D.; and Zubair, M.: Parallel Spatial Direct Numerical Simulation of Boundary-Layer Transition on IBM SP1. Presented at High Performance Computing '95, April 9-13, 1995, Phoenix, Arizona.  
 Organization DF RTOP 505-59-50
- 53 Hardin, J. C.: Computational Aeroacoustics Applied to Active Noise Control. Presented at 25th International Conference on Environmental Systems, July 10-13, 1995, San Diego, California. SAE Paper No. 951645.  
 Organization DF RTOP 505-59-52
- 54 Hardin, J. C.: High Reynolds Number Computational Aeroacoustics. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-091.  
 Organization DF RTOP 505-59-53
- 55 Hardin, J. C.; and Pope, D. S.: An Acoustic/Viscous Splitting Technique for Computational Aeroacoustics. *Theoretical and Computational Fluid Dynamics*, Volume 6, 1994, p. 323-340.  
 Organization DF RTOP 505-59-53
- 56 Henderson, J. L.; Walsh, J. L.; and Young, K. C.: Application of Response Surface Techniques to Helicopter Rotor Blade Optimization Procedure. Presented at American Helicopter Society National Technical Specialists' Meeting, October 30-November 2, 1995, Williamsburg, Virginia. In Proceedings.  
 Organization DF RTOP 505-63-36
- 57 Herrin, J. L.; and Dutton, J. C.: The Turbulence Structure of a Reattaching Axisymmetric Supersonic Free Shear Layer. Presented at 26th AIAA Fluid Dynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2250.  
 Organization DF RTOP 505-59-50
- 58 Hou, G. J.; Korivi, V. M.; Taylor, A. C., III; Maroju, V.; and Newman, P. A.: Simultaneous Aerodynamic Analysis and Design Optimization (SAADO) of Turbulent Transonic Airfoil Using a Navier-Stokes Code With Automatic Differentiation (ADIFOR). Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California.  
 Organization DF RTOP 505-59-53
- 59 Hou, G. J.; Maroju, V.; Taylor, A. C., III; Korivi, V. M.; and Newman, P. A.: Transonic Turbulent Airfoil Design Optimization With Automatic Differentiation in Incremental Iterative Forms. Presented at 12th AIAA Computational Fluid Dynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1692.  
 Organization DF RTOP 505-59-53

- 60 Huebner, L. D.: Computational Inlet-Fairing Effects and Plume Characterization on a Hypersonic Powered Model. *Journal of Aircraft*, Volume 32, No. 6, November-December 1995, p. 1240.  
 Organization DG RTOP 466-02-01
- 61 Huebner, L. D.; Mitchell, A. M.; and Boudreaux, E. J.: Experimental Results on the Feasibility of an Aerospike for Hypersonic Missiles. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0737.  
 Organization DG RTOP 505-70-62
- 62 Hunter, C. A.: *An Approximate Theoretical Method for Modeling the Static Thrust Performance of Non-Axisymmetric Two-Dimensional Convergent-Divergent Nozzles.* (NCC1-14 and NCC1-24 George Washington University, JIAFS.) NASA CR-195050, March 1995, 50 p.  
 Organization DA RTOP 537-07-20
- 63 Jones, K. M.; and Whitlock, M.: Application of a Navier-Stokes Solver to the Analysis of Multielement Airfoils and Wings Using Multizonal Grid Techniques. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1855.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-1855.ps.Z>  
 Organization DA RTOP 505-59-10
- 64 Joslin, R. D.; and Grosch, C. E.: Growth Characteristics Downstream of a Shallow Bump: Computation and Experiment. *Physics of Fluids*, Volume 7, No. 12, December 1995, p. 3042-3047.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-pf-95-v7n12rdj.ps.Z>  
 Organization DF RTOP 505-59-50
- 65 Joslin, R. D.; Hanebutte, U. R.; and Zubair, M.: Scalability of Parallel Spatial Direct Numerical Simulations on Intel Hypercube and IBM SP1 and SP2. *Journal of Scientific Computing*, Volume 10, No. 2, June 1995, p. 233-269.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-jsc-95-v10n2rdj.ps.Z>  
 Organization DF RTOP 505-59-50
- 66 Joslin, R. D.; Nicolaides, R. A.; Erlebacher, G.; Hussaini, M. Y.; and Gunzburger, M. D.: Active Control of Boundary-Layer Instabilities: Use of Sensors and Spectral Controller. *AIAA Journal*, Volume 33, No. 8, August 1995, p. 1521-1523.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-aiaaj-v33n8rdj.ps.Z>  
 Organization DF RTOP 505-59-50
- 67 Kandil, O. A.; Sharaf El-Din, H. H.; and Liu, C. H.: Three Dimensional Solution of Pneumatic Active Control of Forebody Vortex Asymmetry. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0101.  
 Organization DF RTOP 505-59-53
- 68 Kandil, O. A.; Wong, T-C.; Adam, I.; and Liu, C. H.: Prediction of Near- and Far-Field Vortex-Wake Turbulent Flows. Presented at AIAA Atmospheric Flight Mechanics Conference, August 7-9, 1995, Baltimore, Maryland. AIAA Paper No. 95-3470-CP.  
 Organization DF RTOP 505-59-53

- 69 Kinard, T. A.; Harris, B. W.; and Raj, P.: *An Assessment of Viscous Effects in Computational Simulation of Benign and Burst Vortex Flows on Generic Fighter Wind-Tunnel Models Using TEAM Code*. (NAS1-19000 Lockheed Aeronautical Systems Company.) NASA CR-4650, March 1995, 82 p.  
 Organization DA RTOP 505-68-30
- 70 Kumar, A.: Shock-Induced Combustion. Presented at Conference and Workshop on High-Speed Flow Fields, November 6-9, 1995, Houston, Texas.  
 Organization DG RTOP 242-80-01
- 71 Kuruvila, G.; Ta'asan, S.; and Salas, M. D.: Airfoil Design and Optimization by the *One-Shot* Method. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0478.  
 Organization DF RTOP 509-10-11
- 72 Lamar, J. E.: Vapor-Screen Determined Quantifiable Vortex Features of F-106B Aircraft at Subsonic Speeds. Presented at 7th International Symposium on Flow Visualization, September 11-14, 1995, Seattle, Washington. In Proceedings, Volume 7, p. 270-277.  
 Organization DC RTOP 505-68-20
- 73 Lamar, J. E.: Subsonic and Transonic Vortex Features on an F-106B Aircraft. Presented at Second International Workshop on Vortex Flows and Related Numerical Methods, August 20-24, 1995, Montreal, Canada.  
 Organization DC RTOP 505-68-70
- 74 Lamar, J. E.; Brandon, J. M.; and Johnson, T. D., Jr.: Quantifiable Vortex Features of F-106B Aircraft at Subsonic Speeds. *Journal of Aircraft*, Volume 32, No. 3, May-June 1995, p. 464-470.  
 Organization DC RTOP 505-68-20
- 75 Lamar, J. E.; and Hodges, W. T.: Computing Trimmed, Mean-Camber Surfaces at Minimum Drag. Computer Program LAR-15160.  
 Organization DA
- 76 Lamb, M.: *Internal Performance Characteristics of Thrust-Vectored Axisymmetric Ejector Nozzles*. NASA TM-4610, March 1995, 225 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm4610.ps.Z>  
 Organization DA RTOP 505-59-30
- 77 Lee-Rausch, E. M.; and Batina, J. T.: Wing Flutter Boundary Prediction Using an Unsteady Euler Aerodynamic Method. *Journal of Aircraft*, Volume 32, No. 2, March-April 1995, p. 416-422.  
 Organization DS RTOP 505-63-50
- 78 Lin, J. C.; and Dominik, C. J.: Optimization of an Advanced Design Three-Element Airfoil at High Reynolds Numbers. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1858.  
 Organization DF RTOP 505-59-10
- 79 Melson, N. D.; and Sanetrik, M. D.: Multigrid Acceleration of Time-Accurate Navier-Stokes Calculations. Presented at Copper Mountain Conference on Multigrid Methods, April 2-7, 1995, Copper Mountain, Colorado. In Proceedings.  
 Organization DF RTOP 505-59-53

- 80 Miley, S. J.; Van Dam, C. P.; Yip, L. P.; Willard, P. E.; Crowder, J. P.; and Watzlavick, R. L.: Slat Transition Characteristics on the NASA B737-100 Aircraft Using Infrared Imaging and Hot-Film Anemometry. Presented at 7th International Symposium on Flow Visualization, September 11-14, 1995, Seattle, Washington. In Proceedings, Volume 7, p. 950-956.  
 Organization DC RTOP 505-59-10
- 81 Mineck, R. E.: *Study of Potential Aerodynamic Benefits From Spanwise Blowing at Wingtip*. NASA TP-3515, June 1995, 100 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3515.ps.Z>  
 Organization DA RTOP 505-59-10
- 82 Morello, S. A.: NASA Programs for Aircraft Airframes. Presented at SAE Aerotech '95, September 18-22, 1995, Los Angeles, California.  
 Organization BB RTOP 510-02-13
- 83 Naik, D. A.; Krist, S. E.; Campbell, R. L.; Vatsa, V. N.; Buning, P. G.; and Gea, L.-M.: Inverse Design of Nacelles Using Multi-Block Navier Stokes Codes. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1820.  
<http://techreports.larc.nasa.gov/ltrs/papers/aiaa-95-1820/aiaa-95-1820.html>  
 Organization DA RTOP 538-05-13
- 84 Newman, P. A.; Hou, G. J.; and Taylor, A. C., III: Observations Regarding Use of Advanced CFD Analysis, Sensitivity Analysis, and Design Codes in MDO. Presented at ICASE/LaRC Workshop in Multidisciplinary Design Optimization (MDO), March 13-16, 1995, Hampton, Virginia. In Proceedings.  
 Organization DF RTOP 505-59-53
- 85 Pao, S. P.; and Abdol-Hamid, K. S.: Universal Formulation for Symmetries in Computed Flows. NASA Tech Brief LAR-15148, April 1995.  
 Organization DA
- 86 Pauley, H.; Ralston, J.; and Dickes, E.: *Experimental Study of the Effects of Reynolds Number on High Angle of Attack Aerodynamic Characteristics of Forebodies During Rotary Motion*. (NAS1-20228 Bihrl Applied Research, Inc.) NASA CR-195033, January 1995, 98 p.  
 Organization DC RTOP 505-68-30
- 87 Phillips, W. P.; and Englund, W. C.: Subsonic-to-Hypersonic Aerodynamic Characteristics for a Winged, Circular-Body, Single-Stage-to-Orbit Spacecraft Configuration. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1848.  
 Organization DG RTOP 232-01-04
- 88 Pruet, C. D.: *Simulation of Crossflow Instability on a Supersonic Highly Swept Wing*. (NAS1-19656 College of William and Mary.) NASA CR-198267, October 1995, 38 p.  
 Organization DF RTOP 505-59-50
- 89 Radespiel, R.; and Swanson, R. C., Jr.: Progress With Multigrid Schemes for Hypersonic Flow Problems. *Journal of Computational Physics*, Volume 116, No. 1, January 1995, p. 103-122.  
 Organization DG RTOP 505-62-40

- 90 Rhode, M. N.; Engelund, W. C.; and Mendenhall, M. R.: Experimental Aerodynamic Characteristics of the Pegasus Air-Launched Booster and Comparisons With Predicted and Flight Results. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1830.  
Organization DG RTOP 232-01-04
- 91 Rickard, S. J.; Washburn, A. E.; and Morris, M. J.: Pressure Sensitive Paint Studies of Vortical Flow at Low Speed. Presented at SAE AEROTECH '95 Conference, September 19-21, 1995, Los Angeles, California. SAE Paper No. 951989.  
Organization DC RTOP 505-68-70
- 92 Robinson, D. F.; Harris, J. E.; and Hassan, H. A.: Unified Turbulence Closure Model for Axisymmetric and Planar Free Shear Flows. *AIAA Journal*, Volume 33, No. 12, December 1995, p. 2325.  
Organization DF RTOP 505-70-62
- 93 Robinson, D. F.; Harris, J. E.; and Hassan, H. A.: A Unified Turbulence Closure Model for Axisymmetric and Planar Free Shear Flows. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0360.  
Organization DF RTOP 505-70-62
- 94 Rumsey, C. L.; Sanetrik, M. D.; Biedron, R. T.; Melson, N. D.; and Parlette, E. B.: Efficiency and Accuracy of Time-Accurate Turbulent Navier-Stokes Computations. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1835.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-1835.ps.Z>  
Organization DF RTOP 505-59-53
- 95 Rumsey, C. L.; and Vatsa, V. N.: Comparison of the Predictive Capabilities of Several Turbulence Models. *Journal of Aircraft*, Volume 32, No. 3, May-June 1995, p. 510-514.  
Organization DF RTOP 505-59-53
- 96 Scallion, W. I.: *Performance of an Aerodynamic Yaw Controller Mounted on the Space Shuttle Orbiter Body Flap at Mach 10*. NASA TM-109179, February 1995, 28 p.  
Organization DG RTOP 242-80-01
- 97 Sheplak, M.; Spina, E. F.; and McGinley, C. B.: Dynamic Characterization of a Hot-Film Probe for Hypersonic Flow. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6110.  
Organization DF RTOP 505-59-50
- 98 Singer, B. A.; and Choudhari, M. M.: *Multiple Scales Approach to Weakly Nonparallel and Curvature Effects: Details for the Novice*. (NAS1-20059 High Technology Corporation.) NASA CR-198199, August 1995, 10 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198199.ps.Z>  
Organization DF RTOP 505-59-50
- 99 Singer, B. A.; Choudhari, M. M.; and Li, F.: *Weakly Nonparallel and Curvature Effects on Stationary Crossflow Instability: Comparison of Results From Multiple-Scales Analysis and Parabolized Stability Equations*. (NAS1-20059 High Technology Corporation.) NASA CR-198200, August 1995, 9 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198200.ps.Z>  
Organization DF RTOP 505-59-50



- 100 Smith, L. A.; Campbell, R. L.; and Krist, S. E.: Automated Design of Complex Configurations at Transonic Speeds. Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California. In Proceedings.  
Organization DA RTOP 505-59-10
- 101 So, R. M.; Zhang, H. S.; Gatski, T. B.; and Speziale, C. G.: On Logarithmic Laws for Compressible Turbulent Boundary Layers. *AIAA Journal*, Volume 32, No. 11, 1994, p. 2162-2168.  
Organization DF RTOP 505-59-50
- 102 Sommer, T. P.; So, R. M.; and Gatski, T. B.: Verification of Morkovin's Hypothesis for the Compressible Turbulence Field Using Direct Numerical Simulation Data. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0859.  
Organization DF RTOP 505-59-53
- 103 Spall, R. E.; and Gatski, T. B.: Numerical Calculations of Three-Dimensional Turbulent Vortex Breakdown. *International Journal for Numerical Methods in Fluids*, Volume 20, 1995, p. 307-318.  
Organization DF RTOP 505-59-50
- 104 Spencer, B., Jr.; Fox, C. H., Jr.; and Huffman, J. K.: *A Study to Determine Methods of Improving the Subsonic Performance of a Proposed Personnel Launch System (PLS) Concept*. NASA TM-110201, December 1995, 81 p.  
Organization DG RTOP 242-20-08
- 105 Stallings, R. L., Jr.; Plentovich, E. B.; Tracy, M. B.; and Hemsch, M. J.: *Measurements of Store Forces and Moments and Cavity Pressures for a Generic Store In and Near a Box Cavity at Subsonic and Transonic Speeds*. NASA TM-4611, May 1995, 175 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4611.ps.Z>  
Organization DA RTOP 505-68-70
- 106 Streett, C. L.: Computation of Wave Packets in Swept-Wing Flows. Presented at IUTAM Symposium on Nonlinear Instability and Transition in 3-D Boundary Layers, July 17-20, 1995, Manchester, United Kingdom.  
Organization DF RTOP 505-59-50
- 107 Tatum, K. E.; and Huebner, L. D.: Exhaust Gas Modeling Effects on Hypersonic Powered Simulation at Mach 10. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6068.  
Organization DG RTOP 505-70-62
- 108 Thomas, J. L.: A Perspective of Computational Fluid Dynamics Research at NASA. Presented at International Conference on Numerical Methods for Fluid Dynamics, April 3-6, 1995, Oxford, England.  
Organization DF RTOP 505-59-53
- 109 Thomas, J. L.; and Anderson, W. K.: Computational Aerodynamics Based on the Euler Equations. *AGARDograph 325*, Volume AG-325, J. W. Sloof and W. Schmidt, eds., September 1994, p. 143-233.  
Organization DF RTOP 505-59-53

- 110 Treiber, D. A.; and Muilenburg, D. A.: *Euler Technology Assessment for Preliminary Aircraft Design Employing OVERFLOW Code With Multiblock Structured-Grid Method*. (NAS1-18762 Boeing Defense & Space Group.) NASA CR-4651, March 1995, 66 p.  
 Organization DA RTOP 505-68-30
- 111 Van Dam, C. P.; Los, S. M.; Miley, S. J.; Yip, L. P.; Banks, D. W.; Roback, V. E.; and Bertelrud, A.: Analysis of In-Flight Boundary-Layer State Measurements on a Subsonic Transport Wing in High-Lift Configuration. Presented at 1st AIAA Aircraft Engineering, Technology, and Operations Congress, September 19-21, 1995, Los Angeles, California. AIAA Paper No. 95-3911.  
 Organization DC RTOP 505-59-10
- 112 Vatsa, V. N.: Evaluation of a Multigrid-Based Navier-Stokes Solver for Aerothermodynamic Computations. *Journal of Spacecraft and Rockets*, Volume 32, No. 2, March—April 1995, p. 193-199.  
 Organization DF RTOP 505-59-53
- 113 Vatsa, V. N.; Sanetrik, M. D.; and Parlette, E. B.: Block-Structured Grids for Complex Aerodynamic Configurations: Current Status. Presented at Workshop on Surface Modeling, Grid Generation, and Related Issues in CFD, May 9-11, 1995, Cleveland, Ohio.  
 Organization DF RTOP 505-59-53
- 114 Verhaagen, N. G.; Jenkins, L. N.; Kern, S. B.; and Washburn, A. E.: A Study of the Vortex Flow Over a 76/40-deg Double-Delta Wing. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0650.  
 Organization DF RTOP 505-59-53
- 115 Wahls, R. A.; Adcock, J. B.; Witkowski, D. P.; and Wright, F. L.: *A Longitudinal Aerodynamic Data Repeatability Study for a Commercial Transport Model Test in the National Transonic Facility*. NASA TP-3522, August 1995, 91 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3522.ps.Z>  
 Organization DA RTOP 505-59-10
- 116 Walsh, J. L.; and Young, K. C.: Automatic Differentiation Evaluated as a Tool for Rotorcraft Design and Optimization. Presented at American Helicopter Society National Technical Specialists' Meeting, October 30–November 2, 1995, Williamsburg, Virginia. In Proceedings.  
 Organization DF RTOP 505-63-36
- 117 Warren, E. S.; Harris, J. E.; and Hassan, H. A.: Transition Model for High-Speed Flow. *AIAA Journal*, Volume 33, No. 8, August 1995, p. 1391.  
 Organization DF RTOP 537-03-23
- 118 Watson, W. R.; Jones, M. G.; Tanner, S. E.; and Parrott, T. L.: Validation of a Propagation Model Method for Determining Liner Impedance. Presented at ASME Symposium on Turbomachinery Noise, November 12-17, 1995, San Francisco, California.  
 Organization DF RTOP 505-59-52
- 119 Weilmuenster, K. J.; Gnoffo, P. A.; Greene, F. A.; Riley, C. J.; Hamilton, H. H., II; and Alter, S. J.: Hypersonic Aerodynamic Characteristics of a Proposed Single-Stage-to-Orbit Vehicle. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1850.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-1850.ps.Z>  
 Organization DG RTOP 232-01-04

- 120 Wilcox, F. J., Jr.: *Separation Characteristics of Generic Stores From Lee Side of Inclined Flat Plate at Mach 6*. NASA TM-4652, May 1995, 44 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4652.ps.Z  
Organization DA RTOP 505-59-30
- 121 Wing, D. J.: *Afterbody/Nozzle Pressure Distributions of a Twin-Tail Twin-Engine Fighter With Axisymmetric Nozzles at Mach Numbers From 0.6 to 1.2*. NASA TP-3509, May 1995, 212 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3509.ps.Z  
Organization DA RTOP 505-59-30
- 122 Wing, D. J.: Twin Engine Afterbody Model. In *A Selection of Experimental Test Cases for the Validation of CFD Codes*, Volume 2, August 1994, p. E4-1-E4-17.  
Organization DA RTOP 505-62-30
- 123 Wlezien, R. W.: Measurement of Boundary Layer Receptivity: Challenges and Frontiers. Presented at ASME Fluids Engineering Conference, August 14-18, 1995, Hilton Head, South Carolina. In Proceedings.  
Organization DF RTOP 505-59-50
- 124 Woods, W. C.; and Merski, N. R.: Aerodynamic Characteristics of a Vertical Takeoff Vertical Landing (VTVL) Single Stage to Orbit Vehicle From  $M_\infty = 0.1$  to 10. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1828.  
Organization DG RTOP 232-01-04
- 125 Yip, L. P.; Van Dam, C. P.; Whitehead, J. H.; Hardin, J. D.; Miley, S. J.; Potter, R. C.; Bertelrud, A.; Edge, D. C.; and Willard, P. E.: The NASA B737-100 High-Lift Flight Research Program—Measurements and Computations. Presented at CEAS (Confederation of European Aerospace Societies) European Forum High-Lift and Separation Control, March 29-31, 1995, Bath, United Kingdom. In Proceedings.  
Organization DC RTOP 505-59-10
- 126 Yip, L. P.; Vijgen, P. M.; Hardin, J. D.; and Van Dam, C. P.: In-Flight Pressure Measurements on a Subsonic Transport High-Lift Wing Section. *Journal of Aircraft*, Volume 32, No. 3, May-June 1995, p. 529-538.  
Organization DC RTOP 505-59-10

### Category 03 Air Transportation and Safety

- 127 Abbott, T. S.: The Evaluation of Two CDU Concepts and Their Effects on FMS Training. Presented at The Eighth International Symposium on Aviation Psychology, April 23-27, 1995, Columbus, Ohio. In Proceedings.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ijap-95-tsa.ps.Z  
Organization DC RTOP 537-08-21
- 128 Harvey, W. D.: *Aviation System Capacity Improvements Through Technology*. NASA TM-109165, March 1995, 81 p.  
Organization BA RTOP 505-69-20

- 129 Hinton, D. A.: *Aircraft Vortex Spacing System (AVOSS) Conceptual Design*. NASA TM-110184, August 1995, 27 p.  
Organization DC RTOP 538-04-14
- 130 Jones, D. R.; and Young, S. D.: Flight Demonstration of Integrated Airport Surface Automation Concepts. Presented at 14th Digital Avionics Systems Conference and Technical Display, November 5-9, 1995, Cambridge, Massachusetts. In Proceedings, p. 77-82.  
Organization DI RTOP 538-04-30
- 131 Oseguera, R. M.; and Williams, D. H.: Flight Evaluation of the CTAS Descent Advisor Trajectory Prediction. Presented at 1995 American Control Conference, June 21-23, 1995, Seattle, Washington. In Proceedings, Volume 5/6, p. 3435-3439.  
Organization DC RTOP 538-04-11
- 132 Proctor, F. H.; Bracalente, E. M.; Harrah, S. D.; Switzer, G. F.; and Britt, C. L., Jr.: Simulation of the 1994 Charlotte Microburst With Look-Ahead Windshear Radar. Presented at 27th Conference on Radar Meteorology, October 9-13, 1995, Vail, Colorado. In Proceedings, p. 530-532.  
Organization DC RTOP 538-04-14
- 133 Rimbey, P. R.; and Walen, D. B.: *Consistent Approach to Describing Aircraft HIRF Protection*. (NAS1-19360 Boeing Commercial Airplane Group.) NASA CR-195067, March 1995, 93 p.  
Organization DI RTOP 538-01-13
- 134 Tenney, Y. J.; Rogers, W. H.; and Pew, R. W.: *Pilot Opinions on High Level Flight Deck Automation Issues: Toward the Development of a Design Philosophy*. (NAS1-18788 BBN Systems and Technologies.) NASA CR-4669, May 1995, 111 p.  
Organization DC RTOP 505-64-13
- 135 Weinstein, L. M.: Measuring Thickness of Ice When Liquid is Present. NASA Tech Brief LAR-15061, April 1995.  
Organization DF
- 136 Yetter, J. A.: *Why Do Airlines Want and Use Thrust Reversers?—A Compilation of Airline Industry Responses to a Survey Regarding the Use of Thrust Reversers on Commercial Transport Airplanes*. NASA TM-109158, January 1995, 64 p.  
Organization DA RTOP 538-05-13

#### Category 04 Aircraft Communications and Navigation

- 137 Stough, H. P., III: AGATE Flight Systems Work Package Overview. Presented at SAE General, Corporate, & Regional Aviation Meeting & Exposition, May 3-5, 1995, Wichita, Kansas.  
Organization DC RTOP 538-07-11
- 138 Stough, H. P., III; Foote, K.; and Rosback, T.: AGATE and the Cockpit of Tomorrow. Presented at 1995 Experimental Aircraft Association International Fly-In Convention, July 27–August 2, 1995, Oshkosh, Wisconsin.  
Organization DC RTOP 538-07-11

## Category 05 Aircraft Design, Testing and Performance

- 139 Adams, W. M., Jr.; and Christhilf, D. M.: Design and Multifunction Tests of a Frequency Domain-Based Active Flutter Suppression System. *Journal of Aircraft*, Volume 32, No. 1, January–February 1995, p. 52-60.  
Organization DC RTOP 505-64-20
- 140 Bartels, R. E.: Interactive Boundary Layer Computations Using the Improved  $\kappa - \omega$  Turbulence Model. Presented at Ninth International Conference on Numerical Methods for Thermal Problems, July 17-21, 1995, Atlanta, Georgia.  
Organization DS RTOP 505-63-50
- 141 Bartels, R. E.; and Rothmayer, A. P.: An IBL Approach to Multiscaled Shock Induced Oscillation. Presented at 26th AIAA Fluid Dynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2157.  
Organization DS RTOP 505-63-50
- 142 Barthelemy, J-F.; and Hall, L. E.: Automatic Differentiation as a Tool in Engineering Design. *Structural Optimization*, Volume 9, No. 2, April 1995, p. 76-82.  
Organization DS RTOP 505-63-50
- 143 Bement, L. J.; and Schimmel, M. L.: Augmented Shock Wave Severance of Canopies and Metal. Presented at 1995 SAFE Symposium, October 23-25, 1995, Reno, Nevada.  
Organization GK RTOP 297-50-00
- 144 Berry, J. D.: Measurement of Unsteady Flow Characteristics Behind a Model Helicopter Rotor. Presented at American Helicopter Society Northeast Region Specialists Conference on Rotorcraft Aeromechanical Technology, October 11-13, 1995, Bridgeport, Connecticut. In Proceedings, p. 1.20-1.27.  
Organization DA RTOP 505-59-36
- 145 Chaffin, M. S.: *A Guide to the Use of the Pressure Disk Rotor Model as Implemented in INS3D-UP*. (NAS1-19672 ViGYAN, Inc.) NASA CR-4692, September 1995, 25 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr4692.ps.Z>  
Organization DA RTOP 505-59-36
- 146 Dovi, A. R.; Wrenn, G. A.; Barthelemy, J-F.; Coen, P. G.; and Hall, L. E.: Multidisciplinary Design Integration Methodology for a Supersonic Transport Aircraft. *Journal of Aircraft*, Volume 32, No. 2, March–April 1995, p. 290.  
Organization DS RTOP 505-63-50
- 147 Engelbeck, R. M.: *Investigation Into the Impact of Agility in Conceptual Fighter Design*. (NAS1-18762 Boeing Defense & Space Group.) NASA CR-195079, June 1995, 190 p.  
Organization BA RTOP 505-68-70
- 148 Fears, S. P.; Ross, H. M.; and Moul, T. M.: *Low-Speed Wind-Tunnel Investigation of the Stability and Control Characteristics of a Series of Flying Wings With Sweep Angles of 50°*. NASA TM-4640, June 1995, 146 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4640.ps.Z>  
Organization DC RTOP 505-68-30

- 149 Ghee, T. A.; and Elliott, J. W.: The Wake of a Small-Scale Rotor in Forward Flight Using Flow Visualizaton. *Journal of the American Helicopter Society*, Volume 40, No. 3, July 1995, p. 52-65.  
 Organization DA RTOP 505-59-36
- 150 Giles, G. L.: Equivalent Plate Modeling for Conceptual Design of Aircraft Wing Structures. Presented at 1st AIAA Aircraft Engineering, Technology, and Operations Congress, September 19-21, 1995, Los Angeles, California. AIAA Paper No. 95-3945.  
 Organization BA RTOP 505-69-50
- 151 Heeg, J.; McGowan, A. R.; Crawley, E. F.; and Lin, C.: The Piezoelectric Aeroelastic Response Tailoring Investigation. Presented at International Forum on Aeroelasticity and Structural Dynamics 1995, June 26-28, 1995, Manchester, England. In Proceedings, Volume 1.  
 Organization DS RTOP 505-63-50
- 152 Heeg, J.; McGowan, A. R.; Crawley, E. F.; and Lin, C.: The Piezoelectric Aeroelastic Response Tailoring Investigation: Analysis and Open Loop Testing. Presented at 1995 North American Conference on Smart Structures Materials, February 26-March 3, 1995, San Diego, California. In Proceedings.  
 Organization DS RTOP 505-63-50
- 153 Hoadley, S. T.; and McGraw, S. M.: Multiple-Function Digital Controller System for Active Flexible Wing. *Journal of Aircraft*, Volume 32, No. 1, January-February 1995, p. 32-38.  
 Organization DS RTOP 505-63-50
- 154 Hoadley, S. T.; and McGraw, S. M.: Digital Control System for Wind-Tunnel Model. NASA Tech Brief LAR-14778, February 1995.  
 Organization DS
- 155 Jackson, E. B.: Results of a Flight Simulation Software Methods Survey. Presented at AIAA Flight Simulation Technologies Conference, August 7-10, 1995, Baltimore, Maryland. AIAA Paper No. 95-3414-CP.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-3414.ps.Z>  
 Organization DC RTOP 505-64-52
- 156 Kelley, H. L.: Variable-Tilt Helicopter Rotor Mast. NASA Tech Brief LAR-13779, November 1995.  
 Organization BB
- 157 Lin, C.; Crawley, E. F.; and Heeg, J.: Open Loop and Preliminary Closed Loop Results of a Strain Actuated Active Aeroelastic Wing. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1386.  
 Organization DS RTOP 505-63-50
- 158 Logan, T. R.; Abdi, F. F.; and Sobieszczanski-Sobieski, J.: Multilevel Optimization Techniques for Aircraft. In *Advances in Control and Dynamic Systems*, Volume 57, 1993, p. 342-377.  
 Organization DS RTOP 505-63-50
- 159 Mantay, W. R.; and Farley, G. L.: Tailored Precone Rotor. NASA Tech Brief LAR-13878, May 1995.  
 Organization Y

- 160 Morelli, E. A.: *F-18 High Alpha Research Vehicle (HARV) Parameter Identification Flight Test Maneuvers for Optimal Input Design Validation and Lateral Control Effectiveness*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198248, December 1995, 48 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198248.ps.Z  
Organization DC RTOP 505-64-52
- 161 Moul, T. M.; Fears, S. P.; Ross, H. M.; and Foster, J. V.: *Low-Speed Wind-Tunnel Investigation of the Stability and Control Characteristics of a Series of Flying Wings With Sweep Angles of 60°*. NASA TM-4649, August 1995, 156 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4649.ps.Z  
Organization DC RTOP 505-68-30
- 162 Mukhopadhyay, V.: Flutter Suppression Control Law Design and Testing for the Active Flexible Wing. *Journal of Aircraft*, Volume 32, No. 1, January-February 1995, p. 45-51.  
Organization BA RTOP 505-63-50
- 163 Mukhopadhyay, V.: Interactive Flutter Analysis and Parametric Study for Conceptual Wing Design. Presented at 1st AIAA Aircraft Engineering, Technology, and Operations Congress, September 19-21, 1995, Los Angeles, California. AIAA Paper No. 95-3943.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-3943.ps.Z  
Organization BA RTOP 505-90-59
- 164 Noll, T. E.; Perry, B., III; and Kehoe, M. W.: A Quarter Century of NASA Wind-Tunnel and Flight Experiments Involving Aeroservoelasticity. Presented at AGARD SMP Specialists' Meeting on "Advanced Aeroservoelastic Testing and Data Analysis", May 8-12, 1995, Rotterdam, The Netherlands. In Proceedings.  
Organization DS RTOP 505-63-50
- 165 Palmer, M. T.; Rogers, W. H.; Press, H. N.; Latorella, K. A.; and Abbott, T. S.: Summary of a Crew-Centered Flight Deck Design Philosophy for High-Speed Civil Transport (HSCT) Aircraft. Presented at The Eighth International Symposium on Aviation Psychology, April 23-27, 1995, Columbus, Ohio.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ijap-95-mtp.ps.Z  
Organization DC RTOP 537-08-21
- 166 Palmer, M. T.; Rogers, W. H.; Press, H. N.; Latorella, K. A.; and Abbott, T. S.: *A Crew-Centered Flight Deck Design Philosophy for High-Speed Civil Transport (HSCT) Aircraft*. NASA TM-109171, January 1995, 55 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm109171.ps.Z  
Organization DC RTOP 537-08-21
- 167 Parrish, R. V.; Williams, S. P.; and Nold, D. E.: Depth and Size Judgments With Uncollimated and Collimated Stereoscopic Displays. Presented at SID '95 (Society for Information Display) International Symposium Seminar & Exhibition, May 21-26, 1995, Orlando, Florida.  
Organization DC RTOP 537-08-20
- 168 Pearson, A. E.: *Aerodynamic Parameter Estimation Via Fourier Modulating Function Techniques*. (NAG1-1065 Brown University.) NASA CR-4654, April 1995, 45 p.  
Organization DC RTOP 505-64-52
- 169 Pegg, R. J.; Hahne, D. E.; and Cockrell, C. E., Jr.: Low-Speed Wind Tunnel Tests of Two Waverider Configuration Models. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6093.  
Organization J RTOP 505-70-69

- 170 Perry, B., III; Cole, S. R.; and Miller, G. D.: Summary of an Active Flexible Wing Program. *Journal of Aircraft*, Volume 32, No. 1, January–February 1995, p. 10-15.  
Organization DS RTOP 505-63-50
- 171 Piatak, D. J.; Nixon, M. W.; and Kosmatka, J. B.: Stiffness Characteristics of Rotor Blades With Elastic Couplings. Presented at Sixth International Workshop on Dynamics & Aeroelastic Stability of Modeling Rotorcraft Systems, November 8-10, 1995, Los Angeles, California.  
Organization DS RTOP 505-63-36
- 172 Rehder, J. J.; Weston, R. P.; and Townsend, J. C.: Framework for Interdisciplinary Design Optimization (FIDO). Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California.  
Organization D RTOP 509-10-11
- 173 Ross, H. M.; Fears, S. P.; and Moul, T. M.: *Low-Speed Wind-Tunnel Investigation of the Stability and Control Characteristics of a Series of Flying Wings With Sweep Angles of 70°*. NASA TM-4671, September 1995, 141 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4671.ps.Z>  
Organization DC RTOP 505-68-30
- 174 Rudisill, M.: Line Pilots' Attitudes About and Experience With Flight Deck Automation: Results of an International Survey and Proposed Guidelines. Presented at The Eighth International Symposium on Aviation Psychology, April 23-27, 1995, Columbus, Ohio.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ijap-95-mr.ps.Z>  
Organization DC RTOP 537-08-21
- 175 Scott, R. C.; Pototzky, A. S.; and Perry, B., III: Matched Filter and Stochastic Simulation Based Methods of Gust Loads Prediction. *Journal of Aircraft*, Volume 32, No. 5, September–October 1995, p. 1047.  
Organization DS RTOP 505-63-50
- 176 Silva, W. A.; and Bennett, R. M.: Application of Transonic Small Disturbance Theory to the Active Flexible Wing Model. *Journal of Aircraft*, Volume 32, No. 1, January–February 1995, p. 16-22.  
Organization DS RTOP 505-63-50
- 177 Sobieszczanski-Sobieski, J.: Multidisciplinary Design Optimization. In *Monograph on Flight-Vehicle Materials, Structures and Dynamics Technologies*, Volume 6, A. K. Noor, S. L. Venneri, eds., 1995, p. 143-177.  
Organization DS RTOP 505-63-50
- 178 Srinivas, V.; Chopra, I.; and Nixon, M. W.: Aeroelastic Analysis of Advanced Geometry Tiltrotor Aircraft. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1454.  
Organization DS RTOP 505-63-36
- 179 Stockwell, A. E.: *A Verification Procedure for MSC/NASTRAN Finite Element Models*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-4675, June 1995, 24 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr4675.ps.Z>  
Organization DS RTOP 233-01-01



- 180 Striz, A. G.; Wu, Z.; and Sobieszczanski-Sobieski, J.: An Efficiency Study of the Simultaneous Analysis and Design of Structures. Presented at First World Congress of Structural and Multidisciplinary Optimization, May 28–June 2, 1995, Goslar, Germany.  
Organization DS RTOP 505-63-50
- 181 Striz, A. G.; Wu, Z.; and Sobieszczanski-Sobieski, J.: *An Efficiency Study of the Simultaneous Analysis and Design of Structures*. NASA TM-110168, April 1995, 10 p.  
Organization DS RTOP 505-63-50
- 182 Tran, S. Q.: Deposition of Thin-Film Sensors on Glass-Fiber/Epoxy Models. NASA Tech Brief LAR-14591, January 1995.  
Organization GJ
- 183 Walsh, J. L.; Young, K. C.; Pritchard, J. I.; Adelman, H. M.; and Mantay, W. R.: *Integrated Aerodynamic/Dynamic/Structural Optimization of Helicopter Rotor Blades Using Multilevel Decomposition*. NASA TP-3465, ARL-TR-518, January 1995, 50 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3465.ps.Z>  
Organization DS RTOP 505-63-36
- 184 Wang, J. T.; Poe, C. C., Jr.; Ambur, D. R.; and Sleight, D. W.: Residual Strength Prediction of Composite Fuselage Panel With Discrete Source Damage. Presented at Sixth NASA/DoD Advanced Composites Technology Conference, August 7-10, 1995, Anaheim, California. In Proceedings.  
Organization DS RTOP 510-02-12
- 185 Waszak, M. R.; and Srinathkumar, S.: Flutter Suppression for the Active Flexible Wing: A Classical Design. *Journal of Aircraft*, Volume 32, No. 1, January–February 1995, p. 61-67.  
Organization DC RTOP 505-64-20
- 186 Wieseman, C. D.; Hoadley, S. T.; and McGraw, S. M.: On-Line Analysis Capabilities Developed to Support the AFW Wind-Tunnel Tests. *Journal of Aircraft*, Volume 32, No. 1, January-February 1995, p. 39-44.  
Organization DS RTOP 505-63-50
- 187 Williams, S. P.; and Parrish, R. V.: Recent Results From the Army/NASA LaRC Display Technology Program. *Army Aviation Magazine*, June 30, 1992, p. 34-38.  
Organization DC RTOP 505-64-13
- 188 Woods-Vedeler, J. A.; and Pototzky, A. S.: Rolling Maneuver Load Alleviation Using Active Controls. *Journal of Aircraft*, Volume 32, No. 1, January-February 1995, p. 68-76.  
Organization DS RTOP 505-63-50
- 189 Yager, T. J.: The Aircraft Tire Wear Problem. Presented at SAE 1995 Aerospace Atlantic Conference and Exposition, May 23-25, 1995, Dayton, Ohio. SAE Paper No. 951391.  
Organization DS RTOP 505-63-10
- 190 Yager, T. J.: *NASA Tire/Runway Friction Projects*. NASA TM-110186, June 1995, 19 p.  
Organization DS RTOP 505-63-50
- 191 Yager, T. J.: NASA Tire/Runway Friction Projects. Presented at Surface Winter Ice/Snow Control and Friction Testing Workshop (SWIFT), August 21-25, 1995, Winnipeg, Canada. In Proceedings.  
Organization DS RTOP 505-63-50

- 192 Yager, T. J.: Runway Friction. Presented at Aircraft and Airfield Deicing Conference and Exposition, August 27-29, 1995, Washington, DC.  
Organization DS RTOP 505-63-50
- 193 Yager, T. J.: *Soil Runway Friction Evaluation in Support of USAF C-17 Transport Aircraft Operations*. NASA TM-110194, October 1995, 21 p.  
Organization DS RTOP 505-63-50
- 194 Yager, T. J.: Aircraft/Runway Performance Studies. Presented at Flight Safety Foundation's 48th Annual International Air Safety Seminar, November 7-9, 1995, Seattle, Washington.  
Organization DS RTOP 505-63-50
- 195 Yager, T. J.; and Barnes, A. G.: Enhancement of Aircraft Ground Handling Simulation Capability. Presented at Advisory Group for Aerospace Research and Development Flight Mechanics Panel, June 1-30, 1995, Neuilly-Sur-Seine, France.  
Organization DS RTOP 505-63-50
- 196 Yuan, K. A.; and Friedmann, P. P.: *Aeroelasticity and Structural Optimization of Composite Helicopter Rotor Blades With Swept Tips*. (NAG1-833 University of California.) NASA CR-4665, May 1995, 432 p.  
Organization DS RTOP 505-63-36

### Category 07 Aircraft Propulsion and Power

- 197 Albertson, C. W.; and Andrews, E. H.: Mach 4 Tests of a Hydrocarbon-Fueled Subscale Scramjet Engine. Presented at 1995 JANNAF Propulsion and Subcommittee Joint Meeting, December 4-8, 1995, Tampa, Florida.  
Organization DG RTOP 466-02-01
- 198 DeTurreis, D. J.: *Instrumentation Development for Study of Reynolds Analogy in Reacting Flows*. NASA TM-110196, August 1995, 25 p.  
Organization DG RTOP 505-70-62
- 199 Eklund, D. R.; Fletcher, D. G.; Hartfield, R. J., Jr.; Northam, G. B.; and Dancy, C. L.: A Comparative Computational/Experimental Investigation of Mach 2 Flow Over a Rearward-Facing Step. *Computers and Fluids*, Volume 24, No. 5, 1995, p. 593-608.  
Organization DG RTOP 505-70-62
- 200 Emami, S.; Rodi, P. E.; Trexler, C. A.; and Beaulieu, W.: Analysis of Time Accurate Pressure Measurements in a Ramjet/Scramjet Inlet Configuration. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0037.  
Organization DG RTOP 466-02-01
- 201 Emami, S.; Trexler, C. A.; Auslender, A. H.; and Weidner, J. P.: *Experimental Investigation of Inlet-Combustor Isolators for a Dual-Mode Scramjet at a Mach Number of 4*. NASA TP-3502, May 1995, 90 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3502.ps.Z>  
Organization DG RTOP 505-70-62

- 202 Fischer, K. E.; and Rock, K. E.: Calculated Effects of Nitric Oxide Flow Contamination on Scramjet Performance. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-2524.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-2524.ps.Z  
Organization DG RTOP 505-70-62
- 203 Northam, G. B.; Stouffer, S. D.; Haimovitch, Y.; and Eklund, D. R.: Comparison of Wall Mixing Concepts for Scramjet Combustors. Presented at Twelfth International Symposium on Airbreathing Engines, September 10-15, 1995, Melbourne, Australia. In Proceedings, Volume 2, p. 1184-1198.  
Organization DG RTOP 505-59-88
- 204 Riggins, D. W.; McClinton, C. R.; Rogers, R. C.; and Bittner, R. D.: Investigation of Scramjet Injection Strategies for High Mach Number Flows. *Journal of Propulsion and Power*, Volume 11, No. 3, May-June 1995, p. 409.  
Organization J RTOP 505-62-40
- 205 Voland, R. T.; and Rock, K. E.: NASP Concept Demonstration Engine and Subscale Parametric Engine Tests. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6055.  
Organization DG RTOP 505-70-62

### Category 08 Aircraft Stability and Control

- 206 Anderson, M. R.; Suchkov, A. B.; Einthoven, P.; and Waszak, M. R.: Flight Control System Design Risk Assessment. Presented at AIAA Guidance, Navigation and Control Conference, August 7-10, 1995, Baltimore, Maryland. AIAA Paper No. 95-3197.  
Organization DC RTOP 505-64-52
- 207 Brandon, J. M.; Glaab, L. J.; Brown, P. W.; and Phillips, M. R.: Ground-to-Flight Handling Qualities Comparisons for a High Performance Airplane. Presented at AIAA Atmospheric Flight Mechanics Conference, August 7-9, 1995, Baltimore, Maryland. AIAA Paper No. 95-3457.  
Organization DC RTOP 505-68-20
- 208 Buttrill, C. S.; Bacon, B. J.; Heeg, J.; Houck, J. A.; and Wood, D. V.: Simulation and Model Reduction for the Active Flexible Wing Program. *Journal of Aircraft*, Volume 32, No. 1, January-February 1995, p. 23-31.  
Organization DC RTOP 505-64-20
- 209 Clark, J. W.: *Integrated Helmet Mounted Display Concepts for Air Combat*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-198207, September 1995, 21 p.  
Organization DC RTOP 537-08-20
- 210 Fears, S. P.: *Low-Speed Wind-Tunnel Investigation of a Porous Forebody and Nose Strakes for Yaw Control of a Multirole Fighter Aircraft*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-4685, August 1995, 89 p.  
Organization DC RTOP 505-68-30

- 211 Goldthorpe, S. H.; Kernik, A. C.; McBee, L. S.; and Preston, O. W.: *Guidance and Control Requirements for High-Speed Rollout and Turnoff (ROTO)*. (NAS1-19703 McDonnell Douglas Aerospace.) NASA CR-195026, January 1995, 126 p.  
Organization DC RTOP 538-04-13
- 212 Goodrich, K. H.; McManus, J. W.; and Chappell, A. R.: Batch Simulation Environment for Integrated Batch and Piloted Air Combat Simulation Analysis. *Journal of Aircraft*, Volume 32, No. 6, November–December 1995, p. 1263.  
Organization DC RTOP 505-64-30
- 213 Jackson, E. B.: *Manual for a Workstation-Based Generic Flight Simulation Program (LaRC-sim) Version 1.4*. NASA TM-110164, May 1995, 141 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110164.ps.Z>  
Organization DC RTOP 505-64-52
- 214 Jackson, E. B.; Rivers, R. A.; Chowdhry, R. S.; Ragsdale, W. A.; and Geyer, D. W.: Launch Pad Abort of the HL-20 Lifting Body. *Journal of Guidance, Control, and Dynamics*, Volume 18, No. 1, November–December 1994, p. 1345-1349.  
Organization DC RTOP 505-64-52
- 215 Klein, V.; and Noderer, K. D.: *Modeling of Aircraft Unsteady Aerodynamic Characteristics, Part 2—Parameters Estimated From Wind Tunnel Data*. NASA TM-110161, April 1995, 42 p.  
Organization DC RTOP 505-64-52
- 216 Messina, M. D.: *Using the HARV Simulation Aerodynamic Model to Determine Forebody Strake Aerodynamic Coefficients From Flight Data*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198247, December 1995, 16 p.  
Organization DC RTOP 505-68-30
- 217 Messina, M. D.: *Performance Validation of the ANSER Control Laws for the F-18 HARV*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-198196, Part 2, August 1995, 610 p.  
Organization DC RTOP 505-68-30
- 218 Messina, M. D.: *Performance Validation of the ANSER Control Laws for the F-18 HARV*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-198196, Part 1, August 1995, 285 p.  
Organization DC RTOP 505-68-30
- 219 Murri, D. G.; Shah, G. H.; DiCarlo, D. J.; and Trilling, T. W.: Actuated Forebody Strake Controls for the F-18 High-Alpha Research Vehicle. *Journal of Aircraft*, Volume 32, No. 3, May–June 1995, p. 555-562.  
Organization DC RTOP 505-68-30
- 220 Raney, D. L.; Phillips, M. R.; and Person, L. H., Jr.: *Investigation of Piloting Aids for Manual Control of Hypersonic Maneuvers*. NASA TP-3525, October 1995, 64 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3525.ps.Z>  
Organization DC RTOP 505-70-64
- 221 Rash, L. C.: *Divergence of Compound Stings*. (NAS1-19385 Calspan Corporation.) NASA CR-4696, October 1995, 28 p.  
Organization DA RTOP 505-59-85

- 222 Shah, G. H.; and Clemons, S. B.: Parametric Wind-Tunnel Investigation of High-Alpha Aerodynamic and Stability Characteristics of a Prototype F-18E Configuration. Presented at AIAA Atmospheric Flight Mechanics Conference, August 7-9, 1995, Baltimore, Maryland. AIAA Paper No. 95-3503.  
 Organization DC RTOP 505-68-30
- 223 Walker, G. W.: Fuzzy Logic Adaptive Controller for Unmanned Helicopter—A Multi-Platform, Rotary-Winged Aerial Robotic Control System. Presented at Association for Unmanned Vehicle Systems' 1995 Annual Symposium and Exhibition (AUVS-95), July 10-12, 1995, Washington, DC.  
 Organization DA RTOP 505-59-36

### Category 09 Research and Support Facilities (Air)

- 224 Batson, V. M.; and Gupton, L. E.: Ambient-Light Simulator for Testing Cockpit Displays. NASA Tech Brief LAR-14668, February 1995.  
 Organization DC
- 225 Buehrle, R. D.; and Young, C. P., Jr.: Modal Correction Method for Dynamically Induced Errors in Wind Tunnel Model Attitude Measurements. Presented at 13th International Modal Analysis Conference, February 13-16, 1995, Nashville, Tennessee. In Proceedings, Volume II, p. 1708-1714.  
 Organization GK RTOP 505-59-85
- 226 Buehrle, R. D.; Young, C. P., Jr.; Burner, A. W.; Tripp, J. S.; Tchong, P.; Finley, T. D.; and Popernack, T. G., Jr.: *Dynamic Response Tests of Inertial and Optical Wind-Tunnel Model Attitude Measurement Devices*. NASA TM-109182, February 1995, 43 p.  
 Organization GK RTOP 505-59-54
- 227 Capone, F. J.; Bangert, L. S.; Asbury, S. C.; Mills, C. T.; and Bare, E. A.: *The NASA Langley 16-Foot Transonic Tunnel—Historical Overview, Facility Description, Calibration, Flow Characteristics, and Test Capabilities*. NASA TP-3521, September 1995, 202 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3521.ps.Z>  
 Organization DA RTOP 505-59-30
- 228 Jagharghi, A. J.; Cler, D. L.; Erickson, G. E.; Gibson, L. S.; Mitchell, M.; Lamb, M.; Farokhi, S.; Taghavi, R. R.; and Hazelwood, R. N.: Application of Pressure Sensitive Paint to Measurement of Global Surface Pressure for a Convergent-Divergent Nozzle and an Isolated Double Delta Wing at Transonic Speeds. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0639.  
 Organization DA RTOP 307-50-14
- 229 Micol, J. R.: Hypersonic Aerodynamic/Aerothermodynamic Testing Capabilities at Langley Research Center: Aerothermodynamic Facilities Complex. Presented at AIAA 30th Thermophysics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2107.  
 Organization DG RTOP 232-01-04
- 230 Mineck, R. E.; Owens, L. R., Jr.; Wahls, R. A.; and Hannon, J. A.: *Computer Model To Simulate Testing at the National Transonic Facility*. NASA TM-4664, August 1995, 44 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4664.ps.Z>  
 Organization DA RTOP 505-59-10

- 231 Motter, M. A.; and Principe, J. C.: Classification and Prediction of Wind Tunnel Mach Number Responses Using Both Competitive and Gamma Neural Networks. Presented at World Congress on Neural Networks, July 17-21, 1995, Washington, DC. In Proceedings. <ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-wcnn-95-mam.ps.Z>  
 Organization GG RTOP 505-59-54
- 232 Young, C. P., Jr.; Balakrishna, S.; and Kilgore, W. A.: *Development of a Model Protection and Dynamic Response Monitoring System for the National Transonic Facility*. (NCC1-141 North Carolina State University.) NASA CR-195041, February 1995, 29 p.  
 Organization DA RTOP 505-59-85

## Astronautics

### Category 13 Astrodynamics

- 233 Desai, P. N.; and Tartabini, P. V.: Effect of Departure Delays on Manned Mars Mission Selection. *Journal of Spacecraft and Rockets*, Volume 32, No. 2, March-April 1995, p. 250-256.  
 Organization DS RTOP 506-42-11
- 234 Montgomery, R. C.; Tobbe, P. A.; Weathers, J. M.; and Lindsay, T. S.: Simulation and Testing of a Robotic Manipulator Testbed. Presented at Tenth VPI&SU Symposium on Structural Dynamics and Control, May 8-10, 1995, Blacksburg, Virginia. In Proceedings.  
 Organization DC RTOP 233-03-03
- 235 Tartabini, P. V.; Braun, R. D.; and Chowdhry, R. S.: A Comparison of Direct Trajectory Optimization Techniques: Collocation vs. Numerical Integration. Presented at AIAA Atmospheric Flight Mechanics Conference, August 7-9, 1995, Baltimore, Maryland. AIAA Paper No. 95-3481.  
 Organization CB RTOP 242-20-08
- 236 Wilson, J. C.: Litter-Spinning Retarders. NASA Tech Brief LAR-14558, January 1995.  
 Organization DA

### Category 15 Launch Vehicles and Space Vehicles

- 237 Braun, R. D.; Powell, R. W.; Engelund, W. C.; Gnoffo, P. A.; Weilmuenster, K. J.; and Mitcheltree, R. A.: Mars Pathfinder Six-Degree-of-Freedom Entry Analysis. *Journal of Spacecraft and Rockets*, Volume 32, No. 6, November-December 1995, p. 993.  
 Organization CB RTOP 232-01-06
- 238 Braun, R. D.; Powell, R. W.; Engelund, W. C.; Gnoffo, P. A.; Weilmuenster, K. J.; and Mitcheltree, R. A.: Six-Degree-of-Freedom Atmospheric Entry Analysis for the Mars Pathfinder Mission. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0456.  
 Organization CB RTOP 232-01-06

- 239 Braun, R. D.; Powell, R. W.; Lepsch, R. A., Jr.; Stanley, D. O.; and Kroo, I. M.: Comparison of Two Multidisciplinary Optimization Strategies for Launch Vehicle Design. *Journal of Spacecraft and Rockets*, Volume 32, No. 3, May–June 1995, p. 404-410.  
Organization CB RTOP 232-01-06
- 240 Eldred, C. H.: Design Strategies for a Winged-Body Rocket SSTO. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0275.  
Organization CB RTOP 242-20-08
- 241 Freeman, D. C., Jr.; Talay, T. A.; Stanley, D. O.; and Wilhite, A. W.: Design Options for Advanced Manned Launch Systems. *Journal of Spacecraft and Rockets*, Volume 32, No. 2, March–April 1995, p. 250.  
Organization DG RTOP 967-10-10
- 242 Katzberg, S. J.; and Garrison, J. L., Jr. (Compilers): *Prospects for Commercialization of SELV-Based In-Space Operations*. NASA CP-10179, September 1995, 470 p.  
Organization CB RTOP 477-40-00
- 243 Lyon, J. A.: *Abort Performance for a Winged-Body Single-Stage to Orbit Vehicle*. (NCC1-104 George Washington University, JIAFS.) NASA CR-4690, August 1995, 83 p.  
Organization DC RTOP 242-80-01
- 244 Markopoulos, N.; and Calise, A. J.: *Analytical Investigations in Aircraft and Spacecraft Trajectory Optimization and Optimal Guidance*. (NAG1-922 and NAG1-1257 Georgia Institute of Technology.) NASA CR-4672, May 1995, 187 p.  
Organization DC RTOP 242-80-01
- 245 Morris, W. D.; White, N. H.; Davis, W. T.; and Ebeling, C. E.: Defining Support Requirements During Conceptual Design of Reusable Launch Vehicles. Presented at 1995 AIAA Space Programs and Technologies Conference and Exhibit, September 26-28, 1995, Huntsville, Alabama. AIAA Paper No. 95-3619.  
Organization CB RTOP 242-20-08
- 246 Queen, E. M.; and Thompson, A.: Effect of Payload on Risk of Vehicle Loss Due to Engine Failure. *Journal of Spacecraft and Rockets*, Volume 32, No. 3, May–June 1995, p. 566-568.  
Organization DC RTOP 232-01-04
- 247 Swaminathan, P. K.; Rault, D. F.; Taylor, J. C.; Erlandson, R. E.; Kouroupis, J.; and Meng, C. I.: Transition Regime Aerodynamic Heating of Missiles. Presented at AIAA 30th Thermophysics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2117.  
Organization DG RTOP 242-80-01

## Category 16 Space Transportation

- 248 Calise, A. J.; and Leung, M. S.: *Optimal Guidance Law Development for an Advanced Launch System*. (NAG1-939 Georgia Institute of Technology.) NASA CR-4667, April 1995, 107 p.  
Organization DC RTOP 232-01-04

- 249 Freeman, D. C., Jr.; Austin, R. E.; and Talay, T. A.: Single-Stage-to-Orbit—Meeting the Challenge. Presented at 46th International Astronautical Federation Congress, October 2-6, 1995, Oslo, Norway. IAF Paper No. 95-V.5.07.  
 Organization BB RTOP 242-20-08
- 250 Moore, A. A.; Braun, R. D.; and Powell, R. W.: The Infusion of Cost Into the Multidisciplinary Design of Space Transportation Systems. Presented at 17th Annual Conference of the International Society of Parametric Analysts (ISPA), May 30–June 2, 1995, San Diego, California. In Proceedings.  
 Organization CB RTOP 242-10-01
- 251 Shannon, D. T., Jr.; and Klich, P. J.: *Shuttle to Space Station Transfer of the Materials Exposure Facility*. NASA TM-110156, March 1995, 25 p.  
 Organization CB RTOP 963-89-00
- 252 Spencer, D. A.; and Braun, R. D.: Mars Pathfinder Entry Trajectory Design Using a Monte Carlo Approach. Presented at AAS/AIAA Astrodynamics Specialist Conference, August 14-17, 1995, Halifax, Nova Scotia. AAS Paper No. 95-379.  
 Organization CB RTOP 242-10-01
- 253 Unal, R.; Bush, L. B.; Ball, J. M.; and Lindegren, K. R.: Aerobrake Parametric Optimization Study. *Journal of Parametrics*, Volume 13, No. 1, May 1993, p. 51-65.  
 Organization E RTOP 593-11-11

**Category 17 Space Communications, Spacecraft Communications,  
 Command and Tracking**

- 254 Bailey, M. C.; Cockrell, C. R.; and Staton, L. D.: Electronic Compensation for Distortion of Antenna Reflector. NASA Tech Brief LAR-14461, January 1995.  
 Organization DI
- 255 Cravey, R. L.; Blume, H-J.; Harrington, R. F.; Hearn, C. P.; Scherner, M. J.; and Schroeder, L. C.: Electromagnetic Losses in Metallized Thin Films for Inflatable Radiometer Applications. Presented at 1995 AIAA Space Programs and Technologies Conference and Exhibit, September 26-28, 1995, Huntsville, Alabama. AIAA Paper No. 95-3741.  
 Organization DI RTOP 233-01-01
- 256 Deshpande, M. D.; and Reddy, C. J.: *Electromagnetic Scattering From a Rectangular Cavity Recessed in a 3-D Conducting Surface*. (NAS1-19341 ViGYAN, Inc.) NASA CR-4697, October 1995, 46 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr4697.ps.Z>  
 Organization DI RTOP 505-64-52
- 257 Reddy, C. J.; Deshpande, M. D.; Cockrell, C. R.; and Beck, F. B.: Finite Element Analysis of Cavity Backed Apertures in Three Dimensional Bodies. Presented at 1995 IEEE AP-S International Symposium and USNC/URSI Radio Science Meeting, June 18-23, 1995, Newport Beach, California. In URSI Digest, p. 91.  
 Organization DI RTOP 505-64-70



- 258 Reddy, C. J.; Deshpande, M. D.; Cockrell, C. R.; and Beck, F. B.: *Analysis of Three-Dimensional-Cavity-Backed Aperture Antennas Using a Combined Finite Element Method/Method of Moments/Geometrical Theory of Diffraction Technique*. NASA TP-3548, November 1995, 26 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3548.ps.Z>  
 Organization DI RTOP 505-64-70
- 259 Schroeder, L. C.; Cravey, R. L.; Scherner, M. J.; Hearn, C. P.; and Blume, H-J.: *Emissivity Measurements in Thin Metallized Membrane Reflectors Used for Microwave Radiometer Sensors*. NASA TM-110179, June 1995, 41 p.  
 Organization DI RTOP 233-01-03

### Category 18 Spacecraft Design, Testing and Performance

- 260 Armstrong, E. S.: Coprime Factorization Approach to Robust Stabilization of Control Structures Interaction Evolutionary Model. *Journal of Guidance, Control, and Dynamics*, Volume 17, No. 5, September–October 1994, p. 935-941.  
 Organization DC RTOP 585-03-11
- 261 Bement, L. J.; and Schimmel, M. L.: *A Manual for Pyrotechnic Design, Development and Qualification*. NASA TM-110172, June 1995, 81 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110172.ps.Z>  
 Organization GK RTOP 297-50-00
- 262 Bourassa, R. J.; Gillis, J. R.; and Gruenbaum, P. E.: *Operation of the Computer Model for Microenvironment Atomic Oxygen Exposure*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-198190, August 1995, 162 p.  
 Organization CE RTOP 233-03-02
- 263 Bourassa, R. J.; Gruenbaum, P. E.; Gillis, J. R.; and Hargraves, C. R.: *Operation of the Computer Model for Direct Atomic Oxygen Exposure of Earth Satellites*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-198188, August 1995, 117 p.  
 Organization CE RTOP 233-03-02
- 264 Brewer, L. M.; Cirillo, W. M.; Cruz, J. N.; Hall, J. B., Jr.; Troutman, P. A.; Monell, D. W.; Garn, M. A.; Heck, M. L.; Kumar, R. R.; Llewellyn, C. P.; Mazanek, D.; and Sinha, R.: *Alternate Assembly Sequence Databook for the Tier 2 Bus-1 Option of the International Space Station*. NASA TM-110198, August 1995, 412 p.  
 Organization CB RTOP 478-87-00
- 265 Chern, H-S.: *An Open Loop Guidance Architecture for Navigationally Robust On-Orbit Docking*. (NCC1-104 George Washington University, JIAFS.) NASA CR-4687, August 1995, 82 p.  
 Organization DC RTOP 242-80-01
- 266 Collins, T. J.; Fichter, W. B.; Adams, R. R.; and Javeed, M. A.: *Structural Analysis and Testing of an Erectable Truss for Precision Segmented Reflector Application*. NASA TP-3518, July 1995, 39 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3518.ps.Z>  
 Organization DS RTOP 233-01-01

- 267 Demeo, M. E.; Gilbert, M. G.; Scott, M. A.; Lepanto, J. A.; Bains, E. M.; and Jensen, M. C.: Human-in-the-Loop Evaluation of Remote Manipulator System Active Damping Augmentation. *Journal of Guidance, Control, and Dynamics*, Volume 18, No. 4, July–August 1995, p. 689.  
 Organization DS RTOP 506-43-41
- 268 Dursch, H. W.; Bohnhoff-Hlavacek, G. L.; Blue, M. D.; and Hansen, P.: *Analysis of Systems Hardware Flown on LDEF—New Findings and Comparison to Other Retrieved Spacecraft Hardware*. (NAS1-19247 Boeing Defense & Space Group.) NASA CR-4693, September 1995, 106 p.  
 Organization CE RTOP 233-03-02
- 269 Fisher, S.; Schultz, K.; and Taylor, L. W., Jr.: Vibrations of the Low Power Atmospheric Compensation Experiment Satellite. *Journal of Guidance, Control, and Dynamics*, Volume 18, No. 4, July–August 1995, p. 650.  
 Organization DC RTOP 585-03-11
- 270 Gilbert, M. G.; Welch, S. S.; and Moore, C. L.: The Photogrammetric Appendage Structural Dynamics Experiment. Presented at 1995 Shuttle Small Payloads Conference, September 25-28, 1995, Baltimore, Maryland. In NASA CP-3310, p. 73-82.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ssps-95-mgg.ps.Z>  
 Organization DS RTOP 233-01-01
- 271 Gillis, J. R.; Bourassa, R. J.; and Gruenbaum, P. E.: *Operation of the Computer Model for Microenvironment Solar Exposure*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-198189, August 1995, 166 p.  
 Organization CE RTOP 233-03-02
- 272 Gillis, J. R.; Pippin, H. G.; Bourassa, R. J.; and Gruenbaum, P. E.: *Calculated Values of Atomic Oxygen Fluences and Solar Exposure on Selected Surfaces of LDEF*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-198191, August 1995, 98 p.  
 Organization CE RTOP 233-03-02
- 273 Gould, D. C.: *A Conceptual Thermal Design Study of an Electronically Scanned Thinned Array Radiometer*. NASA TM-110173, May 1995, 12 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110173.ps.Z>  
 Organization GK RTOP 233-01-06
- 274 Gronet, M. J.; Jensen, G. A.; and Hoskins, J. W.: *Structures and Materials Technology Needs for Communications and Remote Sensing Spacecraft*. (NAS1-19241 Lockheed Missiles & Space Company, Inc.) NASA CR-198166, April 1995, 107 p.  
 Organization DM RTOP 233-01-01
- 275 Hedahl, M. O.; and Wilmoth, R. G.: *Comparisons of the Maxwell and CLL Gas/Surface Interaction Models Using DSMC*. NASA TM-110205, December 1995, 16 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110205.ps.Z>  
 Organization DG RTOP 242-20-08
- 276 Horta, L. G.; Reaves, M. C.; Elliott, K. B.; Belvin, W. K.; and Teter, J. E., Jr.: *Langley's CSI Evolutionary Model: Phase II*. NASA TM-109059, October 1995, 104 p.  
 Organization DS RTOP 233-01-01
- 277 Javed, M. A.; and Russell, J. W.: *Mass Properties Calibration of the NASA Langley Low Frequency Vibration Test Apparatus*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-198208, September 1995, 42 p.  
 Organization CB RTOP 963-89-00

- 278 Joshi, S. M.; Kelkar, A. G.; and Maghami, P. G.: *A Class of Stabilizing Controllers for Flexible Multibody Systems*. NASA TP-3494, May 1995, 43 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3494.ps.Z>  
 Organization DC RTOP 233-01-01
- 279 Kelkar, A. G.; and Joshi, S. M.: Global Stabilization of Multibody Spacecraft Using Quaternion-Based Nonlinear Control Law. Presented at 1995 American Control Conference, June 21-23, 1995, Seattle, Washington. In Proceedings, Volume 5, p. 3612-3615.  
 Organization DC RTOP 590-14-51
- 280 Kelkar, A. G.; Joshi, S. M.; and Alberts, T. E.: Global Asymptotic Stability of Dynamic Dissipative Compensators for Multibody Flexible Space Structures. *IEEE Transactions on Aerospace and Electronic Systems*, Volume 31, No. 4, October 1995, p. 1325-1330.  
 Organization DC RTOP 233-01-01
- 281 Kelkar, A. G.; Joshi, S. M.; and Alberts, T. E.: Dissipative Controllers for Nonlinear Multibody Flexible Space Systems. *Journal of Guidance, Control, and Dynamics*, Volume 18, No. 5, September-October 1995, p. 1044-1052.  
 Organization DC RTOP 233-01-01
- 282 Kelkar, A. G.; Joshi, S. M.; and Alberts, T. E.: Passivity-Based Control of Nonlinear Flexible Multibody Systems. *IEEE Transactions on Automatic Control*, Volume 40, No. 5, May 1995, p. 910-914.  
 Organization DC RTOP 585-03-11
- 283 Larson, C. R.; Woodard, S. E.; Tischner, L.; Tong, E.; Schmidt, M.; Cheng, J.; Fujii, E.; and Ghofranian, S.: Upper Atmosphere Research Satellite (UARS) Dynamic Analysis Design System (DADS) Controls-Structure Interaction Simulation Development. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0622.  
 Organization DS RTOP 233-01-01
- 284 Maghami, P. G.; Joshi, S. M.; and Price, D. B.: Intergrated Controls-Structures Design Methodology For Flexible Spacecraft. *Journal of Spacecraft and Rockets*, Volume 32, No. 5, September-October 1995, p. 839-844.  
 Organization DC RTOP 590-14-51
- 285 Maghami, P. G.; Kenny, S. P.; and Giesy, D. P.: The PLATSIM Software Package: A Simulation and Analysis Tool for Large-Order Flexible Systems. Presented at 18th Annual AAS Guidance & Control Conference, January 31-February 5, 1995, Keystone, Colorado. AAS Paper No. 95-003.  
 Organization DC RTOP 233-01-01
- 286 Maghami, P. G.; Kenny, S. P.; and Giesy, D. P.: *PLATSIM: An Efficient Linear Simulation and Analysis Package for Large-Order Flexible Systems*. NASA TP-3519, September 1995, 74 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3519.ps.Z>  
 Organization DC RTOP 233-01-01
- 287 Maghami, P. G.; and Lim, K. B.: Fault Accommodation in Control of Flexible Structures. Presented at 1995 American Control Conference, June 21-23, 1995, Seattle, Washington. In Proceedings, Volume 1, p. 417-421.  
 Organization DC RTOP 233-01-01

- 288** Maghami, P. G.; and Sparks, D. W., Jr.: Fault Accommodation With Dissipative Controllers in Control of Flexible Systems. Presented at 1995 SIAM Annual Conference, October 22-27, 1995, Charlotte, North Carolina.  
 Organization DC RTOP 233-01-01
- 289** Manlief, S.: *Two-Micron Laser Atmospheric Wind Sounder (LAWS) Pointing/Tracking Study*. (NAS1-19291 TRW Space & Technology Division.) NASA CR-195012, January 1995, 168 p.  
 Organization DC RTOP 233-01-01
- 290** Raney, D. L.; McMinn, J. D.; and Pototzky, A. S.: Impact of Aeroelastic-Propulsive Interactions on Flight Dynamics of a Hypersonic Vehicle. *Journal of Aircraft*, Volume 32, No. 2, March-April 1995, p. 355-362.  
 Organization DC RTOP 505-70-64
- 291** Rhodes, M. D.; Will, R. W.; and Quach, C. C.: Verification Tests of Automated Robotic Assembly of Space Truss Structures. *Journal of Spacecraft and Rockets*, Volume 32, No. 4, July-August 1995, p. 686.  
 Organization DS RTOP 506-43-41
- 292** Roettker, W. A.: In-Flight Thermal Performance of the Lidar In-Space Technology Experiment. Presented at AIAA 30th Thermophysics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2016.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-2016.ps.Z>  
 Organization GK RTOP 237-02-02
- 293** Silverman, E. M.: *Space Environmental Effects on Spacecraft: LEO Materials Selection Guide*. (NAS1-19291 TRW Space & Electronics Group.) NASA CR-4661, Part 2, August 1995, 411 p.  
 Organization DM RTOP 233-01-01
- 294** Silverman, E. M.: *Space Environmental Effects on Spacecraft: LEO Materials Selection Guide*. (NAS1-19291 TRW Space & Electronics Group.) NASA CR-4661, Part 1, August 1995, 502 p.  
 Organization DM RTOP 233-01-01
- 295** Stadler, J. H.: SEDS End Mass Payload Magnetometer Engineering Performance and Rotational Data Analysis Results. Presented at Fourth International Conference on Tethers in Space, April 10-14, 1995, Washington, DC. In Proceedings, Volume II, p. 613-625.  
 Organization GK RTOP 967-30-40
- 296** Vannell, E. C.; Kenny, S. P.; and Maghami, P. G.: *Efficient Eigenvalue Assignment by State and Output Feedback With Applications for Large Space Structures*. NASA TM-110155, March 1995, 69 p.  
 Organization DC RTOP 233-01-01
- 297** Woodard, S. E.; and Nagchaudhuri, A.: Application of the Least Mean Square (LMS) and Filtered-X Least Mean Square Algorithms to Spacecraft Vibration Compensation. Presented at Fifth Annual AAS/AIAA Space Flight Mechanics Conference, February 13-15, 1995, Albuquerque, New Mexico. In Proceedings.  
 Organization DS RTOP 233-01-01

## Category 19 Spacecraft Instrumentation

- 298 Applin, J. I.; and Turner, C. P.: Space Qualified Hardware: A General Purpose Flight Experiment Module. Presented at 1995 AIAA Space Programs and Technologies Conference and Exhibit, September 26-28, 1995, Huntsville, Alabama. AIAA Paper No. 95-3786.  
Organization GK RTOP 236-02-03
- 299 Jalink, A., Jr.; and Hellbaum, R. F.: Stirling-Cycle Refrigerator Containing Piezoelectric Pumps. NASA Tech Brief LAR-15065, April 1995.  
Organization GL
- 300 Kassel, P. C., Jr.; and Wortman, J. J.: Metal-Oxide-Silicon Capacitor Detectors for Measuring Micrometeoroid and Space-Debris Flux. *Journal of Spacecraft and Rockets*, Volume 32, No. 4, July-August 1995, p. 710.  
Organization GH RTOP 233-03-02

## Category 20 Spacecraft Propulsion and Power

- 301 Hunt, J. L.: Airbreathing/Rocket Single-Stage-to-Orbit Design Matrix. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6011.  
Organization J RTOP 505-70-69
- 302 Lepsch, R. A., Jr.; Stanley, D. O.; and Unal, R.: Dual-Fuel Propulsion in Single-Stage Advanced Manned Launch System Vehicle. *Journal of Spacecraft and Rockets*, Volume 32, No. 3, May-June 1995, p. 417-425.  
Organization DS RTOP 506-49-11

## Chemistry and Materials

### Category 23 Chemistry and Materials (General)

- 303 Bohnhoff-Hlavacek, G. L.; Pippin, H. G.; and Dursch, H. W.: *Long Duration Exposure Facility Mini-Data Base User's Guide—Macintosh Version*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-4656, April 1995, 29 p.  
Organization CE RTOP 506-43-61
- 304 Bohnhoff-Hlavacek, G. L.; Pippin, H. G.; and Dursch, H. W.: *Long Duration Exposure Facility Mini-Data Base User's Guide—IBM-Compatible PC Computer Version*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-4655, April 1995, 29 p.  
Organization CE RTOP 506-43-61
- 305 Bryant, R. G.; Jensen, B. J.; and Hergenrother, P. M.: Phenylethynyl-Terminated Reactive Oligomer. U. S. Patent 5,426,234. Issued June 20, 1995.  
Organization DM

- 306 Bryant, R. G.; Jensen, B. J.; and Hergenrother, P. M.: Phenylethynyl Reactive Diluents. U. S. Patent 5,446,204. Issued August 29, 1995.  
Organization DM
- 307 Dursch, H. W.; Keough, B. K.; and Pippin, H. G.: *Evaluation of Adhesive Materials Used on the Long Duration Exposure Facility*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-4646, March 1995, 58 p.  
Organization CE RTOP 506-43-61
- 308 Gardner, J. E.; Jacobs, J. A.; and Fraker, A. C. (Compilers): *National Educators' Workshop: Update 94—Standard Experiments in Engineering Materials Science and Technology*. NASA CP-3304, August 1995, 618 p.  
Organization E RTOP 243-10-01
- 309 George, P. E.; Dursch, H. W.; and Pippin, H. G.: *Composite Materials Flown on the Long Duration Exposure Facility*. (NAS1-18224 Boeing Defense & Space Group.) NASA CR-4657, April 1995, 66 p.  
Organization CE RTOP 506-43-61
- 310 Harris, C. E.: Industry-University-NASA Partnerships in Aeronautics Research and Technology Development. Presented at 4th Technical Conference on New Century Partnerships for Material Systems, April 23-25, 1995, Blacksburg, Virginia. In Proceedings.  
Organization DM RTOP 505-63-50
- 311 Hergenrother, P. M.; Bryant, R. G.; Jensen, B. J.; and Havens, S. J.: Phenylethynyl Terminated Imide Oligomers. U. S. Patent 5,412,066. Issued May 2, 1995.  
Organization DM
- 312 Pippin, H. G.: *Analysis of Materials Flown on the Long Duration Exposure Facility: Summary of Results of the Materials Special Investigation Group*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-4664, July 1995, 254 p.  
Organization CE RTOP 506-43-61
- 313 Pippin, H. G.: *Analysis of Silverized Teflon Thermal Control Material Flown on the Long Duration Exposure Facility*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-4663, July 1995, 420 p.  
Organization CE RTOP 506-43-61
- 314 Pippin, H. G.; and Bourassa, R. J.: *Effects of Space Exposure on Metals Flown on the Long Duration Exposure Facility*. (NAS1-18224 and NAS1-19247 Boeing Defense & Space Group.) NASA CR-4662, June 1995, 343 p.  
Organization CE RTOP 506-43-61
- 315 St. Clair, T. L.; and Chang, A. C.: Direct Process for Preparing Semi-Crystalline Polymers. U. S. Patent 5,464,928. Issued November 7, 1995.  
Organization DM
- 316 St. Clair, T. L.; and Fay, C. C.: Polyimides That Contain Cyclobutene-3,4-Dione Moieties. NASA Tech Brief LAR-14753, May 1995.  
Organization DM
- 317 Tenney, D. R.: Research Trends and Opportunities in Developing Relevant Government/Industry Materials Research Programs. Presented at AeroMat '95, May 8-11, 1995, Anaheim, California.  
Organization DM RTOP 505-63-50

- 318 Tribble, A. C.; Lukins, R.; Watts, E.; Naumov, S. F.; and Sergeev, V. K.: *Low Earth Orbit Thermal Control Coatings Exposure Flight Tests: A Comparison of U.S. and Russian Results.* (NAS1-19243 Rockwell International.) NASA CR-4647, March 1995, 64 p.  
Organization CE RTOP 233-03-02

## Category 24 Composite Materials

- 319 Allen-Lilly, H.; Cregger, E.; Hoffman, D.; and McCool, J.: *Materials Research for High Speed Civil Transport and Generic Hypersonics—Composites Durability.* (NAS1-20013 Boeing Commercial Airplane Group.) NASA CR-198192, August 1995, 92 p.  
Organization DM RTOP 537-06-20
- 320 Ambur, D. R.: *Design and Evaluation of a Foam-Filled Hat-Stiffened Panel Concept for Aircraft Primary Structural Applications.* NASA TM-109175, January 1995, 20 p.  
Organization DS RTOP 505-63-50
- 321 Ambur, D. R.; and Cruz, J. R.: Low-Speed Impact Response Characteristics of Composite Sandwich Panels. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1460.  
Organization DS RTOP 505-63-50
- 322 Ambur, D. R.; Prasad, C. B.; and Waters, W. A., Jr.: A Dropped-Weight Apparatus for Low-Speed Impact Testing of Composite Structures. *Journal of Experimental Mechanics*, Volume 35, No. 1, March 1995, p. 77-82.  
Organization DS RTOP 505-63-50
- 323 Ambur, D. R.; Prasad, C. B.; Waters, W. A., Jr.; Stockum, R. W.; and Walter, M. A.: Internally Damped, Self-Arresting Vertical Drop-Weight Impact Test Apparatus. U. S. Patent 5,457,984. Issued October 17, 1995.  
Organization DS
- 324 Ambur, D. R.; and Rouse, M.: Simulation of Fuselage Panel Response With a Curved Stiffened Panel Tested in a Pressure-Box Test Fixture. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1362.  
Organization DS RTOP 510-02-12
- 325 Ambur, D. R.; Starnes, J. H., Jr.; and Prasad, C. B.: Low-Speed-Impact Damage-Initiation Characteristics of Selected Laminated Composite Plates. *AIAA Journal*, Volume 33, No. 10, October 1995, p. 1919.  
Organization DS RTOP 510-02-10
- 326 Ambur, D. R.; Starnes, J. H., Jr.; Stoumbos, T.; and Kapania, R. K.: Effects of Large Deformations on the Impact Response of Flat and Curved Graphite-Epoxy Panels. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1205.  
Organization DS RTOP 505-63-50
- 327 Beuth, J. L.: *Separation of Crack Extension Modes in Orthotropic Delamination Models.* NASA TM-109180, April 1995, 25 p.  
Organization DM RTOP 505-63-50

- 328 Bigelow, C. A.; Bahei-El-Din, Y. A.; and Mirdamadi, M.: *Time-Dependent Deformation of Titanium Metal Matrix Composites*. (NAS1-19708 Analytical Services & Materials, Inc.) NASA CR-195030, January 1995, 32 p.  
 Organization DM RTOP 505-63-50
- 329 Bowles, D. E.; and Davis, J. G., Jr.: NASA's Program on the Structural Integrity of the Aging Commercial Transport Fleet. Presented at Flight Safety Foundation's 48th Annual International Air Safety Seminar, November 7-9, 1995, Seattle, Washington.  
 Organization BB RTOP 538-02-11
- 330 Coats, T. W.; and Harris, C. E.: Experimental Verification of a Progressive Damage Model for IM7/5260 Laminates Subjected to Tension-Tension Fatigue. *Journal of Composite Materials*, Volume 29, No. 3, 1995, p. 280-305.  
 Organization DM RTOP 538-02-10
- 331 Cohen, D.; Hyer, M. W.; Shuart, M. J.; Griffin, O. H.; Prasad, C. B.; and Yalamanchili, S. R.: Failure Criterion for Thick Multifastener Graphite-Epoxy Composite Joints. *Journal of Composites Technology & Research*, Volume 17, No. 3, July 1995, p. 237-248.  
 Organization DS RTOP 505-63-50
- 332 Cox, B. N.: *Failure Models for Textile Composites*. (NAS1-19243 Rockwell International Science Center.) NASA CR-4686, August 1995, 142 p.  
 Organization DM RTOP 510-02-11
- 333 Dawicke, D. S.; Newman, J. C., Jr.; and Bigelow, C. A.: *Three-Dimensional CTOA and Constraint Effects During Stable Tearing in a Thin-Sheet Material*. NASA TM-109183, February 1995, 26 p.  
 Organization DM RTOP 538-02-10
- 334 Dexter, H. B.; and Baker, D. J.: Flight Service Environmental Effects on Composite Materials and Structures. *Advanced Performance Materials*, Volume 1, 1994, p. 51-85.  
 Organization DM RTOP 505-63-50
- 335 Everett, R. A., Jr.: The Effect of Hole Quality on the Fatigue Life of 2024-T3 Aluminum Alloy Sheet. Presented at American Helicopter Society Technical Specialist' Meeting on Rotorcraft Structures, October 30–November 2, 1995, Hampton, Virginia.  
 Organization DM RTOP 505-63-50
- 336 Farley, G. L.: A Composite With Through the Thickness Reinforcement. U. S. Patent 5,470,649. Issued November 28, 1995.  
 Organization DS
- 337 Farley, G. L.: Adjustable Reed for Weaving Net Shaped Tailored Fabrics. U. S. Patent 5,465,762. Issued November 14, 1995.  
 Organization DS
- 338 Farley, G. L.: Method and Apparatus for Fabricating Curved Material Preforms. U. S. Patent 5,394,906. Issued March 7, 1995.  
 Organization DS
- 339 Farley, G. L.: Net-Shape Tailored Fabrics for Complex Composite Structures. NASA Tech Brief LAR-14752, January 1995.  
 Organization DS



- 340 Farley, G. L.: Making Composite-Material Parts at Moderate to High Rates. NASA Tech Brief LAR-15128, March 1995.  
Organization DS
- 341 Gates, T. S.; and Feldman, M.: Time Dependent Behavior of a Graphite/Thermoplastic Composite and the Effects of Stress and Physical Aging. *Journal of Composites Technology & Research*, Volume 17, No. 1, 1995, p. 33-42.  
Organization DM RTOP 505-63-50
- 342 Grenoble, R. W.; Marchello, J. M.; Johnston, N. J.; and Hugh, M. K.: Composite Properties of Braided Powder-Coated Towpreg. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 977-984.  
Organization DM RTOP 505-63-50
- 343 Harris, C. E.; Coats, T. W.; Allen, D. H.; and Lo, D. C.: Progressive Damage Analysis of Laminated Composites Due to Tension Fatigue. Presented at ICAF '95 International Committee on Aeronautical Fatigue 18th Symposium, May 1-5, 1995, Melbourne, Australia. In Proceedings.  
Organization DM RTOP 538-02-10
- 344 Harris, C. E.; and Poe, C. C., Jr.: Mechanics Methodology for Textile Preform Composite Materials. Presented at Sixth NASA/DoD Advanced Composites Technology Conference, August 7-10, 1995, Anaheim, California. In NASA CP.  
Organization DM RTOP 510-02-11
- 345 Harris, C. E.; Starnes, J. H., Jr.; and Newman, J. C., Jr.: Development of Advanced Structural Analysis Methodologies for Predicting Widespread Fatigue Damage in Aircraft Structures. Presented at FAA-NASA Sixth International Conference on Continued Airworthiness of Aircraft Structures, June 27-28, 1995, Atlantic City, New Jersey. In Proceedings.  
Organization DM RTOP 538-07-12
- 346 Hoffman, E. K.; Bird, R. K.; and Dicus, D. L.: Brazed Joint Properties and Microstructure of SCS-6/ $\beta$ 21S Titanium Matrix Composites. *Welding Journal*, Volume 74, No. 11, November 1995, p. 378-s-384-s.  
Organization DM RTOP 763-23-41
- 347 Hou, T-H.; Johnston, N. J.; Weiser, E. S.; and Marchello, J. M.: Processing and Properties of IM7 Composites Made From LARC<sup>TM</sup>-IAX Polyimide Powders. Presented at 27th International SAMPE Technical Conference, October 9-12, 1995, Albuquerque, New Mexico. In Proceedings, Volume 27, p. 135-149.  
Organization DM RTOP 505-63-50
- 348 Jackson, W. C.: Low-Velocity Impact Damage Resistance. Presented at Army Vehicle Structures & Aeromechanics Technology Transfer Meeting, April 18-20, 1995, Hampton, Virginia.  
Organization DM RTOP 505-63-50
- 349 Jaunky, N.; Knight, N. F., Jr.; and Ambur, D. R.: *Formulation of an Improved Smear Theory for Buckling Analysis of Grid-Stiffened Composite Panels*. NASA TM-110162, June 1995, 15 p.  
Organization DS RTOP 510-02-12

- 350 Jaunky, N.; Knight, N. F., Jr.; and Ambur, D. R.: Formulation of an Improved Smear Stiffener Theory for Buckling Analysis of Grid Stiffened Composite Panels. Presented at Tenth International Conference on Composite Materials (ICCM-10), August 14-18, 1995, Whistler, Canada. In Proceedings, Volume 5, p. V-51-V-58.  
Organization DS RTOP 510-02-12
- 351 Johnston, N. J.; Cano, R. J.; Marchello, J. M.; and Sandusky, D. A.: Powder-Coated Towpreg: Avenues to Near Shape Fabrication of High Performance Composites. Presented at Tenth International Conference on Composite Materials (ICCM-10), August 14-18, 1995, Whistler, Canada. In Proceedings, Volume 3, p. 407-412.  
Organization DM RTOP 505-63-50
- 352 Johnston, N. J.; Wilkinson, S. P.; Marchello, J. M.; and Dixon, D.: Multipurpose Prepregging Machine. NASA Tech Brief LAR-15098, March 1995.  
Organization DM
- 353 Jones, L. E.; and Carden, H. D.: Overview of Structural Behavior and Occupant Responses From a Crash Test of a Composite Airplane. Presented at 1995 SAE General, Corporate, and Regional Aviation Meeting and Exposition, May 3-5, 1995, Wichita, Kansas.  
Organization DS RTOP 505-63-50
- 354 Kiefer, R. L.; Yue, J. J.; and Hinkley, J. A.: Kinetic Mapping of Oxidative Weight Loss in Polyimide Composites. *Journal of Advanced Materials*, Volume 26, No. 3, April 1995, p. 55-59.  
Organization DM RTOP 505-63-50
- 355 Li, J.; and O'Brien, T. K.: *Simplified Data Reduction Methods for the ECT Test for Mode III Interlaminar Fracture Toughness*. NASA TM-110176, ARL-MR-234, May 1995, 21 p.  
Organization DM RTOP 505-63-50
- 356 Li, J.; and O'Brien, T. K.: *Analytical Investigation of the Hygrothermal Effects and Parametric Study of the Edge Crack Torsion (ECT) Mode III Test Lay-Ups*. NASA TM-110183, ARL-TR-807, June 1995, 37 p.  
Organization DM RTOP 505-63-50
- 357 Maahs, H. G.; Vaughn, W. L.; and Ransone, P. O.: Evolution of NASA Langley Program in Carbon-Carbon Composite Materials. Presented at 2nd France/USA Technology Interchange Meeting for Carbon-Carbon and High Temperature Materials, March 28-30, 1995, La Jolla, California. In Proceedings.  
Organization DM RTOP 505-70-63
- 358 Marrey, R. V.; and Sankar, B. V.: *Micromechanical Models for Textile Structural Composites*. (NAG1-1226 University of Florida.) NASA CR-198229, October 1995, 139 p.  
Organization DM RTOP 505-63-50
- 359 Mason, M. E.: *Time-Dependent Corrosion Fatigue Crack Propagation in 7000 Series Aluminum Alloys*. (NAG1-745 University of Virginia.) NASA CR-198230, October 1995, 175 p.  
Organization DM RTOP 297-40-00
- 360 McGowan, D. M.; and Ambur, D. R.: Compression Response of a Sandwich Fuselage Keel Panel With and Without Impact Damage. Presented at Sixth NASA/DoD Advanced Composites Technology Conference, August 7-10, 1995, Anaheim, California. In NASA CP.  
Organization DS RTOP 505-63-50

- 361 Mikulas, M. M., Jr.; and Sumpter, R.: *A New Merit Function for Evaluating the Flaw Tolerance of Composite Laminates*. (NAG1-1642 University of Colorado.) NASA CR-198253, November 1995, 20 p.  
 Organization DS RTOP 505-63-50
- 362 Miller, J. L.; Newman, J. C., Jr.; and Johnson, W. S.: Fatigue Response of Perforated Titanium for Application in Laminar Flow Control. Presented at 27th National Symposium on Fatigue and Fracture Mechanics, June 26-29, 1995, Williamsburg, Virginia. In Proceedings.  
 Organization DM RTOP 505-63-50
- 363 Miller, J. L.; Portanova, M. A.; and Johnson, W. S.: Impact Damage Resistance and Residual Property Assessment of Titanium Matrix Composites. Presented at Sixth ASTM Symposium on Composite Materials: Fatigue and Fracture, May 16-18, 1995, Denver, Colorado. In Proceedings.  
 Organization DM RTOP 505-63-50
- 364 Miller, J. L.; Portanova, M. A.; and Johnson, W. S.: *Impact Damage Resistance and Residual Property Assessment of [0/±45/90]s SCS-6/Timetal 21S*. NASA TM-110178, May 1995, 37 p.  
 Organization DM RTOP 505-63-50
- 365 Minguet, P. J.; and O'Brien, T. K.: Analysis of Composite Skin/Stringer Bond Failure Using a Strain Energy Release Rate Approach. Presented at Tenth International Conference on Composite Materials (ICCM-10), August 14-18, 1995, Whistler, Canada. In Proceedings, Volume 1, p. 245-252.  
 Organization DM RTOP 505-63-50
- 366 Murri, G. B.: Tapered Laminates With Combined Tension-Bending Loading. Presented at Army Vehicle Structures & Aeromechanics Technology Transfer Meeting, April 18-20, 1995, Hampton, Virginia.  
 Organization DM RTOP 505-63-50
- 367 Murri, G. B.; and O'Brien, T. K.: Tapered Composite Laminates With Combined Tension-Bending Load. Presented at American Helicopter Society National Technical Specialists' Meeting, October 30–November 2, 1995, Williamsburg, Virginia.  
 Organization DM RTOP 505-63-50
- 368 Newman, J. C., Jr.: Application of a Plasticity-Induced Crack-Closure Model to Aircraft and Engine Disc Materials and Loadings. Presented at ASTM E08 Workshop on Advances in Fatigue Crack Closure Measurement and Analysis, November 13, 1995, Norfolk, Virginia.  
 Organization DM RTOP 538-02-10
- 369 Newman, J. C., Jr.: *Fracture Analysis of Stiffened Panels Under Biaxial Loading With Widespread Cracking*. NASA TM-110197, October 1995, 37 p.  
 Organization DM RTOP 538-02-10
- 370 Newman, J. C., Jr.; and Dawicke, D. S.: Fracture Analysis of Stiffened Panels Under Biaxial Loading With Widespread Cracking. Presented at AGARD SMP Specialists' Meeting on "Advanced Aeroservoelastic Testing and Data Analysis", May 8-12, 1995, Rotterdam, The Netherlands. In Proceedings.  
 Organization DM RTOP 505-63-50
- 371 Newman, J. C., Jr.; Dawicke, D. S.; Shivakumar, K. N.; and Grandt, A. F., Jr.: Calculating 3-D Crack-Opening Behavior of a Fatigue Crack. NASA Tech Brief LAR-14598, February 1995.  
 Organization DM

- 372 Noor, A. K.; Starnes, J. H., Jr.; and Peters, J. M.: Nonlinear and Postbuckling Responses of Curved Composite Panels With Cutouts. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1412.  
 Organization DS RTOP 537-06-21
- 373 Norman, T. L.; Anglin, C.; Gaskin, D.; and Patrick, M.: *Effect of Open Hole on Tensile Failure Properties of 2D Triaxial Braided Textile Composites and Tape Equivalents*. (NAG1-1381 West Virginia University.) NASA CR-4676, June 1995, 48 p.  
 Organization DM RTOP 510-02-11
- 374 O'Brien, T. K.; Hagemeyer, R.; Rogers, C.; and Murri, G. B.: Combined Tension and Bending Testing of Tapered Composite Laminates. *Applied Composite Materials Journal*, Volume 3, 1995, p. 1-13.  
 Organization DM RTOP 505-63-50
- 375 O'Brien, T. K.; and Sen, J. K.: Tension/Torsion Fatigue Behavior of Glass Epoxy Laminates. Presented at Sixth ASTM Symposium on Composite Materials: Fatigue and Fracture, May 16-18, 1995, Denver, Colorado.  
 Organization DM RTOP 505-63-50
- 376 Piascik, R. S.; Kelly, R. G.; Inman, M. E.; and Willard, S. A.: Fuselage Lap Splice Corrosion. Presented at USAF Structural Integrity Program Conference, November 28-30, 1995, San Antonio, Texas.  
 Organization DM RTOP 538-02-10
- 377 Poe, C. C., Jr.: Response of Composite Materials to Low-Velocity Impact. Presented at Southwest Research Institute Meeting, May 10, 1995, San Antonio, Texas.  
 Organization DM RTOP 510-02-11
- 378 Poe, C. C., Jr.; and Harris, C. E. (Editor): *Mechanics of Textile Composites Conference*. NASA CP-3311, Part 2, October 1995, 438 p.  
 Organization DM RTOP 510-02-11
- 379 Poe, C. C., Jr.; and Harris, C. E. (Editor): *Mechanics of Textile Composites Conference*. NASA CP-3311, Part 1, October 1995, 257 p.  
 Organization DM RTOP 510-02-11
- 380 Popelka, D.; Lindsay, D.; Parham, T.; Berry, V.; and Baker, D. J.: Results of an Aeroelastic Tailoring Study for a Composite Tiltrotor Wing. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas. In Proceedings.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ahs-95-dp.ps.Z>  
 Organization DS RTOP 505-63-36
- 381 Portanova, M. A.: *Evaluation of the Impact Response of Textile Composites*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198265, December 1995, 53 p.  
 Organization DM RTOP 505-63-50
- 382 Portanova, M. A.: *Standard Methods for Unnotched Tension Testing of Textile Composites*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198264, December 1995, 38 p.  
 Organization DM RTOP 505-63-50

- 383 Portanova, M. A.; and Masters, J. E.: *Standard Methods for Bolt-Bearing Testing of Textile Composites*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198266, December 1995, 27 p.  
 Organization DM RTOP 505-63-50
- 384 Portanova, M. A.; and Masters, J. E.: *Standard Methods for Filled Hole Tension Testing of Textile Composites*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198263, December 1995, 18 p.  
 Organization DM RTOP 505-63-50
- 385 Portanova, M. A.; and Masters, J. E.: *Standard Methods for Open Hole Tension Testing of Textile Composites*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198262, December 1995, 29 p.  
 Organization DM RTOP 505-63-50
- 386 Prosser, W. H.: Waveform Based Acoustic Emission Detection and Location of Matrix Cracking in Composites. Presented at 32nd Annual Technical Meeting of the Society of Engineering Science, October 29–November 1, 1995, New Orleans, Louisiana. In Proceedings, Volume 1, p. 455-456.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ses-95-whp.ps.Z>  
 Organization DM RTOP 510-20-11
- 387 Prosser, W. H.; Jackson, K. E.; Kellas, S.; Smith, B. T.; McKeon, J.; and Friedman, A.: Advanced, Waveform Based Acoustic Emission Detection of Matrix Cracking in Composites. *Materials Evaluation*, Volume 53, No. 9, September 1995, p. 1052-1058.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-asnt-me.ps.Z>  
 Organization DM RTOP 510-20-11
- 388 Prosser, W. H.; Jackson, K. E.; Kellas, S.; Smith, B. T.; McKeon, J.; and Friedman, A.: Detection and Location of Transverse Matrix Cracks in Cross-Ply Gr/Ep Composites Using Acoustic Emission. Presented at Fourth Annual Research Symposium of NDE of Composites and Composite Structures—ASNT's 1995 Spring Conference, March 21-23, 1995, Las Vegas, Nevada. In Proceedings, p. 213-215.  
 Organization DM RTOP 510-02-11
- 389 Radloff, H. D.; Hyer, M. W.; and Nemeth, M. P.: Buckling of Composite Plates With Trapezoidal Planform. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1397.  
 Organization DS RTOP 505-63-50
- 390 Raju, I. S.; and Dattaguru, B.: Review of Methods for Calculating Fracture Parameters for Interface Crack Problems. Presented at International Conference on Computational Engineering Science, July 30–August 3, 1995, Mauna Lani, Hawaii. In Proceedings, Volume II, p. 2020-2026.  
 Organization DM RTOP 505-63-50
- 391 Raju, I. S.; and Newman, J. C., Jr.: A Reinvestigation of Stress-Intensity Factors for Surface and Corner Cracks in Three-Dimensional Solids. In *Contemporary Research in Engineering Science*, R. C. Batia, ed., 1995, p. p.418-441.  
 Organization DM RTOP 505-63-50

- 392** Raju, I. S.; and Newman, J. C., Jr.: A Reinvestigation of Stress-Intensity Factors for Surface and Corner Cracks in Three-Dimensional Solids. Presented at 32nd Annual Technical Meeting of the Society of Engineering Science, October 29–November 1, 1995, New Orleans, Louisiana.  
 Organization DM RTOP 505-63-50
- 393** Ransone, P. O.; Rivers, H. K.; and Northam, G. B.: Carbon-Carbon Composite Piston Development. Presented at ASME Internal Combustion Engine Division's 1995 Fall Technical Conference, September 24-27, 1995, Milwaukee, Wisconsin. In Proceedings, Volume 25-1, p. 33-38.  
 Organization DM RTOP 538-04-14
- 394** Richey, E., III: *Empirical Modeling of Environment-Enhanced Fatigue Crack Propagation in Structural Alloys for Component Life Prediction*. (NAG1-745 University of Virginia.) NASA CR-198231, October 1995, 173 p.  
 Organization DM RTOP 297-40-00
- 395** Rouse, M.; Ambur, D. R.; and Wang, J. T.: Evaluation of Damaged and Undamaged Fuselage Panel Responses Subjected to Internal Pressure and Axial Load. Presented at Sixth NASA/DoD Advanced Composites Technology Conference, August 7-10, 1995, Anaheim, California. In NASA CP.  
 Organization DS RTOP 510-02-12
- 396** Rousseau, C. Q.; and Baker, D. J.: Layer Termination in Graphite Rod Reinforced Structures. Presented at American Helicopter Society National Technical Specialists' Meeting, October 30–November 2, 1995, Williamsburg, Virginia. In Proceedings.  
 Organization DS RTOP 505-63-36
- 397** Rousseau, C. Q.; Chan, W. S.; and Baker, D. J.: Analysis and Testing of a Graphite Rod-Reinforced Hat Section. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1509.  
 Organization DS RTOP 505-63-36
- 398** Sandusky, D. A.; Marchello, J. M.; and Baucom, R. M.: Non-Rectangular Tow Preg Architectures. U. S. Patent 5,405,683. Issued April 11, 1995.  
 Organization DM
- 399** Sandusky, D. A.; Marchello, J. M.; and Johnston, N. J.: Consolidation Mechanism Analysis for *Ex Parte* Ribbonizing Thermoplastic Powder-Coated Towpreg. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings.  
 Organization DM RTOP 505-63-50
- 400** Sharma, S. K.; and Sankar, B. V.: *Effects of Through-the-Thickness Stitching on Impact and Interlaminar Fracture Properties of Textile Graphite/Epoxy Laminates*. (NAG1-1226 University of Florida.) NASA CR-195042, February 1995, 137 p.  
 Organization DM RTOP 505-63-50
- 401** Shivakumar, K.; and Poe, C. C., Jr.: Effect of Geometric Nonlinearity On  $G_{II}$  In Transversely Loaded Delaminated Laminates. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1280.  
 Organization DM RTOP 510-02-11

- 402 St. Clair, T. L.; and Chang, A. C.: LARC<sup>TM</sup>-IA Copolyimides. NASA Tech Brief LAR-15109, May 1995.  
Organization DM
- 403 Veazie, D. R.; and Gates, T. S.: *Physical Aging Effects of the Compressive Linear Viscoelastic Creep of IM7/K3B Composite*. NASA TM-110224, December 1995, 33 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110224.ps.Z  
Organization DM RTOP 505-63-50
- 404 Wilkinson, S. P.; and Hinkley, J. A.: Size and Geometry Effects in Transverse Flexural Testing of Unidirectional Graphite/Thermoplastic. *Journal of Composites Technology and Research*, Volume 17, No. 2, April 1995, p. 84-89.  
Organization DM RTOP 505-63-50
- 405 Willard, S. A.: *A Record of All Marker Bands Found in the Upper Rivet Rows of 2 Adjacent Bays From a Fuselage Lap Splice Joint*. (NAS1-19000 Lockheed Martin Engineering & Sciences Company.) NASA CR-198249, November 1995, 48 p.  
Organization DM RTOP 505-63-50
- 406 Wilson, M. L.; and Johnson, G. S.: Process Makes Thermoplastic Prepreg Ribbon. NASA Tech Brief LAR-14459, January 1995.  
Organization DF
- 407 Woodson, M. B.; Johnson, E. R.; Haftka, R. T.; and Carden, H. D.: Optimal Design of Composite Fuselage Frames for Improved Crashworthiness. Presented at Sixth NASA/DoD Advanced Composites Technology Conference, August 7-10, 1995, Anaheim, California.  
Organization DS RTOP 505-63-50
- 408 Zhao, W.; Newman, J. C., Jr.; and Sutton, M. A.: A Three-Dimensional Weight Function Method—Evaluation and Applications. Presented at 27th National Symposium on Fatigue and Fracture Mechanics, June 26-29, 1995, Williamsburg, Virginia. In Proceedings.  
Organization DM RTOP 583-02-10
- 409 Zhao, W.; Newman, J. C., Jr.; Sutton, M. A.; Shivakumar, K. N.; and Wu, X. R.: *Analysis of Surface Cracks at Hole by a 3-D Weight Function Method With Stresses From Finite Element Method*. NASA TM-110145, July 1995, 42 p.  
Organization DM RTOP 538-02-10
- 410 Zhao, W.; Newman, J. C., Jr.; Sutton, M. A.; Wu, X. R.; and Shivakumar, K. N.: *Analysis of Corner Cracks at Hole by a 3-D Weight Function Method With Stresses From Finite Element Method*. NASA TM-110144, July 1995, 63 p.  
Organization DM RTOP 538-02-10

### Category 25 Inorganic and Physical Chemistry

- 411 Lisagor, W. B.: Environmental Cracking: Stress Corrosion. In *Corrosion Tests and Standards: Application and Interpretation*, Robert Baboian, ed., June 1995, p. 240-252.  
Organization DM RTOP 505-63-50

## Category 26 Metallic Materials

- 412** Clark, R. K.; Cunnington, G. R., Jr.; and Wiedemann, K. E.: Determination of the Recombination Efficiency of Thermal Control Coatings for Hypersonic Vehicles. *Journal of Spacecraft and Rockets*, Volume 32, No. 1, January-February 1995, p. 89-96.  
Organization DM RTOP 505-70-63
- 413** Dawicke, D. S.: *Fracture Testing of 2324-T39 Aluminum Alloy*. (NAS1-19708 Analytical Services & Materials, Inc.) NASA CR-198177, November 1995, 29 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198177.ps.Z>  
Organization DM RTOP 538-02-10
- 414** Dawicke, D. S.; Piascik, R. S.; and Newman, J. C., Jr.: Prediction of Stable Tearing and Fracture of 2324-T39 Aluminum Alloy Plate Using a CTOA Criterion. Presented at 27th National Symposium on Fatigue and Fracture Mechanics, June 26-29, 1995, Williamsburg, Virginia. In STP 1296.  
Organization DM RTOP 538-02-10
- 415** Gates, T. S.: Durability of Polymeric Composite Materials for the High Speed Civil Transport Program. Presented at 4th Technical Conference on New Century Partnerships for Material Systems, April 23-25, 1995, Blacksburg, Virginia.  
Organization DM RTOP 505-63-50
- 416** Gates, T. S.; and Veazie, D. R.: Compressive Creep IM7/K3B Composite and the Effects of Physical Aging on Viscoelastic Behavior. Presented at 1995 Society of Experimental Mechanics Spring Conference, June 12-14, 1995, Grand Rapids, Michigan. In Proceedings, p. 491-498.  
Organization DM RTOP 505-63-50
- 417** Gleason, J. R.; and Outlaw, R. A.: Supported Thin AG Permeation Membranes. Presented at International Conference on Metallurgical Coatings and Thin Films, April 24-28, 1995, San Diego, California.  
Organization DF RTOP 307-51-14
- 418** Hartley, P. J.: *Production of Aluminum-Lithium Near Net Shape Extruded Cylinders*. (NAS8-37143 Lockheed Martin Manned Space Systems.) NASA CR-198204, September 1995, 25 p.  
Organization DM RTOP 506-43-31
- 419** Haynes, D. A.; Somerday, B. P.; Lach, C. L.; and Gangloff, R. P.: Characterization and Micromechanical Modeling of Temperature-Dependent Fracture Toughness in Advanced Aluminum Alloys. Presented at 27th National Symposium on Fatigue and Fracture Mechanics, June 26-29, 1995, Williamsburg, Virginia.  
Organization DM RTOP 505-63-50
- 420** Kalu, P. N.; and Wagner, J. A.: A Microtexture Investigation of the Fracture Behavior of Al-Li Alloy 2090-T81. Presented at 1995 TMS Annual Meeting, February 12-16, 1995, Las Vegas, Nevada. In Light Weight Alloys for Aerospace Applications III.  
Organization DM RTOP 505-63-50



- 421 Li, J.; and O'Brien, T. K.: Analytical Investigation of the Hygrothermal Effects and Parametric Study of the Edge Crack Torsion (ECT) Mode III Test Lay-Ups. Presented at Sixth ASTM Symposium on Composite Materials: Fatigue and Fracture, May 16-18, 1995, Denver, Colorado. In Proceedings.  
 Organization DM RTOP 505-63-50
- 422 Lisagor, W. B.; Haynes, G. S.; and Hack, H. P.: Corrosion Technology Activities of ASTM and Committee G1 on Corrosion of Metals. Presented at Corrosion Standards II, December 5-6, 1995, London, England. In Proceedings.  
 Organization DM RTOP 505-63-50
- 423 Namkung, M.: Application of Self-Nulling Eddy Current Probe and Spin-Off Sensor Technologies to Airline Industry and Beyond. Presented at 22nd Annual Review of Progress in Quantitative Nondestructive Evaluation, July 30-August 4, 1995, Seattle, Washington. In Proceedings.  
 Organization DM RTOP 538-02-11
- 424 Namkung, M.; and Jankowski, D.: Application of Self-Nulling Eddy Current Probe Technology to Industrial NDE Needs. Presented at American Society for Nondestructive Testing Fall Conference, October 16-20, 1995, Dallas, Texas.  
 Organization DM RTOP 538-02-11
- 425 Namkung, M.; Wincheski, R. A.; Fulton, J. P.; and Nath, S.: Self-Nulling Eddy Current Probe Technology and Its Application to Airframe Structure. Presented at Air Transport Association of America NDT Forum, September 26-28, 1995, Hartford, Connecticut. In Proceedings.  
 Organization DM RTOP 538-02-01
- 426 Namkung, M.; Wincheski, R. A.; Fulton, J. P.; Nath, S.; and Simpson, J. W.: Revolving Eddy-Current Probe Detects Cracks Near Rivets. NASA Tech Brief LAR-15231, November 1995.  
 Organization DM
- 427 Piascik, R. S.: Effect of Environment on the Fatigue Crack Growth Behavior of Aircraft Structural Alloys. Presented at Materials Week 1995, October 30-November 2, 1995, Cleveland, Ohio.  
 Organization DM RTOP 538-02-10
- 428 Piascik, R. S.; Kelly, R. G.; and Willard, S. A.: Fuselage Lap Splice Joint Corrosion. Presented at 1995 USAF Structural Integrity Program Conference, November 28-30, 1995, San Antonio, Texas. In Proceedings.  
 Organization DM RTOP 538-02-10
- 429 Prosser, W. H.: Waveform Based AE Detection of Fatigue Cracking in Aluminum and Transverse Matrix Cracking in Composites. Presented at 38th Acoustic Emission Working Group (AEWG), May 1-4, 1995, Hampton, Virginia.  
 Organization DM RTOP 532-02-11
- 430 Shenoy, R. N.; Howe, J. M.; and Piascik, R. S.: A Differential Scanning Calorimetric Study of a Weldalite™ Type Alloy. *Scripta Metallurgica et Materialia*, Volume 33, No. 4, 1995, p. 651-656.  
 Organization DM RTOP 538-02-10

- 431 Starke, E. A., Jr. (Editor): *NASA-UVa Light Aerospace Alloy and Structures Technology Program Supplement: Aluminum-Based Materials for High Speed Aircraft—Semi-Annual Report—July 1, 1992–December 31, 1992*. (NAG1-745 University of Virginia.) NASA CR-4645, February 1995, 383 p.  
 Organization DM RTOP 537-06-20
- 432 Taminger, K. M.; Brewer, W. D.; and Dicus, D. L.: Combined Temperature, Stress, and Atmospheric Pressure Effects on Response of SCS-6/Ti  $\beta$ 21S Composite. Presented at Microstructure/Property Relationships of Titanium Alloys Symposium, February 28–March 3, 1995, San Francisco, California.  
 Organization DM RTOP 505-63-50
- 433 Wagner, J. A.; Bales, T. T.; Domack, M. S.; and Lach, C. L.: Near Net Forming of Al-Li Alloys for Space Transportation Systems. Presented at AeroMat '95, May 8-11, 1995, Anaheim, California.  
 Organization DM RTOP 242-20-05
- 434 Wallace, T. A.: The Effect of Oxidation Exposure on the Mechanical Properties of Timetal-1100 (Ti-6Al-2.75Sn-4Zr-0.4Mo-0.0702-0.2Fe wt %). Presented at Eighth World Conference on Titanium, October 22-26, 1995, Birmingham, United Kingdom. In Proceedings.  
 Organization DM RTOP 505-63-50
- 435 Wallace, T. A.; Clark, R. K.; and Wiedemann, K. E.: Oxidation of Ti-14Al-21Nb in Air and Oxygen From 700 - 1000°C. *Oxidation of Metals*, Volume 42, No. 5/6, December 1994, p. 451-464.  
 Organization DM RTOP 506-43-71

### Category 27 Nonmetallic Materials

- 436 Allen, M. R.: *Materials Research for High Speed Civil Transport and Generic Hypersonics—Adhesive Durability*. (NAS1-20013 Boeing Commercial Airplane Group.) NASA CR-198193, August 1995, 50 p.  
 Organization DM RTOP 537-06-20
- 437 Baugher, A. H.; Goetz, J. M.; Espe, M.; Schaefer, J.; and Pater, R. H.:  $^{13}\text{C}$  and DNP NMR Studies of High Temperature Crosslinking Structures in PMR Polyimides. Presented at Rocky Mountain Conference on Analytical Chemistry, July 23-28, 1995, Denver, Colorado.  
 Organization DM RTOP 505-63-50
- 438 Bryant, R. G.: LaRC<sup>TM</sup>-SI—A Unique High Performance Thermoplastic. Presented at Technology 2005, October 24-26, 1995, Chicago, Illinois. In Proceedings.  
 Organization DM RTOP 505-63-50
- 439 Bryant, R. G.: Polyazomethines Containing Trifluoromethylbenzene Units. U. S. Patent 5,378,795. Issued January 3, 1995.  
 Organization DM
- 440 Bryant, R. G.; and Hergenrother, P. M.: A Diphenylethynyl-Terminated Imide Oligomer and Its Cured Polymer. *High Performance Polymers*, Volume 7, No. 1, March 1995, p. 125-132.  
 Organization DM RTOP 505-63-50

- 441 Cano, R. J.; Hugh, M. K.; Marchello, J. M.; and Grenoble, R. W.: Properties of Polyimide Composites Made From Powder-Coated Uniweave and Solution-Coated Prepreg Tape. Presented at 1995 International Mechanical Engineering Congress & Exposition Meeting, November 12-17, 1995, San Francisco, California. In Proceedings, Volume 69-1, p. 135-144.  
Organization DM RTOP 505-63-50
- 442 Cano, R. J.; and Jensen, B. J.: Effect of Molecular Weight on Adhesive Properties of the Phenylethynyl-Terminated Polyimide LARC™-PETI-5. Presented at 18th Annual Meeting of the Adhesion Society, February 19-22, 1995, Hilton Head, South Carolina. In Proceedings.  
Organization DM RTOP 537-06-20
- 443 Cano, R. J.; Johnston, N. J.; and Marchello, J. M.: Solution Prepreg Quality Control. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 583-595.  
Organization DM RTOP 505-63-50
- 444 Caplan, M. L.; Stoakley, D. M.; and St. Clair, A. K.: Synthesis and Characterization of Self-Metallizing Gold-Doped Polyimide Films. *Journal of Applied Polymer Science*, Volume 56, No. 8, May 23, 1995, p. 995-1006.  
Organization DM RTOP 233-01-01
- 445 Chang, A. C.; and St. Clair, T. L.: Solvent Resistant Copolyimide. U. S. Patent 5,478,916. Issued December 26, 1995.  
Organization DM
- 446 Claus, S. J.; Grenoble, R. W.; Sandusky, D. A.; Marchello, J. M.; and Johnston, N. J.: Composite Ribbon Fabrication With Reactive Polymers. Presented at 27th International SAMPE Technical Conference, October 9-12, 1995, Albuquerque, New Mexico. In Proceedings, Volume 27, p. 854-866.  
Organization DM RTOP 505-63-50
- 447 Connell, J. W.; Crivello, J. V.; and Bi, D.: Effect of Low Earth Orbit Atomic Oxygen Exposure on Epoxy Functionalized Siloxanes. *Journal of Applied Polymer Science*, Volume 57, 1995, p. 1251-1259.  
Organization DM RTOP 233-03-02
- 448 Connell, J. W.; Hergenrother, P. M.; and Smith, J. G., Jr.: Polybenzimidazoles Via Aromatic Nucleophilic Displacement. U. S. Patent 5,412,059. Issued May 2, 1995.  
Organization DM
- 449 Connell, J. W.; Hergenrother, P. M.; and Smith, J. G., Jr.: Poly(N-Arylenebenzimidazole)s Via Aromatic Nucleophilic Displacement. U. S. Patent 5,410,012. Issued April 25, 1995.  
Organization DM
- 450 Connell, J. W.; Smith, J. G., Jr.; and Hedrick, J. L.: Oxygen Plasma-Resistant Phenylphosphine Oxide-Containing Polyimides and Poly(arylene ether heterocycles): 2. *Polymer*, Volume 36, No. 1, 1995, p. 13-19.  
Organization DM RTOP 233-03-02
- 451 Connell, J. W.; Smith, J. G., Jr.; and Hergenrother, P. M.: Oxygen Plasma-Resistant Phenylphosphine Oxide-Containing Polyimides and Poly(arylene ether heterocycle)s: 1. *Polymer*, Volume 36, No. 1, 1995, p. 5-11.  
Organization DM RTOP 233-03-02

- 452 Connell, J. W.; Smith, J. G., Jr.; and Hergenrother, P. M.: Properties and Potential Applications of Poly(Arylene Ether Benzimidazole)s. In *High-Temperature Properties and Applications of Polymers and Polymer Composites*, M. R. Tant, J. W. Connell, and H. L. McManus, eds., 1995, p. 186-199.  
 Organization DM RTOP 505-53-60
- 453 Connell, J. W.; Smith, J. G., Jr.; and Hergenrother, P. M.: Chemistry and Properties of Phenylethynyl Terminated Phenylquinoxaline Oligomers. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 1082-1093.  
 Organization DM RTOP 505-63-50
- 454 Connell, J. W.; Smith, J. G., Jr.; and Hergenrother, P. M.: The Effects of Low Earth Orbit Atomic Oxygen Exposure on Phenylphosphine Oxide-Containing Poly(Arylene Ether)s. Presented at International Chemical Congress of Pacific Basin Societies, December 17-22, 1995, Honolulu, Hawaii.  
 Organization DM RTOP 505-63-50
- 455 Freeman, W. T., Jr.: ACT Cost Modeling. Presented at Materials Week 1995, October 30–November 2, 1995, Cleveland, Ohio.  
 Organization DM RTOP 505-63-50
- 456 Freeman, W. T., Jr.: Composites for Primary Aircraft Structure. Presented at Fourth Technical Conference on New Century Partnerships for Material Systems, April 23-25, 1995, Blacksburg, Virginia.  
 Organization DM RTOP 505-63-50
- 457 Freeman, W. T., Jr.; Siddiqi, S. A.; and Edlow, R.: COINS—The COMposite INFORMATION System Database. Presented at Sixth ACT Conference, August 7-11, 1995, Anaheim, California.  
 Organization DM RTOP 505-63-50
- 458 Hergenrother, P. M.; Connell, J. W.; and Smith, J. G., Jr.: Imide Oligomers Containing Phenylethynyl Groups. Presented at International Chemical Congress of Pacific Basin Societies, December 17-22, 1995, Honolulu, Hawaii.  
 Organization DM RTOP 505-63-50
- 459 Hergenrother, P. M.; Havens, S. J.; and Beltz, M. W.: Modified Polyimides are More Compression Moldable. NASA Tech Brief LAR-14457, May 1995.  
 Organization DM
- 460 Hergenrother, P. M.; and Jensen, B. J.: Poly(arylene ether)s Containing Pendent Ethynyl Groups. NASA Tech Brief LAR-15041, January 1995.  
 Organization DM
- 461 Hinkley, J. A.; Grenoble, R. W.; and Marchello, J. M.: Rapid Welding of Thermoplastic Towpreg Ribbon. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 1560.  
 Organization DM RTOP 505-63-50
- 462 Hinkley, J. A.; and Jensen, B. J.: The Relative Thermo-Oxidative Stability of a Phthalimide Against a Phenylethynylphthalimide Terminated Polyimide. *High Performance Polymers*, Volume 7, No. 1, March 1995, p. 1-10.  
 Organization DM RTOP 537-06-20

- 463 Hou, T-H.: *Processing and Properties of Fiber Reinforced Polymeric Matrix Composites: I. IM7/LARC<sup>TM</sup>-PETI-7 Polyimide Composites.* (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-198254, December 1995, 21 p.  
 Organization DM RTOP 505-63-50
- 464 Jensen, B. J.; Bryant, R. G.; Smith, J. G., Jr.; and Hergenrother, P. M.: Adhesive Properties of Cured Phenylethynyl-Terminated Imide Oligomers. Presented at 18th Annual Meeting of the Adhesion Society, February 19-22, 1995, Hilton Head, South Carolina.  
 Organization DM RTOP 505-63-50
- 465 Jensen, B. J.; Hergenrother, P. M.; and Bass, R. G.: Crystalline Imide/Arylene Ether Copolymers. U. S. Patent 5,418,300. Issued May 23, 1995.  
 Organization DM
- 466 Jensen, B. J.; Hou, T-H.; and Wilkinson, S. P: Adhesive and Composite Properties of LARC<sup>TM</sup>-8515 Polyimide. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 1072-1081.  
 Organization DM RTOP 505-63-50
- 467 Jensen, B. J.; Hou, T-H.; and Wilkinson, S. P: Adhesive and Composite Properties of LARC<sup>TM</sup>-8515 Polyimide. *High Performance Polymers*, Volume 7, No. 1, March 1995, p. 11-22.  
 Organization DM RTOP 505-63-50
- 468 Jensen, B. J.; and Working, D. C.: LaRC<sup>TM</sup>-ITPI/Arylene Ether Copolymers. *High Performance Polymers*, Volume 4, No. 1, 1992, p. 55-63.  
 Organization DM RTOP 505-63-50
- 469 Keating, J.: *Development of LaRC<sup>TM</sup>- IA Thermoplastic Polyimide Coated Aerospace Wiring.* (NAS1-20121 Imitec, Inc.) NASA CR-195048, March 1995, 55 p.  
 Organization DM RTOP 506-43-11
- 470 Kincaid, R. K.; Martin, A. D.; and Hinkley, J. A.: Heuristic Search for the Polymer Straightening Problem. *Computational Polymer Science*, Volume 5, No. 1/2, 1995, p. 1.  
 Organization DM RTOP 505-63-50
- 471 Knudsen, R. L.; and Jensen, B. J.: Blends of Reactive Diluents With Phenylethynyl Terminated Arylene Ether Oligomers. Presented at 1995 Spring National American Chemical Society Meeting, April 2-7, 1995, Anaheim, California. In Proceedings, Volume 36, p. 412.  
 Organization DM RTOP 505-63-50
- 472 Kruse, N. M.: A Novel Method of Fabricating Flexible Multilayer Circuits. Presented at Technology 2005, October 24-26, 1995, Chicago, Illinois. In Proceedings.  
 Organization GJ RTOP 243-10-01
- 473 McDaniel, P. R.; Orwoll, R. A.; and Connell, J. W.: Synthesis and Characterization of Poly(arylene ether)s and Poly(arylene ether imidazole)s. *High Performance Polymers*, Volume 7, No. 1, March 1995, p. 69-80.  
 Organization DM RTOP 505-63-50
- 474 McDaniel, P. R.; and St. Clair, T. L.: Thermal and Mechanical Characteristics of Polyimide Based Ceramers. Presented at Materials Research Society Meeting, November 27-December 1, 1995, Boston, Massachusetts.  
 Organization DM RTOP 505-63-50

- 475 McDaniel, P. R.; and St. Clair, T. L.: High Performance Polymer Dominated Ceramers. Presented at International Symposium on the Science and Technology of Atomically Engineered Materials, October 31–November 4, 1995, Richmond, Virginia.  
Organization DM RTOP 505-63-50
- 476 Miner, G. A.; St. Clair, A. K.; Stoakley, D. M.; Caplan, M. L.; Kalil, C. R.; Brown, C. A.; and Shipulski, E. M.: Surface Analysis of Self-Metallizing Polyimide Films for Space Applications. Presented at 1995 Spring National American Chemical Society Meeting, April 2-7, 1995, Anaheim, California. In Proceedings, Volume 72, p. 355-356.  
Organization DM RTOP 233-02-02
- 477 Pater, R. H.: Thermosetting Polyimides: A Review. *SAMPE Journal*, Volume 30, No. 5, September–October 1994, p. 29-38.  
Organization DM RTOP 506-43-11
- 478 Pater, R. H.; Soucek, M. D.; and Jang, B. Z.: Deformation and Fracture Toughness in High Performance Polymers. In *Toughened Plastics: Science and Engineering*, C. K. Riew and A. J. Kinloch, eds., 1993, p. 105-142.  
Organization DM RTOP 506-43-11
- 479 Pellett, G. L.; Wilson, L. G.; Humphreys, W. M., Jr.; Bartram, S. M.; Gartrell, L. R.; and Isaac, K. M.: Velocity Fields of Axisymmetric Hydrogen-Air Counterflow Diffusion Flames From LDV, PIV, and Numerical Computation. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-3112.  
Organization DG RTOP 505-70-62
- 480 Potter, B. D.; Yuan, F. G.; and Pater, R. H.: Nonlinear Viscoelastic Characterization of IM7/RP46 Laminates at High Temperatures. Presented at Tenth International Conference on Composite Materials (ICCM-10), August 14-18, 1995, Whistler, Canada.  
Organization DM RTOP 505-63-50
- 481 Rubira, A. F.; Rancourt, J. D.; Caplan, M. L.; St. Clair, A. K.; and Taylor, L. T.: Optically Reflective Polyimide Films Created by In Situ Silver Metal Formation. *Chemistry of Materials*, Volume 6, No. 12, December 1994, p. 2351-2358.  
Organization DM RTOP 233-02-03
- 482 Simpson, J. O.; St. Clair, T. L.; and Welch, S. S.: Novel Piezoelectric Polyimides. Presented at Materials Research Society Meeting, November 27–December 1, 1995, Boston, Massachusetts. In Proceedings.  
Organization DM RTOP 505-63-50
- 483 Siochi, E. J.: *Summary of GPC/DV Results for Space Exposed Poly(Arylene Ether Phosphine Oxide)s*. (NAS1-19000 Lockheed Engineering & Sciences Company.) NASA CR-198217, September 1995, 7 p.  
Organization DM RTOP 505-63-50
- 484 Siochi, E. J.; Havens, S. J.; Young, P. R.; and Hergenrother, P. M.: Characterization of LARC™-CPI 2 Poly(Amide Acid) Aging by Gel Permeation Chromatography-Differential Viscometry. *High Performance Polymers*, Volume 7, No. 1, March 1995, p. 55-68.  
Organization DM RTOP 505-63-50
- 485 Siochi, E. J.; Young, P. R.; and Bryant, R. G.: Effect of Molecular Weight on Properties of a Soluble Polyimide. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 11-18.  
Organization DM RTOP 505-63-50

- 486 Smith, J. G., Jr.; Connell, J. W.; Siochi, E. J.; and Hergenrother, P. M.: Controlled Molecular Weight Poly(Arylene Ether Benzimidazole)s Endcapped With Benzimidazole and Acetylene Groups. *High Performance Polymers*, Volume 7, No. 1, March 1995, p. 41-54.  
Organization DM RTOP 505-63-50
- 487 Soucek, M. D.; and Pater, R. H.: Novel Inorganic/Organic Semi-Interpenetrating Networks. Presented at 1995 ANTEC, May 7-11, 1995, Boston, Massachusetts. In Proceedings, Volume 41, p. 2676-2684.  
Organization DM RTOP 505-63-50
- 488 Southward, R. E.; Thompson, D. S.; Thompson, D. W.; Caplan, M. L.; and St. Clair, A. K.: Synthesis of Reflective Polyimide Films Via *In Situ* Silver (I) Reduction. *Chemistry of Materials*, Volume 7, No. 11, November 1995, p. 2171-2180.  
Organization DM RTOP 233-02-03
- 489 Southward, R. E.; Thompson, D. S.; Thompson, D. W.; Caplan, M. L.; and St. Clair, A. K.: Reflective Polyimide Films Via *In Situ* Formation of a Silvered Surface. *Proceedings of the ACS-Division of PMSE*, Volume 73, 1995, p. 382-383.  
Organization DM RTOP 233-02-03
- 490 St. Clair, A. K.; Boston, H. G.; and Pratt, J. R.: Polyimides Made From PDMDA. NASA Tech Brief LAR-14487, September 1995.  
Organization DM
- 491 St. Clair, A. K.; St. Clair, T. L.; and Winfree, W. P.: Low Dielectric Polyimides. U. S. Patent 4,428,102. Issued June 27, 1995.  
Organization DM
- 492 St. Clair, A. K.; Yamamoto, H.; Mi, Y.; and Stern, S. A.: Structure/Permeability Relationships of Polyimide Membranes. NASA Tech Brief LAR-14600, June 1995.  
Organization DM
- 493 St. Clair, T. L.; Chang, A. C.; and Working, D. C.: LARC<sup>TM</sup>-IA Thermoplastic Polyimide. Presented at Gordon Research Conference on Chemistry & Physics of Coatings and Films, July 24-28, 1995, New Concord, New Hampshire.  
Organization DM RTOP 505-63-50
- 494 St. Clair, T. L.; and Pratt, J. R.: Polyimides Containing Meta-Biphenyldioxy Moieties and Articles Prepared Therefrom. U. S. Patent 5,445,327. Issued October 3, 1995.  
Organization DM
- 495 St. Clair, T. L.; Progar, D. J.; and Chang, A. C.: A Thermoplastic Polyetherimide Adhesive. Presented at Workshop on High Temperature Resins and Composites, October 11-13, 1995, Williamsburg, Virginia.  
Organization DM RTOP 505-63-50
- 496 St. Clair, T. L.; Progar, D. J.; and Chang, A. C.: A Thermoplastic Polyetherimide Adhesive. Presented at 18th Annual Meeting of the Adhesion Society, February 19-22, 1995, Hilton Head, South Carolina. In Proceedings.  
Organization DM RTOP 505-63-50
- 497 St. Clair, T. L.; St. Clair, A. K.; Gerber, M. K.; and Pratt, J. R.: Polyimides Made From 3,5 Diaminobenzotrifluoride. NASA Tech Brief LAR-14206, February 1995.  
Organization DM

- 498 Weiser, E. S.; and Baucom, R. M.: Molding of Complex Composite Parts Utilizing Modified Silicone Rubber Tooling. *SAMPE Quarterly*, Volume 26, No. 1, October 1994, p. 2-8.  
 Organization DM RTOP 506-43-11
- 499 Young, P. R.; St. Clair, A. K.; and Slemph, W. S.: Characterization of Space Environmental Effects on Selected Polymeric Materials. Presented at 40th International SAMPE Symposium and Exhibition, May 8-11, 1995, Anaheim, California. In Proceedings, Volume 40, p. 747-459.  
 Organization DM RTOP 506-43-11

## Category 29 Materials Processing

- 500 Baucom, R. M.; Snoha, J. J.; and Weiser, E. S.: Modified Silicone-Rubber Tooling for Molding Composite Parts. NASA Tech Brief LAR-15217, May 1995.  
 Organization DM
- 501 Parker, F. R.; Winfree, W. P.; and Barrows, D. A.: Broadband, High-Temperature Ultrasonic Transducer. NASA Tech Brief LAR-14615, March 1995.  
 Organization DM

## Engineering

### Category 31 Engineering (General)

- 502 Amundsen, R. M.; Feldhaus, W. S.; Little, A. D.; and Mitchum, M. V.: *Integration of Design, Structural, Thermal and Optical Analysis and User's Guide for Structural-to-Optical Translator (PATCOD)*. NASA TM-110153, March 1995, 22 p.  
 Organization GK RTOP 243-10-01
- 503 Bement, L. J.; and Schimmel, M. L.: Augmented Shock Wave Severance of Materials. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-2407.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-2047.ps.Z>  
 Organization GK RTOP 297-50-00
- 504 Britcher, C. P.; and Groom, N. J.: Eddy Current Computations Applied to Magnetic Suspensions and Magnetic Bearings. Presented at MAG '95: Magnetic Bearings, Magnetic Drives and Dry Gas Seals, August 10-11, 1995, Alexandria, Virginia. In Proceedings, p. 333-342.  
 Organization DC RTOP 505-64-70
- 505 Dowling, P. K.; and Levine, J. S.: The Kuwait Oil Fires and Their Regional Meteorological Impacts. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
 Organization CA RTOP 146-90-04



- 506 Juang, J-N.; and Hyland, D. C.: Multiprocessor Adaptive Control of a Dynamic System. NASA Tech Brief LAR-15243, May 1995.  
Organization DS
- 507 Juang, J-N.; Longman, R. W.; and Phan, M.: Learning Identification From One Set of Input/Output Data. NASA Tech Brief LAR-14665, April 1995.  
Organization DS

### Category 32 Communications and Radar

- 508 Bailey, M. C.: Computing Radiation From Multiple-Circular-Aperture Antennas (VAX Version). Computer Program LAR-15236.  
Organization DI
- 509 Bailey, M. C.: Computing Radiation From Multiple-Circular-Aperture Antennas (IBM Version). Computer Program LAR-15226.  
Organization DI
- 510 Cockrell, C. R.; and Beck, F. B.: *Note on Use of Slope Diffraction Coefficients for Aperture Antennas on Finite Ground Planes*. NASA TM-110192, August 1995, 14 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110192.ps.Z>  
Organization DI RTOP 505-64-52
- 511 Cravey, R. L.; Fralick, D. T.; and Vedeler, E.: *Radar Cross-Section Measurements and Simulation of a Tethered Satellite: The Small Expendable Deployer System End-Mass Payload*. NASA TM-4613, February 1995, 20 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm4613.ps.Z>  
Organization DI RTOP 505-64-70
- 512 Cravey, R. L.; Tiemsin, P. I.; Bussell, K.; and Dudley, K. L.: *Dielectric Property Measurements in the Electromagnetic Properties Measurement Laboratory*. NASA TM-110147, April 1995, 16 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110147.ps.Z>  
Organization DI RTOP 505-64-52
- 513 Deshpande, M. D.; and Reddy, C. J.: *Application of FEM to Estimate Complex Permittivity of Dielectric Material at Microwave Frequency Using Waveguide Measurements*. (NAS1-19341 ViGYAN, Inc.) NASA CR-198203, August 1995, 24 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198203.ps.Z>  
Organization DI RTOP 505-64-52
- 514 Deshpande, M. D.; Reddy, C. J.; and Cravey, R. L.: Measurement of Complex Permittivity of Dielectric Material at Microwave Frequency Using Waveguide Measurements. Presented at Antenna Measurement Techniques Association 17th Annual Meeting and Symposium, November 13-17, 1995, Williamsburg, Virginia. In Proceedings, p. 312-317.  
Organization DI RTOP 505-64-52
- 515 Ely, J. J.; Christodoulou, C.; and Shively, D. G.: Square Spiral Microstrip Antennas for Wireless Applications. Presented at NTC 95 "The Microwave Systems Conference," May 17-19, 1995, Orlando, Florida. In Proceedings, p. 229-232.  
Organization DI RTOP 505-64-52

- 516 Ely, J. J.; Christodoulou, C.; and Shively, D. G.: Square Spiral Microstrip Antennas: Analysis for Different Sizes and Substrate Parameters Using a Personal Computer. Presented at Southcon/95 Technical Conference, March 7-9, 1995, Ft. Lauderdale, Florida. In Proceedings.  
 Organization DI RTOP 505-64-52
- 517 Hearn, C. P.; and Neece, R. T.: *Reflectometer Distance Measurement Between Parallel Conductive Plates*. NASA TM-4694, November 1995, 20 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4694.ps.Z>  
 Organization DI RTOP 538-04-11
- 518 Patel, P. D.; and Bailey, M. C.: Mutual Coupling Analysis in Finite Planar Arrays of Different Collinear Rectangular Waveguides Covered With Multiple Dielectric Sheets. Presented at 1995 Antenna Symposium, July 11-13, 1995, London, England.  
 Organization DI RTOP 505-64-52
- 519 Reddy, C. J.; and Deshpande, M. D.: *User's Manual for CBS3DS—Version 1.0*. (NAS1-19935 Hampton University.) NASA CR-198236, October 1995, 39 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198236.ps.Z>  
 Organization DI RTOP 505-64-52
- 520 Reddy, C. J.; Deshpande, M. D.; Cockrell, C. R.; and Beck, F. B.: *Electromagnetic Scattering Analysis of a Three-Dimensional Cavity-Backed Aperture in an Infinite Ground Plane Using a Combined Finite Element Method/Method of Moments Approach*. NASA TP-3544, October 1995, 22 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3544.ps.Z>  
 Organization DI RTOP 505-64-70
- 521 Reddy, C. J.; Deshpande, M. D.; and Fralick, D. T.: *Analysis of Elliptically Polarized Cavity Backed Antennas Using a Combined FEM/MoM/GTD Technique*. (NAS1-19935 Hampton University.) NASA CR-198197, August 1995, 24 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198197.ps.Z>  
 Organization DI RTOP 505-64-70
- 522 Reddy, C. J.; Deshpande, M. D.; Fralick, D. T.; Cockrell, C. R.; and Beck, F. B.: Investigation of Circular Archimedean Spiral Antenna for Automobile Applications. Presented at Antenna Measurement Techniques Association 17th Annual Meeting and Symposium, November 13-17, 1995, Williamsburg, Virginia. In Proceedings, p. 451-455.  
 Organization DI RTOP 505-64-52
- 523 Vedeler, E.: Resistive Card Edge Treatment Performance on a Gregorian Compact Range Subreflector. Presented at Antenna Measurement Techniques Association 17th Annual Meeting and Symposium, November 13-17, 1995, Williamsburg, Virginia. In Proceedings, p. 475-479.  
 Organization DI RTOP 505-64-70
- 524 Ybarra, G. A.; Wu, S. M.; Bilbro, G. L.; Ardalan, S. H.; Hearn, C. P.; and Neece, R. T.: Optimal Signal Processing of Frequency-Stepped CW Radar Data. *IEEE Transactions on Microwave Theory and Techniques*, Volume 43, No. 1, January 1995, p. 94-105.  
 Organization DC RTOP 592-01-11

### Category 33 Electronics and Electrical Engineering

- 525 Britcher, C. P.; and Groom, N. J.: Computational Analysis of Static and Dynamic Behavior of Magnetic Suspensions and Magnetic Bearings. Presented at Third International Symposium on Magnetic Suspension Technology, December 12-15, 1995, Tallahassee, Florida.  
Organization DC RTOP 505-64-70
- 526 Burkett, C. G., Jr.; West, J. W.; Hutchinson, M. A.; Lawrence, R. M.; and Crum, J. R.: Thermoelectric Control of Temperatures of Pressure Sensors. NASA Tech Brief LAR-15389, August 1995.  
Organization GH
- 527 Culliton, W. G.: Interface Provides Standard-Bus Communication. NASA Tech Brief LAR-15111, June 1995.  
Organization DF
- 528 Diamond, J. K.; and Nagurny, W. G.: Design of the Signal and Power Conditioning Subsystems for the SEDS End Mass Payloads. Presented at Fourth International Conference on Tethers in Space, April 10-14, 1995, Washington, DC. In Proceedings.  
Organization GL RTOP 967-30-40
- 529 Froggatt, M. E.: Phase-Locked Loop for Measurement of Small and Large Delays. NASA Tech Brief LAR-14840, February 1995.  
Organization DM
- 530 Froggatt, M. E.: Pulsed Phase Locked Loop Strain Monitor. U. S. Patent 5,404,743. Issued April 11, 1995.  
Organization DM
- 531 Hayhurst, A. R.: Device for Testing Continuity and/or Short Circuits in a Cable. U. S. Patent 5,447,152. Issued December 19, 1995.  
Organization AF
- 532 Kendall, B. M.; Bailey, M. C.; Schroeder, L. C.; and Harrington, R. F.: Inflatable Antenna Microwave Radiometer for Soil Moisture Measurement. Presented at Second Topical Symposium on Combined Optical-Microwave Earth and Atmosphere Sensing, April 3-6, 1995, Atlanta, Georgia. In Proceedings, p. 217-219.  
Organization DI RTOP 233-01-03
- 533 Lockard, G. E.: Circuit Stops Prelasing in a Q-Switched Laser. NASA Tech Brief LAR-14790, March 1995.  
Organization GL
- 534 Poggio, A. J.; Burke, G. J.; and Pennock, S. T.: *The Determination of the Constitutive Parameters of a Medium With Application to a Reinforced Concrete Pad.* (L-79902C Lawrence Livermore National Laboratory.) NASA CR-4674, June 1995, 56 p.  
Organization DI RTOP 538-01-13
- 535 Tripp, J. S.: Digital Frequency-Differencing Circuit. NASA Tech Brief LAR-14951, November 1995.  
Organization GH

## Category 34 Fluid Mechanics and Heat Transfer

- 536 Balakrishna, S.; and Kilgore, W. A.: *Performance of the 0.3-Meter Transonic Cryogenic Tunnel With Air, Nitrogen, and Sulfur Hexafluoride Media Under Closed Loop Automatic Control.* (NAS1-19672 ViGYAN, Inc.) NASA CR-195052, January 1995, 34 p.  
Organization DF RTOP 505-59-50
- 537 Bataille, F.; Zhou, Y.; and Bertoglio, J-P.: *Energy Transfer in Compressible Turbulence.* (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198216, ICASE Report No. 95-65, September 1995, 15 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-65.ps.Z>  
Organization A RTOP 505-90-52
- 538 Bauer, F.; Maestrello, L.; and Ting, L.: *Acoustic Field in Unsteady Moving Media.* (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198162, ICASE Report No. 95-39, May 1995, 47 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-39.ps.Z>  
Organization A RTOP 505-90-52
- 539 Bayliss, A.; Maestrello, L.; McGreevy, J. L.; and Fenno, C. C.: *Response of Multi-Panel Assembly to Noise From a Jet in Forward Motion.* (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198164, ICASE Report No. 95-41, May 1995, 29 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-41.ps.Z>  
Organization A RTOP 505-90-52
- 540 Bertolotti, F. P.; and Joslin, R. D.: The Effect of Far-Field Boundary Conditions on Boundary-Layer Transition. *Journal of Computational Physics*, Volume 118, May 1995, p. 392-395.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-jcp-95-p392-5.ps.Z>  
Organization DF RTOP 505-59-50
- 541 Blackaby, N. D.; Dando, A.; and Hall, P.: *The Nonlinear Evolution of Inviscid Görtler Vortices in Three-Dimensional Boundary Layers.* (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198222, ICASE Report No. 95-68, September 1995, 44 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-68.ps.Z>  
Organization A RTOP 505-90-52
- 542 Cattafesta, L. N., III; Iyer, V.; Masad, J. A.; King, R. A.; and Dagenhart, J. R.: Three-Dimensional Boundary-Layer Transition on a Swept Wing at Mach 3.5. *AIAA Journal*, Volume 33, No. 11, November 1995, p. 2032.  
Organization DF RTOP 505-59-50
- 543 Choudhari, M. M.; Ng, L. L.; and Streett, C. L.: *Acoustic Receptivity Due to Weak Surface Inhomogeneities in Adverse Pressure Gradient Boundary Layers.* NASA TM-4577, February 1995, 36 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm4577.ps.Z>  
Organization DF RTOP 537-03-23

- 544 Criminale, W. O.; Jackson, T. L.; and Lasseigne, D. G.: *The Initial-Value Problem for Viscous Channel Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195034, ICASE Report No. 95-6, February 1995, 29 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-06.ps.Z  
Organization A RTOP 505-90-52
- 545 Criminale, W. O.; Lasseigne, D. G.; and Jackson, T. L.: *Vortex Perturbation Dynamics*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198182, ICASE Report No. 95-52, July 1995, 21 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-52.ps.Z  
Organization A RTOP 505-90-52
- 546 D'Ambrosio, D.; and Marsilio, R.: *Shock-Induced Separated Structures in Symmetric Corner Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198239, ICASE Report No. 95-79, December 1995, 32 p.  
Organization A RTOP 505-90-52
- 547 D'Ambrosio, D.; and Marsilio, R.: *A Numerical Method for Solving the Three-Dimensional Parabolized Navier-Stokes Equations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198159, ICASE Report No. 95-38, May 1995, 24 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-38.ps.Z  
Organization A RTOP 505-90-52
- 548 Dando, A.; and Hall, P.: *Wavenumber Selection for Small-Wavelength Görtler Vortices in Curved Channel Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195063, ICASE Report No. 95-21, April 1995, 28 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-21.ps.Z  
Organization A RTOP 505-90-52
- 549 Dogra, V. K.; Moss, J. N.; and Price, J. M.: Near Wake Structure for a Generic ASTV Configuration of Aeroassisted Space Transfer Vehicles. *Journal of Spacecraft and Rockets*, Volume 31, No. 6, November-December 1994, p. 953-959.  
Organization DG RTOP 506-40-91
- 550 Dogra, V. K.; Moss, J. N.; Wilmoth, R. G.; and Price, J. M.: Hypersonic Rarefied Flow Past Spheres Including Wake Structure. *Journal of Spacecraft and Rockets*, Volume 31, No. 5, September-October 1994, p. 713-718.  
Organization DG RTOP 506-40-91
- 551 Dogra, V. K.; Moss, J. N.; Wilmoth, R. G.; Taylor, J. C.; and Hassan, B. A.: Effects of Chemistry on Blunt-Body Wake Structure. *AIAA Journal*, Volume 33, No. 3, March 1995, p. 463-469.  
Organization DG RTOP 232-01-04
- 552 Dogra, V. K.; Moss, J. N.; Wilmoth, R. G.; Taylor, J. C.; and Hassan, H. A.: Blunt Body Rarefied Wakes for Earth Entry. *Journal of Thermophysics and Heat Transfer*, Volume 9, No. 3, July-September 1995, p. 464-470.  
Organization DG RTOP 242-80-01
- 553 Item deleted.

- 554 Gartenberg, E.: *A Concept for Transition Mapping on a  $10^\circ$ -Cone in the National Transonic Facility Using Flow-Pressure Variation*. (NAS1-19858 Old Dominion University.) NASA CR-198209, September 1995, 49 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198209.ps.Z  
Organization DA RTOP 505-59-54
- 555 Girimaji, S. S.: *Fully-Explicit and Self-Consistent Algebraic Reynolds Stress Models*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198243, ICASE Report No. 95-82, December 1995, 24 p.  
Organization A RTOP 505-90-52
- 556 Girimaji, S. S.; and Zhou, Y.: *Analysis and Modeling of Subgrid Scalar Mixing Using Numerical Data*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198169, ICASE Report No. 95-44, May 1995, 31 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-44.ps.Z  
Organization A RTOP 505-90-52
- 557 Girimaji, S. S.; and Zhou, Y.: *Spectrum and Energy Transfer in Steady Burgers Turbulence*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195047, ICASE Report No. 95-13, March 1995, 19 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-13.ps.Z  
Organization A RTOP 505-90-52
- 558 Gnoffo, P. A.; Weilmuenster, K. J.; Braun, R. D.; and Cruz, C. I.: Effects of Sonic Line Transition on Aerothermodynamics of the Mars Pathfinder Probe. Presented at 13th AIAA Applied Aerodynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1825.  
Organization DG RTOP 232-01-04
- 559 Greendyke, R. B.; and Gnoffo, P. A.: *Convective and Radiative Heating for Vehicle Return From the Moon and Mars*. NASA TM-110185, July 1995, 26 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110185.ps.Z  
Organization DG RTOP 242-80-01
- 560 Greendyke, R. B.; and Hartung, L. C.: Convective and Radiative Heat Transfer Analysis for the FIRE II Forebody. *Journal of Spacecraft and Rockets*, Volume 31, No. 6, November-December 1994, p. 986-992.  
Organization DG RTOP 506-40-91
- 561 Greene, F. A.: Application of the Multigrid Solution Technique to Hypersonic Entry Vehicles. *Journal of Spacecraft and Rockets*, Volume 31, No. 5, September-October 1994, p. 744-750.  
Organization DG RTOP 506-40-91
- 562 Gupta, R. N.; and Lee, K-P.: Thermo-Chemical Nonequilibrium Analysis of Viscous Shock-Layers. Presented at AIAA 30th Thermophysics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2083.  
Organization DG RTOP 232-01-04
- 563 Hall, P.; and Papageorgiou, D. T.: *On the Modulational Instability of Large Amplitude Waves in Supersonic Boundary Layers*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195072, ICASE Report No. 95-29, April 1995, 44 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-29.ps.Z  
Organization A RTOP 505-90-52

- 564 Herrin, J. L.; and Dutton, J. C.: Effect of a Rapid Expansion on the Development of Compressible Free Shear Layers. *Physics of Fluids*, Volume 7, No. 1, January 1995, p. 159-171.  
 Organization DF RTOP 505-59-50
- 565 Holland, S. D.: *Mach 10 Experimental Database of a Three-Dimensional Scramjet Inlet Flow Field*. NASA TM-4648, September 1995, 217 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4648.ps.Z>  
 Organization DG RTOP 506-40-41
- 566 Holland, S. D.: *Internal Aerodynamics of a Generic Three-Dimensional Scramjet Inlet at Mach 10*. NASA TP-3476, January 1995, 54 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3476.ps.Z>  
 Organization DG RTOP 506-40-41
- 567 Holland, S. D.: *Mach 10 Computational Study of a Three-Dimensional Scramjet Inlet Flow Field*. NASA TM-4602, March 1995, 30 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm4602.ps.Z>  
 Organization DG RTOP 506-40-41
- 568 Hollis, B. R.: *User's Manual for the One-Dimensional Hypersonic Experimental Aerothermodynamic (1DHEAT) Data Reduction Code*. (NAG1-1663 and NAGW-1331 North Carolina State University.) NASA CR-4691, August 1995, 72 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr4691.ps.Z>  
 Organization DG RTOP 242-20-08
- 569 Hsu, P-F; and Farmer, J. T.: Benchmark Solutions of Radiative Heat Transfer Within Nonhomogeneous Participating Media Using the Monte Carlo and YIX Methods. Presented at 1995 National Heat Transfer Conference, August 5-9, 1995, Portland, Oregon. In Proceedings.  
 Organization CB RTOP 477-50-00
- 570 Hu, F. Q.: *On Absorbing Boundary Conditions for Linearized Euler Equations by a Perfectly Matched Layer*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198224, ICASE Report No. 95-70, October 1995, 28 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-70.ps.Z>  
 Organization A RTOP 505-90-52
- 571 Ismail, S.; and Browell, E. V.: NASA LASE Water Vapor Differential Absorption Lidar Measurements and Performance Evaluation. Presented at Second Topical Symposium on Combined Optical-Microwave Earth and Atmosphere Sensing, April 3-6, 1995, Atlanta, Georgia. In Proceedings, p. 101.  
 Organization CA RTOP 618-32-33
- 572 Iyer, V.: *Computer Program BL2D for Solving Two-Dimensional and Axisymmetric Boundary Layers*. (NAS1-19672 ViGYAN, Inc.) NASA CR-4668, May 1995, 98 p.  
 Organization DF RTOP 537-03-23
- 573 Joslin, R. D.: Evolution of Stationary Crossflow Vortices in Boundary Layers on Swept Wings. *AIAA Journal*, Volume 33, No. 7, July 1995, p. 1279-1285.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-aiaaj-v33n7rdj.ps.Z>  
 Organization DF RTOP 505-59-50

- 574 Joslin, R. D.: Direct Simulation of Evolution and Control of Three-Dimensional Instabilities in Attachment-Line Boundary Layers. *Journal of Fluid Mechanics*, Volume 291, May 1995, p. 369-392.  
 Organization DF RTOP 505-59-50
- 575 Joslin, R. D.; Gunzburger, M. D.; Nicolaidis, R. A.; Erlebacher, G.; and Hussaini, M. Y.: *A Self-Contained, Automated Methodology for Optimal Flow Control Validated for Transition Delay*. (NAS1-19840 Institute for Computer Applications in Science and Engineering.) NASA CR-198215, ICASE Report No. 95-64, September 1995, 46 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-64.ps.Z>  
 Organization A RTOP 505-90-52
- 576 Killough, B. D., Jr.: Thermal Design and Analysis of the CERES Instrument for the EOS-AM Spacecraft. Presented at 25th International Conference on Environmental Systems, July 10-13, 1995, San Diego, California. SAE Paper No. 951562.  
 Organization GK RTOP 225-12-02
- 577 Korte, J. J.; and Hodge, J. S.: Flow Quality of Hypersonic Wind-Tunnel Nozzles Designed Using Computational Fluid Dynamics. *Journal of Spacecraft and Rockets*, Volume 32, No. 4, July-August 1995, p. 569.  
 Organization DG RTOP 505-70-62
- 578 Larar, A. M.; Drayson, S. R.; and Hays, P. B.: Global Tropospheric and Total Ozone Monitoring With a Double-Etalon Fabry-Perot Interferometer. Presented at Sixth Topical Meeting on Optical Remote Sensing of the Atmosphere, February 6-10, 1995, Salt Lake City, Utah.  
 Organization CA RTOP 464-51-01
- 579 Mahalov, A.; and Zhou, Y.: *Analytical and Phenomenological Studies of Rotating Turbulence*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198227, ICASE Report No. 95-72, October 1995, 33 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-72.ps.Z>  
 Organization A RTOP 505-90-52
- 580 Micol, J. R.: Aerothermodynamic Measurement and Prediction for a Modified Orbiter at Mach 6 and 10 in Air. *Journal of Spacecraft and Rockets*, Volume 32, No. 5, September-October 1995, p. 737-750.  
 Organization DG RTOP 506-40-41
- 581 Mitcheltree, R. A.: Computational Aerothermodynamics for Mars Pathfinder Including Turbulence. Presented at AIAA Atmospheric Flight Mechanics Conference, August 7-9, 1995, Baltimore, Maryland. AIAA Paper No. 95-3493.  
 Organization DG RTOP 242-80-01
- 582 Mitcheltree, R. A.; and Gnoffo, P. A.: Wake Flow About the Mars Pathfinder Entry Vehicle. *Journal of Spacecraft and Rockets*, Volume 32, No. 5, September-October 1995, p. 771.  
 Organization DG RTOP 232-01-04
- 583 Moss, J. N.: Rarefied Flows of Planetary Entry Capsules. Presented at AGARD Lecture Series on "Aerothermodynamics and Propulsion Integration for Hypersonic Vehicles," March 20-22, 1995, Brussels, Belgium. In Proceedings.  
 Organization DG RTOP 242-80-01



- 584 Moss, J. N.; Price, J. M.; and Dogra, V. K.: *DSMC Calculations for a 70° Blunted Cone at 3.2 km/s in Nitrogen*. NASA TM-109181, January 1995, 53 p.  
 Organization DG RTOP 242-80-01
- 585 Moss, J. N.; Price, J. M.; Dogra, V. K.; and Hash, D. B.: Comparison of DSMC and Experimental Results for Hypersonic External Flows. Presented at AIAA 30th Thermophysics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2028.  
 Organization DG RTOP 232-01-04
- 586 Nance, R. P.; Wilmoth, R. G.; Moon, B.; Hassan, H. A.; and Saltz, J.: Parallel Monte Carlo Simulation of Three-Dimensional Flow Over a Flat Plate. *Journal of Thermophysics and Heat Transfer*, Volume 9, No. 3, July-September 1995, p. 471.  
 Organization DG RTOP 232-01-04
- 587 Olsen, G. C.; and Nowak, R. J.: *Hydrogen Film Cooling With Incident and Swept-Shock Interactions in a Mach 6.4 Nitrogen Free Stream*. NASA TM-4603, June 1995, 45 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4603.ps.Z>  
 Organization DG RTOP 506-43-31
- 588 Papageorgiou, D. T.: *On the Breakup of Viscous Liquid Threads*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195023, ICASE Report No. 95-1, January 1995, 49 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-01.ps.Z>  
 Organization A RTOP 505-90-52
- 589 Pruett, C. D.: On the Accurate Prediction of the Wall-Normal Velocity in Compressible Boundary-Layer Flow. *International Journal for Numerical Methods in Fluids*, Volume 16, No. 2, January 30, 1993, p. 133-152.  
 Organization DF RTOP 505-59-40
- 590 Pruett, C. D.; Zang, T. A.; Chang, C-L.; and Carpenter, M. H.: Spatial Direct Numerical Simulation of High-Speed Boundary-Layer Flows—Part I: Algorithmic Considerations and Validations. *Theoretical and Computational Fluid Mechanics Journal*, Volume 7, No. 1, 1995, p. 49.  
 Organization DF RTOP 505-70-59
- 591 Rai, M. M.; Gatski, T. B.; and Erlebacher, G.: Direct Simulation of Spatially Evolving Compressible Turbulent Boundary Layers. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0583.  
 Organization DF RTOP 505-60-01
- 592 Rault, D. F.: Methodology for Thruster Plume Simulation and Impingement Effects Characterized Using DSMC. Presented at AIAA 30th Thermophysics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-2032.  
 Organization DG RTOP 232-01-04
- 593 Rault, D. F.: Aerodynamics of Shuttle Orbiter at High Altitudes. *Journal of Spacecraft and Rockets*, Volume 31, No. 6, November-December 1994, p. 944-952.  
 Organization DG RTOP 506-40-91
- 594 Rault, D. F.: Aerodynamic Characteristics of a Hypersonic Viscous Optimized Waverider at High Altitudes. *Journal of Spacecraft and Rockets*, Volume 31, No. 5, September-October 1994, p. 719-727.  
 Organization DG RTOP 506-40-91

- 595 Rault, D. F.; and Woronowicz, M. S.: Application of Direct-Simulation Monte Carlo to Satellite Contamination Studies. *Journal of Spacecraft and Rockets*, Volume 32, No. 3, May-June 1995, p. 392.  
Organization DG RTOP 506-40-91
- 596 Reed, J. C.; and Bushnell, D. M.: Polymer/Riblet Combination for Hydrodynamic Skin Friction Reduction. U. S. Patent 5,445,095. Issued August 29, 1995.  
Organization A
- 597 Riley, C. J.; and DeJarnette, F. R.: Engineering Interactive Inviscid-Boundary Layer Method for Hypersonic Flow. *Journal of Spacecraft and Rockets*, Volume 32, No. 6, November-December 1995, p. 1081.  
Organization DG RTOP 242-80-01
- 598 Ristorcelli, J. R.: *Diagnostic Statistics for the Assessment and Characterization of Complex Turbulent Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198221, ICASE Report No. 95-67, December 1995, 38 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-67.ps.Z>  
Organization A RTOP 505-90-52
- 599 Ristorcelli, J. R.: *A Pseudo-Sound Constitutive Relationship for the Dilatational Covariances in Compressible Turbulence: An Analytical Theory*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195064, ICASE Report No. 95-22, March 1995, 50 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-22.ps.Z>  
Organization A RTOP 505-90-52
- 600 Rodi, P. E.: Effects of Body-Side Compression on Forward-Swept Sidewall Compression Inlets. *Journal of Propulsion and Power*, Volume 11, No. 6, November-December 1995, p. 1242.  
Organization DF RTOP 505-70-62
- 601 Rubinstein, R.: *Relaxation Approximation in the Theory of Shear Turbulence*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198186, ICASE Report No. 95-55, July 1995, 21 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-55.ps.Z>  
Organization A RTOP 505-90-52
- 602 Salas, M. D.; and Iollo, A.: *Entropy Jump Across an Inviscid Shock Wave*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195046, ICASE Report No. 95-12, February 1995, 16 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-12.ps.Z>  
Organization A RTOP 505-90-52
- 603 Settles, G. S.; Hackett, E. E.; Miller, J. D.; and Weinstein, L. M.: Full-Scale Schlieren Flow Visualization. Presented at 7th International Symposium on Flow Visualization, September 11-14, 1995, Seattle, Washington. In Proceedings, p. 2-13.  
Organization DF RTOP 505-59-50
- 604 Shortis, T. A.; and Hall, P.: *On the Nonlinear Stability of the Unsteady, Viscous Flow of an Incompressible Fluid in a Curved Pipe*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195065, ICASE Report No. 95-23, April 1995, 23 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-23.ps.Z>  
Organization A RTOP 505-90-52

- 605 Smith, M. W.; and Northam, G. B.: Application of Absorption Filter—Planar Doppler Velocimetry to Sonic and Supersonic Jets. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0299.  
Organization DG RTOP 505-70-62
- 606 Speziale, C. G.: *A Review of Reynolds Stress Models for Turbulent Shear Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195054, ICASE Report No. 95-15, March 1995, 44 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-15.ps.Z>  
Organization A RTOP 505-90-52
- 607 Speziale, C. G.; Abid, R.; and Blaisdell, G. A.: *On the Consistency of Reynolds Stress Turbulence Closures With Hydrodynamic Stability Theory*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198173, ICASE Report No. 95-46, July 1995, 22 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-46.ps.Z>  
Organization A RTOP 505-90-52
- 608 Speziale, C. G.; and Gatski, T. B.: An Alternative Assessment of Second-Order Closure Models in Turbulent Shear Flows. *AIAA Journal*, Volume 32, No. 10, October 1994, p. 2113-2115.  
Organization DF RTOP 505-59-50
- 609 Stalker, R. J.; Bakos, R. J.; Morgan, R. G.; Porter, L.; Mee, D.; Paull, A.; Tuttle, S. L.; Simmons, J. M.; Wendt, M.; Skinner, K.; He, Y.; Neely, A. J.; and Daniel, W.: *Shock Tunnel Studies of Scramjet Phenomena 1993—Supplement 10*. (NAGW-674 University of Queensland.) NASA CR-195038, January 1995, 113 p.  
Organization DG RTOP 505-70-62
- 610 Tartabini, P. V.; Wilmoth, R. G.; and Rault, D. F.: Direct Simulation Monte Carlo Calculation of a Jet Interaction Experiment. *Journal of Spacecraft and Rockets*, Volume 32, No. 1, January–February 1995, p. 75-83.  
Organization DS RTOP 506-40-91
- 611 Verhaagen, N. G.; Jenkins, L. N.; Kern, S. B.; and Washburn, A. E.: *A Study of the Vortex Flow Over 76/40-deg Double-Delta Wing*. (NAS1-195032 Institute for Computer Applications in Science and Engineering.) NASA CR-195032, ICASE Report No. 95-5, February 1995, 33 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-05.ps.Z>  
Organization A RTOP 505-90-52
- 612 Wilmoth, R. G.; Mitcheltree, R. A.; Moss, J. N.; and Dogra, V. K.: Zonally-Decoupled DSMC Solutions of Hypersonic Blunt Body Wake Flows. *Journal of Spacecraft and Rockets*, Volume 31, No. 6, November–December 1994, p. 971-979.  
Organization DG RTOP 506-40-91
- 613 Wood, W. A.; and Eberhardt, S.: Dual-Code Solution Strategy for Chemically-Reacting Hypersonic Flows. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0158.  
Organization DG RTOP 232-01-04
- 614 Wu, S. F.; and Maestrello, L.: Responses of Finite Baffled Plate to Turbulent Flow Excitations. *AIAA Journal*, Volume 33, No. 1, January 1995, p. 13-19.  
Organization DF RTOP 505-90-52

- 615 Zhou, Y.: *A Phenomenological Treatment of Rotating Turbulence*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198168, ICASE Report No. 95-43, May 1995, 13 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-43.ps.Z  
Organization A RTOP 505-90-52
- 616 Zhou, Y.: *Classical Closure Theory and LAM's Interpretation of  $\epsilon$ -RNG*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195061, ICASE Report No. 95-19, March 1995, 10 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-19.ps.Z  
Organization A RTOP 505-90-52
- 617 Zhou, Y.; and Rubinstein, R.: *Sweeping and Straining Effects in Sound Generation by High Reynolds Number Isotropic Turbulence*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198235, ICASE Report No. 95-77, November 1995, 11 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-77.ps.Z  
Organization A RTOP 505-90-52

### Category 35 Instrumentation and Photography

- 618 Belvin, W. K.: *Spacecraft Jitter Attenuation Using Embedded Piezoelectric Actuators*. Presented at International Forum on Aeroelasticity and Structural Dynamics 1995, June 26-28, 1995, Manchester, England. In Proceedings.  
Organization DS RTOP 233-01-01
- 619 Browell, E. V.: *Airborne Remote Sensing of Ozone and Aerosol Distributions for the Study of Stratosphere-Troposphere Exchange and Correlation of Observed Ozone Distributions With PV Analyses*. Presented at World Climate Research Program—Stratospheric Processes and Their Role in Climate, June 12-15, 1995, Quebec, Canada.  
Organization CA RTOP 464-14-34
- 620 Browell, E. V.; Grant, W. B.; Clayton, M. E.; Nowicki, G. D.; Fenn, M. A.; Butler, C. F.; Newell, R. E.; Wu, Z.-X.; and Fuelberg, H. E.: *Use of Airborne Lidar Ozone and Aerosol Data in the Study of Stratosphere-Troposphere Exchange*. Presented at Annual Meeting: The Atmospheric Effects of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
Organization CA RTOP 464-14-34
- 621 Burkett, C. G., Jr.; Bauserman, W. A., Jr.; and West, J. W.: *Apparatus Tests Thermocouples for Seebeck Inhomogeneity*. NASA Tech Brief LAR-15198, January 1995.  
Organization GH
- 622 Burner, A. W.: *Zoom Lens Calibration for Wind Tunnel Measurements*. Presented at Videometrics IV, October 22-26, 1995, Philadelphia, Pennsylvania. In Proceedings of SPIE, Volume 2598, p. 19-33.  
Organization GH RTOP 505-59-54
- 623 Cagle, C. M.: *Fixture for Mounting a Pressure Sensor*. NASA Tech Brief LAR-15070, January 1995.  
Organization GH

- 624 Chapman, J. J.; Hopson, P., Jr.; and Kruse, N. M.: *A Hybrid Electronically Scanned Pressure Module for Cryogenic Environments*. NASA TM-110146, May 1995, 11 p.  
 Organization CA RTOP 505-59-54
- 625 Daryabeigi, K.; Dillon-Townes, L. A.; Johnson, P. B.; and Ash, R. L.: Flexible Multiplexed Surface Temperature Sensor. NASA Tech Brief LAR-14003, February 1995.  
 Organization GH
- 626 Heyman, J. S.: Magnetic or Optical Surface Layer Would Indicate Strain. NASA Tech Brief LAR-14510, October 1995.  
 Organization GH
- 627 Higdon, N. S.; Chyba, T. H.; Ponsardin, P.; De Young, R. J.; and Browell, E. V.: Recent Developments and Field Tests of the NASA Langley Research Center Airborne Water Vapor DIAL System. Presented at Seventh Topical Meeting of the Optical Remote Sensing of the Atmosphere, February 6-10, 1995, Salt Lake City, Utah. In Proceedings.  
 Organization CA RTOP 460-21-49
- 628 Holmes, H. K.: Compensating for Apparent Strain at High Temperature. NASA Tech Brief LAR-14726, February 1995.  
 Organization GH
- 629 Huck, F. O.; Fales, C. L., Jr.; Jobson, D. J.; and Rahman, Z-U.: Electro-Optical Design for Efficient Visual Communication. *Optical Engineering*, Volume 34, No. 3, March 1995, p. 795-813.  
 Organization DI RTOP 233-01-03
- 630 Ismail, S.; and Browell, E. V.: LASE Observations of Cirrus Clouds and Associated Water Vapor Distributions. Presented at Annual Meeting of the Atmospheric Effects of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
 Organization CA RTOP 618-32-33
- 631 Jobson, D. J.; and Woodell, G. A.: *Properties of a Center/Surround Retinex: Part 2—Surround Design*. NASA TM-110188, August 1995, 14 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110188.ps.Z>  
 Organization DI RTOP 233-01-03
- 632 McAdoo, J. A.; Towe, E.; Bishop, W. L.; and Wang, L-G.: Circular Metal/Semiconductor/Metal Photodetectors. NASA Tech Brief LAR-15172, September 1995.  
 Organization GL
- 633 McAdoo, J. A.; Towe, E.; Bishop, W. L.; and Wang, L-G.: Circular Electrode Geometry Metal-Semiconductor-Metal Photodetectors. U. S. Patent 5,451,769. Issued September 19, 1995.  
 Organization GL
- 634 McGinley, C. B.; Stephens, R. M.; Hopson, P., Jr.; Bartlett, J. E.; Sheplak, M.; and Spina, E. F.: Microsensor Hot-Film Anemometer. NASA Tech Brief LAR-15112, April 1995.  
 Organization DF
- 635 Montgomery, R. C.; and LaFleur, S. S.: Real-Time, Holographic, Dynamic Image-Storage Device. NASA Tech Brief LAR-13989, February 1995.  
 Organization DC

- 636 Oglesby, D. M.; Leighty, B. D.; and Upchurch, B. T.: Pressure Sensitive Paint With an Internal Reference Luminophore. Presented at 41st International Instrumentation Symposium, May 7-11, 1995, Denver, Colorado. In Proceedings.  
Organization GH RTOP 505-59-54
- 637 Oglesby, D. M.; Puram, C. K.; and Upchurch, B. T.: *Optimization of Measurements With Pressure Sensitive Paints*. NASA TM-4695, June 1995, 6 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4695.ps.Z  
Organization GH RTOP 505-59-54
- 638 Rahman, Z-U.: *Properties of a Center/Surround Retinex: Part 1-Signal Processing Design*. (NAS1-19603 Science and Technology Corporation.) NASA CR-198194, August 1995, 14 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr198194.ps.Z  
Organization DI RTOP 233-01-03
- 639 Rhew, R. D.: Development of the SEDS EMP Tensiometer and Tether Attachment Mechanism. Presented at Fourth International Conference on Tethers in Space, April 10-14, 1995, Washington, DC. In Proceedings.  
Organization GH RTOP 967-30-40
- 640 Shortis, M. R.; and Snow, W. L.: Calibration of CCD Cameras for Field and Frame Capture Modes. Presented at Conference on Digital Photogrammetry and Remote Sensing '95, June 25-30, 1995, St. Petersburg, Russia.  
Organization GH RTOP 505-68-70
- 641 Shortis, M. R.; Snow, W. L.; and Goad, W. K.: Comparative Geometric Tests of Industrial and Scientific CCD Cameras Using Plumb Line and Test Range Calibrations. Presented at ISPRS Intercommission Workshop From Pixels to Sequences, March 22-24, 1995, Zurich, Switzerland.  
Organization GH RTOP 505-61-05
- 642 Snow, W. L.; and Shortis, M. R.: A Rigid Body Motion Analysis System for Offline Processing of Time Coded Video Sequences. Presented at Videometrics IV, October 22-26, 1995, Philadelphia, Pennsylvania. In Proceedings of SPIE, Volume 2598, p. 220-232.  
Organization GH RTOP 538-04-14
- 643 Tchong, P.; Tripp, J. S.; and Finley, T. D.: *Effects of Yaw and Pitch Motion on Model Attitude Measurements*. NASA TM-4641, February 1995, 9 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm4641.ps.Z  
Organization GH RTOP 505-59-54
- 644 Tripp, J. S.; and Daniels, T. S.: Controllable Bidirectional DC Power Sources for Large Loads. NASA Tech Brief LAR-14664, January 1995.  
Organization GH
- 645 Tripp, J. S.; Hare, D. A.; and Tchong, P.: *High-Precision Buffer Circuit for Suppression of Regenerative Oscillation*. NASA TM-4658, May 1995, 16 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4658.ps.Z  
Organization GH RTOP 505-59-54
- 646 Tripp, J. S.; Hare, D. A.; and Tchong, P.: Analysis and Design of a Regenerative Oscillation Suppression Circuit. Presented at 41st International Instrumentation Symposium, May 7-11, 1995, Denver, Colorado. In Proceedings, p. 107-116.  
Organization GH RTOP 505-59-54

- 647 Wong, D. T.: Inertial Sensor Alignment Mechanism (ISAM). Presented at 18th Transducer Workshop, June 20-22, 1995, Colorado Springs, Colorado.  
 Organization GH RTOP 505-59-54
- 648 Wright, K. D., II; and Gray, D. L.: High-Density Digital Data Storage System. NASA Tech Brief LAR-14651, February 1995.  
 Organization GH
- 649 Yu, E.; Cha, S. S.; and Burner, A. W.: Interferometric Tomographic Measurement of an Instantaneous Flow Field Under Adverse Environments. Presented at Optical Technique in Fluid, Thermal, and Combustion Flow, July 9-14, 1995, San Diego, California. In Proceedings.  
 Organization GH RTOP 274-00-95
- 650 Zuckerwar, A. J.; and Cuomo, F. W.: Field Tests of a High-Temperature Fiber Optic Lever Microphone. Presented at 129th Meeting of the Acoustical Society of America, May 30-June 3, 1995, Washington, DC. In The J. Acoust. Soc. Am., Vol. 97, No. 5, Pt. 2, May 1995, p. 3252.  
 Organization GH RTOP 537-02-22
- 651 Zuckerwar, A. J.; Cuomo, F. W.; Nguyen, T. D.; Rizzi, S. A.; and Clevenson, S. A.: High Temperature Fiber Optic Lever Microphone. *Journal of the Acoustical Society of America*, Volume 97, No. 6, June 1995, p. 3605-3616.  
 Organization GH RTOP 763-23-71
- 652 Zuckerwar, A. J.; and Davis, D. C.: Acoustic Calibration Apparatus for Calibrating Plethysmographic Acoustic Pressure Sensor. U. S. Patent 5,448,904. Issued September 12, 1995.  
 Organization GH

### Category 36 Lasers and Masers

- 653 Beutner, T. J.; Baust, H. D.; and Meyers, J. F.: Doppler Global Velocimetry Measurements of a Vortex-Tall Interaction. Presented at 7th International Symposium on Flow Visualization, September 11-14, 1995, Seattle, Washington. In Proceedings, p. 418-423.  
 Organization DF RTOP 538-03-12
- 654 Cook, A. L.; and Hendricks, H. D.: Characteristics of Linewidth-Narrowed Distributed Bragg Reflector Lasers With a Fiber External Cavity Formed With the Vertical Second-Order Grating Emission. *IEEE Journal of Lightwave Technology*, Volume 13, No. 3, March 1995, p. 356-363.  
 Organization DI RTOP 233-01-03
- 655 Costen, R. C.; Heinbockel, J. H.; Miner, G. A.; Meador, W. E., Jr.; Tabibi, B. M.; Lee, J. H.; and Williams, M. D.: *Reduced Dimer Production in Solar-Simulator-Pumped Continuous Wave Iodine Lasers Based on Model Simulations and Scaling and Pumping Studies*. NASA TP-3486, March 1995, 69 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3486.ps.Z>  
 Organization DM RTOP 232-01-04

- 656 Harvey, G. A.; Chyba, T. H.; and Cimolino, M. C.: Cleanliness and Damage Measurements of Optics in Atmospheric Sensing High Energy Lasers. Presented at 27th Annual Boulder Damage Symposium, October 30–November 1, 1995, Boulder, Colorado. In Proceedings.  
Organization GK RTOP 460-21-42
- 657 Hepner, T. E.: State-of-the-Art Laser Doppler Velocimeter Signal Processors: Calibration and Evaluation. In *Selected Technical Papers From the Aerodynamic Measurement Technology Committee: 32nd AIAA Aerospace Sciences Meeting and Exhibit*, 1994.  
Organization DF RTOP 505-59-54
- 658 Hunter, W. W., Jr.; Humphreys, W. M., Jr.; and Bartram, S. M.: Fast Light-Sheet Scanner. NASA Tech Brief LAR-14644, December 1995.  
Organization DF
- 659 Meyers, J. F.: Technology and Spin-Offs From Doppler Global Velocimetry. Presented at 12th International Symposium on the Unification of Analytical Computational and Experimental Solution Methodologies, July 6–8, 1995, Worcester, Massachusetts.  
Organization DF RTOP 505-59-54
- 660 Meyers, J. F.: Development of Doppler Global Velocimetry as a Flow Diagnostics Tool. *Measurement Science & Technology*, Volume 6, No. 5, June 1995, p. 769-783.  
Organization DF RTOP 505-59-54
- 661 Meyers, J. F.; Usry, J. W.; and Miller, L. S.: Assessing the Capability of Doppler Global Velocimetry to Measure Vortical Flow Fields. *Journal of Aerospace Engineering*, Volume 208, Part G, December 1994, p. 99-105.  
Organization DF RTOP 505-59-54
- 662 Morris, N. A.; Connolly, J. C.; Martinelli, R. U.; Abeles, J. H.; and Cook, A. L.: Single-Mode Distributed-Feedback 761-nm GaAs/AlGaAs Quantum-Well Laser. *IEEE Photonics Technology Letters*, Volume 7, No. 5, May 1995, p. 455-457.  
Organization DI RTOP 233-01-03
- 663 Morris, N. A.; Connolly, J. C.; Martinelli, R. U.; Abeles, J. H.; Cooper, D. E.; Carlisle, C. B.; Riris, H.; and Cook, A. L.: Single-Mode Distributed-Feedback GaAs/AlGaAs Quantum-Well Lasers for Laser Absorption Spectroscopy. Presented at SPIE's International Symposium on Photonics West '95, Solid State Lasers and Nonlinear Crystals, February 4-10, 1995, San Jose, California. In Proceedings.  
Organization DI RTOP 233-01-03
- 664 Schuster, G. L.; and Andrews, J. R.: Coherent Beam Combining—Optical Loss Effects on Power Scaling. *Applied Optics*, Volume 34, No. 30, October 20, 1995, p. 6801-6805.  
Organization CA RTOP 232-01-04
- 665 Tyson, R. W.; Ellison, J. C.; and Whitehead, P. R.: NASP Government Work Package Implementation. Presented at AIAA 6th International Aerospace Plane and Hypersonics Technologies Conference, April 3-7, 1995, Chattanooga, Tennessee. AIAA Paper No. 95-6053.  
Organization J RTOP 466-10-04
- 666 Williams, M. D.; Walker, G. H.; Humes, D. H.; and Kwon, J. H.: Satellites Would Transmit Power by Laser Beams. NASA Tech Brief LAR-14633, August 1995.  
Organization DG



## Category 37 Mechanical Engineering

- 667 Smith, R. W.; and Rhodes, M. D.: End Effector Coupler/Decoupler. NASA Tech Brief LAR-14984, July 1995.  
Organization DS

## Category 38 Quality Assurance and Reliability

- 668 Blanchard, R. C.; and Nicholson, J. Y.: *Orbiter Rarefied-Flow Reentry Measurements From the OARE on STS-62*. NASA TM-110182, June 1995, 35 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110182.ps.Z>  
Organization DG RTOP 242-80-01
- 669 Blanchard, R. C.; and Nicholson, J. Y.: *Summary of OARE Flight Calibration Measurements*. NASA TM-109159, January 1995, 63 p.  
Organization DG RTOP 242-80-01
- 670 Blanchard, R. C.; Nicholson, J. Y.; and Ritter, J. R.: Absolute Acceleration Measurements on STS-50 From the Orbital Acceleration Research Experiment (OARE). *International Journal for Microgravity Research and Applications*, Volume 7, No. 1, 1994, p. 60-68.  
Organization DG RTOP 242-80-01
- 671 Madaras, E. I.: Phase-Insensitive Ultrasonic Testing System. NASA Tech Brief LAR-13980, February 1995.  
Organization DM
- 672 Madaras, E. I.: Device for Ultrasonic Scanning of Curved Object. NASA Tech Brief LAR-14621, February 1995.  
Organization DM
- 673 Madaras, E. I.: Method and Apparatus for Non-Destructive Evaluation of Composite Materials With Cloth Surface Impressions. U. S. Patent 5,390,544. Issued February 21, 1995.  
Organization DM
- 674 Madaras, E. I.: X-Ray Moire Techniques for Measuring Strain. NASA Tech Brief LAR-15104, July 1995.  
Organization DM
- 675 Nicol, D. M.; and Palumbo, D. L.: Reliability Analysis of Complex Models Using SURE Bounds. *IEEE Transactions on Reliability*, Volume 44, No. 1, March 1995, p. 46-53.  
Organization DI RTOP 538-01-12

## Category 39 Structural Mechanics

- 676 Allred, J. W.; and Fleck, V. J., Jr.: Brake Stops Both Rotation and Translation. NASA Tech Brief LAR-14738, September 1995.  
Organization GG
- 677 Ambur, D. R.; Cerro, J. A.; and Dickson, J. N.: D-Box Fixture for Testing Stiffened Panels in Compression and Pressure. *Journal of Aircraft*, Volume 32, No. 6, November–December 1995, p. 1382.  
Organization DS RTOP 510-02-12
- 678 Ambur, D. R.; Starnes, J. H., Jr.; and Prasad, C. B.: Influence of Impact Parameters on the Response of Laminated Composite Plates. *In Composite Materials: Fatigue and Fracture, Fifth Volume, ASTM STP-1230*, R. H. Martin, ed., 1995, p. 389-404.  
Organization DS RTOP 505-63-50
- 679 Barut, A.; Madenci, E.; and Tessler, A.: Nonlinear Analysis of Laminates Through a Mindlin-Type Shear-Deformable Shallow Shell Element. Presented at ASME Applied Mechanics Division–Materials Division Summer Meeting, June 28-30, 1995, Los Angeles, California.  
Organization DS RTOP 505-63-53
- 680 Barut, A.; Madenci, E.; and Tessler, A.: Nonlinear Deformation of Rotating Composite Blades. Presented at ASME Applied Mechanics Division–Materials Division Summer Meeting, June 28-30, 1995, Los Angeles, California.  
Organization DS RTOP 505-63-53
- 681 Belvin, W. K.; Sparks, D. W., Jr.; Horta, L. G.; and Elliott, K. B.: On the Isolation of Science Payloads From Spacecraft Vibrations. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1234.  
Organization DS RTOP 233-01-01
- 682 Blosser, M. L.; Blankson, I. M.; Schwoerke, S.; Brunson, D.; and Hagseth, P.: Wing Leading-Edge Design Concepts for Airbreathing Hypersonic Waveriders. *Journal of Aircraft*, Volume 32, No. 1, March–April, 1995, p. 307-312.  
Organization DS RTOP 505-70-63
- 683 Chen, C-W.; Huang, J-K.; and Juang, J-N.: Identification of Linear Stochastic Systems Through Projection Filters. *Journal of Guidance, Control, and Dynamics*, Volume 18, No. 4, July–August 1995, p. 767.  
Organization DS RTOP 590-14-21
- 684 Davis, D. D., Jr.; O'Brien, T. K.; Rousseau, C. Q.; and Hou, G. J.: Influence of Microstructural Geometry on the Bending Strength of Rodpack-Reinforced Composite Laminates. Presented at Sixth ASTM Symposium on Composite Materials: Fatigue and Fracture, May 16-18, 1995, Denver, Colorado.  
Organization DS RTOP 505-63-53
- 685 Generazio, E. R.; and Chamis, C. C.: Technology Benefit Estimator (T/BEST) for Aerospace Propulsion Systems. Presented at Materials Week '95, October 30–November 2, 1995, Cleveland, Ohio.  
Organization DM RTOP 538-02-11

- 686 Harris, C. E.: NASA Airframe Structural Integrity Program (ASIP). Presented at Air Force Third Aging Aircraft Conference, September 26-28, 1995, Dayton, Ohio. In Proceedings.  
Organization DM RTOP 538-02-10
- 687 Harris, C. E.: NASA Airframe Structural Integrity Program (ASIP). Presented at Workshop on Fatigue & Fracture Applications for Aging Structures, November 13, 1995, Norfolk, Virginia. In Proceedings.  
Organization DM RTOP 538-02-10
- 688 Harris, C. E.: Advanced Fracture Mechanics Methodology for Aircraft Supportability. Presented at Materials Week 1995, October 30–November 2, 1995, Cleveland, Ohio.  
Organization DM RTOP 538-02-10
- 689 Harris, C. E.; Newman, J. C., Jr.; and Starnes, J. H., Jr.: Analytical Methodology to Predict the Onset of Widespread Fatigue Damage in Airframe Structure. Presented at 1995 USAF Structural Integrity Program Conference, November 28-30, 1995, San Antonio, Texas. In Proceedings.  
Organization DM RTOP 538-02-10
- 690 Harris, C. E.; Starnes, J. H., Jr.; and Newman, J. C., Jr.: *Development of Advanced Structural Analysis Methodologies for Predicting Widespread Fatigue Damage in Aircraft Structures*. NASA TM-110187, August 1995, 25 p.  
Organization DM RTOP 538-02-10
- 691 Holloway, S. E., III: Linear Proof Mass Actuator. Presented at 29th Aerospace Mechanisms Symposium, May 17-19, 1995, Houston, Texas. In NASA CP-3923, p. 368-380.  
Organization GK RTOP 233-01-01
- 692 Holloway, S. E., III; Crossley, E. A., Jr.; Miller, J. B.; Jones, I. W.; Davis, C. C.; Behun, V. D.; and Goodrich, L. R., Sr.: Linear Proof-Mass Actuator. NASA Tech Brief LAR-14352, April 1995.  
Organization GK
- 693 Horner, G. C.: Smart Materials and Structures Applications at the NASA Langley Research Center. Presented at 1995 North American Conference on Smart Structures Materials, February 26–March 3, 1995, San Diego, California.  
Organization DS RTOP 233-01-01
- 694 Housner, J. M.; Aminpour, M. A.; Davila, C. G.; Schiermeier, J. E.; Stroud, W. J.; Ransom, J. B.; and Gillian, R. E.: An Interfacing Method for Global/Local and Substructuring Analysis. Presented at 1995 MSC World User's Conference, May 8-12, 1995, Universal City, California. In Proceedings, Volume 1, Section 25.  
Organization DS RTOP 505-63-53
- 695 Housner, J. M.; and Pinson, L. D.: NASA Develops Computational Structures Technology to Assist the US Aerospace Industry. *Aerospace America*, Volume 31, No. 2, February 1993, p. 5, 14-18, 25.  
Organization DS RTOP 505-63-53
- 696 Jackson, K. E.; Lavoie, J. A.; and Morton, J.: Fixture for Crush Testing of Composite Plates. NASA Tech Brief LAR-15212, May 1995.  
Organization DS

- 697 Jaunky, N.; Knight, N. F., Jr.; and Ambur, D. R.: Buckling Analysis of General Triangular Anisotropic Plates Determined by Eigensensitivity Analysis. *AIAA Journal*, Volume 33, No. 12, December 1995, p. 2414.  
 Organization DS RTOP 505-63-50
- 698 Jaunky, N.; Knight, N. F., Jr.; and Ambur, D. R.: Buckling of Arbitrary Quadrilateral Anisotropic Plates. *AIAA Journal*, Volume 33, No. 5, May 1995, p. 938-944.  
 Organization DS RTOP 505-63-50
- 699 Jaunky, N.; Knight, N. F., Jr.; and Ambur, D. R.: Buckling Analysis of General Triangular Anisotropic Plates Using Polynomials. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1456.  
 Organization DS RTOP 505-63-50
- 700 Jegley, D. C.: *Analysis of Selected Compression Splice Joint Locations in a Graphite-Epoxy Transport Wing Stub Box*. NASA TM-110170, October 1995, 33 p.  
 Organization DS RTOP 510-02-12
- 701 Johnson, A. R.; and Quigley, C. J.: Research Issues in Viscoelastic Modeling of Elastomer Components. Presented at 147th Meeting of the Rubber Division of the American Chemical Society, May 2-5, 1995, Philadelphia, Pennsylvania.  
 Organization DS RTOP 505-63-53
- 702 Johnson, A. R.; Quigley, C. J.; and Freese, C. E.: A Viscohyperelastic Finite Element Model for Rubber. *Computer Methods in Applied Mechanics and Engineering*, Volume 127, No. 1/4, November 1995, p. 163-180.  
 Organization DS RTOP 505-63-10
- 703 Johnson, A. R.; Tanner, J. A.; and Mason, A. J.: A Viscoelastic Model for Tires Analyzed With Nonlinear Shell Elements. Presented at Fourteenth Annual Meeting and Conference on Tire Science and Technology, March 21-22, 1995, Akron, Ohio.  
 Organization DS RTOP 505-63-53
- 704 Johnson, T. F.; and Card, M. F.: Effects of Stiffening and Mechanical Load on Thermal Buckling of Stiffened Cylindrical Shells. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1317.  
 Organization DS RTOP 505-63-50
- 705 Kellas, S.; Morton, J.; and Jackson, K. E.: Damage and Failure Mechanisms in Scaled Angle-Ply Laminates. In *Composite Materials: Fatigue and Fracture, Fourth Volume, ASTM STP-1156*, 1993, p. 257-280.  
 Organization DS RTOP 505-63-50
- 706 Lee-Glauser, G. J.; Ahmadi, G.; and Horta, L. G.: *Integrated Passive/Active Vibration Absorber for Multi-Story Buildings*. NASA TM-109178, January 1995, 21 p.  
 Organization DS RTOP 233-01-01
- 707 Lee-Glauser, G. J.; Ahmadi, G.; and Horta, L. G.: Integrated Passive/Active Vibration Absorber for Multi-Story Buildings. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1235.  
 Organization DS RTOP 233-01-01

- 708 Librescu, L.; Lin, W.; Nemeth, M. P.; and Starnes, J. H., Jr.: Thermomechanical Postbuckling of Geometrically Imperfect Flat and Curved Panels Taking Into Account Tangential Edge Constraints. *Journal of Thermal Stresses*, Volume 18, No. 4, July–August 1995, p. 465-482.  
Organization DS RTOP 505-63-50
- 709 Maloney, J. M.; Wu, K. C.; and Robinson, J. C.: *Analytical Comparison of Three Stiffened Panel Concepts*. NASA TM-110165, December 1995, 29 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110165.ps.Z>  
Organization CB RTOP 242-10-01
- 710 McCleary, S. L.; and Aminpour, M. A.: *A Generic Interface Element for COMET-AR*. (NAS1-19000 Lockheed Engineering & Sciences Company and NAS1-19700 Analytical Services & Materials, Inc.) NASA CR-195075, March 1995, 196 p.  
Organization DS RTOP 505-63-53
- 711 Moas, E., Jr.; Boitnott, R. L.; and Griffin, O. H.: An Analytical and Experimental Investigation of the Response of Curved, GR/EP I-Frame/Skin Specimens. *Journal of the American Helicopter Society*, Volume 39, No. 3, July 1994, p. 58-66.  
Organization DS RTOP 505-63-53
- 712 Nemeth, M. P.: Buckling Behavior of Long Anisotropic Plates Subjected to Combined Loads. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1455.  
Organization DS RTOP 505-63-50
- 713 Nemeth, M. P.: *Buckling Behavior of Long Anisotropic Plates Subjected to Combined Loads*. NASA TP-3568, November 1995, 38 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3568.ps.Z>  
Organization DS RTOP 505-63-50
- 714 Newman, J. C., Jr.: Constraint Effects and Stable Tearing Under Complex Loading. Presented at Workshop on Size & Geometry Effects on R-Curves, GKSS Research Centre, May 3-5, 1995, Geesthacht, Germany.  
Organization DM RTOP 538-02-10
- 715 Ng, G. S.: Service Cart for Engines. NASA Tech Brief LAR-14858, March 1995.  
Organization GK
- 716 Noor, A. K.; and Tanner, J. A. (Compilers): *Computational Modeling of Tires*. NASA CP-3306, August 1995, 187 p.  
Organization DS RTOP 505-63-50
- 717 Pappa, R. S.; Gilbert, M. G.; and Welch, S. S.: *Simulation of the Photogrammetric Appendage Structural Dynamics Experiment*. NASA TM-110221, November 1995, 8 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110221.ps.Z>  
Organization DS RTOP 233-01-01
- 718 Perry, C. A.; Gurdal, Z.; and Starnes, J. H., Jr.: Minimum-Weight Design of Compressively Loaded Stiffened Panels for Postbuckling Response. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1162.  
Organization DS RTOP 510-02-12

- 719 Phan, M. Q.; Horta, L. G.; Juang, J.-N.; and Longman, R. W.: Linear System Identification Via an Asymptotically Stable Observer. *Journal of Optimization Theory and Application*, Volume 79, No. 1, 1994, p. 59-86.  
Organization DS RTOP 590-14-21
- 720 Rehfield, L. W.; Zischka, P. J.; Chang, S.; Fentress, M. L.; and Ambur, D. R.: Experimental Evaluation of a Box Beam Specifically Tailored for Chordwise Deformation. *AIAA Journal*, Volume 33, No. 1, January 1995, p. 116-119.  
Organization DS RTOP 510-02-12
- 721 Rezaeepazhand, J.; Simiteses, G. J.; and Starnes, J. H., Jr.: Use of Scaled Down Models for Predicting Vibration Responses of Laminated Plates. *Composite Structures Journal*, Volume 30, No. 4, 1995, p. 419-426.  
Organization DS RTOP 505-63-50
- 722 Scotti, S. J.: *Structural Design Using Equilibrium Programming Formulations*. NASA TM-110175, June 1995, 115 p.  
Organization DS RTOP 537-06-21
- 723 Starnes, J. H., Jr.; Britt, V. O.; and Rankin, C. C.: Nonlinear Response of Damaged Stiffened Shells Subjected to Combined Internal Pressure and Mechanical Loads. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1462.  
Organization DS RTOP 538-02-10
- 724 Storaasli, O. O.; Gillian, R. E.; and Housner, J. M.: Algorithms for Coupled Aero-Structural Design Studies on High-Performance Computers. Presented at Computational Aero-Sciences Workshop, March 7-9, 1995, Moffett Field, California.  
Organization DS RTOP 505-63-53
- 725 Tessler, A.: Laminated Composite and Sandwich Shell Analysis via Efficient Transverse Shear/Normal Deformation Shell Element. Presented at 10th ASCE Engineering Mechanics Conference, May 21-24, 1995, Boulder, Colorado.  
Organization DS RTOP 505-63-53
- 726 Tessler, A.; Riggs, H. R.; and Freese, C. E.: A Robust Variational Method for FEA Solution Enhancement and Error Estimation. Presented at ASME Applied Mechanics Division-Materials Division Summer Meeting, June 28-30, 1995, Los Angeles, California.  
Organization DS RTOP 505-63-53
- 727 Tessler, A.; Saether, E.; and Tsui, T.: Vibration of Thick Laminated Composite Plates. *Journal of Sound and Vibration*, Volume 179, No. 3, January 19, 1995, p. 475-498.  
Organization DS RTOP 505-63-53
- 728 Tessler, A.; Tsui, T.; and Saether, E.: A [1,2]-Order Theory for Elastodynamic Analysis of Thick Orthotropic Shells. *International Journal of Solids and Structures*, Volume 32, No. 22, November 1995, p. 3237-3260.  
Organization DS RTOP 505-63-53
- 729 Wang, J. T.; Raju, I. S.; and Sleight, D. W.: Composite Skin-Stiffener Debond Analysis Using Fracture Mechanics Approach With Shell Elements. *Composites Engineering*, Volume 5, No. 3, 1995, p. 277-296.  
Organization DS RTOP 505-63-01

- 730** Wang, J. T.; Xue, D. Y.; Sleight, D. W.; and Housner, J. M.: Computation of Energy Release Rates for Cracked Composite Panels With Nonlinear Deformation. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1463.  
Organization DS RTOP 505-63-53
- 731** Won, C-C.; Sparks, D. W., Jr.; Belvin, W. K.; and Sulla, J. L.: Application of Piezoelectric Devices to Vibration Suppression: From Modeling and Controller Designs to Implementation. *Journal of Guidance, Control, and Dynamics*, Volume 17, No. 6, November-December 1994, p. 1333-1338.  
Organization DC RTOP 590-14-61
- 732** Wu, K. C.: Multi-Criterion Preliminary Design of a Tetrahedral Truss Platform. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1327.  
Organization DS RTOP 527-10-00

## Geosciences

### Category 43 Earth Resources and Remote Sensing

- 733** Cahoon, D. R., Jr.; French, N.; and Johnson, R.: Using AVHRR Data to Monitor Boreal Forest Fires. Presented at Biomass Burning, Climate Change, and the Carbon Cycle in North American Boreal Forests, September 11-14, 1995, Fairbanks, Alaska.  
Organization CA RTOP 146-90-04
- 734** Cahoon, D. R., Jr.; Stocks, B. J.; Levine, J. S.; Cofer, W. R., III; and Barber, J. A.: Monitoring the 1992 Forest Fires in the Boreal Ecosystem Using NOAA AVHRR Satellite Imagery. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04
- 735** Esplin, R.; Zollinger, L.; Batty, C.; Folkman, S.; Roosta, M.; Tansock, J.; Jensen, M.; Stauder, J.; Miller, J. B.; Vanek, M.; and Robinson, D. M.: SABER Instrument Design Update. Presented at Infrared Spaceborne Remote Sensing III, July 12-14, 1995, San Diego, California. In SPIE Proceedings, Volume 2553.  
Organization CC RTOP 432-78-00
- 736** Stocks, B. J.; Cahoon, D. R., Jr.; Cofer, W. R., III; and Levine, J. S.: Monitoring Large-Scale Forest Fire Behavior in Northeastern Siberia Using NOAA-AVHRR Satellite Imagery. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04
- 737** Stocks, B. J.; Cahoon, D. R., Jr.; Goldammer, J. G.; and Bauer, R. J.: Documenting the Seasonal Distribution of Vegetation Fires in Eastern Africa Using DMSP and NOAA-AVHRR Satellite Imagery. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04

## Category 45 Environment Pollution

- 738 Bachmeier, A. S.; Shipham, M. C.; Browell, E. V.; Grant, W. B.; and Klassa, J. M.: Stratospheric/Tropospheric Exchange Affecting the Northern Wetlands Regions of Canada During Summer 1990. *Journal of Geophysical Research*, Volume 99, No. D1, January 20, 1994, p. 1805-1819.  
Organization CA RTOP 464-54-03
- 739 Bakwin, P. S.; Jacob, D. J.; Wofsy, S. C.; Munger, J. W.; Daube, B. C.; Bradshaw, J. P.; Sandholm, S. T.; Talbot, R. W.; Singh, H. B.; Gregory, G. L.; and Blake, D. R.: Reactive Nitrogen Oxides and Ozone Above a Taiga Woodland. *Journal of Geophysical Research*, Volume 99, No. D1, January 20, 1994, p. 1927-1936.  
Organization CA RTOP 464-54-11
- 740 Cofer, W. R., III; Levine, J. S.; Cahoon, D. R., Jr.; Winstead, E. L.; Pinto, J. P.; and Stevens, R. K.: Gaseous Composition of Kuwaiti Oil Fire Smoke Determined From Individual Wellfires. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04
- 741 Cofer, W. R., III; Levine, J. S.; Cahoon, D. R., Jr.; Winstead, E. L.; Stocks, B. J.; and Goldammer, J. G.: Trace Gas Chemistry of Canadian and Siberian Boreal Forest Fires. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04
- 742 Cofer, W. R., III; Winstead, E. L.; Stocks, B. J.; Goldammer, J. G.; Cahoon, D. R., Jr.; and Levine, J. S.: Gaseous Crownfire Emissions From the Bor Forest Island Fire. Presented at IUFRO (International Union of Forestry Research Organizations) World Congress 1995, August 6-12, 1995, Tampers, Finland.  
Organization CA RTOP 146-90-04
- 743 Gorzelska, K.; Talbot, R. W.; Klemm, K.; Lefer, B.; Klemm, O.; Gregory, G. L.; Anderson, B. E.; and Barrie, L. A.: Chemical Composition of the Atmospheric Aerosol in the Troposphere Over the Hudson Bay Lowlands and Quebec-Labrador Regions of Canada. *Journal of Geophysical Research*, Volume 99, No. D1, January 20, 1994, p. 1763-1779.  
Organization CA RTOP 464-54-11
- 744 Gregory, G. L.; and Scott, A. D., Jr.: *Compendium of NASA Data Base for the Global Tropospheric Experiment's Transport and Atmospheric Chemistry Near the Equator—Atlantic (TRACE-A)*. NASA TM-110151, April 1995, 162 p.  
Organization CA RTOP 464-54-03
- 745 Gregory, G. L.; and Scott, A. D., Jr.: *Compendium of NASA Data Base for the Global Tropospheric Experiment's Pacific Exploratory Mission West-B (PEM West-B)*. NASA TM-110193, October 1995, 154 p.  
Organization CA RTOP 464-54-07
- 746 Gregory, G. L.; and Scott, A. D., Jr.: *Compendium of NASA Data Base for the Global Tropospheric Experiment's Pacific Exploratory Mission West-A (PEM West-A)*. NASA TM-109177, February 1995, 146 p.  
Organization CA RTOP 464-54-03



- 747 Metwally, M.: *Jet Aircraft Engine Emissions Database Development—1992 Military, Charter, and Nonscheduled Traffic*. (NAS1-19345 McDonnell Douglas Aerospace.) NASA CR-4684, November 1995, 61 p.  
 Organization I RTOP 538-08-12
- 748 Roulet, N. T.; Jano, A.; Kelly, C. A.; Klinger, L.; Moore, T. R.; Protz, R.; Ritter, J. A.; and Rouse, W. R.: The Role of the Hudson Bay Lowland as a Source of Atmospheric Methane. *Journal of Geophysical Research*, Volume 99, No. D1, January 20, 1994, p. 1439-1454.  
 Organization CA RTOP 464-54-11
- 749 Sandholm, S. T.; *et al.*: Summertime Partitioning and Budget of NO<sub>y</sub> Compounds in Troposphere Over Alaska and Canada: ABLE-3B. *Journal of Geophysical Research*, Volume 99, No. D1, January 20, 1994, p. 1837-1861.  
 Organization CA RTOP 464-54-11

### Category 46 Geophysics

- 750 Baughcum, S. L.; and Henderson, S. C.: *Aircraft Emission Inventories Projected in Year 2015 for a High Speed Civil Transport (HSCT) Universal Airline Network*. (NAS1-19360 Boeing Commercial Airplane Group.) NASA CR-4659, July 1995, 126 p.  
 Organization I RTOP 537-09-23
- 751 Bissonnette, L. R.; *et al.*: LIDAR Multiple Scattering From Clouds. *Applied Physics B*, Volume 60, 1995, p. 355-362.  
 Organization CA RTOP 665-45-53
- 752 Browell, E. V.; Nowicki, G. D.; Fenn, M. A.; and Hoff, R. M.: LITE Observations of Biomass Burning Plumes Over South America, Africa, and the Southern Atlantic Ocean. Presented at 1995 Spring American Geophysical Union Meeting, May 29–June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 69-70.  
 Organization CA RTOP 460-48-40
- 753 Callis, L. B., Jr.; Boughner, R. E.; Baker, D. N.; Mewaldt, R. A.; Blake, J. B.; and Natarajan, M.: Global Energy Deposition by Relativistic Electrons Observed by SAMPEX: Relationship to the Solar Cycle. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
 Organization CA RTOP 370-21-08
- 754 Callis, L. B., Jr.; Boughner, R. E.; Natarajan, M.; and Lambeth, J. D.: Global Scale O<sub>3</sub> Variations: The Role of Temperature and Transport Changes. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
 Organization CA RTOP 370-21-08
- 755 Callis, L. B., Jr.; Natarajan, M.; and Lambeth, J. D.: Calculations of Rates of O<sub>3</sub> Destruction by NO<sub>y</sub> Using SAGE and SAGE II Data. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F110.  
 Organization CA RTOP 370-21-08

- 756 Carli, B.; *et al.*: SAFIRE: Spectroscopy of the Atmosphere Using Fair InfraRed Emission. Presented at International Workshop on Small Mission Opportunities and the Scientific Community, October 12-13, 1995, Rome, Italy.  
Organization CA RTOP 618-01-02
- 757 Clough, S. A.; Rinsland, C. P.; and Brown, P. D.: Retrieval of Tropospheric Ozone From Simulations of Nadir Spectral Radiances as Observed From Space. *Journal of Geophysical Research*, Volume 100, No. D8, August 1995, p. 16,579-16,593.  
Organization CA RTOP 229-02-06
- 758 Connor, B. J.; Parrish, A.; Tsou, J. J.; and McCormick, M. P.: Error Analysis for the Ground-Based Microwave Ozone Measurements During STOIC. *Journal of Geophysical Research*, Volume 100, No. D5, 1995, p. 9283-9291.  
Organization CA RTOP 464-13-23
- 759 Connors, V. S.; Flood, M.; Jones, T.; Gormsen, B. B; Nolf, S. R.; and Reichle, H. G., Jr.: Global Distribution of Biomass Burning and Carbon Monoxide in Middle Troposphere During Early April and October 1994. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 618-22-31
- 760 Connors, V. S.; and Reichle, H. G., Jr.: The Distribution of Carbon Monoxide in the Middle Troposphere During Early April 1994. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl. p. F77.  
Organization CA RTOP 618-22-31
- 761 Eckman, R. S.; Grose, W. L.; Turner, R. E.; and Blackshear, W. T.: Global Impact of Polar Ozone Depletion: A Three-Dimensional Modeling Study. Presented at European Geophysical Society XX General Assembly, April 3-7, 1995, Hamburg, Germany.  
Organization CA RTOP 229-81-38
- 762 Eckman, R. S.; Grose, W. L.; Turner, R. E.; Blackshear, W. T.; Russell, J. M., III; Froidevaux, L.; Waters, J. W.; Kumer, J. B.; and Roche, A. E.: Stratospheric Trace Constituents Simulated by a Three-Dimensional General Circulation Model: Comparison With UARS Data. *Journal of Geophysical Research*, Volume 100, No. D7, July 1995, p. 13,951.  
Organization CA RTOP 673-41-10
- 763 Edwards, D. P.; Lopez-Puertas, M.; and Mlynczak, M. G.: Non-Local Thermodynamic Equilibrium Limb Radiance from O<sub>3</sub> and CO<sub>2</sub> in the 9-11  $\mu$ m Spectral Region. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 52, No. 3/4, September-October 1994, p. 389-407.  
Organization CA RTOP 464-23-22
- 764 Fakhruzzaman, K. M.; Fishman, J.; and Brackett, V. G.: Tropospheric Ozone Over Equatorial Atlantic: Ozone-sonde-Trajectory Analysis. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 464-51-01
- 765 Ferrare, R. A.; McGee, T. J.; Whiteman, D.; Burris, J.; Owens, M.; Butler, J.; Barnes, R. A.; Schmidlin, F. J.; Komhyr, W.; Wang, P-H.; McCormick, M. P.; and Miller, A. J.: Lidar Measurements of Stratospheric Temperature During STOIC. *Journal of Geophysical Research*, Volume 100, No. D5, May 1995, p. 9303.  
Organization CA RTOP 460-22-93

- 766 Fishman, J.: Chemistry/Climate Interactions and the Tropics. Presented at 75th Annual Meeting of the American Meteorological Society, January 15-20, 1995, Dallas, Texas.  
Organization CA RTOP 464-51-01
- 767 Fishman, J.: Ozone, Tropospheric. In *Encyclopedia of Energy Technology and the Environment*, A. Bisio and S. G. Boots, eds., 1995, p. 2180-2188.  
Organization CA RTOP 579-21-51
- 768 Fishman, J.: Global Smog: An Unpleasant Consequence of Global Change. In *Global Change: A Midwestern Perspective*, G. R. Carmichael, G. E. Folk, and J. L. Schnoor, eds., 1995, p. 3-10.  
Organization CA RTOP 579-21-51
- 769 Fishman, J.; Browell, E. V.; Brackett, V. G.; and Olson, J. R.: Large-Scale Impact of Biomass Burning on the Composition of the Troposphere as Determined From Analysis of Satellite Measurements. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 464-51-01
- 770 Goldman, A.; Gillis, J. R.; Rinsland, C. P.; and Burkholder, J. B.: Improved Line Parameters for the X<sup>2</sup>I<sup>-</sup> - X<sup>2</sup>I<sup>+</sup> (1-0) Bands of <sup>35</sup>ClO and <sup>37</sup>ClO. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 52, No. 3/4, September-October 1994, p. 357-360.  
Organization CA RTOP 464-34-02
- 771 Gormsen, B. B.; Nolf, S. R.; Olson, J. O.; and Connors, V. S.: Demonstration of the Measurement of Air Pollution From Satellites Carbon Monoxide Data Sets Acquired During April and October 1994. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F68.  
Organization CA RTOP 618-22-31
- 772 Grant, W. B.: Optical Remote Sensing: Present Status and Future Direction. *Optics and Photonics News*, Volume 6, No. 1, January 1995, p. 16-21.  
Organization CA RTOP 464-54-16
- 773 Grant, W. B.; Browell, E. V.; Butler, C. F.; Fenn, M. A.; and Nowicki, G. D.: Comparisons of Electra-Lidar and LITE Atmospheric Measurements Near the East Coast of the U.S. and the Caribbean. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 70-71.  
Organization CA RTOP 460-48-40
- 774 Grant, W. B.; Browell, E. V.; Long, C. S.; Stowe, L. L.; Grainger, R. G.; and Lambert, A.: Observations of Stratospheric Dynamics Using Volcanic Aerosols. Presented at Annual Meeting of Atmospheric Effect of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
Organization CA RTOP 464-54-16
- 775 Grant, W. B.; Browell, E. V.; Park, J. H.; Long, C. S.; Stowe, L. L.; and Choi, W.: The Tropical Stratospheric Reservoir, Its Boundaries, and Transport of Tracers to Mid-Latitudes. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl. p. F139.  
Organization CA RTOP 464-54-16

- 776 Grose, W. L.; Eckman, R. S.; and Pierce, R. B.: Tracer Correlations in the Stratosphere: Comparisons of Satellite and Aircraft Observations With 3-D Chemistry/Transport Model Simulations. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
 Organization CA RTOP 229-81-38
- 777 Grose, W. L.; Eckman, R. S.; Waters, J. W.; Turner, R. E.; and Blackshear, W. T.: The Seasonal Evolution of Chlorine Monoxide in the Middle Atmosphere: Three-Dimensional Simulation and UARS MLS Observations. Presented at European Geophysical Society XX General Assembly, April 3-7, 1995, Hamburg, Germany.  
 Organization CA RTOP 229-81-38
- 778 Grose, W. L.; Fairlie, T. D.; and Eckman, R. S.: The Seasonal Evolution of Active Chlorine in the Middle Atmosphere. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F95.  
 Organization CA RTOP 148-65-42
- 779 Grose, W. L.; and Gille, J. (Editors): *Upper Atmosphere Satellite Validation Workshop III: Temperature and Constituents Validation*. NASA CP-3317, November 1995, 649 p.  
 Organization CA RTOP 665-70-01
- 780 Grose, W. L.; Russell, J. M., III; Lingenfelter, G. S.; and Proffitt, M. H.: Intercomparison of Ozone Measurements in the Lower Stratosphere From the UARS HALOE Experiment and the ER-2 UV Absorption Ozone Photometer. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F112.  
 Organization CA RTOP 148-65-42
- 781 Harries, J. E.; Russell, J. M., III; Park, J. H.; Tuck, A. F.; and Drayson, S. R.: Observations of Absorbing Layers in the Antarctic Stratosphere in October 1991. *Quarterly Journal of the Royal Meteorological Society*, Volume 121, 1995, p. 655-667.  
 Organization CA RTOP 665-25-30
- 782 Hervig, M. E.; Russell, J. M., III; Gordley, L. L.; Daniels, J.; Drayson, S. R.; and Park, J. H.: Aerosol Effects and Corrections in the Halogen Occultation Experiment. *Journal of Geophysical Research*, Volume 100, No. D1, January 1995, p. 1067.  
 Organization CA RTOP 665-25-31
- 783 Hostetler, C. A.; and Winker, D. M.: Spaceborne Lidar Measurements of Tropospheric Aerosol Optical Depth. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 67-68.  
 Organization CA RTOP 460-41-41
- 784 Ismail, S.; Browell, E. V.; Hall, W. M.; Kooi, S. A.; Brackett, V. G.; and Clayton, M. E.: LASE Measurements of Tropospheric Water Vapor and Aerosol Profiles. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F75.  
 Organization CA RTOP 618-32-33
- 785 Ismail, S.; Browell, E. V.; Kooi, S. A.; and Nowicki, G. D.: Simultaneous LASE and LITE Aerosol Profile Measurements Over the Atlantic. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 70.  
 Organization CA RTOP 460-48-40

- 786 Jackman, C. H.; Cerniglia, M. C.; Nielsen, J. E.; Allen, D. J.; Zawodny, J. M.; McPeters, R. D.; Douglass, A. R.; Rosenfield, J. E.; and Rood, R. B.: Two-Dimensional and Three-Dimensional Model Simulations, Measurements, and Interpretation of the Influence of the October 1989 Solar Proton Events on the Middle Atmosphere. *Journal of Geophysical Research*, Volume 100, No. D6, June 20, 1995, p. 11,641-11,660.  
Organization CA RTOP 665-45-55
- 787 Jonsson, H. H.; Wilson, J. C.; Brock, C. A.; Knollenberg, R. G.; Newton, R.; Dye, J. E.; Baumgardner, D.; Borrmann, S.; Ferry, G. V.; Pueschel, R.; Woods, D. C.; and Pitts, M. C.: Performance of a Focused Cavity Aerosol Spectrometer for Measurements in the Stratosphere of Particle Size in the 0.06-2.0- $\mu$ m-Diameter Range. *Journal of Atmospheric and Oceanic Technology*, Volume 12, No. 1, February 1995, p. 115-129.  
Organization CA RTOP 460-48-40
- 788 Kambis, A. D.; and Levine, J. S.: A Numerical Model of the Global Carbon Cycle to Assess the Impact of Biomass Burning on Levels of Atmospheric Carbon Dioxide. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-09-04
- 789 Lambeth, J. D.; and Callis, L. B., Jr.: Temperature Variations in the Middle and Upper Stratosphere: 1979-1992. *Journal of Geophysical Research*, Volume 99, No. D10, October 20, 1994, p. 20,701-20,712.  
Organization CA RTOP 307-51-11
- 790 Levine, J. S.; Cahoon, D. R., Jr.; Cofer, W. R., III; Goldammer, J. G.; Stocks, B. J.; Rightler, K. S.; Lulla, K. P.; Elvidge, C. D.; McElroy, J. L.; Trollope, W. S.; Kirchhoff, V. W.; and Setzer, A. W.: A Global Inventory for the Geographical and Temporal Distribution of Biomass Burning and Its Gaseous and Particulate Emissions. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04
- 791 Levine, J. S.; Cofer, W. R., III; Cahoon, D. R., Jr.; and Winstead, E. L.: Biomass Burning: A Driver for Global Change! *Environmental Science and Technology*, Volume 29, No. 3, 1995, p. 120-125.  
Organization CA RTOP 146-90-04
- 792 Levine, J. S.; Cofer, W. R., III; Cahoon, D. R., Jr.; Winstead, E. L.; and Sebacher, D. I.: Biomass Burning, Biogenic Soil Emissions, and the Global Nitrogen Budget. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-09-04
- 793 Levine, J. S.; Cofer, W. R., III; Cahoon, D. R., Jr.; Winstead, E. L.; and Sebacher, D. I.: Fire and the Biogeochemical Cycling of Nitrogen. Presented at XII International Symposium on Environmental Biogeochemistry, September 4-8, 1995, Rio de Janeiro, Brazil. In Proceedings.  
Organization CA RTOP 146-90-04
- 794 Mahieu, E.; Rinsland, C. P.; Zander, R.; Demoulin, P.; Debouille, L.; and Roland, G.: Vertical Column Abundances of HCN Deduced From Ground-Based Infrared Solar Spectra. *Journal of Atmospheric Chemistry*, Volume 20, No. 3, March 1995, p. 299-310.  
Organization CA RTOP 464-34-02

- 795 Margitan, J. J.; *et al.*: Stratospheric Ozone Intercomparison Campaign (STOIC) 1989: Overview. *Journal of Geophysical Research*, Volume 100, No. D5, May 1995, p. 9193-9207.  
Organization CA RTOP 460-41-41
- 796 Mazurek, M. A.; Laterza, C.; Newman, L.; Daum, P. H.; Cofer, W. R., III; Levine, J. S.; and Winstead, E. L.: Molecular Composition of Carbonaceous Smoke Particles From Prescribed Burning of a Canadian Boreal Forest. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 146-90-04
- 797 McCormick, M. P.: Lidar In-Space Technology Experiment—Overview and Early Results. Presented at Seventh Topical Meeting of the Optical Remote Sensing of the Atmosphere, February 6-10, 1995, Salt Lake City, Utah. In Proceedings, Volume 2, p. 16-18.  
Organization CA RTOP 460-48-40
- 798 McCormick, M. P.: The Atmospheric Effects of the 1991 Pinatubo Eruption. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
Organization CA RTOP 460-41-41
- 799 McCormick, M. P.: Spaceborne Lidars. *The Review of Laser Engineering*, Volume 23, No. 2, February 1995, p. 175-179.  
Organization CA RTOP 460-22-93
- 800 McCormick, M. P.: LITE—An Overview. Presented at 1995 Spring American Geophysical Union Meeting, May 29–June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 66.  
Organization CA RTOP 460-41-41
- 801 McCormick, M. P.: Volcanoes, PSCs and Ozone Depletion. Presented at 32nd Space Congress, April 25-28, 1995, Merritt Island, Florida. In Proceedings.  
Organization CA RTOP 460-22-93
- 802 McCormick, M. P.; and Hostetler, C. A.: Lidar In Space—The First Flight. Presented at 32nd Space Congress, April 25-28, 1995, Merritt Island, Florida. In Proceedings.  
Organization CA RTOP 460-22-93
- 803 McCormick, M. P.; and Hostetler, C. A.: LITE—The First Spaceborne Lidar. Presented at Second Topical Symposium on Combined Optical-Microwave Earth and Atmosphere Sensing, April 3-6, 1995, Atlanta, Georgia. In Proceedings.  
Organization CA RTOP 665-45-20
- 804 McCormick, M. P.; Thomason, L. W.; and Trepte, C. R.: Atmospheric Effects of the Mt. Pinatubo Eruption. *Nature*, Volume 373, No. 6513, February 2, 1995, p. 399-404.  
Organization CA RTOP 665-45-53
- 805 Meriwether, J. W.; and Mlynczak, M. G.: Is Chemical Heating a Major Cause of the Mesosphere Inversion Layer? *Journal of Geophysical Research*, Volume 100, No. D1, January 20, 1995, p. 1379-1387.  
Organization CA RTOP 665-25-00
- 806 Mlynczak, M. G.; and Nesbitt, D. J.: The Einstein Coefficient for Spontaneous Emission of the  $O_2(a^1\Delta_g)$  State. *Geophysical Research Letters*, Volume 22, No. 11, June 1, 1995, p. 1381-1384.  
Organization CA RTOP 464-23-22

- 807 Mlynczak, M. G.; Nesbitt, D. J.; and Olander, D. S.: A Review of the Molecular Oxygen Airglow Emissions and Associated Kinetic and Spectroscopic Parameters. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
Organization CA RTOP 464-23-22
- 808 Mlynczak, M. G.; and Olander, D. S.: On the Utility of the Molecular Oxygen Dayglow Emissions as Proxies for Middle Atmospheric Ozone. *Geophysical Research Letters*, Volume 22, No. 11, June 1, 1995, p. 1377-1380.  
Organization CA RTOP 464-23-22
- 809 Mlynczak, M. G.; and Russell, J. M., III: An Overview of the SABER Experiment for the TIMED Mission. Presented at Seventh Topical Meeting of the Optical Remote Sensing of the Atmosphere, February 6-10, 1995, Salt Lake City, Utah. In Proceedings.  
Organization CA RTOP 464-23-22
- 810 Mlynczak, M. G.; Solomon, S.; Chu, D. A.; Portmann, R. W.; and Garcia, R. R.: Energetics of the Stratosphere and Mesosphere as Revealed by UARS. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
Organization CA RTOP 464-23-22
- 811 Mlynczak, M. G.; Yee, J. H.; and Hays, P. B.: Kinetic and Spectroscopic Requirements for Accurate Inference of Ozone From the Molecular Oxygen Dayglow. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F437.  
Organization CA RTOP 665-25-00
- 812 Neil, D. O.: Refined Analysis of MAPS 1984 Global CO Measurements. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 618-22-31
- 813 Olson, J. R.: A Study of the Mass Transport of Enhanced Continental Ozone in the Tropics and Its Impact Over the Remote Southern Atlantic Ocean. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 464-51-01
- 814 Osborn, M. T.; DeCoursey, R. J.; Trepte, C. R.; Winker, D. M.; and Woods, D. C.: Evolution of the Pinatubo Volcanic Cloud Over Hampton, Virginia. *Geophysical Research Letters*, Volume 22, No. 9, May 1, 1995, p. 1101-1104.  
Organization CA RTOP 460-22-93
- 815 Perrin, A.; Flaud, J-M.; Camy-Peyret, C.; Goldman, A.; Rinsland, C. P.; and Gunson, M. R.: Identification of the HNO<sub>3</sub> 3ν<sub>9</sub>-ν<sub>9</sub> Band Q Branch in Stratospheric Solar Occultation Spectra. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 52, No. 3/4, September-October 1994, p. 319-322.  
Organization CA RTOP 618-21-00
- 816 Pierce, R. B.: Evolution of the Southern Hemisphere Stratospheric Polar Vortex: A Perspective From the ASHOE/MAESA Mission. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 78.  
Organization CA RTOP 579-21-17

- 817 Pierce, R. B.; Grose, W. L.; Russell, J. M., III; Grooss, J. U.; and Crutzen, P. J.: An Intercomparison of In-Situ ER2 Measurements and HALOE Airmass Photochemistry During ASHOE/MAESA. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F123.  
 Organization CA RTOP 148-65-42
- 818 Pitts, M. C.; and Thomason, L. W.: Comparison of SAGE II and UARS Aerosol Measurements. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F122.  
 Organization CA RTOP 665-45-20
- 819 Poole, L. R.: Aerosol Observations and Interpretation. Presented at International Conference on Ozone in the Lower Stratosphere, May 15-20, 1995, Halkidiki, Greece. In Proceedings.  
 Organization CA RTOP 665-45-53
- 820 Poole, L. R.; Hostetler, C. A.; DeCoursey, R. J.; Kent, G. S.; Hansen, G.; and Quackenbush, T. R.: Ground-Based Lidar Measurements of the Wake Vortex Regime of a Boeing 737. Presented at Annual Meeting: The Atmospheric Effects of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
 Organization CA RTOP 538-04-14
- 821 Pougatchev, N. S.; Connor, B. J.; and Rinsland, C. P.: Infrared Measurements of the Ozone Vertical Distribution Above Kitt Peak. *Journal of Geophysical Research*, Volume 100, No. D8, August 1995, p. 16,689.  
 Organization CA RTOP 464-34-02
- 822 Pougatchev, N. S.; and Rinsland, C. P.: Spectroscopic Study of the Seasonal Variation of Carbon Monoxide Vertical Distribution Above Kitt Peak. *Journal of Geophysical Research*, Volume 100, No. D1, January 20, 1995, p. 1409-1416.  
 Organization CA RTOP 464-34-02
- 823 Reisinger, A. R.; Jones, N. B.; and Matthews, C. G.: Southern Hemisphere Mid-Latitude Ground Based Measurements of  $ClONO_2$ : Method of Analysis, Seasonal Cycle and Long-Term Trend. *Journal of Geophysical Research*, Volume 100, No. D11, November 1995, p. 23,183.  
 Organization CA RTOP 464-34-02
- 824 Remsberg, E. E.; Bhatt, P. P.; and Russell, J. M., III: Estimates of the Water Vapor Budget of the Stratosphere From UARS HALOE Data. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F75.  
 Organization CA RTOP 665-25-00
- 825 Remsberg, E. E.; Burton, J.; Gordley, L. L.; Marshall, B. T.; Bhatt, P. P.; and Miles, T.: Improvements in Nimbus 7 Limb Infrared Monitor of the Stratosphere Ozone Profiles as Obtained With Updated Spectral Line Parameters and Radiance Algorithms. *Journal of Geophysical Research*, Volume 100, No. D8, August 1995, p. 16,727.  
 Organization CA RTOP 579-21-44
- 826 Rinsland, C. P.; Gunson, M. R.; Abrams, M. C.; Lowes, L. L.; Zander, R.; Mahieu, E.; Goldman, A.; and Irion, F. W.: April 1993 Arctic Profiles of Stratospheric  $HCl$ ,  $ClONO_2$  and  $CCl_2F_2$  From ATMOS/ATLAS 2 Infrared Solar Occultation Spectra. *Journal of Geophysical Research*, Volume 100, July 20, 1995, p. 14,019-14027.  
 Organization CA RTOP 618-21-00



- 827 Rinsland, C. P.; Gunson, M. R.; Ko, M. K.; Weisenstein, D. W.; Zander, R.; Abrams, M. C.; Goldman, A.; Sze, N. D.; and Yue, G. K.: H<sub>2</sub>SO<sub>4</sub> Photolysis: A Source of Sulphur Dioxide in the Upper Stratosphere. *Geophysical Research Letters*, Volume 22, No. 9, May 1, 1995, p. 1109-1112.  
 Organization CA RTOP 618-21-00
- 828 Russell, J. M., III; Deaver, L. E.; Gordley, L. L.; and Luo, M.: Validation of HALOE HCl and HF Observations Made From the UARS Platform. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
 Organization CA RTOP 665-25-31
- 829 Russell, J. M., III; Gordley, L. L.; Purcell, P. N.; and Stone, K. V.: Comparison of HALOE O<sub>3</sub> and H<sub>2</sub>O Observations From UARS With Ground and Balloonborne Measurements. Presented at Seventh Topical Meeting of the Optical Remote Sensing of the Atmosphere, February 6-10, 1995, Salt Lake City, Utah. In Proceedings.  
 Organization CA RTOP 464-23-22
- 830 Russell, J. M., III; Luo, M.; Cicerone, R. J.; and Deaver, L. E.: HALOE Observations of HCl and HF Temporal Increases. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F116.  
 Organization CA RTOP 665-25-31
- 831 Russell, J. M., III; Luo, M.; Cicerone, R. J.; and Haggard, K. V.: HCl and HF Time Trends Observed by HALOE From the UARS Platform. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
 Organization CA RTOP 665-25-31
- 832 Siskind, D. E.; Connor, B. J.; Eckman, R. S.; Remsberg, E. E.; Tsou, J. J.; and Parrish, A.: An Intercomparison of Model Ozone Deficits in the Upper Stratosphere and Mesosphere From Two Data Sets. *Journal of Geophysical Research*, Volume 100, No. D6, June 1995, p. 11,191.  
 Organization CA RTOP 579-21-44
- 833 Stauder, J.; Esplin, R.; Zollinger, L.; Mlynczak, M. G.; Russell, J. M., III; Gordley, L. L.; and Marshall, B. T.: Stray Light Analysis of the SABER Telescope. Presented at Infrared Spaceborne Remote Sensing III, July 12-14, 1995, San Diego, California.  
 Organization CA RTOP 464-23-22
- 834 Stiller, G. P.; Gunson, M. R.; Lowes, L. L.; Abrams, M. C.; Raper, O. F.; Farmer, C. B.; Zander, R.; and Rinsland, C. P.: Stratospheric and Mesospheric Pressure-Temperature Profiles From the Rotational Analysis of CO<sub>2</sub> Lines in ATMOS/ATLAS-1 Infrared Solar Occultation Spectra. *Journal of Geophysical Research*, Volume 100, No. D2, February 20, 1995, p. 3107-3117.  
 Organization CA RTOP 618-21-00
- 835 Thomason, L. W.: A Global View of Stratospheric Aerosol Opacity From Lidar, Radiometry, and Satellite Observations: 1991-1993. Presented at Sixth Symposium on Global Change Studies, January 15-20, 1995, Dallas, Texas.  
 Organization CA RTOP 665-45-53
- 836 Thomason, L. W.: Multi-Sensor Characterization of the Mount Pinatubo Aerosol. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 68.  
 Organization CA RTOP 460-41-41

- 837 Thomason, L. W.; McCormick, M. P.; and Zawodny, J. M.: The Stratospheric Aerosol and Gas Experiment III. Presented at European Symposium on Satellite Remote Sensing II, September 25-29, 1995, Paris, France.  
Organization CA RTOP 665-45-20
- 838 Thomason, L. W.; and Pitts, M. C.: Determination of Polar Stratospheric Cloud Properties Utilizing Observations From SAGE III and ILAS. Presented at European Symposium on Satellite Remote Sensing II, September 25-29, 1995, Paris, France.  
Organization CA RTOP 665-45-20
- 839 Trepte, C. R.; Powell, K. A.; and Winker, D. M.: Observations of Saharan Dust by LITE. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F75.  
Organization CA RTOP 665-45-20
- 840 Tsou, J. J.; Connor, B. J.; Parrish, A.; McDermid, I. S.; and Chu, W. P.: Ground-Based Microwave Monitoring of Middle Atmosphere Ozone: Comparison to Lidar and SAGE II Satellite Observations. *Journal of Geophysical Research*, Volume 100, No. D2, February 20, 1995, p. 3005-3016.  
Organization CA RTOP 464-13-19
- 841 Veiga, R. E.; Cunnold, D. M.; Chu, W. P.; and McCormick, M. P.: Stratospheric Aerosol and Gas Experiments I and II Comparisons With Ozonesondes. *Journal of Geophysical Research*, Volume 100, No. D5, May 1995, p. 9073.  
Organization CA RTOP 460-22-93
- 842 Wang, P-H.; McCormick, M. P.; Minnis, P.; Kent, G. S.; Yue, G. K.; and Skeens, K. M.: A Method for Estimating Vertical Distribution of the SAGE II Opaque Cloud Frequency. *Geophysical Research Letters*, Volume 22, No. 3, February 1, 1995, p. 243-246.  
Organization CA RTOP 665-45-54
- 843 Wang, P-H.; Minnis, P.; and Yue, G. K.: Extinction Coefficient ( $1 \mu\text{m}$ ) Properties of High-Altitude Clouds From Solar Occultation Measurements (1985-1990): Evidence of Volcanic Aerosol Effect. *Journal of Geophysical Research*, Volume 100, No. D2, February 20, 1995, p. 3181-3199.  
Organization CA RTOP 460-41-97
- 844 Winker, D. M.: Observations of Aerosols and Clouds With LITE. Presented at European Symposium on Satellite Remote Sensing II, September 25-29, 1995, Paris, France. In SPIE Volume 2581.  
Organization CA RTOP 665-45-53
- 845 Winker, D. M.: Effects of Multiple Scattering on LITE Observations of Clouds. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 67.  
Organization CA RTOP 460-41-41
- 846 Winker, D. M.: Aerosol and Cloud Observations From the Lidar In-Space Technology Experiment. Presented at Seventh Topical Meeting of the Optical Remote Sensing of the Atmosphere, February 6-10, 1995, Salt Lake City, Utah. In Proceedings.  
Organization CA RTOP 460-48-40

- 847 Winker, D. M.: Global Measurements of Clouds and Aerosols With the Lidar In-Space Technology Experiment. Presented at 1995 Conference on Lasers and Electro-Optics, May 22-26, 1995, Baltimore, Maryland. In Proceedings.  
Organization CA RTOP 460-48-40
- 848 Winker, D. M.; and McCormick, M. P.: LITE: The First Atmospheric Lidar Measurements From Space. Presented at National Space Development Agency International Workshop on Spaceborne Lidar 1995, October 24-26, 1995, Nara, Japan.  
Organization CA RTOP 665-45-20
- 849 Winker, D. M.; and Poole, L. R.: Monte Carlo Calculations of Cloud Returns for Ground-Based and Space-Based Lidars. *Applied Physics B*, Volume 60, 1995, p. 341-344.  
Organization CA RTOP 460-41-41
- 850 Winker, D. M.; and Trepte, C. R.: Cirrus Observations by LITE Near the Tropical Tropopause. Presented at 1995 Fall American Geophysical Union Meeting, December 11-15, 1995, San Francisco, California. In EOS Transactions, Volume 76, No. 46, November 7, 1995, Suppl., p. F74.  
Organization CA RTOP 665-45-20
- 851 Winker, D. M.; Trepte, C. R.; and Kent, G. S.: Global Observations of Enhanced Aerosols in the Free Troposphere by Lidar. Presented at 1995 Annual Meeting of the American Association for Aerosol Research, October 9-13, 1995, Pittsburgh, Pennsylvania. In Proceedings.  
Organization CA RTOP 665-45-20
- 852 Woods, D. C.: The Lidar In-Space Technology Experiment (LITE)— A Summary Overview. Presented at 67th Annual Conference of the National Technical Association, July 19-22, 1995, Houston, Texas.  
Organization CA RTOP 460-48-40
- 853 Woods, D. C.; and Osborn, M. T.: A Correlative Measurement Plan for the Lidar In-Space Technology Experiment. Presented at 1995 Spring American Geophysical Union Meeting, May 29–June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 25, 1995, p. 70.  
Organization CA RTOP 460-48-40
- 854 Worden, H.; Beer, R.; and Rinsland, C. P.: Airborne High Resolution Infrared Spectroscopy of Western Wildfires. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia.  
Organization CA RTOP 618-21-00
- 855 Yue, G. K.; Poole, L. R.; McCormick, M. P.; Veiga, R. E.; Wang, P-H.; Rizi, V.; Masci, F.; D'Altorio, A.; and Visconti, G.: Comparing Simultaneous Stratospheric Aerosol and Ozone Lidar Measurements With SAGE II Data After the Mount Pinatubo Eruption. *Geophysical Research Letters*, Volume 22, No. 14, July 15, 1995, p. 1881-1884.  
Organization CA RTOP 665-45-54
- 856 Yue, G. K.; Poole, L. R.; and Wang, P-H.: Difference of Aerosols and Ozone Observed by SAGE II Inside and Outside Subsonic Flight Corridors. Presented at Annual Meeting: The Atmospheric Effects of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
Organization CA RTOP 538-04-14

- 857 Yue, G. K.; Thomason, L. W.; Poole, L. R.; Wang, P-H.; Baumgardner, D.; and Dye, J. E.: Aerosol Surface Areas Deducted From Early 1993 SAGE II Data and Comparisons With Stratospheric Photochemistry, Aerosols and Dynamics Expedition Measurements. *Geophysical Research Letters*, Volume 22, No. 21, November 1, 1995, p. 2933-2936.  
Organization CA RTOP 665-45-54

- 858 Zawodny, J. M.; McCormick, M. P.; and Chu, W. P.: Ozone Trends in the Lower Stratosphere as Seen by SAGE. Presented at International Conference on Ozone in the Lower Stratosphere, May 15-20, 1995, Halkidiki, Greece. In Proceedings.  
Organization CA RTOP 665-45-53

### Category 47 Meteorology and Climatology

- 859 Barkstrom, B. R.: An Efficient Algorithm for Choosing Scattering Directions in Monte Carlo Work With Arbitrary Phase Functions. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 53, No. 1, January 1995, p. 23-38.  
Organization CA RTOP 229-01-02

- 860 Browell, E. V.: Remote Sensing of Trace Gases From Satellites and Aircraft. In *Chemistry of the Atmosphere: The Impact on Global Change*, J. G. Calvert, ed., 1994, p. 121-134.  
Organization CA RTOP 464-54-16

- 861 Browell, E. V.: Applications of Lasers in Remote Sensing. Presented at 1995 Advanced Solid State Lasers Topical Meeting, January 29–February 1, 1995, Memphis, Tennessee.  
Organization CA RTOP 464-54-16

- 862 Browell, E. V.; and Ismail, S.: First Lidar Measurements of Water Vapor and Aerosols From a High-Altitude Aircraft. Presented at Optical Remote Sensing of the Atmosphere Topical Meeting, February 6-10, 1995, Salt City, Utah.  
Organization CA RTOP 618-32-33

- 863 Browell, E. V.; Ismail, S.; and Higdon, N. S.: Remote Water Vapor Measurements With Advanced Airborne Lidar Systems. Presented at International GeoScience and Remote Sensing Symposium 95, July 10-14, 1995, Firenze, Italy.  
Organization CA RTOP 460-21-49

- 864 Browell, E. V.; McCormick, M. P.; Butler, C. F.; Fenn, M. A.; Nowicki, G. D.; Grant, W. B.; and Ismail, S.: Airborne and Spaceborne Lidar Observations of Biomass Burning Plumes Over Africa and South America. Presented at Chapman Conference: Biomass Burning and Global Change, March 13-17, 1995, Williamsburg, Virginia. In Proceedings.  
Organization CA RTOP 464-54-16

- 865 CERES Science Team: *Clouds and the Earth's Radiant Energy System (CERES) Algorithm Theoretical Basis Document, Volume III—Cloud Analyses and Determination of Improved Top of Atmosphere Fluxes (Subsystem 4)*. NASA RP-1376, Volume III, December 1995, 259 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1376vol3.ps.Z>  
Organization CA RTOP 148-65-41

- 866 CERES Science Team: *Clouds and the Earth's Radiant Energy System (CERES) Algorithm Theoretical Basis Document, Volume II—Geolocation, Calibration, and ERBE-Like Analyses (Subsystems 1-3)*. NASA RP-1376, Volume II, December 1995, 136 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1376vol2.ps.Z  
Organization CA RTOP 148-65-41
- 867 CERES Science Team: *Clouds and the Earth's Radiant Energy System (CERES) Algorithm Theoretical Basis Document, Volume IV—Determination of Surface and Atmosphere Fluxes and Temporally and Spatially Averaged Products (Subsystems 5-12)*. NASA RP-1376, Volume IV, December 1995, 189 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1376vol4.ps.Z  
Organization CA RTOP 148-65-41
- 868 CERES Science Team: *Clouds and the Earth's Radiant Energy System (CERES) Algorithm Theoretical Basis Document, Volume I—Overviews (Subsystem 0)*. NASA RP-1376, Volume I, December 1995, 114 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1376vol1.ps.Z  
Organization CA RTOP 148-65-41
- 869 Cess, R. D.; *et al.*: Absorption of Solar Radiation by Clouds: Observations Versus Models. *Science*, Volume 267, No. 5197, January 27, 1995, p. 496-498.  
Organization CA RTOP 578-12-70
- 870 Charlock, T. P.; Minnis, P.; Alberta, T. L.; Smith, W. L., Jr.; and Rose, F. G.: Local Scale Space-Time Variability of Surface and Atmospheric Radiation: Simulations, Input Data, and Validating Observations on Public Database. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
Organization CA RTOP 578-12-25
- 871 Charlock, T. P.; Whitlock, C. H.; Alberta, T. L.; and Ohmura, A.: Assessment of the Budget for the Absorption of Solar Energy by the Earth's Atmosphere. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
Organization CA RTOP 578-12-25
- 872 Crommelynck, D.; Fichot, A.; Lee, R. B., III; and Romero, J.: First Realization of the Space Absolute Radiometric Reference (SARR) During the Atlas 2 Flight Period. *Advances in Space Research*, Volume 16, No. 8, 1995, p. (8)17-(8)23.  
Organization CA RTOP 229-18-45
- 873 Harrison, E. F.; Denn, F. M.; and Gibson, G. G.: *ATLAS-3 Correlative Measurement Opportunities With UARS and Surface Observations*. NASA TM-110159, June 1995, 80 p.  
Organization CA RTOP 579-21-61
- 874 Harrison, E. F.; Wielicki, B. A.; Gibson, G. G.; and Denn, F. M.: Orbital Analysis of LidarSat for Synergistic Measurements With the Earth Observing System (EOS) Satellite. Presented at AAS/AIAA Astrodynamics Specialist Conference, August 14-17, 1995, Halifax, Nova Scotia. AAS Paper No. 95-329.  
Organization CA RTOP 229-81-02
- 875 Harshvardhan, ; Wielicki, B. A.; and Ginger, K. M.: The Interpretation of Remotely Sensed Cloud Properties From a Model Parameterization Perspective. *Journal of Climate*, Volume 7, No. 12, December 1994, p. 1987-1998.  
Organization DS RTOP 460-42-09

- 876 Ismail, S.; Browell, E. V.; Hall, W. M.; Barnes, J. C.; Luck, W. S.; Little, A. D.; and Kooi, S. A.: Evaluation of NASA LASE Water Vapor DIAL System Performance Using Engineering Test Flight Measurements. Presented at International GeoScience and Remote Sensing Symposium 95, July 10-14, 1995, Firenze, Italy.  
Organization CA RTOP 618-32-33
- 877 Kratz, D. P.: The Correlated  $\kappa$ -Distribution Technique as Applied to the AVHRR Channels. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 53, No. 5, May 1995, p. 501-518.  
Organization CA RTOP 229-81-02
- 878 Lee, R. B., III: Calibrations of the Earth Radiation Budget Satellite (ERBS) Active-Cavity Radiometer Nonscanning Sensors. Presented at 67th Annual Conference of the National Technical Association, July 19-22, 1995, Houston, Texas.  
Organization CA RTOP 229-18-45
- 879 Lee, R. B., III; Gibson, M. A.; Wilson, R. S.; and Thomas, S.: Long-Term Total Solar Irradiance Variability During Sunspot Cycle 22. *Journal of Geophysical Research*, Volume 100, No. A2, February 1, 1995, p. 1667-1675.  
Organization CA RTOP 665-45-20
- 880 Lee, R. B., III; Wilson, R. S.; Thomas, S.; and Gibson, M. A.: Sunspot Cycle 22: Long-Term Solar Irradiance Variability. Presented at 1995 Spring American Geophysical Union Meeting, May 29-June 2, 1995, Baltimore, Maryland. In EOS Transactions, Volume 76, No. 17, April 17, 1995, p. 237.  
Organization CA RTOP 229-18-45
- 881 Martin, G. M.; Johnson, D. W.; Rogers, D. P.; Jonas, P. R.; Minnis, P.; and Hegg, D. A.: Observations of the Interaction Between Cumulus Clouds and Warm Stratocumulus Clouds in the Marine Boundary Layer During ASTEX. *Journal of the Atmospheric Sciences*, Volume 52, 1995, p. 2902-2922.  
Organization CA RTOP 460-44-41
- 882 Minnis, P.: Satellite Perspective of Ice Cloud Microphysics and Radiation. In *IAMAS Cloud-Radiation Interactions and Their Parameterization in Climate Models*, November 1994, p. 114-116.  
Organization CA RTOP 148-65-41
- 883 Minnis, P.; Palikonda, R.; Ayers, J. K.; Young, D. F.; and Vadnais, C. M.: Comparison of Satellite and Surface-Observed Contrails Over the U.S. Presented at Annual Meeting: The Atmospheric Effects of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
Organization CA RTOP 538-08-12
- 884 Minnis, P.; Palikonda, R.; Young, D. F.; and Doelling, D. R.: Comparison of Liquid Water Path and Cloud Droplet Sizes Derived From SSM/I, Meteosat, and AVHRR During ASTEX. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
Organization CA RTOP 460-44-41
- 885 Minnis, P.; Smith, W. L., Jr.; Garber, D. P.; Ayers, J. K.; and Doelling, D. R.: *Cloud Properties Derived From GOES-7 for Spring 1994 ARM Intensive Observing Period Using Version 1.0.0 of ARM Satellite Data Analysis Program*. NASA RP-1366, August 1995, 59 p. <ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1366.ps.Z>  
Organization CA RTOP 146-90-04

- 886 Minnis, P.; Smith, W. L., Jr.; Young, D. F.; Garber, D. P.; and Heck, P. W.: Cloud Particle Size Retrievals Using Satellite Data During ARM IOPs. Presented at Fifth Annual Atmospheric Radiation Measurement (ARM) Program Science Team Meeting, March 20-23, 1995, San Diego, California.  
Organization CA RTOP 146-90-04
- 887 Minnis, P.; Smith, W. L., Jr.; Young, D. F.; and Gibson, G. G.: DOE ARM Satellite-Derived Cloud and Radiation Properties. Presented at Joint U.S.-Russian Ecological/Environmental Seminar, May 14-19, 1995, Washington, DC.  
Organization CA RTOP 146-90-04
- 888 Pandey, D. K.; Lee, R. B., III; and Paden, J.: Effects of Atmospheric Emissivity on Clear Sky Temperatures. *Atmospheric Environment*, Volume 29, No. 16, August 1995, p. 2201-2204.  
Organization CA RTOP 665-45-20
- 889 Pinker, R. T.; Laszlo, I.; Whitlock, C. H.; and Charlock, T. P.: Radiative Flux Opens New Window on Climate Research. *EOS Transactions*, Volume 76, No. 15, April 11, 1995, p. 145, 155, and 158.  
Organization CA RTOP 578-12-23
- 890 Schmidt, E. O.; Arduini, R. F.; Wielicki, B. A.; Stone, R. S.; and Tsay, S-C.: Considerations for Modeling Thin Cirrus Effects via Brightness Temperature Differences. *Journal of Applied Meteorology*, Volume 34, No. 2, February 1995, p. 447-459.  
Organization CA RTOP 229-81-02
- 891 Shipham, M. C.; Crill, P.; Bartlett, K.; and Blaha, D.: Elevated Ambient Methane Observed at Harvard Forest Related to Local Regions of High Population Density. Presented at Annual Harvard Forest Ecology Symposium, April 10-11, 1995, Petersham, Massachusetts.  
Organization CA RTOP 665-45-20
- 892 Smith, G. L.; Lee, R. B., III; Barkstrom, B. R.; Cooper, J. E.; Kopia, L. P.; and Lawrence, R. W.: Design and Calibration Features of the Clouds and the Earth's Radiant Energy System (CERES) Instrument. Presented at Society for Photometric and Instrumentation Engineering, September 25-29, 1995, Paris, France. In SPIE, Volume 2583.  
Organization CA RTOP 229-71-45
- 893 Smith, G. L.; and Manalo-Smith, N.: Scene-Identification Error Probabilities for Evaluating Earth Radiation Measurements. *Journal of Geophysical Research*, Volume 100, No. D8, August 20, 1995, p. 16,377-16,385.  
Organization CA RTOP 229-01-02
- 894 Smith, W. L., Jr.; Minnis, P.; Garber, D. P.; Ayers, J. K.; and Minnett, P. J.: Satellite-Derived Cloud Properties During ARM IOP's. Presented at Fifth Annual Atmospheric Radiation Measurement (ARM) Program Science Team Meeting, March 20-23, 1995, San Diego, California.  
Organization CA RTOP 146-90-04
- 895 Whitlock, C. H.; Charlock, T. P.; Staylor, W. F.; Pinker, R. T.; Laszlo, I.; Ohmura, A.; Gilgen, H.; Dipasquale, R. C.; LeCroy, S. R.; and Ritchey, N. A.: First Global WCRP Surface Radiation Budget Data Set. *Bulletin of the American Meteorological Society*, Volume 76, No. 6, June 1995, p. 905-922.  
Organization CA RTOP 578-12-23

- 896 Wielicki, B. A.: CERES Algorithm Research and Development. Presented at 1995 IUGG XXI General Assembly, July 2-14, 1995, Boulder, Colorado.  
 Organization CA RTOP 229-01-02
- 897 Wielicki, B. A.; Cess, R. D.; King, M. D.; Randall, D. A.; and Harrison, E. F.: Mission to Planet Earth: Role of Clouds and Radiation in Climate. *Bulletin of the American Meteorological Society*, Volume 76, No. 11, November 1995, p. 2125-2154.  
 Organization CA RTOP 229-81-02

## Life Sciences

### Category 51 Life Sciences (General)

- 898 Wilson, J. W.; Townsend, L. W.; Tripathi, R. K.; Norbury, J. W.; Khan, F.; and Badavi, F. F.: Computer Model of Fragmentation of Atomic Nuclei. NASA Tech Brief LAR-15230, February 1995.  
 Organization DM

### Category 52 Aerospace Medicine

- 899 Cucinotta, F. A.; and Wilson, J. W.: A Track Structure Model of Initiation-Promotion for Radiation Carcinogenesis. Presented at Tenth International Congress on Radiation Research, August 27-September 1, 1995, Wurzburg, Germany. In Proceedings.  
 Organization DM RTOP 199-45-16
- 900 Cucinotta, F. A.; Wilson, J. W.; and Katz, R.: Calculations of Action Cross Sections for Inactivation and Mutation. Presented at Fifth Workshop of Heavy Charged Particles in Biology and Medicine, August 22-23, 1995, Darmstadt, Germany. In Proceedings.  
 Organization DM RTOP 199-45-16
- 901 Cucinotta, F. A.; Wilson, J. W.; and Katz, R.: Biological Effectiveness of Medium Energy Proton Beams Along the Bragg Ionization Curve. Presented at 1995 Joint Meeting of the Radiation Research Society and North American Hyperthermia Society, April 1-6, 1995, San Jose, California.  
 Organization DM RTOP 199-45-16
- 902 Katz, R.; and Cucinotta, F. A.: Track Theory Update. Presented at Tenth International Congress on Radiation Research, August 27-September 1, 1995, Wurzburg, Germany.  
 Organization DM RTOP 199-45-16
- 903 Katz, R.; Cucinotta, F. A.; and Zhang, C. X.: The Calculation of Radial Dose From Heavy Ions: Effects on Predictions of Biological Action Cross Sections. Presented at Third International Symposium on Swift Heavy Ions in Matter, May 15-19, 1995, Caen, France. In Proceedings.  
 Organization DM RTOP 199-45-16



- 904 Wilson, J. W.; Cucinotta, F. A.; Tai, H.; Shinn, J. L.; Chun, S. Y.; Tripathi, R. K.; and Sihver, L.: Transport Properties of Light Ions in Water. Presented at Fifth Workshop of Heavy Charged Particles in Biology and Medicine, August 22-23, 1995, Darmstadt, Germany. In Proceedings, Volume 1, p. 193-196.  
Organization DM RTOP 199-45-16

- 905 Yost, W. T.; Wait, J. L.; Nahormek, P. A.; Cantrell, J. H., Jr.; and Hanna-Hawver, P. D.: Method and Apparatus for Non Invasive Evaluation of Diaphragmatic Function. U. S. Patent 5,448,995. Issued September 12, 1995.  
Organization DM

### Category 53 Behavioral Sciences

- 906 Burt, J. L.; Bartolome, D. S.; Burdette, D. W.; and Comstock, J. R., Jr.: A Psychophysiological Evaluation of the Perceived Urgency of Auditory Warning Signals. Presented at Human Factors in Alarm Design II, September 26, 1995, Southampton, England.  
Organization DC RTOP 505-64-53
- 907 Burt, J. L.; Bartolome, D. S.; Burdette, D. W.; and Comstock, J. R., Jr.: A Psychophysiological Evaluation of the Perceived Urgency of Auditory Warning Signals. *Ergonomics*, Volume 38, No. 11, November 1995, p. 2327-2340.  
Organization DC RTOP 505-64-53
- 908 Pope, A. T.: Hazardous States of Awareness. Presented at 40th Corporate Aviation Safety Seminar, April 26-28, 1995, Vancouver, British Columbia.  
Organization DC RTOP 505-64-53
- 909 Pope, A. T.; Comstock, J. R., Jr.; Bartolome, D. S.; Bogart, E. H.; and Burdette, D. W.: Biocybernetic System Validates Index of Operator Engagement in Automated Task. *Biological Psychology*, Volume 40, 1995, p. 187-195.  
Organization DF RTOP 505-64-53

## Mathematical and Computer Sciences

### Category 59 Mathematical and Computer Sciences (General)

- 910 Anon.: *Cumulative Reports and Publications Through December 31, 1994*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195043, March 1995, 106 p.  
Organization A RTOP 505-90-52
- 911 Anon.: *Semiannual Report—April 1, 1995 Through September 30, 1995*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198246, November 1995, 130 p.  
Organization A RTOP 505-90-52

- 912 Anon.: *Semiannual Report—October 1, 1994 Through March 31, 1995*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198172, June 1995, 80 p.  
 Organization A RTOP 505-90-52
- 913 Dean, E. B.: Parametric Cost Deployment. Presented at Seventh Annual Symposium on Quality Function Deployment, June 11-13, 1995, Novi, Michigan. In Proceedings, p. 27-34.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-qfd-95-p27.ps.Z>  
 Organization DF RTOP 323-43-33
- 914 Girimaji, S. S.: *The First ICASE/LaRC Industry Roundtable: Session Proceedings*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195040, ICASE Interim Report 26, February 1995, 68 p.  
 Organization A RTOP 505-90-52
- 915 Holloway, C. M. (Compiler): *Third NASA Langley Formal Methods Workshop*. NASA CP-10176, June 1995, 269 p.  
<http://atb-www.larc.nasa.gov/WS95/proceedings.html>  
 Organization DI RTOP 505-64-50
- 916 Holloway, C. M.; Miner, P. S.; and Butler, R. W.: An Informal Introduction to Formal Methods. Presented at Third NASA Langley Formal Methods Workshop, May 10-12, 1995, Hampton, Virginia.  
 Organization DI RTOP 505-64-50
- 917 Kerr, P. A.; Smith, R. E.; and Posenau, M-A.: GEOMETRY LABORATORY (GEOLAB) Surface Modeling and Grid Generation Technology and Services. Presented at Workshop on Surface Modeling, Grid Generation, and Related Issues in CFD, May 9-11, 1995, Cleveland, Ohio. In NASA CP-3291, p. 69-88.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cp3291p69-86.ps.Z>  
 Organization GM RTOP 505-59-53
- 918 Macrossan, M. N.: *Some Developments of the Equilibrium Particle Simulation Method for the Direct Simulation of Compressible Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198175, ICASE Interim Report 27, June 1995, 34 p.  
 Organization A RTOP 505-90-52
- 919 Mastin, C. W.: Multilevel Elliptic Smoothing of Large Three-Dimensional Grids. Presented at Workshop on Surface Modeling, Grid Generation, and Related Issues in CFD, May 9-11, 1995, Cleveland, Ohio. In NASA CP-3291, p. 689-696.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cp3291p689-96.ps.Z>  
 Organization DM RTOP 505-59-53
- 920 Mastin, C. W.: Optimal NURBS Approximation of Surface Grids. Presented at Fourth SIAM Conference on Geometric Design, November 6-9, 1995, Nashville, Tennessee.  
 Organization GM RTOP 505-90-53
- 921 Padula, S. L.: Aerospace Applications of Integer and Combinatorial Optimization. Presented at SIAM Annual Meeting, October 23-26, 1995, Charlotte, North Carolina.  
 Organization DF RTOP 505-63-36
- 922 Padula, S. L.; and Kincaid, R. K.: *Aerospace Applications of Integer and Combinatorial Optimization*. NASA TM-110210, October 1995, 19 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110210.ps.Z>  
 Organization DF RTOP 505-63-36

- 923 Sadreghighi, I.; Smith, R. E.; and Tiwari, S. N.: Grid Sensitivity and Aerodynamic Optimization of Generic Airfoils. *Journal of Aircraft*, Volume 32, No. 6, November-December 1995, p. 1234.  
 Organization GM RTOP 505-90-53
- 924 Smith, R. E.: Rapid Airplane Parametric Input Design (RAPID). Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California. In Proceedings.  
 Organization GM RTOP 505-59-53
- 925 Smith, R. E.; Bloor, M. G.; Wilson, M.; and Thomas, A. M.: Rapid Airplane Parametric Input Design (RAPID). Presented at 12th AIAA Computational Fluid Dynamics Conference, June 19-22, 1995, San Diego, California. AIAA Paper No. 95-1687.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-1687.ps.Z>  
 Organization GM RTOP 505-59-53

### Category 60 Computer Operations and Hardware

- 926 Banks, D. C.; and Kelley, M.: *Tracking a Turbulent Spot in an Immersive Environment*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198179, ICASE Report No. 95-50, June 1995, 12 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-50.ps.Z>  
 Organization A RTOP 505-90-52
- 927 Banks, D. C.; and Singer, B. A.: *A Predictor-Corrector Technique for Visualizing Unsteady Flow*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198180, ICASE Report No. 95-51, July 1995, 30 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-51.ps.Z>  
 Organization A RTOP 505-90-52
- 928 Belcastro, C. M.: A Low-Cost Comprehensive Methodology for EME Effects Assessment of Critical Systems. Presented at Reverberation Chamber & Anechoic Chamber Operators Group Meeting, December 5-7, 1995, Dahlgren, Virginia.  
 Organization DI RTOP 505-64-10
- 929 Belcastro, C. M.; and Fischl, R.: Upset Detection for Closed-Loop Laboratory HIRF Testing of Fault Tolerant Aircraft Control Computers. Presented at 14th Digital Avionics Systems Conference and Technical Display, November 5-9, 1995, Cambridge, Massachusetts. In Proceedings, p. 438-447.  
 Organization DI RTOP 505-64-10
- 930 Bokhari, S. H.: *Multiphase Complete Exchange on Paragon, SP2 & CS-2*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198212, ICASE Report No. 95-61, September 1995, 22 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-61.ps.Z>  
 Organization A RTOP 505-90-52

- 931** Bokhari, S. H.: *The LINUX Operating System: An Introduction*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198178, ICASE Report No. 95-49, June 1995, 20 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-49.ps.Z  
Organization A RTOP 505-90-52
- 932** Bokhari, S. H.: *Communication Overhead on the Intel Paragon, IBM SP2 & Meiko CS-2*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198211, ICASE Interim Report 28, September 1995, 19 p.  
Organization A RTOP 505-90-52
- 933** Brunstrom, A.; Leutenegger, S. T.; and Simha, R.: *Experimental Evaluation of Dynamic Data Allocation Strategies in a Distributed Database With Changing Workloads*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195024, ICASE Report No. 95-2, January 1995, 17 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-02.ps.Z  
Organization A RTOP 505-90-52
- 934** Chrisochoides, N.: *Multithreaded Model for Dynamic Load Balancing Parallel Adaptive PDE Computations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198244, ICASE Report No. 95-83, November 1995, 25 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-83.ps.Z  
Organization A RTOP 505-90-52
- 935** Ciardo, G.: *Discrete-Time Markovian Stochastic Petri Nets*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195039, ICASE Report No. 95-9, February 1995, 20 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-09.ps.Z  
Organization A RTOP 505-90-52
- 936** Ciardo, G.; Gluckman, J.; and Nicol, D. M.: *Distributed State-Space Generation of Discrete-State Stochastic Models*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198233, ICASE Report No. 95-75, October 1995, 25 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-75.ps.Z  
Organization A RTOP 505-90-52
- 937** Crockett, T. W.: *Parallel Rendering*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195080, ICASE Report No. 95-31, April 1995, 52 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-31.ps.Z  
Organization A RTOP 505-90-52
- 938** Dickens, P. M.; Haines, M.; Mehrotra, P.; and Nicol, D. M.: *Towards a Thread-Based Parallel Direct Execution Simulator*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198242, ICASE Report No. 95-81, November 1995, 17 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-81.ps.Z  
Organization A RTOP 505-90-52
- 939** Fahringer, T.; Haines, M.; and Mehrotra, P.: *On the Utility of Threads for Data Parallel Programming*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198155, ICASE Report No. 95-35, May 1995, 14 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-35.ps.Z  
Organization A RTOP 505-90-52

- 940 Franklin, H.; Larson, B.; Johnson, M.; Droessler, J.; and Reinhart, W. F.: *Panoramic, Large-Screen, 3-D Flight Display System Design*. (NAS1-20073 Honeywell, Inc.) NASA CR-198218, October 1995, 312 p.  
 Organization DC RTOP 537-08-20
- 941 Haines, M.; Mehrotra, P.; and Cronk, D.: *Ropes: Support for Collective Operations Among Distributed Threads*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198157, ICASE Report No. 95-36, May 1995, 19 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-36.ps.Z>  
 Organization A RTOP 505-90-52
- 942 Haines, M.; Mehrotra, P.; and Van Rosendale, J.: *SmartFiles: An OO Approach to Data File Interoperability*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198187, ICASE Report No. 95-56, July 1995, 20 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-56.ps.Z>  
 Organization A RTOP 505-90-52
- 943 Ma, K-L.: *Runtime Volume Visualization for Parallel CFD*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198232, ICASE Report No. 95-74, October 1995, 13 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-74.ps.Z>  
 Organization A RTOP 505-90-52
- 944 Ma, K-L.: *Parallel Volume Ray-Casting for Unstructured-Grid Data on Distributed-Memory Architectures*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198195, ICASE Report No. 95-57, August 1995, 21 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-57.ps.Z>  
 Organization A RTOP 505-90-52
- 945 Ma, K-L.; Smith, P J.; and Jain, S.: *Visualizing Turbulent Mixing of Gases and Particles*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198226, ICASE Report No. 95-71, October 1995, 15 p.  
 Organization A RTOP 505-90-52
- 946 Maddalon, J. M.; and Cleveland, J. I., II: *A Study of Workstation Computational Performance for Real-Time Flight Simulation*. NASA TM-109184, February 1995, 9 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm109184.ps.Z>  
 Organization GM RTOP 505-90-53
- 947 Middleton, D. J.: *An Executable Specification for the Message Processor in a Simple Combining Network*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198174, ICASE Report No. 95-47, June 1995, 36 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-47.ps.Z>  
 Organization A RTOP 505-90-52
- 948 Nicol, D. M.; Palumbo, D. L.; and Ulrey, M. L.: *Integrating Reliability Analysis With a Performance Tool*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198256, ICASE Report No. 95-85, December 1995, 19 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-85.ps.Z>  
 Organization A RTOP 505-90-52

- 949 Somani, A. K.; and Zhang, T.: *Architecture and Performance Analysis of DIRSMIN: A Fault-Tolerant Switch Using Dilated Reduced-Stage MIN*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198238, ICASE Report No. 95-78, November 1995, 29 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-78.ps.Z>  
 Organization A RTOP 505-90-52
- 950 Stoica, I.; Abdel-Wahab, H.; and Pothen, A.: *A Microeconomic Scheduler for Parallel Computers*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198153, ICASE Report No. 95-33, May 1995, 23 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-33.ps.Z>  
 Organization A RTOP 505-90-52
- 951 Sun, X-H.: *The Relation of Scalability and Execution Time*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198213, ICASE Report No. 95-62, September 1995, 24 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-62.ps.Z>  
 Organization A RTOP 505-90-52
- 952 Sun, X-H.; and Zhu, J.: *Performance Prediction: A Case Study Using a Multi-Ring KSR-1 Machine*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195066, ICASE Report No. 95-24, April 1995, 21 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-24.ps.Z>  
 Organization A RTOP 505-90-52
- 953 Ueng, S. K.; Sikorski, K.; and Ma, K-L.: *Fast Algorithms for Visualizing Fluid Motion in Steady Flow on Unstructured Grids*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198198, ICASE Report No. 95-58, August 1995, 18 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-58.ps.Z>  
 Organization A RTOP 505-90-52
- 954 Wilson, L. F.; and Nicol, D. M.: *Experiments in Automated Load Balancing*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198241, ICASE Report No. 95-80, November 1995, 15 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-80.ps.Z>  
 Organization A RTOP 505-90-52

### Category 61 Computer Programming and Software

- 955 Amundsen, R. M.; Feldhaus, W. S.; Little, A. D.; and Mitchum, M. V.: PATCOD (PATRAN-to-Code V translator) Version 1.0. Computer Program LAA-1995-0005.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0005.html>  
 Organization GK
- 956 Arthur, J. J.; Nelson, M. L.; and Williams, S. B.: NX to PVM3.2 Message Passing Conversion Library Version 1.0. Computer Program LSS-1995-0000.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0000.html>  
 Organization GM

- 957 Chambers, L. H.: LORAN (Langley Optimized RAdiative Nonequilibrium code) Version 1. Computer Program LSS-1995-0004.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0004.html>  
 Organization CA
- 958 Coo, D.: *Advanced Flight Computer, Special Study Final Report*. (L-40679D Loral Federal Systems.) NASA CR-198165, March 1995, 53 p.  
 Organization DI RTOP 233-01-03
- 959 Humes, D. C.: NSLTOOLS Version 2.1. Computer Program LSS-1995-0009.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0009.html>  
 Organization GM
- 960 Humes, D. C.: EARS Version 2.1. Computer Program LSS-1995-0008.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0008.html>  
 Organization GM
- 961 Jackson, E. B.: LaRCsim Version 1.4d. Computer Program LSS-1995-0021.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0021.html>  
 Organization DC
- 962 Jones, R. L., III: *Design Tool for Multiprocessor Scheduling and Evaluation of Iterative Dataflow Algorithms*. NASA TP-3491, April 1995, 40 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3491.ps.Z>  
 Organization DI RTOP 233-01-03
- 963 Juang, J-N.; Horta, L. G.; and Phan, M. Q.: System/Observer/Controller Identification Toolbox Version v0. Computer Program LSS-1995-0023.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0023.html>  
 Organization DS
- 964 Martinez, D.: *The Transition of a Real-Time Single-Rotor Helicopter Simulation Program to a Supercomputer*. NASA TM-110166, October 1995, 106 p.  
 Organization GM RTOP 505-90-53
- 965 Nelson, M. L.; Gottlich, G. L.; Bianco, D. J.; Binkley, R. L.; Kellogg, Y. D.; Paulson, S. S.; Beaumont, C. J.; Schmunk, R. B.; Kurtz, M. J.; and Accomazzi, A.: The Widest Practicable Dissemination: The NASA Technical Report Server. Presented at Computing in Aerospace 10, March 28-30, 1995, San Antonio, Texas. AIAA Paper No. 95-0964.  
 Organization GM RTOP 505-90-53
- 966 Obando, R. A.; and Stoughton, J. W.: *A Performance Prediction Model for a Fault-Tolerant Computer During Recovery and Restoration*. (NCC1-136 Old Dominion University.) NASA CR-195074, February 1995, 189 p.  
 Organization DI RTOP 233-01-03
- 967 Rehder, J. J.: Coordinated Software Scouts for Knowledge Retrieval. Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California.  
 Organization D RTOP 509-10-11
- 968 Riley, C. J.: THINBL (Three-dimensional Hypersonic INviscid Boundary-Layer code) Version 1. Computer Program LSS-1995-0007.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0007.html>  
 Organization DG

- 969 Rogers, J. L., Jr.; and Hall, L. E.: Program Helps Decompose Complex Design Systems. Computer Program LAR-15099.  
Organization DS
- 970 Rogers, J. L., Jr.; and LaMarsh, W. J., II: *Reducing Neural Network Training Time With Parallel Processing*. NASA TM-110154, February 1995, 20 p.  
Organization DF RTOP 505-63-50
- 971 Rushby, J.: *Formal Methods and Their Role in Digital Systems Validation for Airborne Systems*. (NAS1-18969 SRI International.) NASA CR-4673, August 1995, 65 p.  
Organization DI RTOP 505-64-10
- 972 Srivas, M. K.; and Miller, S. P.: *Formal Verification of an Avionics Microprocessor*. (NAS1-18969 SRI International.) NASA CR-4682, July 1995, 109 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr4682.ps.Z>  
Organization DI RTOP 505-64-10
- 973 Storaasli, O. O.: Day of Week Version DOW3-95. Computer Program LSS-1995-0003.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0003.html>  
Organization DS
- 974 Storaasli, O. O.; Baddourah, M.; and Nguyen, D. T.: General Purpose Solver (GPS) for  $[A] \{x\} = \{b\}$  Version GPS-T95. Computer Program LSS-1995-0002.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0002.html>  
Organization DS
- 975 Weisenborn, M. D.; and Williams, S. B.: Illume Version 2.0. Computer Program LAA-1995-0006.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0006.html>  
Organization GM
- 976 Witte, D. W.; and Tatum, K. E.: Thermally Perfect Gas Code Version 2.4.0. Computer Program LSS-1995-0001.  
<http://www.larc.nasa.gov/LSS/ABSTRACT/LSS-1995-0001.html>  
Organization DG

## Category 62 Computer Systems

- 977 Butler, R. W.: Rationale for Formal Methods. Presented at Third NASA Langley Formal Methods Workshop, May 10-12, 1995, Hampton, Virginia.  
Organization DI RTOP 505-64-10
- 978 Butler, R. W.: Formal Methods and NASA. Presented at 18th National Information Systems Security Conference, October 10-13, 1995, Baltimore, Maryland. In Proceedings, Volume 2, p. 635.  
Organization DI RTOP 505-64-10
- 979 Butler, R. W.; Caldwell, J. L.; Carreno, V. A.; Di Vito, B. L.; Holloway, C. M.; and Miner, P. S.: NASA Langley's Research and Technology-Transfer Program in Formal Methods. Presented at 10th Annual IEEE Conference on COMPUTER ASSurance (COMPASS '95), June 26-30, 1995, Gaithersburg, Maryland. In Proceedings.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ieee-95-compassrwb.ps.Z>  
Organization DI RTOP 505-64-10



- 980 Butler, R. W.; and Johnson, S. C.: *Techniques for Modeling the Reliability of Fault-Tolerant Systems With the Markov State-Space Approach*. NASA RP-1348, September 1995, 130 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-rp1348.ps.Z>  
 Organization DI RTOP 505-64-10
- 981 Cleveland, J. I., II: Multiple Cab Simulator System With Common Computer Infrastructure. Presented at Simulation Technology Conference, June 15-16, 1995, Houston, Texas.  
 Organization GM1 RTOP 505-90-53
- 982 Guaspari, D.; McHugh, J.; Polak, W.; and Saaltink, M.: *Towards a Formal Semantics for Ada 9X*. (NAS1-18972 Odyssey Research Associates, Inc.) NASA CR-195037, March 1995, 157 p.  
 Organization DI RTOP 505-64-10
- 983 Holloway, C. M.: Ada 95 and Safety-Critical Software. Presented at 14th Digital Avionics Systems Conference and Technical Display, November 5-9, 1995, Cambridge, Massachusetts. In Proceedings, p. 504-509.  
<http://atb-www.larc.nasa.gov/CMH/dasc-bib.ps>  
 Organization DI RTOP 505-64-50
- 984 Humes, D. C.; and Pao, J. Z.: Experiences From NASA/Langley's DMSS Project. Presented at 14th IEEE Symposium on Mass Storage Systems, September 11-14, 1995, Monterey, California. In Proceedings, Volume 1, p. 182-189.  
<http://techreports.larc.nasa.gov/ltrs/papers/NASA-95-14ieee-mss/NASA-95-14ieee-mss.html>  
 Organization GM RTOP 505-90-53
- 985 Johnson, S. C.; and Boerschlein, D. P.: *ASSIST User Manual*. NASA TM-4592, August 1995, 101 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4592.ps.Z>  
 Organization DI RTOP 505-64-10
- 986 Johnson, S. D.; Miner, P. S.; and Camilleri, A.: Studies of the Single Pulser in Various Reasoning Systems. In *Lecture Notes in Computer Science*, Volume 901, T. Kropf and R. Kumar, eds., 1995, p. 126-145.  
 Organization DI RTOP 505-64-10
- 987 Miner, P. S.: *Defining the IEEE-854 Floating-Point Standard in PVS*. NASA TM-110167, June 1995, 23 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110167.ps.Z>  
 Organization DI RTOP 505-64-10
- 988 Miner, P. S.: Formal Specification of IEEE Floating-Point Arithmetic Using PVS. Presented at 2nd IFAC Workshop on Safety and Reliability in Emerging Control Technologies, November 1-3, 1995, Daytona Beach, Florida. In Proceedings, p. 51-66.  
 Organization DI RTOP 505-64-10
- 989 Miner, P. S.: Formal Development of a Clock Synchronization Circuit. Presented at Third NASA Langley Formal Methods Workshop, May 10-12, 1995, Hampton, Virginia.  
 Organization DI RTOP 505-64-10
- 990 Nelson, M. L.; Gottlich, G. L.; Bianco, D. J.; Paulson, S.; Binkley, R. L.; Kellogg, Y. D.; Beaumont, C. J.; Schmunk, R. B.; Kurtz, M. J.; Accomazzi, A.; and Syed, O.: The NASA Technical Report Server. *Internet Research: Electronic Network Applications and Policy*, Volume 5, No. 1, September 1995, p. 25-36.  
<http://techreports.larc.nasa.gov/ltrs/papers/NASA-95-ir-p25/NASA-95-ir-p25.html>  
 Organization GM RTOP 505-90-53

- 991 Noor, A. K. (Compiler): *Human-Computer Interaction and Virtual Environments*. NASA CP-3320, November 1995, 315 p.  
 Organization D RTOP 505-63-50
- 992 Russinoff, D. M.: *Specification and Verification of Gate-Level VHDL Models of Synchronous and Asynchronous Circuits*. (NAS1-18878 Computational Logic, Inc.) NASA CR-191608, January 1995, 138 p.  
 ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-cr191608.ps.Z  
 Organization DI RTOP 505-64-10
- 993 Smith, R. M.; Chung, V. I.; and Martinez, D.: *Transport Delays Associated With the NASA Langley Flight Simulation Facility*. NASA TM-110150, February 1995, 9 p.  
 ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110150.ps.Z  
 Organization GM RTOP 505-90-53
- 994 Torres-Pomales, W.: *An Optimized Implementation of a Fault-Tolerant Clock Synchronization Circuit*. NASA TM-109176, February 1995, 24 p.  
 Organization DI RTOP 505-64-10

### Category 63 Cybernetics

- 995 Burley, J. R., II; and LaRussa, J. A.: *Holographic Helmet-Mounted Display Unit*. NASA Tech Brief LAR-14603, February 1995.  
 Organization DC
- 996 Garrahan, S. L.; Tolson, R. H.; and Williams, R. L., II: *Simulating the Dynamic Interaction of a Robotic Arm and the Space Shuttle Remote Manipulator System*. (NCC1-104 George Washington University, JIAFS.) NASA CR-195076, April 1995, 107 p.  
 Organization DI RTOP 233-03-03
- 997 Gupta, S.; and Joshi, S. M.: *State Space Characterization and Robust Stabilization of Dissipative LTI Systems*. Presented at 1995 American Control Conference, June 21-23, 1995, Seattle, Washington. In Proceedings.  
 Organization DC RTOP 590-14-51
- 998 Joshi, S. M.; Kelkar, A. G.; and Wen, J. T.: *Robust Attitude Stabilization of Spacecraft Using Nonlinear Quaternion Feedback*. *IEEE Transactions on Automatic Control*, Volume 40, No. 10, October 1995, p. 1800-1803.  
 Organization DC RTOP 590-14-51
- 999 Joshi, S. M.; Maghami, P. G.; and Kelkar, A. G.: *Design of Dynamic Dissipative Compensators for Flexible Space Structures*. *IEEE Transactions on Aerospace and Electronic Systems*, Volume 31, No. 4, October 1995, p. 1314-1324.  
 Organization DC RTOP 538-03-11

## Category 64 Numerical Analysis

- 1000 Arian, E.: *Analysis of the Hessian for Aeroelastic Optimization*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198245, ICASE Report No. 95-84, December 1995, 22 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-84.ps.Z  
Organization A RTOP 505-90-52
- 1001 Baker, G.; Siegel, M.; and Tanveer, S.: *A Well-Posed Numerical Method to Track Isolated Conformal Map Singularities in Hele-Shaw Flow*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195035, ICASE Report No. 95-7, February 1995, 50 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-07.ps.Z  
Organization A RTOP 505-90-52
- 1002 Balakrishnan, N.; Hou, G. J.; and Camarda, C. J.: *Nonlinear Transient Thermal Analysis Using the Force Derivative Method*. Presented at Ninth International Conference on Numerical Methods for Thermal Problems, July 17-21, 1995, Atlanta, Georgia.  
Organization DS RTOP 424-20-02
- 1003 Banks, H. T.; Smith, R. C.; Brown, D. E.; Metcalf, V. L.; and Silcox, R. J.: *The Estimation of Material and Patch Parameters in a PDE-Based Circular Plate Model*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198220, ICASE Report No. 95-66, September 1995, 28 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-66.ps.Z  
Organization A RTOP 505-90-52
- 1004 Banks, H. T.; Smith, R. C.; Brown, D. E.; Silcox, R. J.; and Metcalf, V. L.: *Experimental Confirmation of a PDE-Based Approach to Design of Feedback Controls*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198167, ICASE Report No. 95-42, May 1995, 42 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-42.ps.Z  
Organization A RTOP 505-90-52
- 1005 Bey, K. S.: *hp-Adaptive Discontinuous Galerkin Methods for Hyperbolic Conservation Laws*. Presented at Third U.S. National Congress on Computational Mechanics, June 12-14, 1995, Dallas, Texas. In Proceedings, Volume 1, p. 362.  
Organization DS RTOP 537-06-21
- 1006 Bey, K. S.; Patra, A.; and Oden, J. T.: *hp-Version Discontinuous Galerkin Methods for Hyperbolic Conservation Laws: A Parallel Adaptive Strategy*. *International Journal for Numerical Methods in Engineering*, Volume 38, No. 22, November 30, 1995, p. 3889-3098.  
Organization DS RTOP 537-06-21
- 1007 Burns, J. A.; and King, B. B.: *Representation of Feedback Operators for Hyperbolic Systems*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198171, ICASE Report No. 95-45, May 1995, 13 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-45.ps.Z  
Organization A RTOP 505-90-52

- 1008 Cai, X-C.; Keyes, D. E.; and Venkatakrishnan, V.: *Newton-Krylov-Schwarz: An Implicit Solver for CFD*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198258, ICASE Report No. 95-87, December 1995, 19 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-87.ps.Z  
Organization A RTOP 505-90-52
- 1009 Cai, X-C.; and Sarkis, M.: *Local Multiplicative Schwarz Algorithms for Convection-Diffusion Equations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198257, ICASE Report No. 95-86, December 1995, 15 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-86.ps.Z  
Organization A RTOP 505-90-52
- 1010 Carpenter, M. H.; and Gottlieb, D. I.: *Spectral Methods on Arbitrary Grids*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198158, ICASE Report No. 95-37, May 1995, 29 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-37.ps.Z  
Organization A RTOP 505-90-52
- 1011 Costiner, S.; and Ta'asan, S.: *Separation Analysis, a Tool for Analyzing Multigrid Algorithms*. (NAS1-18605 and NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195036, ICASE Report No. 95-8, February 1995, 20 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-08.ps.Z  
Organization A RTOP 505-90-52
- 1012 Danowitz, J. S.; Abarbanel, S. A.; and Turkel, E.: *A Far-Field Non-Reflecting Boundary Condition for Two-Dimensional Wake Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198214, ICASE Report No. 95-63, September 1995, 34 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-63.ps.Z  
Organization A RTOP 505-90-52
- 1013 Fiterman, A.; Turkel, E.; and Vatsa, V. N.: *Pressure Updating Methods for the Steady-State Fluid Equations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198163, ICASE Report No. 95-40, May 1995, 15 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-40.ps.Z  
Organization A RTOP 505-90-52
- 1014 Geer, J. F.; and Banerjee, N. S.: *Exponentially Accurate Approximations to Piece-Wise Smooth Periodic Functions*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195059, ICASE Report No. 95-17, March 1995, 40 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-17.ps.Z  
Organization A RTOP 505-90-52
- 1015 Haras, Z.; and Ta'asan, S.: *The Large Discretization Step Method for Time-Dependent Partial Differential Equations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195068, ICASE Report No. 95-25, April 1995, 53 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-25.ps.Z  
Organization A RTOP 505-90-52
- 1016 Iollo, A.; Kuruvila, G.; and Ta'asan, S.: *Pseudo-Time Method for Optimal Shape Design Using the Euler Equations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198205, ICASE Report No. 95-59, August 1995, 23 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-59.ps.Z  
Organization A RTOP 505-90-52

- 1017 Iollo, A.; and Salas, M. D.: *Contribution to the Optimal Shape Design of Two-Dimensional Internal Flows With Embedded Shocks*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195062, ICASE Report No. 95-20, March 1995, 22 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-20.ps.Z>  
 Organization A RTOP 505-90-52
- 1018 Jiang, G-S.; and Shu, C-W.: *Efficient Implementation of Weighted ENO Schemes*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198228, ICASE Report No. 95-73, October 1995, 41 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-73.ps.Z>  
 Organization A RTOP 505-90-52
- 1019 Kangro, U.; and Nicolaides, R. A.: *Spurious Fields in Time Domain Computations of Scattering Problems*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198223, ICASE Report No. 95-69, October 1995, 15 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-69.ps.Z>  
 Organization A RTOP 505-90-52
- 1020 Kopriva, D. A.; and Kalias, J. H.: *A Conservative Staggered-Grid Chebyshev Multidomain Method for Compressible Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195060, ICASE Report No. 95-18, March 1995, 48 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-18.ps.Z>  
 Organization A RTOP 505-90-52
- 1021 Lewis, R. M.: *Practical Aspects of Variable Reduction Formulations and Reduced Basis Algorithms in Multidisciplinary Design Optimization*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198234, ICASE Report No. 95-76, November 1995, 21 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-76.ps.Z>  
 Organization A RTOP 505-90-52
- 1022 Mavriplis, D. J.: *Multigrid Solution Strategies for Adaptive Meshing Problems*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195049, ICASE Report No. 95-14, March 1995, 39 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-14.ps.Z>  
 Organization A RTOP 505-90-52
- 1023 Mavriplis, D. J.: *Multigrid Techniques for Unstructured Meshes*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195070, ICASE Report No. 95-27, April 1995, 61 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-27.ps.Z>  
 Organization A RTOP 505-90-52
- 1024 Mavriplis, D. J.: *Unstructured Mesh Generation and Adaptivity*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195069, ICASE Report No. 95-26, April 1995, 47 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-26.ps.Z>  
 Organization A RTOP 505-90-52
- 1025 Mavriplis, D. J.; and Venkatakrishnan, V.: *A Unified Multigrid Solver for the Navier-Stokes Equations on Mixed Element Meshes*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198183, ICASE Report No. 95-53, July 1995, 26 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-53.ps.Z>  
 Organization A RTOP 505-90-52

- 1026 Mavriplis, D. J.; and Venkatakrishnan, V.: *A 3D Agglomeration Multigrid Solver for the Reynolds-Averaged Navier-Stokes Equations on Unstructured Meshes*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195073, ICASE Report No. 95-30, April 1995, 29 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-30.ps.Z>  
 Organization A RTOP 505-90-52
- 1027 Morano, E.; and Mavriplis, D. J.: *Implementation of a Parallel Unstructured Euler Solver on the CM-5*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195056, ICASE Report No. 95-16, March 1995, 22 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-16.ps.Z>  
 Organization A RTOP 505-90-52
- 1028 Morano, E.; Mavriplis, D. J.; and Venkatakrishnan, V.: *Coarsening Strategies for Unstructured Multigrid Techniques With Application to Anisotropic Problems*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198154, ICASE Report No. 95-34, May 1995, 19 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-34.ps.Z>  
 Organization A RTOP 505-90-52
- 1029 Nicolaidis, R. A.; and Wu, X.: *Covolume Solutions of Three Dimensional Div-Curl Equations*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195031, ICASE Report No. 95-4, January 1995, 13 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-04.ps.Z>  
 Organization A RTOP 505-90-52
- 1030 Sidilkover, D.; and Roe, P. L.: *Unification of Some Advection Schemes in Two Dimensions*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195044, ICASE Report No. 95-10, February 1995, 28 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-10.ps.Z>  
 Organization A RTOP 505-90-52
- 1031 Ta'asan, S.: *Pseudo-Time Methods for Constrained Optimization Problems Governed by PDE*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195081, ICASE Report No. 95-32, May 1995, 15 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-32.ps.Z>  
 Organization A RTOP 505-90-52
- 1032 Tidriri, M. D.: *Mathematical Analysis of the Navier-Stokes Equations With Non Standard Boundary Conditions*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198184, ICASE Report No. 95-54, July 1995, 19 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-54.ps.Z>  
 Organization A RTOP 505-90-52
- 1033 Tidriri, M. D.: *Krylov Methods for Compressible Flows*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198176, ICASE Report No. 95-48, June 1995, 31 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-48.ps.Z>  
 Organization A RTOP 505-90-52
- 1034 Venkatakrishnan, V.: *A Perspective on Unstructured Grid Flow Solvers*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195025, ICASE Report No. 95-3, February 1995, 39 p.  
<ftp://ftp.icase.edu/pub/techreports/95/95-03.ps.Z>  
 Organization A RTOP 505-90-52

- 1035 Venkatakrishnan, V.: *Implicit Schemes and Parallel Computing in Unstructured Grid CFD*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195071, ICASE Report No. 95-28, April 1995, 62 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-28.ps.Z  
Organization A RTOP 505-90-52
- 1036 Venkatakrishnan, V.; and Mavriplis, D. J.: *Implicit Method for the Computation of Unsteady Flows on Unstructured Grids*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-198206, ICASE Report No. 95-60, August 1995, 35 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-60.ps.Z  
Organization A RTOP 505-90-52
- 1037 Wesseling, P.: *Introduction to Multigrid Methods*. (NAS1-19480 Institute for Computer Applications in Science and Engineering.) NASA CR-195045, ICASE Report No. 95-11, February 1995, 136 p.  
ftp://ftp.icase.edu/pub/techreports/95/95-11.ps.Z  
Organization A RTOP 505-90-52

### Category 65 Statistics and Probability

- 1038 Ricks, W. R.: Pairwise-Comparison Software. Computer Program LAR-15143.  
Organization DC
- 1039 White, A. L.; and Palumbo, D. L.: Reduction of Sizes of Semi-Markov Reliability Models. NASA Tech Brief LAR-14363, January 1995.  
Organization DI

### Category 66 Systems Analysis

- 1040 Babcock, D. A.: *Simulated Dynamic Response of a Multi-Stage Compressor With Variable Molecular Weight Flow Medium*. NASA TM-110199, September 1995, 46 p.  
Organization GG
- 1041 Braun, R. D.; and Kroo, I. M.: Use of Collaborative Optimization in a Multidisciplinary Design Environment. Presented at International Congress on Industrial and Applied Mathematics, July 3-7, 1995, Hamburg, Germany.  
Organization CB RTOP 242-10-01
- 1042 Carreno, V. A.: *Interpretation of IEEE-854 Floating-Point Standard and Definition in the HOL System*. NASA TM-110189, September 1995, 42 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110189.ps.Z  
Organization DI RTOP 505-64-50
- 1043 Carreno, V. A.; and Miner, P. S.: Specification of the IEEE-854 Floating-Point Standard in HOL and PVS. Presented at 8th International Workshop on Higher Order Logic Theorem Proving and Its Applications, September 11-14, 1995, Aspen Grove, Utah. In Proceedings, Volume 1, p. 1-16.  
Organization DI RTOP 505-64-50

- 1044 Moore, A. A.; and Powell, R. W.: Determining Technology Investment Strategies Using Price H. Presented at Martin Marietta PRICE Systems Symposium, March 21-22, 1995, Redondo Beach, California.  
 Organization CB RTOP 242-10-01
- 1045 Nicol, D. M.; Palumbo, D. L.; and Ulrey, M. L.: A Graphical Model-Based Reliability Estimation Tool and Failure Mode and Effects Simulator. Presented at Reliability and Maintainability Symposium, January 16-19, 1995, Washington, DC. In Proceedings.  
 Organization DI RTOP 538-01-12
- 1046 Unal, R.; Braun, R. D.; Moore, A. A.; and Lepsch, R. A., Jr.: Design Optimization for Cost Using Genetic Algorithms. Presented at 17th Annual Conference of the International Society of Parametric Analysts (ISPA), May 30-June 2, 1995, San Diego, California. In Proceedings.  
 Organization CB RTOP 242-10-01

## Physics

### Category 70 Physics (General)

- 1047 Li, Z.; Whitlock, C. H.; and Charlock, T. P.: Assessment of the Global Monthly Mean Surface Insolation Estimated From Satellite Measurements Using Global Energy Balance Archive Data. *Journal of Climate*, Volume 8, No. 2, February 1995, p. 315-328.  
 Organization CA RTOP 578-12-23
- 1048 Winfree, W. P.; and Parker, F. R.: Spatial Resolution of Reverse Geometry X-Ray System. Presented at 22nd Annual Review of Progress in Quantitative Nondestructive Evaluation, July 30-August 4, 1995, Seattle, Washington.  
 Organization DM RTOP 538-02-11

### Category 71 Acoustics

- 1049 Ahuja, K. K.; and Mendoza, J.: *Effects of Cavity Dimensions, Boundary Layer, and Temperature on Cavity Noise With Emphasis on Benchmark Data To Validate Computational Codes.* (NAS1-19061 Georgia Institute of Technology.) NASA CR-4653, April 1995, 281 p.  
 Organization DF RTOP 505-59-52
- 1050 Bass, H. E.; Sutherland, L. C.; Zuckerwar, A. J.; Blackstock, D. T.; and Hester, D. M.: Atmospheric Absorption of Sound: Further Developments. *Journal of the Acoustical Society of America*, Volume 97, No. 1, January 1995, p. 680-683.  
 Organization GH RTOP 505-59-54
- 1051 Bayliss, A.; Maestrello, L.; McGreevy, J. L.; and Fenno, C. C.: Response of Multi-Panel Assembly to Noise From a Jet in Forward Motion. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-0139.  
 Organization DF RTOP 505-63-50



- 1052 Bent, P. H.: *Fan Noise Prediction Assessment*. (NAS1-20103 McDonnell Douglas Aerospace.) NASA CR-195051, May 1995, 36 p.  
 Organization DF RTOP 538-03-11
- 1053 Brentner, K. S.; and Holland, P. C.: An Efficient and Robust Method for Computing Quadrupole Noise. Presented at 2nd International Aeromechanics Specialists' Conference, October 11-13, 1995, Bridgeport, Connecticut. In Proceedings, Volume 1, p. 3.21-3.30.  
 Organization DF RTOP 537-02-22
- 1054 Brentner, K. S.; Marcolini, M. A.; and Burley, C. L.: Sensitivity of Acoustic Predictions to Variation of Input Parameters. *Journal of the American Helicopter Society*, Volume 39, No. 3, July 1994, p. 43-52.  
 Organization DF RTOP 505-63-36
- 1055 Cantrell, J. H., Jr.; and Yost, W. T.: Nonlinear Acoustic Assessment of Precipitation-Induced Strains in Aluminum Alloy 2-24. Presented at 22nd Annual Review of Progress in Quantitative Nondestructive Evaluation, July 30-August 4, 1995, Seattle, Washington.  
 Organization DM RTOP 538-02-11
- 1056 Chen, R. T.; Hindson, W. S.; and Mueller, A. W.: Acoustic Flight Tests of Rotorcraft Noise-Abatement Approaches Using Local Differential GPS Guidance. Presented at American Helicopter Society Northeast Region Specialists Conference on Rotorcraft Aeromechanical Technology, October 11-13, 1995, Bridgeport, Connecticut. In Proceedings, Volume 2, p. 5.1-5.36.  
 Organization DF RTOP 505-63-36
- 1057 Chow, P. L.; and Maestrello, L.: Stabilization of Non-Linear Panel Vibrations by Boundary Damping. *Journal of Sound and Vibration*, Volume 182, No. 4, May 11, 1995, p. 541-558.  
 Organization DF RTOP 505-63-50
- 1058 Dash, S. M.; Kenzakowski, D. C.; Sinha, N.; Seiner, J. M.; Rose, W.; Shapiro, A.; and Gaj, R.: Advanced Computational Simulation of Plume/Aircraft Wake Nearfield Interactions and Data Comparisons. Presented at Annual Meeting: The Atmospheric Effects of Aviation, April 23-28, 1995, Virginia Beach, Virginia.  
 Organization DF RTOP 505-59-52
- 1059 Dawson, S.; Hassan, A. A.; Straub, F.; and Tadghighi, H.: *Blade-Mounted Flap Control for BVI Noise Reduction Proof-of-Concept Test*. (NAS1-19060 McDonnell Douglas Helicopter Systems.) NASA CR-195078, July 1995, 195 p.  
 Organization DF RTOP 505-63-36
- 1060 Dawson, S.; Marcolini, M. A.; Booth, E. R., Jr.; Straub, F.; Hassan, A. A.; Tadghighi, H.; and Kelley, H. L.: Wind Tunnel Test of an Active Flap Rotor: BVI Noise and Vibration Reduction. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas.  
 Organization DF RTOP 505-63-36
- 1061 Dunn, M. H.; Tweed, J.; and Farassat, F.: Turbomachinery and Core Noise. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-073.  
 Organization DF RTOP 538-03-11
- 1062 Elmer, K. R.; and Joshi, M. C.: *Noise Impact of Advanced High Lift Systems*. (NAS1-20103 McDonnell Douglas Aerospace.) NASA CR-195028, March 1995, 65 p.  
 Organization DF RTOP 538-03-15

- 1063 Farassat, F.: Book Review: "Acoustic and Elastic Wave Scattering Using Boundary Elements." *AIAA Journal*, Volume 33, No. 9, September 1995, p. 1755.  
Organization DF RTOP 538-03-11
- 1064 Farassat, F.; and Myers, M. K.: The Kirchhoff Formula for a Supersonically Moving Surface. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-062.  
Organization DF RTOP 538-03-11
- 1065 Fenno, C. C.; Bayliss, A.; and Maestrello, L.: Panel Response to Jet Noise Under Near Sonic Conditions. Presented at 129th Meeting of the Acoustical Society of America, May 30-June 3, 1995, Washington, DC.  
Organization DF RTOP 505-63-50
- 1066 Fidell, S.; Howe, R. R.; Tabachnick, B. G.; Pearsons, K. S.; and Sneddon, M. D.: *Noise-Induced Sleep Disturbance in Residences Near Two Civil Airports*. (NAS1-20101 BBN Acoustic Technologies Division.) NASA CR-198252, December 1995, 135 p.  
Organization DF RTOP 538-03-15
- 1067 Frendi, A.; Maestrello, L.; and Bayliss, A.: Outgoing Acoustic Waves in an Unstable Supersonic Laminar Boundary Layer Over a Flexible Surface. In *Instability Transition and Turbulence*, M. Y. Hussaini, A. Kumar, and C. L. Streett, eds., 1992, p. 337-343.  
Organization DF RTOP 505-63-50
- 1068 Frendi, A.; Maestrello, L.; and Ting, L.: An Efficient Model for Coupling Structural Vibrations With Acoustic Radiation. *Journal of Sound and Vibration*, Volume 182, No. 5, May 18, 1995, p. 741-757.  
Organization DF RTOP 505-63-50
- 1069 Gaeta, R. J.; Ahuja, K. K.; and Booth, E. R., Jr.: Acoustic Properties of Selected Liners at Low Pressures and Their Compatibility With a Semi-Cryogenic Wind Tunnel. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0837.  
Organization DF RTOP 505-63-36
- 1070 Gallman, J. M.; Tung, C.; Schultz, K. J.; Splettstoesser, W. R.; Buchholz, H.; Spiegel, P.; Burley, C. L.; Brooks, T. F.; and Boyd, D. D., Jr.: Effect of Wake Structure on Blade-Vortex Inter-Action Phenomena: Acoustic Prediction and Validation. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-052.  
Organization DF RTOP 505-63-36
- 1071 Gerhold, C. H.: Active Control of Fan-Generated Tone Noise. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-029.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ceas-aiaa-95-029.ps.Z>  
Organization DF RTOP 538-03-12
- 1072 Gmelin, B.; Heller, H.; Mercker, E.; Philippe, J. J.; Preisser, J. S.; and Yu, Y. H.: The HART Programme—A Quadrilateral Cooperative Research Effort. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas.  
Organization DF RTOP 505-63-36

- 1073** Grosveld, F. W.; and Lester, H. C.: Numerical Study of Active Sound Transmission Control for Stiffened Double Wall Cylinders. Presented at 1995 International Symposium on Active Control of Sound and Vibration (ACTIVE 95), July 6-8, 1995, Newport Beach, California. In Proceedings, Volume 1, p. 311-322.  
 Organization DF RTOP 538-03-14
- 1074** Haffner, S. W.: *Noise Exposure Reduction of Advanced High-Lift Systems*. (NAS1-20090 Boeing Commercial Airplane Group.) NASA CR-195077, May 1995, 21 p.  
 Organization DF RTOP 538-03-15
- 1075** Hardin, J. C.: Noise Control Technology Transfer From NASA to U.S. Industry. Presented at Industrial Hearing Conservation Conference 1995, April 5-7, 1995, Tampa, Florida. In Proceedings, Volume 1, p. 85-90.  
 Organization DF RTOP 505-59-52
- 1076** Hardin, J. C.: Computational Aeroacoustics—A Challenge for High Performance Computing. Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California. In Proceedings.  
 Organization DF RTOP 537-02-22
- 1077** Hardin, J. C.; and Pope, D. S.: Sound Generation by Flow Over a Two-Dimensional Cavity. *AIAA Journal*, Volume 33, No. 3, March 1995, p. 407-412.  
 Organization DF RTOP 505-59-52
- 1078** Hardin, J. C.; Ristorcelli, J. R.; and Tam, C. K. (Editors): *ICASE/LaRC Workshop on Benchmark Problems in Computational Aeroacoustics (CAA)*. NASA CP-3300, May 1995, 408 p.  
 Organization A RTOP 505-90-52
- 1079** Hodge, S. L.; Zorumski, W. E.; and Watson, W. R.: *Solution of the Three-Dimensional Helmholtz Equation With Nonlocal Boundary Conditions*. NASA TM-110174, May 1995, 39 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110174.ps.Z>  
 Organization DF RTOP 505-63-50
- 1080** Hsu, C-H.; Spence, P. L.; and Farassat, F.: Ducted Fan Noise Prediction Based on a Hybrid Aerodynamic-Aeroacoustic Technique. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-075.  
 Organization DF RTOP 538-03-11
- 1081** Hubbard, H. H.; and Shepherd, K. P.: Wind Turbine Acoustics. In *Wind Turbine Technology*, D. A. Spera, ed., 1994, p. 323-370.  
 Organization DF RTOP 776-33-41
- 1082** Istenes, R. R., Jr.; Rizzi, S. A.; and Wolfe, H. F.: Experimental Nonlinear Random Vibration Results of Thermally Buckled Composite Panels. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1345.  
 Organization DF RTOP 537-06-22
- 1083** Kay, K. Q.; Fuller, C. R.; and Lyle, K. H.: Near-Field Acoustic Holography for Enclosures With Unknown Green's Functions. Presented at 129th Meeting of the Acoustical Society of America, May 30-June 3, 1995, Washington, DC.  
 Organization DF RTOP 538-03-14

- 1084** Kitaplioglu, C.; Caradonna, F. X.; and Burley, C. L.: An Experimental Study of Blade-Vortex Interaction Aeroacoustics Utilizing an Independently Generated Vortex and Comparison With Computations. Presented at Aeromechanics Technology and Product Design for the 21st Century Conference, October 11-13, 1995, Bridgeport, Connecticut.  
Organization DF RTOP 505-63-36
- 1085** Lockard, D. P.; Brentner, K. S.; and Atkins, H. L.: High Accuracy Algorithms for Computational Aeroacoustics. *AIAA Journal*, Volume 33, No. 2, February 1995, p. 246-251.  
Organization DF RTOP 505-59-52
- 1086** Lyle, K. H.; and Silcox, R. J.: A Study of Active Trim Panels for Interior Noise Reduction in an Aircraft Fuselage. Presented at 1995 SAE General, Corporate, and Regional Aviation Meeting and Exposition, May 3-5, 1995, Wichita, Kansas. SAE Paper No. 951179.  
Organization DF RTOP 538-03-14
- 1087** Madaras, E. I.; Kohl, T. W.; and Rogers, W. P.: Measurement and Modeling of Dispersive Pulse Propagation in Drawn Wire Waveguides. *The Journal of the Acoustical Society of America*, Volume 97, No. 1, January 1995, p. 252-261.  
Organization DM RTOP 506-43-11
- 1088** Maestrello, L.: Experiments on Turbulent Boundary Layer Flow-Flexible Structure-Sound Interactions. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-140.  
Organization DF RTOP 505-63-50
- 1089** Maestrello, L.: Active Suppression of Vibrations on Aircraft Structures. NASA Tech Brief LAR-15071, March 1995.  
Organization DF
- 1090** Maestrello, L.: Experiments on Turbulent Boundary Layer/Flexible Structure/Sound Interactions in Accelerated Motion. Presented at 129th Meeting of the Acoustical Society of America, May 30-June 3, 1995, Washington, DC.  
Organization DF RTOP 505-63-50
- 1091** Marcolini, M. A.; Booth, E. R., Jr.; Tadghighi, H.; Hassan, A. A.; Smith, C. D.; and Becker, L. E.: Control of BVI Noise Using an Active Trailing Edge Flap. Presented at Vertical Lift Aircraft Design Conference, January 18-21, 1995, San Francisco, California. In Proceedings, p. 5.4.1-5.4.10.  
Organization DF RTOP 505-63-36
- 1092** Marcolini, M. A.; Conner, D. A.; Brieger, J. T.; Becker, L. E.; and Smith, C. D.: Noise Characteristics of a Model Tiltrotor. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas. In Proceedings, Volume 2, p. 1217-1226.  
Organization DF RTOP 538-07-14
- 1093** McCurdy, D. A.; Brown, S. A.; and Hilliard, R. D.: The Effects of Simulated Sonic Booms on People in Their Homes. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0834.  
Organization DF RTOP 537-03-21
- 1094** McGreevy, J. L.; Bayliss, A.; and Maestrello, L.: Interaction of Jet Noise With a Nearby Panel Assembly. *AIAA Journal*, Volume 33, No. 4, April 1995, p. 577-585.  
Organization DF RTOP 505-63-50

- 1095 McGreevy, J. L.; Maestrello, L.; and Bayliss, A.: Simulation of Flow/Structure/Jet Noise Interaction. *Album of Visualization*, No. 12, 1995, p. 11-12.  
Organization DF RTOP 505-63-50
- 1096 Meadows, K. R.: On the Interaction of a Ring Vortex With a Shock Wave. Presented at International Workshop on Shock Wave-Vortex Interaction, September 5-9, 1995, Tokyo, Japan. In Proceedings.  
Organization DF RTOP 505-59-52
- 1097 Metzger, F. B.: *A Review of Propeller Noise Prediction Methodology 1919-1994*. (L-50418D Metzger Technology Services.) NASA CR-198156, June 1995, 119 p.  
Organization DF RTOP 538-03-11
- 1098 Metzger, F. B.: *An Assessment of Propeller Aircraft Noise Reduction Technology*. (L-50418D Metzger Technology Services.) NASA CR-198237, August 1995, 123 p.  
Organization DF RTOP 538-03-11
- 1099 Metzger, F. B.; and Preisser, J. S.: Status of Propeller Noise Prediction Methods for General Aviation Aircraft. Presented at 1995 SAE General, Corporate, and Regional Aviation Meeting and Exposition, May 3-5, 1995, Wichita, Kansas. SAE Paper No. 951175.  
Organization DF RTOP 538-03-11
- 1100 Metzger, F. B.; and Preisser, J. S.: A History of Propeller Tone Noise Prediction Methodology, 1919 to 1994. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEA/AIAA Paper No. 95-006.  
Organization DF RTOP 538-03-13
- 1101 Mueller, A. W.; Conner, D. A.; Rutledge, C. K.; and Wilson, M. R.: Full Scale Flight Acoustics Results for the UH-60A Airloads Aircraft. Presented at Vertical Lift Aircraft Design Conference, January 18-21, 1995, San Francisco, California. In Proceedings, p. 5.1.1-5.1.25.  
Organization DF RTOP 505-63-36
- 1102 Murphy, K. D.; Virgin, L. N.; and Rizzi, S. A.: An Experimental Study of the Forced Response of Pre- and Post-Critical Plates. Presented at 15th ASME Biennial Conference on Mechanical Vibration and Noise, September 17-21, 1995, Boston, Massachusetts. In Proceedings, Volume 3, Part A, p. 695-701.  
Organization DF RTOP 537-06-22
- 1103 Ponton, M. K.; Williford, C. B.; and Lagen, N. T.: Shield for Flexible Pipe. NASA Tech Brief LAR-15157, July 1995.  
Organization DF
- 1104 Powell, C. A.: NASA Noise Reduction Program Overview. Presented at Federal Interagency Committee on Aviation Noise Public Forum, March 1-4, 1995, San Diego, California.  
Organization DF RTOP 538-03-11
- 1105 Powell, C. A.: Aircraft Community Noise Impact. Presented at 1st AIAA Aircraft Engineering, Technology, and Operations Congress, September 19-22, 1995, Los Angeles, California.  
Organization DF RTOP 538-03-15
- 1106 Prichard, D. S.; Burley, C. L.; and Boyd, D. D., Jr.: Computational Techniques for Improved Blade Vortex Interaction Modeling. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas. In Proceedings, Volume 2.  
Organization DF RTOP 505-63-36

- 1107 Regan, C. R.; Jalink, A., Jr.; Hellbaum, R. F.; and Rohrbach, W. R.: Improved Piezoelectric Loudspeakers and Transducers. NASA Tech Brief LAR-15138, June 1995.  
Organization GL
- 1108 Ribner, H. S.: *An Extension of the Lighthill Theory of Jet Noise to Encompass Refraction and Shielding*. NASA TM-110163, May 1995, 44 p.  
Organization DF RTOP 505-59-52
- 1109 Robinson, J. H.; and Brown, S. A.: Chaotic Structural Acoustic Response of a Milled Aluminum Panel. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1301.  
Organization DF RTOP 505-63-50
- 1110 Rutledge, C. K.; Mueller, A. W.; and Wilson, M. R.: A Study of the Variability Difference Between Model Scale Wind Tunnel and Full Scale Flight Test Airloads Data. Presented at Vertical Lift Aircraft Design Conference, January 18-21, 1995, San Francisco, California. In Proceedings, p. 5.2.1-5.2.26.  
Organization DF RTOP 505-63-36
- 1111 Santa Maria, O. L.; Soderman, P. T.; Horne, W. C.; Jones, M. G.; and Bock, L. A.: Internal Acoustics Measurements of an Advanced Ducted Propulsor Demonstrator. Presented at 31st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, July 10-12, 1995, San Diego, California. AIAA Paper No. 95-3034.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-3034.EPS.Z>  
Organization DF RTOP 538-03-12
- 1112 Seiner, J. M.; Bhat, T. R.; and Ponton, M. K.: Mach Wave Emission From a High Temperature Supersonic Jet. *AIAA Journal*, Volume 32, No. 12, December 1994, p. 2345-2350.  
Organization DF RTOP 537-02-22
- 1113 Seiner, J. M.; and Gilinsky, M. M.: Nozzle Thrust Optimization While Reducing Jet Noise. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-149.  
Organization DF RTOP 537-02-22
- 1114 Shepherd, K. P.; Brown, S. A.; Leatherwood, J. D.; McCurdy, D. A.; and Sullivan, B. M.: Human Response to Sonic Booms—Recent NASA Research. Presented at INTER-NOISE 95—The 1995 International Congress on Noise Control Engineering, July 10-12, 1995, Newport Beach, California. In Proceedings, Volume 2, p. 871-874.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-internoise-95-kps.ps.Z>  
Organization DF RTOP 537-03-21
- 1115 Silcox, R. J.; Fuller, C. R.; and Burdisso, R. A.: Concepts on an Integrated Design Approach to the Active Control of Structurally Radiated Noise (ASAC). *Special ASME Issue Journal of Mechanical Design and Journal of Vibration and*, Volume 117, June 1995, p. 261-270.  
Organization DF RTOP 538-03-14
- 1116 Silcox, R. J.; Lyle, K. H.; Metcalf, V. L.; and Brown, D. E.: A Study of Active Structural Acoustic Control Applied to the Trim Panels of a Large Scale Fuselage Model. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-161.  
Organization DF RTOP 538-03-14

- 1117 South, J. C., Jr.; Thomas, J. L.; and Van Rosendale, J. (Editors): *ICASE/LaRC Workshop on Adaptive Grid Methods*. NASA CP-3316, October 1995, 275 p.  
 Organization A RTOP 505-90-52
- 1118 Stephens, D. G.: *New Developments in Aviation Technology*. Presented at 10th Airport Noise & Land Use Compatibility Symposium, February 27-28, 1995, San Diego, California. In Proceedings.  
 Organization DF RTOP 537-06-22
- 1119 Stephens, D. G.; and Cazier, F. W., Jr.: *NASA Noise Reduction Program for Advanced Subsonic Transports*. Presented at INTER-NOISE 95—The 1995 International Congress on Noise Control Engineering, July 10-12, 1995, Newport Beach, California. In Proceedings, Volume 1, p. 177-182.  
 Organization DF RTOP 538-03-15
- 1120 Sternfeld, H.; Spencer, R.; and Ziegenbein, P.: *Evaluation of the Impact of Noise Metrics on Tiltrotor Aircraft Design*. (NAS1-20095 Boeing Defense & Space Group.) NASA CR-198240, November 1995, 37 p.  
 Organization DF RTOP 538-07-15
- 1121 Tadghighi, H.; Rajagopalan, G.; and Burley, C. L.: *Simulation of Tiltrotor Fountain Flow Field Effects Using a Finite Volume Technique—An Aero/Acoustic Study*. Presented at American Helicopter Society's 51st Annual Forum and Technology Display, May 9-11, 1995, Fort Worth, Texas. In Proceedings.  
 Organization DF RTOP 538-07-13
- 1122 Thomas, R. H.; Gerhold, C. H.; Farassat, F.; Santa Maria, O. L.; Nuckolls, W. E.; and DeVilbiss, D. W.: *Far-Field Noise of the 12 Inch Advanced Ducted Propeller Simulator*. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0722.  
 Organization DF RTOP 538-03-11
- 1123 Tung, C.; Gallman, J. M.; Kube, R.; Wagner, W.; Van der Wall, B. G.; Brooks, T. F.; Burley, C. L.; Boyd, D. D., Jr.; Rahier, G.; and Beaumier, P.: *Prediction and Measurement of Blade-Vortex-Interaction Loading*. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-051.  
 Organization DF RTOP 505-63-36
- 1124 Turner, T. L.; and Rizzi, S. A.: *Prediction and Measurement of the Vibration and Acoustic Radiation of Panels Subjected to Acoustic Loading*. Presented at INTER-NOISE 95—The 1995 International Congress on Noise Control Engineering, July 10-12, 1995, Newport Beach, California. In Proceedings, Volume 1, p. 315-318.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-internoise-95-tlt.ps.Z>  
 Organization DF RTOP 537-06-22
- 1125 Turner, T. L.; Singh, M. P.; and Mei, C.: *A Spectral Analysis Approach for Acoustic Radiation From Composite Panels*. Presented at AIAA/ASME/ASCE/AHS/ASC 36th Structures, Structural Dynamics, and Materials Conference, April 10-12, 1995, New Orleans, Louisiana. AIAA Paper No. 95-1303.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-aiaa-95-1303.ps.Z>  
 Organization DF RTOP 538-03-14

- 1126 Watson, W. R.; Jones, M. G.; Tanner, S. E.; and Parrott, T. L.: *A Finite Element Propagation Model for Extracting Normal Incidence Impedance in Nonprogressive Acoustic Wave Fields*. NASA TM-110160, April 1995, 20 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110160.ps.Z  
Organization DF RTOP 537-02-22
- 1127 Weir, D. S.; Jumper, S. J.; Burley, C. L.; and Golub, R. A.: *Aircraft Noise Prediction Program Theoretical Manual—Rotorcraft System Noise Prediction System (ROTONET)*. NASA TM-83199, Part 4, April 1995, 274 p.  
Organization DF RTOP 532-06-37
- 1128 Wilkinson, J. E.; Lu, H. Y.; and Seiner, J. M.: The Noise Shielding Effects of Multiple Jets. Presented at First Joint CEAS/AIAA Aeroacoustics Conference, June 12-15, 1995, Munich, Germany. CEAS/AIAA Paper No. 95-068.  
Organization DF RTOP 537-02-22
- 1129 Wilson, M. R.; Mueller, A. W.; and Rutledge, C. K.: A New Technique for Estimating Ground Footprint Acoustics Using Measured Sound Fields. Presented at Vertical Lift Aircraft Design Conference, January 18-21, 1995, San Francisco, California. In Proceedings, p. 5.3.1-5.3.9.  
Organization DF RTOP 505-63-36
- 1130 Yamamoto, K. J.; Donelson, M. J.; Huang, S. C.; and Joshi, M. C.: *Airframe Noise Prediction Evaluation*. (NAS1-20103 McDonnell Douglas Aerospace.) NASA CR-4695, October 1995, 91 p.  
Organization DF RTOP 538-03-13
- 1131 Yost, W. T.; Cantrell, J. H., Jr.; and Pretlow, R. A.: Beat-Frequency/Microsphere Medical Ultrasonic Imaging. NASA Tech Brief LAR-15211, January 1995.  
Organization DM
- 1132 Zorumski, W. E.; Watson, W. R.; and Hodge, S. L.: A Non-Local Computational Boundary Condition for Duct Acoustics. *Journal of Computational Acoustics*, Volume 3, No. 1, March 1995, p. 15-26.  
Organization DF RTOP 505-59-52
- 1133 Zuckerwar, A. J.: Principles of Operation of Condenser Microphones. In *AIP Handbook of Condenser Microphones*, G. S. K. Wong and T. F. W. Embleton, eds., 1995, p. 37-69.  
Organization GH RTOP 505-61-01

## Category 72 Atomic and Molecular Physics

- 1134 Benner, D. C.; Devi, V. M.; Smith, M. A.; and Rinsland, C. P.: Air-, N<sub>2</sub>-, and O<sub>2</sub>-Broadening and Shift Coefficients in the  $\nu_3$  Spectral Region of <sup>12</sup>CH<sub>4</sub>. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 50, 1993, p. 65-89.  
Organization CA RTOP 464-23-08
- 1135 Cucinotta, F. A.; Katz, R.; Wilson, J. W.; and Dubey, R. R.: *Heavy Ion Track-Structure Calculations for Radial Dose in Arbitrary Materials*. NASA TP-3497, February 1995, 19 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3497.ps.Z  
Organization DM RTOP 199-45-16



- 1136 Devi, V. M.; Benner, D. C.; Smith, M. A.; and Rinsland, C. P.: Temperature Dependence of Lorentz Air-Broadening and Pressure-Shift Coefficients of  $^{12}\text{CH}_4$  Lines in the 2.3- $\mu\text{m}$  Spectral Region. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 51, No. 3, March 1994, p. 439-465.  
Organization CA RTOP 464-23-08
- 1137 Herring, G. C.; and Hillard, M. E., Jr.: Effect of Crossed Beams on Stokes Gain and Interaction Length in Stimulated Raman Gain Spectroscopy. *Applied Optics*, Volume 34, No. 30, October 20, 1995, p. 6837-6841.  
Organization DF RTOP 505-59-53
- 1138 Herring, G. C.; South, B. W.; and Hillard, M. E., Jr.: Pressure Broadening of Vibrational Raman Lines in  $\text{N}_2$  at Temperatures Below 300 K. *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 52, No. 6, December 1994, p. 835-840.  
Organization DF RTOP 505-70-91
- 1139 Lee, J. H.; Choi, S. H.; and Song, K. D.: Quenching Rate of Excited Nitrogen Ion by Argon. Presented at 1995 Division of Atomic, Molecular, and Optical Physics Annual Meeting, May 16-19, 1995, Toronto, Canada. In Proceedings.  
Organization DF RTOP 505-59-50
- 1140 Situ, W.; and De Young, R. J.: Long Distance Detection of Laser Produced Ions by a Reflectron Mass Spectrometer. *Applied Spectroscopy*, Volume 49, No. 6, June 1995, p. 791-797.  
Organization CA RTOP 307-51-13
- 1141 Smith, M. A.; Devi, V. M.; Benner, D. C.; and Rinsland, C. P.: Measurements of  $\text{O}_3$  Line Intensities in the  $\nu_3$  Band: Preliminary Results. Presented at 50th Ohio State University International Symposium on Molecular Spectroscopy, June 12-16, 1995, Columbus, Ohio. In Proceedings.  
Organization CA RTOP 464-23-08
- 1142 Stephens, D. G.: Aircraft Noise Control. Presented at 129th Acoustical Society of America Meeting, May 30-June 3, 1995, Washington, DC.  
Organization DF RTOP 537-06-22
- 1143 Tai, H.: Generalized Method for Solving Multi-Center Molecular Integrals of Slater Type Orbitals. *Chinese Journal of Physics*, Volume 32, No. 6-I, December 1994, p. 847-862.  
Organization DM RTOP 505-63-50

### Category 73 Nuclear and High-Energy Physics

- 1144 Cucinotta, F. A.; Wilson, J. W.; and Townsend, L. W.: *Abrasion-Ablation Model for Neutron Production in Heavy Ion Reactions*. NASA TM-4656, June 1995, 13 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4656.ps.Z>  
Organization DM RTOP 199-45-16
- 1145 Dubey, R. R.; Khandelwal, G. S.; Cucinotta, F. A.; and Maung, K. M.: *Comparison of Exact Solution With Eikonal Approximation for Elastic Heavy Ion Scattering*. NASA TP-3498, February 1995, 16 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3498.ps.Z>  
Organization DM RTOP 199-45-16

- 1146 Dubey, R. R.; Khandelwal, G. S.; Cucinotta, F. A.; and Wilson, J. W.: Cluster Abrasion of the Light Ion in Heavy-Ion Fragmentation. Presented at 1995 Joint Meeting With CAP (Canada) and SMF (Mexico), June 11-16, 1995, Quebec City, Canada.  
Organization DM RTOP 199-45-16
- 1147 Schneider, J. P.; Norbury, J. W.; and Cucinotta, F. A.: *Parameterized Spectral Distributions for Meson Production in Proton-Proton Collisions*. NASA TM-4675, June 1995, 17 p.  
ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4675.ps.Z  
Organization DM RTOP 199-45-16
- 1148 Schneider, J. P.; Norbury, J. W.; and Cucinotta, F. A.: Parameterization of Spectral Distributions for Pion and Kaon Production in Proton-Proton Collisions. *Astrophysical Journal Supplement*, Volume 97, 1995, p. 571-574.  
Organization DM RTOP 199-45-16
- 1149 Townsend, L. W.; and Cucinotta, F. A.: Overview of Nuclear Fragmentation Models and Needs. *Advances in Space Research*, Volume 17, 1995, p. 59-68.  
Organization DM RTOP 199-45-16
- 1150 Townsend, L. W.; and Tripathi, R. K.: Bose-Einstein Condensation of Nuclei. Presented at XIX International Workshop on Condensed Matter Theories, June 12-17, 1995, Caracas, Venezuela. In Proceedings.  
Organization DG RTOP 466-02-01

#### Category 74 Optics

- 1151 Allario, F.; and Temple, D. (Editors): *Second Annual Research Center for Optical Physics (RCOP) Forum*. NASA CP-3314, October 1995, 121 p.  
Organization GM RTOP 410-10-04
- 1152 Brown, M. S.; Millard, M. W.; DeBarber, P. A.; Roberts, W. L.; Herring, G. C.; and Eklund, D. R.: Degenerate Four-Wave Mixing Imaging of  $\Lambda^2\Sigma^+ \leftarrow X^2\Pi$  OH in a Methane-Air Flame. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0171.  
Organization DF
- 1153 Bryant, A. L.; Albin, S.; Egalon, C. O.; and Rogowski, R. S.: Changes in the Amount of Core Light Injection for a Fluorescent Clad Optical Fiber Due to Variations in the Fiber Refractive Index and Core Radius: Experimental Results. *Journal of the Optical Society of America B*, Volume 12, No. 5, May 1995, p. 904-906.  
Organization DM RTOP 538-02-11
- 1154 Busquets, A. M.; Parrish, R. V.; and Williams, S. P.: Increasing Range of Apparent Depth in a Stereoscopic Display. NASA Tech Brief LAR-14531, June 1995.  
Organization DF
- 1155 Egalon, C. O.; and Rogowski, R. S.: Optical Fiber Strain Sensor With Improved Linearity Range. U. S. Patent 5,381,493. Issued January 10, 1995.  
Organization DM

- 1156 Fahringer, D. T.; Vasquez, P.; and Scheidegger, A. P.: Wax Reinforces Honeycomb During Machining. NASA Tech Brief LAR-14927, October 1995.  
Organization GJ
- 1157 Namkung, J. S.; Hoke, M.; Rogowski, R. S.; and Albin, S.: FTIR-Optical-Fiber Remote Detection of Aluminum Hydroxide by Evanescent Wave Absorption Spectroscopy. *Applied Spectroscopy*, Volume 49, No. 9, September 1995, p. 1305-1310.  
Organization DM RTOP 538-02-11
- 1158 Rogowski, R. S.; and Egalon, C. O.: Optical-Fiber Fluorosensors With Polarized Light Sources. NASA Tech Brief LAR-14652, September 1995.  
Organization DM
- 1159 Rogowski, R. S.; and Egalon, C. O.: Reshaping Light Emitting Diodes to Increase External Efficiency. NASA Tech Brief LAR-15184, September 1995.  
Organization DM
- 1160 Schott, T. D.: Optoelectronic Inclinometer. NASA Tech Brief LAR-14728, October 1995.  
Organization GH
- 1161 Shirinzadeh, B.; Balla, R. J.; and Hillard, M. E., Jr.: Quantitative Density Measurements in a Mach 6 Flow Field Using the Rayleigh Scattering Technique. Presented at 16th International Congress on Instrumentation in Aerospace Simulation Facilities, July 18-21, 1995, Dayton, Ohio. In Proceedings.  
Organization DF RTOP 538-03-12
- 1162 Vasquez, P.; Fox, R. L.; and Sandford, S. P.: Ceramic Replaces Metal in High Performance Optomechanical Structures. NASA Tech Brief LAR-14948/LAR-14981, October 1995.  
Organization GJ
- 1163 Weinstein, L. M.: An Electronic Schlieren Camera for Aircraft Shock Wave Visualization. Presented at High-Speed Research: 1995 Sonic Boom Workshop, September 12-13, 1995, Hampton, Virginia.  
Organization DF RTOP 505-59-50

### Category 76 Solid-State Physics

- 1164 Barnes, J. C.; Marsh, W. D.; Richter, D.; Johnson, C. C.; Ertur, E.; and Campbell, R. E.: Solid State Laser Technology Development for NASA DIAL and Lidar Systems. Presented at 1995 AIAA Space Programs and Technologies Conference and Exhibit, September 26-28, 1995, Huntsville, Alabama. AIAA Paper No. 95-3600.  
Organization GL RTOP 233-01-03
- 1165 Barnes, N. P.: Physics of Quasi Four Lasers. Presented at SPIE's International Symposium on Photonics West '95, Solid State Lasers and Nonlinear Crystals, February 4-10, 1995, San Jose, California. In Proceedings.  
Organization GL RTOP 233-01-03
- 1166 Barnes, N. P.: Spectroscopy and Development of Solid State Lasers at NASA. Presented at NATO Advanced Study Institute Conference, June 17-July 1, 1995, Erice, Italy.  
Organization GL RTOP 233-01-03

- 1167 Barnes, N. P.; Jani, M. G.; and Hutcheson, R. L.: Diode Pumped, Room Temperature Tm:LuAG Laser. *Applied Optics*, Volume 34, No. 21, July 20, 1995, p. 4290-4292.  
Organization GL RTOP 233-01-03
- 1168 Barnes, N. P.; Morrison, C. A.; and Filer, E. D.: Ho:Tm:Lu<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> as an Infrared Laser Material. NASA Tech Brief LAR-15105, August 1995.  
Organization GL
- 1169 Barnes, N. P.; and Williams-Byrd, J. A.: Average Power Effects in Parametric Oscillators and Amplifiers. *Journal of the Optical Society of America B*, Volume 12, No. 1, January 1995, p. 124-131.  
Organization GL RTOP 582-03-31
- 1170 Hooker, M. W.; Taylor, T. D.; and Wise, S. A.: Net Shape Superconductors Can Be Formed by Nonaqueous Slip Casting. *Materials Technology*, Volume 9, No. 3/4, March-April 1994, p. 49-50.  
Organization GL RTOP 142-20-14
- 1171 Hooker, M. W.; Thomas, M. E.; Wise, S. A.; and Tappan, N. D.: *A Ruggedness Evaluation of Procedures for Damage Threshold Testing Optical Materials*. NASA TM-4639, February 1995, 7 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4639.ps.Z>  
Organization GL RTOP 323-17-04
- 1172 Hooker, M. W.; Thomas, M. E.; Wise, S. A.; and Tappan, N. D.: Standardization of the Laser-Induced Damage Threshold Test. Presented at American Ceramic Society 1995 Annual Meeting and Exposition, April 30-May 4, 1995, Cincinnati, Ohio.  
Organization DM RTOP 236-01-01
- 1173 Jani, M. G.; Barnes, N. P.; Murray, K. E.; and Lockard, G. E.: Diode Pumped, Long Pulse Length Ho:Tm:YLiF<sub>4</sub> Laser at 10 Hz. Presented at Advanced Solid State Laser Conference '95, January 29-February 3, 1995, Memphis, Tennessee. In Proceedings.  
Organization GL RTOP 233-01-03
- 1174 Jani, M. G.; Naranjo, F. L.; Barnes, N. P.; Murray, K. E.; and Lockard, G. E.: Diode Pumped, Long Pulse Length Ho:Tm:YLiF<sub>4</sub> Laser at 10 Hz. *Optics Letters*, Volume 20, No. 8, April 15, 1995, p. 872-894.  
Organization GL RTOP 233-01-03
- 1175 Walsh, B. M.: *Spectroscopy and Excitation Dynamics of the Trivalent Lanthanides Tm<sup>3+</sup> and Ho<sup>3+</sup> in LiYF<sub>4</sub>*. (NAG1-955 Boston College.) NASA CR-4689, August 1995, 170 p.  
Organization GL RTOP 233-01-03
- 1176 Wise, S. A.; Amundsen, R. M.; Hopson, P., Jr.; High, J. W.; Kruse, N. M.; Kist, E. H.; and Hooker, M. W.: Design and Testing of the MIDAS Spaceflight Instrument. *IEEE Transactions on Applied Superconductivity*, Volume 5, No. 2, June 1995, p. 1545-1548.  
Organization DM RTOP 236-01-01
- 1177 Wise, S. A.; Hopson, P., Jr.; Kruse, N. M.; High, J. W.; and Hooker, M. W.: Fabrication of an Active Microelectronics Package Containing YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub>. Presented at 1995 Annual Meeting of the American Ceramic Society, April 30-May 4, 1995, Cincinnati, Ohio.  
Organization DM RTOP 236-01-01

- 1178 Yost, W. T.: Measuring Work Functions of "Dirty" Surfaces With a Vibrating Capacitive Probe. NASA Tech Brief LAR-14671, February 1995.  
Organization DM

### **Category 77 Thermodynamics and Statistical Physics**

- 1179 Cramer, K. E.; Howell, P. A.; and Syed, H. I.: Quantitative Thermal Imaging of Aircraft Structures. Presented at Thermosense XVII, April 14-22, 1995, Orlando, Florida. In Proceedings.  
Organization DM RTOP 538-02-11
- 1180 Cramer, K. E.; and Syed, H. I.: *TIA Software User's Manual*. NASA TM-4687, September 1995, 42 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4687.ps.Z>  
Organization DM RTOP 538-02-11

## **Social Sciences**

### **Category 80 Social Sciences (General)**

- 1181 Tiwari, S. N.; and Young, D. B. (Compilers): *1995 NASA-ODU American Society for Engineering Education (ASEE) Summer Faculty Fellowship Program*. (NGT-47-003-029 Old Dominion University.) NASA CR-198210, December 1995, 140 p.  
Organization AE

### **Category 81 Administration and Management**

- 1182 Avery, D. E.; Sherrill, R. T.; and Funk, J. G.: The Materials Exposure Facility: A Technology Development Facility for International Space Station. Presented at 1995 AIAA Space Programs and Technologies Conference and Exhibit, September 26-28, 1995, Huntsville, Alabama. AIAA Paper No. 95-3664.  
Organization CB RTOP 237-03-01

### **Category 82 Documentation and Information Science**

- 1183 Bishop, A. P.: *The Use of Computer Networks in Aerospace Engineering*. (L-45107 University of Illinois at Urbana-Champaign.) NASA CR-198170, June 1995, 402 p.  
Organization GM RTOP 505-90

- 1184 Brinberg, H. R.; Pinelli, T. E.; and Barclay, R. O.: Valuing Information in an Interactive Environment. Presented at International Congress on the Economics of Information, May 18-20, 1995, Lyon, France. In Proceedings.  
Organization GM RTOP 505-90
- 1185 Hecht, L. F.; Pinelli, T. E.; Kennedy, J. M.; and Barclay, R. O.: Becoming an Aerospace Engineer: A Cross-Gender Comparison. *Journal of Engineering Education*, Volume 84, No. 3, July 1995, p. 263-270.  
Organization GM RTOP 505-90
- 1186 Holm, J.; and Judge, N.: Electronic Photography at the NASA Langley Research Center. Presented at 48th Annual Meeting of the Imaging Science and Technology Association, May 7-12, 1995, Washington, DC. In Proceedings, p. 436-441.  
Organization GM RTOP 505-90
- 1187 Kennedy, J. M.; Pinelli, T. E.; and Barclay, R. O.: Technical Communications in Aerospace Education: A Comparison Across Four Countries. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0075.  
Organization GM RTOP 505-90
- 1188 Kennedy, J. M.; Pinelli, T. E.; and Barclay, R. O.: A Comparison of the Information Seeking Behaviors of Three Groups of U.S. Aerospace Engineers. Presented at 33rd AIAA Aerospace Sciences Meeting and Exhibit, January 9-12, 1995, Reno, Nevada. AIAA Paper No. 95-0706.  
Organization GM RTOP 505-90
- 1189 Maa, M-H.; and Nelson, M. L.: *Recent Improvements in the NASA Technical Report Server*. NASA TM-110209, October 1995, 11 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm110209.ps.Z>  
Organization GM RTOP 505-90-53
- 1190 Nelson, M. L.; and Bianco, D. J.: Accessing NASA Technology With the World Wide Web. *IEEE Aerospace and Electronic Systems Magazine*, Volume 10, No. 5, May 1995, p. 7-13.  
<http://techreports.larc.nasa.gov/ltrs/papers/NASA-ieee-aes-95p7-13/NASA-ieee-aes-95p7-13.html>  
Organization GM RTOP 505-90-53
- 1191 Phillips, M. S.; and Stewart, S. H. (Compilers): *NASA Langley Scientific and Technical Information Output—1994*. NASA TM-109170, Volume I, January 1995, 174 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tm109170.ps.Z>  
Organization GM
- 1192 Pinelli, T. E.: Review of Harold C. Relyea's "Silencing Science—National Security Controls and Scientific Communication." *Internet Research: Electronic Networking Applications and Policy*, Volume 5, No. 1, 1995, p. 99-100.  
Organization GM RTOP 505-90
- 1193 Pinelli, T. E.; Barclay, R. O.; Keene, M. L.; Kennedy, J. M.; and Hecht, L. F.: From Student to Entry-Level Professional: Examining the Role of Language and Written Communications in the Reacculturation of Aerospace Engineering Students. *Journal of the Society for Technical Communication*, Volume 42, No. 3, August 1995, p. 492-503.  
Organization GM RTOP 505-90
- 1194 Pinelli, T. E.; Barclay, R. O.; and Kennedy, J. M.: *The Technical Communications Practices of U.S. Aerospace Engineers and Scientists: Results of the Phase 1 NASA Langley Research Center Mail Survey*. NASA TM-110208, November 1995, 51 p.  
Organization GM RTOP 505-90

- 1195 Pinelli, T. E.; Barclay, R. O.; and Kennedy, J. M.: *How Early Career-Stage U.S. Aerospace Engineers and Scientists Produce and Use Information*. NASA TM-110181, September 1995, 49 p.  
 Organization GM RTOP 505-90
- 1196 Pinelli, T. E.; Barclay, R. O.; and Kennedy, J. M.: *The Technical Communications Practices of U.S. Aerospace Engineers and Scientists: Results of the Phase 1 AIAA Mail Survey*. NASA TM-110180, September 1995, 51 p.  
 Organization GM RTOP 505-90
- 1197 Pinelli, T. E.; Cordle, V. M.; Glassman, M.; and Vondran, R. F.: Report Format Preferences of Technical Managers and Nonmanagers. In *Perspectives on the Profession of Technical Communication*, Madelyn Flammia, ed., 1995, p. 92-96.  
 Organization GM RTOP 505-90
- 1198 Pinelli, T. E.; Kennedy, J. M.; and Barclay, R. O.: Workplace Communications Skills and the Value of Communications and Information-Use Skills Instruction: Engineering Students' Perspectives. Presented at 1995 IEEE International Professional Communication Conference (IPCC), September 27-29, 1995, Savannah, Georgia. In Proceedings.  
 Organization GM RTOP 505-90
- 1199 Pinelli, T. E.; Kennedy, J. M.; and Barclay, R. O.: Career Goals and Educational Preparation of Aerospace Engineering and Science Students: An International Perspective. *AIAA Student Journal*, Volume 33, No. 3, Fall 1995, p. 4-5, 7-11, 13.  
 Organization GM RTOP 505-90

### Category 83 Economics and Cost Analysis

- 1200 Moore, A. A.: Design for Cost: Cost Analysis as Part of the Conceptual Design Process. Presented at 16th Annual Conference of the American Society for Engineering Management, September 21-25, 1995, Washington, DC.  
 Organization CB RTOP 242-10-01
- 1201 Moore, A. A.; Braun, R. D.; and Powell, R. W.: Space Transportation Conceptual Design for Cost Using Multidisciplinary Optimization. Presented at SCEA 1995 National Conference & Educational Workshop, July 19-21, 1995, Washington, DC.  
 Organization CB RTOP 242-10-01

## Space Sciences

### Category 88 Space Sciences (General)

- 1202 Funk, J. G.; and Pearson, S. D.: Space Environment and Effects Program. Presented at 1995 AIAA Space Programs and Technologies Conference and Exhibit, September 26-28, 1995, Huntsville, Alabama. AIAA Paper No. 95-3565.  
 Organization CE RTOP 233-03-02

## Category 90 Astrophysics

- 1203 Kinard, W. H.; Jones, J. L., Jr.; and Humes, D. H.: Technology to Monitor and to Mitigate the Effects on Spacecraft of Man-Made Orbiting Debris. Presented at International Symposium for Space Technology, August 24-25, 1995, Taejon, Korea.  
Organization DM RTOP 547-60-00

## Category 91 Lunar and Planetary Exploration

- 1204 Simonsen, L. C.: Analysis of Lunar and Mars Habitation Modules for the Space Exploration Initiative (SEI). Presented at Shielding Strategies for Human Space Exploration Workshop, December 6-8, 1995, Houston, Texas. In Proceedings.  
Organization CB RTOP 242-20-08
- 1205 Simonsen, L. C.: Construction Technologies: Prefabricated Versus In-Situ Materials for Lunar Studies. Presented at Shielding Strategies for Human Space Exploration Workshop, December 6-8, 1995, Houston, Texas. In Proceedings.  
Organization CB RTOP 242-20-08

## Category 93 Space Radiation

- 1206 Badhwar, G. D.; Patel, J. U.; Cucinotta, F. A.; and Wilson, J. W.: Measurements of the Secondary Particle Energy Spectra in the Space Shuttle. *Radiation Measurements*, Volume 24, No. 2, April 1995, p. 129-138.  
Organization DM RTOP 199-45-16
- 1207 Cucinotta, F. A.; Shinn, J. L.; Tai, H.; and Wilson, J. W.: Transport Code and Database Development. Presented at Sixth Annual Space Radiation Health Investigators Workshop, May 2-4, 1995, Long Island, New York.  
Organization DM RTOP 199-45-16
- 1208 Cucinotta, F. A.; Townsend, L. W.; Wilson, J. W.; Shinn, J. L.; Badhwar, G. D.; and Dubey, R. R.: Light Ion Component of the Galactic Cosmic Rays: Nuclear Interactions and Transport Theory. *Advances in Space Research*, Volume 17, 1995, p. 77-86.  
Organization DM RTOP 199-45-16
- 1209 Cucinotta, F. A.; and Wilson, J. W.: Initiation-Promotion Model of Tumor Prevalence in Mice From Space Radiation Exposures. *Radiation and Environmental Biophysics*, Volume 34, No. 3, August 1995, p. 145-150.  
Organization DM RTOP 199-45-16
- 1210 Curtis, S. B.; Badavi, F. F.; Wilson, J. W.; and Hutchinson, F.: Using  $Z^2\beta^2$  as a Predictor of Biological Effect for Radiation Protection Purposes. Presented at 1995 Joint Meeting of the Radiation Research Society and North American Hyperthermia Society, April 1-6, 1995, San Jose, California.  
Organization DM RTOP 199-45-16



- 1211** Schimmerling, W.; Cucinotta, F. A.; Miller, J.; Shinn, J. L.; and Wilson, J. W.: Space Radiation Protection Studies on the Lunar Surface. Presented at Workshop on the Moon as an International Scientific Resource, April 5-7, 1995, Hamburg, Germany. In Proceedings.  
Organization DM RTOP 199-45-16
- 1212** Shinn, J. L.; Cucinotta, F. A.; Wilson, J. W.; Badhwar, G. D.; O'Neill, P. M.; and Badavi, F. F.: Effects of Target Fragmentation on Evaluation of LET Spectra From Space Radiation on Low-Earth Orbit (LEO) Environment: Impact on SEU Predictions. Presented at 32nd Annual International Nuclear and Space Radiation Effects Conference, July 17-21, 1995, Madison, Wisconsin. In Proceedings.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-ieee-95-tns.ps.Z>  
Organization DM RTOP 199-45-16
- 1213** Shinn, J. L.; Kim, M-H.; Cucinotta, F. A.; and Wilson, J. W.: Problems in Cosmic Ray Shielding. Presented at 1995 Joint Meeting of the Radiation Research Society and the North American Hyperthermia Society, April 1-6, 1995, San Jose, California.  
Organization DM RTOP 199-45-16
- 1214** Simonsen, L. C.; Schimmerling, W.; Wilson, J. W.; and Thibeault, S. A.: Prefabricated Versus In-Situ Materials for Lunar Base Space Radiation Shielding. Presented at Workshop on the Moon as an International Scientific Resource, April 5-7, 1995, Hamburg, Germany.  
Organization CB RTOP 199-45-16
- 1215** Wilson, J. W.; Badavi, F. F.; Cucinotta, F. A.; Shinn, J. L.; Badhwar, G. D.; Silberberg, R.; Tsao, C. H.; Townsend, L. W.; and Tripathi, R. K.: *HZETRN: Description of a Free-Space Ion and Nucleon Transport and Shielding Computer Program*. NASA TP-3495, May 1995, 146 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3495.ps.Z>  
Organization DM RTOP 199-45-16
- 1216** Wilson, J. W.; Cucinotta, F. A.; and Shinn, J. L.: Radiation Safety Issues in High Altitude Commercial Aircraft. Presented at Tenth International Congress on Radiation Research, August 27-September 1, 1995, Wurzburg, Germany. In Proceedings, Volume II.  
Organization DM RTOP 537-09-21
- 1217** Wilson, J. W.; Cucinotta, F. A.; Shinn, J. L.; and Tai, H.: Issues in the Protection of Humans From Space Radiation. Presented at Sixth Annual Space Radiation Health Investigators Workshop, May 2-4, 1995, Long Island, New York. In Proceedings.  
Organization DM RTOP 199-45-16
- 1218** Wilson, J. W.; Cucinotta, F. A.; Shinn, J. L.; Townsend, L. W.; Badavi, F. F.; Tripathi, R. K.; Silberberg, R.; Tsao, C. H.; and Badhwar, G. D.: Computing Interactions of Free-Space Radiation With Matter. NASA Tech Brief LAR-15225, March 1995.  
Organization DM
- 1219** Wilson, J. W.; Cucinotta, F. A.; and Simonsen, L. C.: Cellular Repair Dependent Effects in Low-Earth Orbit. Presented at 1995 Joint Meeting of the Radiation Research Society and North American Hyperthermia Society, April 1-6, 1995, San Jose, California.  
Organization DM RTOP 199-45-16
- 1220** Wilson, J. W.; Kim, M-H.; Schimmerling, W.; Badavi, F. F.; Thibeault, S. A.; Cucinotta, F. A.; Shinn, J. L.; and Kiefer, R. L.: Issues in Space Radiation Protection: Galactic Cosmic Rays. *Health Physics*, Volume 68, No. 1, January 1995, p. 50-58.  
Organization DM RTOP 199-45-16

- 1221 Wilson, J. W.; Nealy, J. E.; Cucinotta, F. A.; Shinn, J. L.; Hajnal, F.; Reginatto, M.; and Goldhagen, P.: *Radiation Safety Aspects of Commercial High-Speed Flight Transportation*. NASA TP-3524, May 1995, 32 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/tp3524.ps.Z>  
 Organization DM RTOP 537-09-21
- 1222 Wilson, J. W.; Nealy, J. E.; Wood, J. S.; Qualls, G. D.; Atwell, W.; Shinn, J. L.; and Simonsen, L. C.: Variations in Astronaut Radiation Exposure Due to Anisotropic Shield Distribution. *Health Physics*, Volume 69, No. 1, July 1995, p. 34-45.  
 Organization DM RTOP 199-45-16
- 1223 Wilson, J. W.; Reginatto, M.; Hajnal, F.; and Chun, S. Y.: Calculation of Dose, Dose Equivalent, and Relative Biological Effectiveness for High Charge and Energy Ion Beams. *Health Physics*, Volume 68, No. 4, April 1995, p. 532-538.  
 Organization DM RTOP 199-45-16
- 1224 Wilson, J. W.; Tripathi, R. K.; Cucinotta, F. A.; Shinn, J. L.; Badavi, F. F.; Chun, S. Y.; Norbury, J. W.; Zeitlin, C. J.; Hielbronn, L.; and Miller, J.: *NUCFRG2: An Evaluation of the Semiempirical Nuclear Fragmentation Database*. NASA TP-3533, October 1995, 47 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tp3533.ps.Z>  
 Organization DM RTOP 199-45-16

## General

### Category 99 General

- 1225 Anon.: *Research and Technology Highlights 1994*. NASA TM-4708, December 1995, 245 p.  
<ftp://techreports.larc.nasa.gov/pub/techreports/larc/95/NASA-95-tm4708.ps.Z>  
<http://techreports.larc.nasa.gov/RandT94>  
 Organization AE
- 1226 Hansen, J. R.: *Spaceflight Revolution—NASA Langley Research Center From Sputnik to Apollo*. NASA SP-4308, May 1995, 574 p.  
 Organization GF
- 1227 Levine, A. S. (Editor): *69 Months in Space—Third LDEF Post-Retrieval Symposium*. NASA CP-3275, Part 2, February 1995, 354 p.  
 Organization DM RTOP 233-03-02
- 1228 Levine, A. S. (Editor): *69 Months in Space—Third LDEF Post-Retrieval Symposium*. NASA CP-3275, Part 1, February 1995, 561 p.  
 Organization DM RTOP 233-03-02
- 1229 Levine, A. S. (Editor): *69 Months in Space—Third LDEF Post-Retrieval Symposium*. NASA CP-3275, Part 3, February 1995, 546 p.  
 Organization DM RTOP 233-03-02
- 1230 Sawyer, J. W.: Test Technique for Obtaining Improved Mechanical Strain Measurements at Elevated Temperatures. Presented at SEM Hostile-Environment and High-Temperature Conference, October 31—November 1, 1995, Detroit, Michigan.  
 Organization DS RTOP 505-70-63

**1231** Seidel, G.; Kidwell, G.; Sobieszczanski-Sobieski, J.; Berke, L.; and Lytle, J.: Multidisciplinary Design Optimization at Ames, Lewis, and Langley: Demanding Customers for HPCCP. Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California. In Proceedings.

Organization DS

RTOP 509-10-01

**1232** Sobieszczanski-Sobieski, J.: Multidisciplinary Design Optimization: Definition, Taxonomy, Capability, and Trends. Presented at NASA Computational Aerosciences Workshop, March 7-9, 1995, Moffett Field, California. In Proceedings.

Organization DS

RTOP 509-10-01



## Author Index

### A

Abarbanel, S. A.: 30, 1012  
Abbott, T. S.: 127, 165, 166  
Abdel-Wahab, H.: 950  
Abdi, F. F.: 158  
Abdol-Hamid, K. S.: 8, 9, 10, 29, 85  
Abeles, J. H.: 662, 663  
Abid, R.: 11, 607  
Abrams, M. C.: 826, 827, 834  
Accomazzi, A.: 965, 990  
Adam, I.: 68  
Adams, R. R.: 266  
Adams, W. M., Jr.: 139  
Adcock, J. B.: 115  
Adelman, H. M.: 183  
Ahmadi, G.: 706, 707  
Ahuja, K. K.: 1049, 1069  
Alberta, T. L.: 870, 871  
Alberts, T. E.: 280, 281, 282  
Albertson, C. W.: 197  
Albin, S.: 1153, 1157  
Alcorn, C. W.: 12  
Allario, F.: 1151  
Allen, D. H.: 343  
Allen, D. J.: 786  
Allen, M. R.: 436  
Allen-Lilly, H.: 319  
Allison, D. O.: 13  
Allred, J. W.: 676  
Alter, S. J.: 119  
Ambur, D. R.: 184, 320, 321, 322, 323, 324,  
325, 326, 349, 350, 360, 395, 677, 678,  
697, 698, 699, 720  
Aminpour, M. A.: 694, 710  
Amundsen, R. M.: 502, 955, 1176  
Anderson, B. E.: 743  
Anderson, M. R.: 206  
Anderson, W. K.: 14, 15, 22, 109  
Andrews, E. H.: 197  
Andrews, J. R.: 664  
Anglin, C.: 373  
Anon.: 910, 911, 912, 1225  
Applin, J. I.: 298  
Applin, Z. T.: 16, 17  
Ardalan, S. H.: 524  
Arduini, R. F.: 890  
Arian, E.: 1000  
Armstrong, E. S.: 260  
Arthur, J. J.: 956

Asbury, S. C.: 18, 19, 227  
Ash, R. L.: 625  
Atkins, H. L.: 1085  
Atwell, W.: 1222  
Auslender, A. H.: 201  
Austin, R. E.: 249  
Avery, D. E.: 1182  
Ayers, J. K.: 883, 885, 894

### B

Babcock, D. A.: 1040  
Bachmeier, A. S.: 738  
Bacon, B. J.: 208  
Badavi, F. F.: 898, 1210, 1212, 1215, 1218,  
1220, 1224  
Baddourah, M.: 974  
Badhwar, G. D.: 1206, 1208, 1212, 1215,  
1218  
Bahei-El-Din, Y. A.: 328  
Bailey, M. C.: 254, 508, 509, 518, 532  
Bains, E. M.: 267  
Baker, D. J.: 334, 380, 396, 397  
Baker, D. N.: 753  
Baker, G.: 1001  
Bakos, R. J.: 609  
Bakwin, P. S.: 739  
Balakrishna, S.: 232, 536  
Balakrishnan, N.: 1002  
Bales, T. T.: 433  
Ball, J. M.: 253  
Balla, R. J.: 1161  
Banerjee, N. S.: 1014  
Bangert, L. S.: 41, 227  
Banks, D. C.: 926, 927  
Banks, D. W.: 111  
Banks, H. T.: 1003, 1004  
Barber, J. A.: 734  
Barclay, R. O.: 1184, 1185, 1187, 1188,  
1193, 1194, 1195, 1196, 1198, 1199  
Bare, E. A.: 227  
Barkstrom, B. R.: 859, 892  
Barnes, A. G.: 195  
Barnes, J. C.: 876, 1164  
Barnes, N. P.: 1165, 1166, 1167, 1168, 1169,  
1173, 1174  
Barnes, R. A.: 765  
Barrie, L. A.: 743  
Barrows, D. A.: 501  
Bartels, R. E.: 140, 141

Barthelemy, J-F.: 142, 146  
 Bartlett, J. E.: 634  
 Bartlett, K.: 891  
 Bartolome, D. S.: 906, 907, 909  
 Bartram, S. M.: 479, 658  
 Barut, A.: 679, 680  
 Bass, H. E.: 1050  
 Bass, R. G.: 465  
 Bataille, F.: 537  
 Batina, J. T.: 77  
 Batson, V. M.: 224  
 Batty, C.: 735  
 Baucom, R. M.: 398, 498, 500  
 Bauer, F.: 538  
 Bauer, R. J.: 373  
 Baughcum, S. L.: 750  
 Baugher, A. H.: 437  
 Baumgardner, D.: 787, 857  
 Bauserman, W. A., Jr.: 621  
 Baust, H. D.: 653  
 Bayliss, A.: 539, 1051, 1065, 1067, 1094,  
 1095  
 Beaulieu, W.: 200  
 Beaumier, P.: 1123  
 Beaumont, C. J.: 965, 990  
 Beck, F. B.: 257, 258, 510, 520, 522  
 Becker, L. E.: 1091, 1092  
 Beer, R.: 854  
 Behun, V. D.: 692  
 Belcastro, C. M.: 928, 929  
 Beltz, M. W.: 459  
 Belvin, W. K.: 276, 618, 681, 731  
 Bement, L. J.: 143, 261, 503  
 Benner, D. C.: 1134, 1136, 1141  
 Bennett, R. M.: 176  
 Bent, P. H.: 1052  
 Berke, L.: 1231  
 Berrier, B. L.: 20  
 Berry, J. D.: 34, 144  
 Berry, V.: 380  
 Bertelrud, A.: 111, 125  
 Bertoglio, J-P.: 537  
 Bertolotti, F. P.: 540  
 Beuth, J. L.: 327  
 Beutner, T. J.: 653  
 Bey, K. S.: 1005, 1006  
 Bhat, T. R.: 1112  
 Bhatt, P. P.: 824, 825  
 Bi, D.: 447  
 Bianco, D. J.: 965, 990, 1190  
 Biedron, R. T.: 94  
 Bigelow, C. A.: 328, 333  
 Bilbro, G. L.: 524  
 Binkley, R. L.: 965, 990  
 Bird, R. K.: 346  
 Bishop, A. P.: 1183  
 Bishop, W. L.: 632, 633  
 Bissonnette, L. R.: 751  
 Bittner, R. D.: 204  
 Blackaby, N. D.: 541  
 Blackshear, W. T.: 761, 762, 777  
 Blackstock, D. T.: 1050  
 Blaha, D.: 891  
 Blaisdell, G. A.: 607  
 Blake, D. R.: 739  
 Blake, J. B.: 753  
 Blanchard, R. C.: 21, 668, 669, 670  
 Bland, S. R.: 39  
 Blankson, I. M.: 682  
 Bloor, M. G.: 925  
 Blosser, M. L.: 682  
 Blue, M. D.: 268  
 Blume, H-J.: 255, 259  
 Bock, L. A.: 1111  
 Boerschlein, D. P.: 985  
 Bogart, E. H.: 909  
 Bohnhoff-Hlavacek, G. L.: 268, 303, 304  
 Boitnott, R. L.: 711  
 Bokhari, S. H.: 930, 931, 932  
 Bonhaus, D. L.: 14, 15, 22  
 Booth, E. R., Jr.: 1060, 1069, 1091  
 Borrmann, S.: 787  
 Boston, H. G.: 490  
 Boudreaux, E. J.: 61  
 Boughner, R. E.: 753, 754  
 Bourassa, R. J.: 262, 263, 271, 272, 314  
 Bowles, D. E.: 329  
 Boyd, D. D., Jr.: 1070, 1106, 1123  
 Bracalente, E. M.: 132  
 Brackett, V. G.: 764, 769, 784  
 Bradshaw, J. P.: 739  
 Brandon, J. M.: 74, 207  
 Brauckmann, G. J.: 23  
 Braun, R. D.: 235, 237, 238, 239, 250, 252,  
 558, 1041, 1046, 1201  
 Brentner, K. S.: 1053, 1054, 1085  
 Brewer, L. M.: 264  
 Brewer, W. D.: 432  
 Brieger, J. T.: 1092  
 Brinberg, H. R.: 1184  
 Britcher, C. P.: 504, 525  
 Britt, C. L., Jr.: 132  
 Britt, V. O.: 723  
 Brock, C. A.: 787  
 Brooks, T. F.: 1070, 1123  
 Browell, E. V.: 571, 619, 620, 627, 630, 738,  
 752, 769, 773, 774, 775, 784, 785, 860,  
 861, 862, 863, 864, 876  
 Brown, C. A.: 476

Brown, D. E.: 1003, 1004, 1116  
 Brown, M. S.: 1152  
 Brown, P. D.: 757  
 Brown, P. W.: 207  
 Brown, S. A.: 1093, 1109, 1114  
 Brunson, D.: 682  
 Brunstrom, A.: 933  
 Bryant, A. L.: 1153  
 Bryant, R. G.: 305, 306, 311, 438, 439, 440,  
 464, 485  
 Buchholz, H.: 1070  
 Buck, G. M.: 24, 25  
 Buehrle, R. D.: 225, 226  
 Buning, P. G.: 83  
 Burdette, D. W.: 906, 907, 909  
 Burdisso, R. A.: 1115  
 Burke, G. J.: 534  
 Burkett, C. G., Jr.: 526, 621  
 Burkholder, J. B.: 770  
 Burley, C. L.: 1054, 1070, 1084, 1106, 1121,  
 1123, 1127  
 Burley, J. R., II: 995  
 Burner, A. W.: 226, 622, 649  
 Burns, J. A.: 1007  
 Burris, J.: 765  
 Burt, J. L.: 906, 907  
 Burton, J.: 825  
 Bush, L. B.: 253  
 Bushnell, D. M.: 26, 27, 596  
 Busquets, A. M.: 1154  
 Bussell, K.: 512  
 Butler, C. F.: 620, 773, 864  
 Butler, J.: 765  
 Butler, R. W.: 916, 977, 978, 979, 980  
 Buttrill, C. S.: 208

## C

Cagle, C. M.: 623  
 Cahoon, D. R., Jr.: 733, 734, 736, 737, 740,  
 741, 742, 790, 791, 792, 793  
 Cai, X-C.: 1008, 1009  
 Caldwell, J. L.: 979  
 Calise, A. J.: 244, 248  
 Callis, L. B., Jr.: 753, 754, 755, 789  
 Camarda, C. J.: 1002  
 Camilleri, A.: 986  
 Campbell, R. E.: 1164  
 Campbell, R. L.: 28, 83, 100  
 Camy-Peyret, C.: 815  
 Cano, R. J.: 351, 441, 442, 443  
 Cantrell, J. H., Jr.: 905, 1055, 1131  
 Caplan, M. L.: 444, 476, 481, 488, 489  
 Capone, F. J.: 18, 227  
 Caradonna, F. X.: 1084  
 Card, M. F.: 704  
 Carden, H. D.: 353, 407  
 Carli, B.: 756  
 Carlisle, C. B.: 663  
 Carlson, J. R.: 9, 10, 29  
 Carpenter, M. H.: 30, 31, 32, 590, 1010  
 Carreno, V. A.: 979, 1042, 1043  
 Casper, J.: 32  
 Casper, J. H., Jr.: 33  
 Cattafesta, L. N., III: 542  
 Cazier, F. W., Jr.: 1119  
 CERES Science Team, : 865, 866, 867, 868  
 Cerniglia, M. C.: 786  
 Cerro, J. A.: 677  
 Cess, R. D.: 869, 897  
 Cha, S. S.: 649  
 Chaffin, M. S.: 34, 145  
 Chambers, L. H.: 957  
 Chamis, C. C.: 685  
 Chan, W. S.: 397  
 Chang, A. C.: 315, 402, 445, 493, 495, 496  
 Chang, C-L.: 590  
 Chang, S.: 720  
 Chapman, J. J.: 624  
 Chappell, A. R.: 212  
 Charlock, T. P.: 870, 871, 889, 895, 1047  
 Chen, C-W.: 683  
 Chen, R. T.: 1056  
 Cheng, J.: 283  
 Chern, H-S.: 265  
 Choi, S. H.: 1139  
 Choi, W.: 775  
 Chopra, I.: 178  
 Choudhari, M. M.: 98, 99, 543  
 Chow, P. L.: 1057  
 Chowdhry, R. S.: 214, 235  
 Chrisochoides, N.: 934  
 Christhilf, D. M.: 139  
 Christodoulou, C.: 515, 516  
 Chu, D. A.: 810  
 Chu, W. P.: 840, 841, 858  
 Chun, S. Y.: 904, 1223, 1224  
 Chung, V. I.: 993  
 Chyba, T. H.: 627, 656  
 Ciardo, G.: 935, 936  
 Cicerone, R. J.: 830, 831  
 Cimolino, M. C.: 656  
 Cirillo, W. M.: 264  
 Clark, J. W.: 209  
 Clark, R. K.: 412, 435  
 Claus, S. J.: 446  
 Clayton, M. E.: 620, 784  
 Clemons, S. B.: 222  
 Cler, D. L.: 35, 228  
 Cleveland, J. I., II: 946, 981

- Clevenson, S. A.: 651  
 Clough, S. A.: 757  
 Coats, T. W.: 330, 343  
 Cockrell, C. E., Jr.: 36, 43, 169  
 Cockrell, C. R.: 254, 257, 258, 510, 520, 522  
 Coen, P. G.: 146  
 Cofer, W. R., III: 734, 736, 740, 741, 742,  
 790, 791, 792, 793, 796  
 Cohen, D.: 331  
 Cole, S. R.: 170  
 Collins, T. J.: 266  
 Comstock, J. R., Jr.: 906, 907, 909  
 Connell, J. W.: 447, 448, 449, 450, 451,  
 452, 453, 454, 458, 473, 486  
 Conner, D. A.: 1092, 1101  
 Connolly, J. C.: 662, 663  
 Connor, B. J.: 758, 821, 832, 840  
 Connors, V. S.: 759, 760, 771  
 Coe, D.: 958  
 Cook, A. L.: 654, 662, 663  
 Cooper, D. E.: 663  
 Cooper, J. E.: 892  
 Cordle, V. M.: 1197  
 Costen, R. C.: 655  
 Costiner, S.: 1011  
 Cox, B. N.: 332  
 Cramer, K. E.: 1179, 1180  
 Cravey, R. L.: 255, 259, 511, 512, 514  
 Crawley, E. F.: 151, 152, 157  
 Cregger, E.: 319  
 Crill, P.: 891  
 Criminale, W. O.: 544, 545  
 Crivello, J. V.: 447  
 Crockett, T. W.: 937  
 Crommelynck, D.: 872  
 Cronk, D.: 941  
 Croom, M. A.: 12  
 Crossley, E. A., Jr.: 692  
 Crowder, J. P.: 80  
 Crum, J. R.: 526  
 Crutzen, P. J.: 817  
 Cruz, C. I.: 37, 558  
 Cruz, J. N.: 264  
 Cruz, J. R.: 321  
 Cucinotta, F. A.: 899, 900, 901, 902, 903,  
 904, 1135, 1144, 1145, 1146, 1147, 1148,  
 1149, 1206, 1207, 1208, 1209, 1211,  
 1212, 1213, 1215, 1216, 1217, 1218,  
 1219, 1220, 1221, 1224  
 Culliton, W. G.: 527  
 Cunnington, G. R., Jr.: 412  
 Cunnold, D. M.: 841  
 Cuomo, F. W.: 650, 651  
 Curtis, S. B.: 1210
- D**
- D'Altorio, A.: 855  
 D'Ambrosio, D.: 546, 547  
 Dadone, L.: 51  
 Dagenhart, J. R.: 542  
 Dancey, C. L.: 199  
 Dando, A.: 541, 548  
 Daniel, W.: 609  
 Daniels, J.: 782  
 Daniels, T. S.: 644  
 Danowitz, J. S.: 1012  
 Darden, C. M.: 38  
 Daryabeigi, K.: 625  
 Dash, S. M.: 1058  
 Dattaguru, B.: 390  
 Daube, B. C.: 739  
 Daum, P. H.: 796  
 Davila, C. G.: 694  
 Davis, C. C.: 692  
 Davis, D. C.: 652  
 Davis, D. D., Jr.: 684  
 Davis, J. G., Jr.: 329  
 Davis, W. T.: 245  
 Dawicke, D. S.: 333, 370, 371, 413, 414  
 Dawson, S.: 1059, 1060  
 De Young, R. J.: 627, 1140  
 DeBarber, P. A.: 1152  
 DeCoursey, R. J.: 814, 820  
 DeJarnette, F. R.: 597  
 DeTurriss, D. J.: 198  
 DeVilbiss, D. W.: 1122  
 Dean, E. B.: 913  
 Deaver, L. E.: 828, 830  
 Debouille, L.: 794  
 Demeo, M. E.: 267  
 Demoulin, P.: 794  
 Denn, F. M.: 873, 874  
 Desai, P. N.: 233  
 Deshpande, M. D.: 256, 257, 258, 513, 514,  
 519, 520, 521, 522  
 Desmarais, R. N.: 39  
 Devi, V. M.: 1134, 1136, 1141  
 Dexter, H. B.: 334  
 Di Vito, B. L.: 979  
 DiCarlo, D. J.: 1, 219  
 Diamond, J. K.: 528  
 Dickens, P. M.: 938  
 Dickes, E.: 86  
 Dickson, J. N.: 677  
 Dicus, D. L.: 346, 432  
 Dillon-Townes, L. A.: 625  
 Dipasquale, R. C.: 895  
 Dixon, D.: 352  
 Doelling, D. R.: 884, 885



Doggett, R. V., Jr.: 2  
Dogra, V. K.: 549, 550, 551, 552, 584, 585,  
612  
Domack, M. S.: 433  
Dominik, C. J.: 78  
Don, W. S.: 30  
Donelson, M. J.: 1130  
Douglass, A. R.: 786  
Dovi, A. R.: 146  
Dowling, P. K.: 505  
Drayson, S. R.: 578, 781, 782  
Droessler, J.: 940  
Drummond, J. P.: 47  
Dubey, R. R.: 1135, 1145, 1146, 1208  
Dudley, K. L.: 512  
Dunn, M. H.: 1061  
Dursch, H. W.: 268, 303, 304, 307, 309  
Dutton, J. C.: 57, 564  
Dwoyer, D. L.: 40  
Dye, J. E.: 787, 857  
Dye, T. P.: 553

## E

Ebeling, C. E.: 245  
Eberhardt, S.: 613  
Eckman, R. S.: 761, 762, 776, 777, 778, 832  
Edge, D. C.: 125  
Edlow, R.: 457  
Edwards, D. P.: 763  
Egalon, C. O.: 1153, 1155, 1158, 1159  
Einthoven, P.: 206  
Eklund, D. R.: 199, 203, 1152  
Eldred, C. H.: 240  
Elliott, J. W.: 149  
Elliott, K. B.: 276, 681  
Ellison, J. C.: 665  
Elmer, K. R.: 1062  
Elvidge, C. D.: 790  
Ely, J. J.: 515, 516  
Emami, S.: 200, 201  
Engelbeck, R. M.: 147  
Engelund, W. C.: 87, 90, 237, 238  
Erickson, G. E.: 228  
Erlandson, R. E.: 247  
Erlebacher, G.: 66, 575, 591  
Ertur, E.: 1164  
Espe, M.: 437  
Esplin, R.: 735, 833  
Everett, R. A., Jr.: 335

## F

Fahringer, D. T.: 1156  
Fahringer, T.: 939

Fairlie, T. D.: 778  
Fakhruzzaman, K. M.: 764  
Fales, C. L., Jr.: 629  
Farassat, F.: 1061, 1063, 1064, 1080, 1122  
Farley, G. L.: 159, 336, 337, 338, 339, 340  
Farmer, C. B.: 834  
Farmer, J. T.: 569  
Farokhi, S.: 228  
Fay, C. C.: 316  
Fears, S. P.: 148, 161, 173, 210  
Federspiel, J. F.: 41  
Feldhaus, W. S.: 502, 955  
Feldman, M.: 341  
Fenn, M. A.: 620, 752, 773, 864  
Fenno, C. C.: 539, 1051, 1065  
Fentress, M. L.: 720  
Ferrare, R. A.: 765  
Ferry, G. V.: 787  
Fichot, A.: 872  
Fichter, W. B.: 266  
Fidell, S.: 1066  
Filer, E. D.: 1168  
Finley, D. B.: 36, 42, 43  
Finley, T. D.: 226, 643  
Fischer, K. E.: 202  
Fischl, R.: 929  
Fisher, S.: 269  
Fishman, J.: 764, 766, 767, 768, 769  
Fiterman, A.: 1013  
Flamm, J. D.: 44  
Flaud, J-M.: 815  
Fleck, V. J., Jr.: 676  
Fletcher, D. G.: 199  
Flood, M.: 759  
Folkman, S.: 735  
Foote, K.: 138  
Foster, J. V.: 161  
Fox, C. H., Jr.: 104  
Fox, R. L.: 1162  
Fraker, A. C.: 308  
Fralick, D. T.: 511, 521, 522  
Francis, M. S.: 12  
Franklin, H.: 940  
Freeman, D. C., Jr.: 241, 249  
Freeman, W. T., Jr.: 455, 456, 457  
Freese, C. E.: 702, 726  
Fremaux, C. M.: 45  
French, N.: 733  
Frendi, A.: 1067, 1068  
Friedman, A.: 387, 388  
Friedmann, P. P.: 196  
Frink, N. T.: 46  
Froggatt, M. E.: 529, 530  
Froidevaux, L.: 762  
Fuelberg, H. E.: 620

Fujii, E.: 283  
Fuller, C. R.: 1083, 1115  
Fulton, J. P.: 425, 426  
Funk, J. G.: 1182, 1202

## G

Gaeta, R. J.: 1069  
Gaffney, R. L.: 47  
Gaj, R.: 1058  
Gallman, J. M.: 1070, 1123  
Gangloff, R. P.: 419  
Garber, D. P.: 885, 886, 894  
Garcia, R. R.: 810  
Gardner, J. E.: 308  
Garn, M. A.: 264  
Garrahan, S. L.: 996  
Garrison, J. L., Jr.: 242  
Gartenberg, E.: 554  
Gartrell, L. R.: 479  
Gaskin, D.: 373  
Gates, T. S.: 341, 403, 415, 416  
Gatlin, G. M.: 48  
Gatski, T. B.: 11, 49, 101, 102, 103, 591,  
608  
Gea, L-M.: 83  
Geer, J. F.: 1014  
Generazio, E. R.: 685  
Gentry, G. L., Jr.: 17  
George, P. E.: 309  
Gerber, M. K.: 497  
Gerhold, C. H.: 1071, 1122  
Geyer, D. W.: 214  
Ghee, T. A.: 50, 149  
Ghofranian, S.: 283  
Gibson, G. G.: 873, 874, 887  
Gibson, L. S.: 228  
Gibson, M. A.: 879, 880  
Giesy, D. P.: 285, 286  
Gilbert, M. G.: 267, 270, 717  
Giles, G. L.: 150  
Gilgen, H.: 895  
Gilinsky, M. M.: 1113  
Gille, J.: 779  
Gillian, R. E.: 694, 724  
Gillis, J. R.: 262, 263, 271, 272, 770  
Ginger, K. M.: 875  
Girimaji, S. S.: 47, 555, 556, 557, 914  
Glaab, L. J.: 207  
Glassman, M.: 1197  
Gleason, J. R.: 417  
Gluckman, J.: 936  
Gmelin, B.: 1072  
Gnoffo, P. A.: 119, 237, 238, 558, 559, 582  
Goad, W. K.: 641  
Goetz, J. M.: 437

Goldammer, J. G.: 737, 741, 742, 790  
Goldhagen, P.: 1221  
Goldman, A.: 770, 815, 826, 827  
Goldthorpe, S. H.: 211  
Golub, R. A.: 1127  
Goodrich, K. H.: 212  
Goodrich, L. R., Sr.: 692  
Gordley, L. L.: 782, 825, 828, 829, 833  
Gormsen, B. B.: 759, 771  
Gorton, S. A.: 51  
Gorzelska, K.: 743  
Gottlich, G. L.: 965, 990  
Gottlieb, D. I.: 30, 1010  
Gould, D. C.: 273  
Grainger, R. G.: 774  
Grandt, A. F., Jr.: 371  
Grant, W. B.: 620, 738, 772, 773, 774, 775,  
864  
Gray, D. L.: 648  
Greendyke, R. B.: 559, 560  
Greene, F. A.: 119, 561  
Gregory, G. L.: 739, 743, 744, 745, 746  
Grenoble, R. W.: 342, 441, 446, 461  
Griffin, O. H.: 331, 711  
Gronet, M. J.: 274  
Groom, N. J.: 504, 525  
Grooss, J. U.: 817  
Grosch, C. E.: 64  
Grose, W. L.: 761, 762, 776, 777, 778, 779,  
780, 817  
Grosveld, F. W.: 1073  
Gruenbaum, P. E.: 262, 263, 271, 272  
Guaspari, D.: 982  
Gunson, M. R.: 815, 826, 827, 834  
Gunzburger, M. D.: 66, 575  
Gupta, R. N.: 562  
Gupta, S.: 997  
Gupton, L. E.: 224  
Gurdal, Z.: 718

## H

Hack, H. P.: 422  
Hackett, E. E.: 603  
Haffner, S. W.: 1074  
Haftka, R. T.: 407  
Hagemeier, R.: 374  
Haggard, K. V.: 831  
Hagseth, P.: 682  
Hahne, D. E.: 169  
Haimovitch, Y.: 203  
Haines, M.: 938, 939, 941, 942  
Hajnal, F.: 1221, 1223  
Hall, J. B., Jr.: 264  
Hall, L. E.: 142, 146, 969

Hall, P.: 541, 548, 563, 604  
 Hall, W. M.: 784, 876  
 Hamilton, H. H., II: 119  
 Hanebutte, U. R.: 52, 65  
 Hanna-Hawver, P. D.: 905  
 Hannon, J. A.: 230  
 Hansen, G.: 820  
 Hansen, J. R.: 1226  
 Hansen, P.: 268  
 Haras, Z.: 1015  
 Hardin, J. C.: 53, 54, 55, 1075, 1076, 1077, 1078  
 Hardin, J. D.: 125, 126  
 Hare, D. A.: 645, 646  
 Hargraves, C. R.: 263  
 Harrah, S. D.: 132  
 Harries, J. E.: 781  
 Harrington, R. F.: 255, 532  
 Harris, B. W.: 69  
 Harris, C. E.: 310, 330, 343, 344, 345, 378, 379, 686, 687, 688, 689, 690  
 Harris, J. E.: 92, 93, 117  
 Harrison, E. F.: 873, 874, 897  
 Harshvardhan, : 875  
 Hartfield, R. J., Jr.: 199  
 Hartley, P. J.: 418  
 Hartung, L. C.: 560  
 Harvey, G. A.: 656  
 Harvey, W. D.: 128  
 Hash, D. B.: 585  
 Hassan, A. A.: 1059, 1060, 1091  
 Hassan, B. A.: 551  
 Hassan, H. A.: 92, 93, 117, 552, 586  
 Havens, S. J.: 311, 459, 484  
 Hawkes, T.: 41  
 Hayhurst, A. R.: 531  
 Haynes, D. A.: 419  
 Haynes, G. S.: 422  
 Hays, P. B.: 578, 811  
 Hazelwood, R. N.: 228  
 He, Y.: 609  
 Hearn, C. P.: 255, 259, 517, 524  
 Hecht, L. F.: 1185, 1193  
 Heck, M. L.: 264  
 Heck, P. W.: 886  
 Hedahl, M. O.: 275  
 Hedrick, J. L.: 450  
 Heeg, J.: 151, 152, 157, 208  
 Hegg, D. A.: 881  
 Heinbockel, J. H.: 655  
 Hellbaum, R. F.: 299, 1107  
 Heller, H.: 1072  
 Hensch, M. J.: 105  
 Henderson, J. L.: 56  
 Henderson, S. C.: 750  
 Hendricks, H. D.: 654  
 Hepner, T. E.: 657  
 Hergenrother, P. M.: 305, 306, 311, 440, 448, 449, 451, 452, 453, 454, 458, 459, 460, 464, 465, 484, 486  
 Herrin, J. L.: 57, 564  
 Herring, G. C.: 1137, 1138, 1152  
 Hervig, M. E.: 782  
 Hester, D. M.: 1050  
 Heyman, J. S.: 626  
 Hielbronn, L.: 1224  
 Higdon, N. S.: 627, 863  
 High, J. W.: 1176, 1177  
 Hillard, M. E., Jr.: 1137, 1138, 1161  
 Hilliard, R. D.: 1093  
 Hindson, W. S.: 1056  
 Hinkley, J. A.: 354, 404, 461, 462, 470  
 Hinton, D. A.: 129  
 Hoadley, S. T.: 153, 154, 186  
 Hodge, J. S.: 553, 577  
 Hodge, S. L.: 1079, 1132  
 Hodges, W. T.: 75  
 Hoff, R. M.: 752  
 Hoffman, D.: 319  
 Hoffman, E. K.: 346  
 Hoke, M.: 1157  
 Holland, P. C.: 1053  
 Holland, S. D.: 565, 566, 567  
 Hollis, B. R.: 568  
 Holloway, C. M.: 915, 916, 979, 983  
 Holloway, S. E., III: 691, 692  
 Holm, J.: 1186  
 Holmes, H. K.: 628  
 Hooker, M. W.: 1170, 1171, 1172, 1176, 1177  
 Hopson, P., Jr.: 624, 634, 1176, 1177  
 Horne, W. C.: 1111  
 Horner, G. C.: 693  
 Horta, L. G.: 276, 681, 706, 707, 719, 963  
 Hoskins, J. W.: 274  
 Hostetler, C. A.: 783, 802, 803, 820  
 Hou, G. J.: 58, 59, 84, 684, 1002  
 Hou, T-H.: 347, 463, 466, 467  
 Houck, J. A.: 208  
 Housner, J. M.: 694, 695, 724, 730  
 Howe, J. M.: 430  
 Howe, R. R.: 1066  
 Howell, P. A.: 1179  
 Hsu, C-H.: 1080  
 Hsu, P-F: 569  
 Hu, F. Q.: 570  
 Huang, J-K.: 683  
 Huang, S. C.: 1130  
 Hubbard, H. H.: 1081

Huck, F. O.: 629  
Huebner, L. D.: 36, 60, 61, 107  
Hueschen, R. M.: 3  
Huffman, J. K.: 104  
Hugh, M. K.: 342, 441  
Humes, D. C.: 959, 960, 984  
Humes, D. H.: 666, 1203  
Humphreys, W. M., Jr.: 479, 658  
Hunt, J. L.: 301  
Hunter, C. A.: 62  
Hunter, W. W., Jr.: 658  
Hussaini, M. Y.: 66, 575  
Hutcheson, R. L.: 1167  
Hutchinson, F.: 1210  
Hutchinson, M. A.: 526  
Hyer, M. W.: 331, 389  
Hyland, D. C.: 506

### I

Inman, M. E.: 376  
Iollo, A.: 602, 1016, 1017  
Irion, F. W.: 826  
Isaac, K. M.: 479  
Ismail, S.: 571, 630, 784, 785, 862, 863, 864,  
876  
Istenes, R. R., Jr.: 1082  
Iyer, V.: 542, 572

### J

Jackman, C. H.: 786  
Jackson, E. B.: 155, 213, 214, 961  
Jackson, K. E.: 387, 388, 696, 705  
Jackson, T. L.: 544, 545  
Jackson, W. C.: 348  
Jacob, D. J.: 739  
Jacobs, J. A.: 308  
Jagharghi, A. J.: 228  
Jain, S.: 945  
Jalink, A., Jr.: 299, 1107  
Jang, B. Z.: 478  
Jani, M. G.: 1167, 1173, 1174  
Jankowski, D.: 424  
Jano, A.: 748  
Jaunky, N.: 349, 350, 697, 698, 699  
Javeed, M. A.: 266, 277  
Jegley, D. C.: 700  
Jenkins, L. N.: 114, 611  
Jensen, B. J.: 305, 306, 311, 442, 460, 462,  
464, 465, 466, 467, 468, 471  
Jensen, G. A.: 274  
Jensen, M.: 735  
Jensen, M. C.: 267  
Jiang, G-S.: 1018  
Jobson, D. J.: 629, 631

Johnson, A. R.: 701, 702, 703  
Johnson, C. C.: 1164  
Johnson, D. W.: 881  
Johnson, E. R.: 407  
Johnson, G. S.: 406  
Johnson, M.: 940  
Johnson, P. B.: 625  
Johnson, R.: 733  
Johnson, S. C.: 980, 985  
Johnson, S. D.: 986  
Johnson, T. D., Jr.: 74  
Johnson, T. F.: 704  
Johnson, W. S.: 362, 363, 364  
Johnston, N. J.: 342, 347, 351, 352, 399,  
443, 446  
Jonas, P. R.: 881  
Jones, D. R.: 130  
Jones, I. W.: 692  
Jones, J. L., Jr.: 1203  
Jones, K. M.: 63  
Jones, L. E.: 353  
Jones, M. G.: 118, 1111, 1126  
Jones, N. B.: 823  
Jones, R. L., III: 962  
Jones, T.: 759  
Jones, W. T.: 29  
Jonsson, H. H.: 787  
Jonsson, J. E.: 4  
Joshi, M. C.: 1062, 1130  
Joshi, S. M.: 278, 279, 280, 281, 282, 284,  
997, 998, 999  
Joslin, R. D.: 52, 64, 65, 66, 540, 573, 574,  
575  
Juang, J-N.: 506, 507, 683, 719, 963  
Judge, N.: 1186  
Jumper, S. J.: 1127

### K

Kalil, C. R.: 476  
Kalu, P. N.: 420  
Kambis, A. D.: 788  
Kandil, O. A.: 67, 68  
Kangro, U.: 1019  
Kapania, R. K.: 326  
Kassel, P. C., Jr.: 300  
Katz, R.: 900, 901, 902, 903, 1135  
Katzberg, S. J.: 242  
Kay, K. Q.: 1083  
Keating, J.: 469  
Keene, M. L.: 1193  
Kehoe, M. W.: 164  
Kelkar, A. G.: 278, 279, 280, 281, 282, 998,  
999  
Kellas, S.: 387, 388, 705

Kelley, H. L.: 50, 156, 1060  
Kelley, M.: 926  
Kellogg, Y. D.: 965, 990  
Kelly, C. A.: 748  
Kelly, R. G.: 376, 428  
Kendall, B. M.: 532  
Kennedy, J. M.: 1185, 1187, 1188, 1193,  
1194, 1195, 1196, 1198, 1199  
Kenny, S. P.: 285, 286, 296  
Kent, G. S.: 820, 842, 851  
Kenzakowski, D. C.: 1058  
Keough, B. K.: 307  
Kern, S. B.: 114, 611  
Kernik, A. C.: 211  
Kerr, P. A.: 917  
Keyes, D. E.: 1008  
Khan, F.: 898  
Khandelwal, G. S.: 1145, 1146  
Kidwell, G.: 1231  
Kiefer, R. L.: 354, 1220  
Kilgore, W. A.: 232, 536  
Killough, B. D., Jr.: 576  
Kim, M-H.: 1213, 1220  
Kinard, T. A.: 69  
Kinard, W. H.: 1203  
Kincaid, R. K.: 470, 922  
King, B. B.: 1007  
King, M. D.: 897  
King, R. A.: 542  
Kirchhoff, V. W.: 790  
Kist, E. H.: 1176  
Kitaplioglu, C.: 1084  
Kjelgaard, S. O.: 40  
Klassa, J. M.: 738  
Klein, V.: 215  
Klemm, K.: 743  
Klemm, O.: 743  
Klich, P. J.: 251  
Klinger, L.: 748  
Knight, N. F., Jr.: 349, 350, 697, 698, 699  
Knollenberg, R. G.: 787  
Knudsen, R. L.: 471  
Ko, M. K.: 827  
Kohl, T. W.: 1087  
Kolias, J. H.: 1020  
Komhyr, W.: 765  
Kooi, S. A.: 784, 785, 876  
Kopia, L. P.: 892  
Kopriva, D. A.: 1020  
Korivi, V. M.: 58, 59  
Korte, J. J.: 577  
Kosmatka, J. B.: 171  
Kouroupis, J.: 247  
Kratz, D. P.: 877  
Krist, S. E.: 83, 100

Kroo, I. M.: 239, 1041  
Kruse, N. M.: 472, 624, 1176, 1177  
Kube, R.: 1123  
Kumar, A.: 70  
Kumar, R. R.: 264  
Kumer, J. B.: 762  
Kurtz, M. J.: 965, 990  
Kuruvila, G.: 71, 1016  
Kwon, J. H.: 666

## L

LaFleur, S. S.: 635  
LaMarsh, W. J., II: 970  
LaRussa, J. A.: 995  
Lach, C. L.: 419, 433  
Lagen, N. T.: 1103  
Lakshmanan, B.: 10  
Lamar, J. E.: 72, 73, 74, 75  
Lamb, M.: 19, 76, 228  
Lambert, A.: 774  
Lambeth, J. D.: 754, 755, 789  
Larar, A. M.: 578  
Larman, K. T.: 21  
Larson, B.: 940  
Larson, C. R.: 283  
Lasseigne, D. G.: 544, 545  
Laszlo, I.: 889, 895  
Laterza, C.: 796  
Latorella, K. A.: 165, 166  
Lavoie, J. A.: 696  
Lawrence, R. M.: 526  
Lawrence, R. W.: 892  
LeCroy, S. R.: 895  
Leatherwood, J. D.: 1114  
Lee, J. H.: 655, 1139  
Lee, K-P.: 562  
Lee, R. B., III: 872, 878, 879, 880, 888, 892  
Lee-Glauser, G. J.: 706, 707  
Lee-Rausch, E. M.: 77  
Lefer, B.: 743  
Leighty, B. D.: 636  
Lepanto, J. A.: 267  
Lepsch, R. A., Jr.: 239, 302, 1046  
Lester, H. C.: 1073  
Leung, M. S.: 248  
Leutenegger, S. T.: 933  
Levine, A. S.: 1227, 1228, 1229  
Levine, J. S.: 505, 734, 736, 740, 741, 742,  
788, 790, 791, 792, 793, 796  
Lewis, R. M.: 1021  
Li, F.: 99  
Li, J.: 355, 356, 421  
Li, Z.: 1047  
Librescu, L.: 708  
Lim, K. B.: 287

Lin, C.: 151, 152, 157  
Lin, J. C.: 78  
Lin, W.: 708  
Lindegren, K. R.: 253  
Lindsay, D.: 380  
Lindsay, T. S.: 234  
Lingenfelser, G. S.: 780  
Lisagor, W. B.: 411, 422  
Little, A. D.: 502, 876, 955  
Liu, C. H.: 67, 68  
Llewellyn, C. P.: 264  
Lo, D. C.: 343  
Lockard, D. P.: 1085  
Lockard, G. E.: 533, 1173, 1174  
Logan, T. R.: 158  
Long, C. S.: 774, 775  
Longman, R. W.: 507, 719  
Lopez-Puertas, M.: 763  
Los, S. M.: 111  
Loves, L. L.: 826, 834  
Lu, H. Y.: 1128  
Luck, W. S.: 876  
Lukins, R.: 318  
Lulla, K. P.: 790  
Luo, M.: 828, 830, 831  
Lyle, K. H.: 1083, 1086, 1116  
Lyon, J. A.: 243  
Lytle, J.: 1231

## M

Ma, K-L.: 943, 944, 945, 953  
Maa, M-H.: 1189  
Maahs, H. G.: 357  
Macrossan, M. N.: 918  
Madaras, E. I.: 671, 672, 673, 674, 1087  
Maddalon, J. M.: 946  
Madenci, E.: 679, 680  
Maestrello, L.: 538, 539, 614, 1051, 1057,  
1065, 1067, 1068, 1088, 1089, 1090,  
1094, 1095  
Maghami, P. G.: 278, 284, 285, 286, 287,  
288, 296, 999  
Mahalov, A.: 579  
Mahieu, E.: 794, 826  
Maloney, J. M.: 709  
Manalo-Smith, N.: 893  
Manlief, S.: 289  
Mantay, W. R.: 159, 183  
Marchello, J. M.: 342, 347, 351, 398, 399,  
441, 443, 446, 461  
Marchellow, J. M.: 352  
Marcolini, M. A.: 1054, 1060, 1091, 1092  
Margitan, J. J.: 795  
Markopoulos, N.: 244

Maroju, V.: 58, 59  
Marrey, R. V.: 358  
Marsh, W. D.: 1164  
Marshall, B. T.: 825, 833  
Marsilio, R.: 546, 547  
Martin, A. D.: 470  
Martin, G. M.: 881  
Martinelli, R. U.: 662, 663  
Martinez, D.: 964, 993  
Masad, J. A.: 542  
Masci, F.: 855  
Mason, A. J.: 703  
Mason, M. E.: 359  
Mason, M. L.: 19  
Masters, J. E.: 383, 384, 385  
Mastin, C. W.: 919, 920  
Matthews, C. G.: 823  
Maung, K. M.: 1145  
Mavriplis, D. J.: 22, 1022, 1023, 1024, 1025,  
1026, 1027, 1028, 1036  
Mazanek, D.: 264  
Mazurek, M. A.: 796  
McAdoo, J. A.: 632, 633  
McBee, L. S.: 211  
McCleary, S. L.: 710  
McClinton, C. R.: 5, 204  
McCool, J.: 319  
McCormick, M. P.: 758, 765, 797, 798, 799,  
800, 801, 802, 803, 804, 837, 841, 842,  
848, 855, 858, 864  
McCurdy, D. A.: 1093, 1114  
McDaniel, P. R.: 473, 474, 475  
McDermid, I. S.: 840  
McElroy, J. L.: 790  
McGee, T. J.: 765  
McGhee, R. J.: 14  
McGinley, C. B.: 97, 634  
McGowan, A. R.: 151, 152  
McGowan, D. M.: 360  
McGrath, B. E.: 48  
McGraw, S. M.: 153, 154, 186  
McGreevy, J. L.: 539, 1051, 1094, 1095  
McHugh, J.: 982  
McKeon, J.: 387, 388  
McManus, J. W.: 212  
McMinn, J. D.: 290  
McPeters, R. D.: 786  
Meador, W. E., Jr.: 655  
Meadows, K. R.: 33, 1096  
Mee, D.: 609  
Mehrotra, P.: 938, 939, 941, 942  
Mei, C.: 1125  
Melson, N. D.: 79, 94  
Mendenhall, M. R.: 90

Mendoza, J.: 1049  
Meng, C. I.: 247  
Mercker, E.: 1072  
Meriwether, J. W.: 805  
Merski, N. R.: 124  
Messina, M. D.: 216, 217, 218  
Metcalf, V. L.: 1003, 1004, 1116  
Metwally, M.: 747  
Metzger, F. B.: 1097, 1098, 1099, 1100  
Mewaldt, R. A.: 753  
Meyers, J. F.: 653, 659, 660, 661  
Mi, Y.: 492  
Micol, J. R.: 229, 580  
Middleton, D. J.: 947  
Mikulas, M. M., Jr.: 361  
Miles, T.: 825  
Miley, S. J.: 80, 111, 125  
Millard, M. W.: 1152  
Miller, A. J.: 765  
Miller, G. D.: 170  
Miller, J.: 1211, 1224  
Miller, J. B.: 692, 735  
Miller, J. D.: 603  
Miller, J. L.: 362, 363, 364  
Miller, L. S.: 661  
Miller, S. P.: 972  
Mills, C. T.: 227  
Mineck, R. E.: 81, 230  
Miner, G. A.: 476, 655  
Miner, P. S.: 916, 979, 986, 987, 988, 989,  
1043  
Minguet, P. J.: 365  
Minnett, P. J.: 894  
Minnis, P.: 842, 843, 870, 881, 882, 883,  
884, 885, 886, 887, 894  
Mirdamadi, M.: 328  
Mitchell, A. M.: 61  
Mitchell, M.: 228  
Mitcheltree, R. A.: 237, 238, 581, 582, 612  
Mitchum, M. V.: 502, 955  
Mlynczak, M. G.: 763, 805, 806, 807, 808,  
809, 810, 811, 833  
Moas, E., Jr.: 711  
Monell, D. W.: 264  
Montgomery, R. C.: 234, 635  
Moon, B.: 586  
Moore, A. A.: 250, 1044, 1046, 1200, 1201  
Moore, C. L.: 270  
Moore, T. R.: 748  
Morano, E.: 1027, 1028  
Morelli, E. A.: 160  
Morello, S. A.: 82  
Morgan, R. G.: 609  
Morris, M. J.: 91  
Morris, N. A.: 662, 663  
Morris, W. D.: 245  
Morrison, C. A.: 1168  
Morrison, J. H.: 11  
Morton, J.: 696, 705  
Moss, J. N.: 549, 550, 551, 552, 583, 584,  
585, 612  
Motter, M. A.: 231  
Moul, T. M.: 148, 161, 173  
Mueller, A. W.: 1056, 1101, 1110, 1129  
Muilenburg, D. A.: 110  
Mukhopadhyay, V.: 162, 163  
Munger, J. W.: 739  
Murphy, K. D.: 1102  
Murray, K. E.: 1173, 1174  
Murri, D. G.: 219  
Murri, G. B.: 366, 367, 374  
Myers, M. K.: 1064

N

Nagchaudhuri, A.: 297  
Nagurny, W. G.: 528  
Nahormek, P. A.: 905  
Naik, D. A.: 83  
Namkung, J. S.: 1157  
Namkung, M.: 423, 424, 425, 426  
Nance, R. P.: 586  
Naranjo, F. L.: 1174  
Natarajan, M.: 753, 754, 755  
Nath, S.: 425, 426  
Naumov, S. F.: 318  
Nealy, J. E.: 1221, 1222  
Neece, R. T.: 517, 524  
Neely, A. J.: 609  
Neil, D. O.: 812  
Nelson, M. L.: 956, 965, 990, 1189, 1190  
Nemeth, M. P.: 389, 708, 712, 713  
Nesbitt, D. J.: 806, 807  
Newell, R. E.: 620  
Newman, J. C., Jr.: 333, 345, 362, 368, 369,  
370, 371, 391, 392, 408, 409, 410, 414,  
689, 690, 714  
Newman, L.: 796  
Newman, P. A.: 58, 59, 84  
Newton, R.: 787  
Ng, G. S.: 715  
Ng, L. L.: 543  
Nguyen, D. T.: 974  
Nguyen, T. D.: 651  
Nicholson, J. Y.: 21, 668, 669  
Nicol, D. M.: 675, 936, 938, 948, 954, 1045  
Nicolaidis, R. A.: 66, 575, 1019, 1029  
Nicolson, J. Y.: 670  
Nielsen, J. E.: 786

Nixon, M. W.: 171, 178  
Noderer, K. D.: 215  
Nold, D. E.: 167  
Nolf, S. R.: 759, 771  
Noll, T. E.: 164  
Noor, A. K.: 372, 716, 991  
Norbury, J. W.: 898, 1147, 1148, 1224  
Norman, T. L.: 373  
Northam, G. B.: 199, 203, 393, 605  
Nowak, R. J.: 587  
Nowicki, G. D.: 620, 752, 773, 785, 864  
Nuckolls, W. E.: 1122

## O

O'Brien, T. K.: 355, 356, 365, 367, 374,  
375, 421, 684  
O'Neill, P. M.: 1212  
Obando, R. A.: 966  
Oden, J. T.: 1006  
Oglesby, D. M.: 636, 637  
Ohmura, A.: 871, 895  
Olander, D. S.: 807, 808  
Olsen, G. C.: 587  
Olson, J. O.: 771  
Olson, J. R.: 769, 813  
Orwoll, R. A.: 473  
Osborn, M. T.: 814, 853  
Oseguera, R. M.: 131  
Otto, J. C.: 31  
Outlaw, R. A.: 417  
Owens, L. R., Jr.: 230  
Owens, M.: 765

## P

Paden, J.: 888  
Padula, S. L.: 921, 922  
Palikonda, R.: 883, 884  
Palmer, M. T.: 165, 166  
Palumbo, D. L.: 675, 948, 1039, 1045  
Pandey, D. K.: 888  
Pao, J. Z.: 984  
Pao, S. P.: 9, 29, 85  
Papageorgiou, D. T.: 563, 588  
Pappa, R. S.: 717  
Parham, T.: 380  
Parikh, P. C.: 46  
Park, J. H.: 775, 781, 782  
Parker, F. R.: 501, 1048  
Parlette, E. B.: 94, 113  
Parrish, A.: 758, 832, 840  
Parrish, R. V.: 167, 187, 1154  
Parrott, T. L.: 118, 1126  
Patel, J. U.: 1206  
Patel, P. D.: 518

Pater, R. H.: 437, 477, 478, 480, 487  
Patra, A.: 1006  
Patrick, M.: 373  
Pauley, H.: 86  
Paull, A.: 609  
Paulson, J. W., Jr.: 23  
Paulson, S.: 990  
Paulson, S. S.: 965  
Pearson, A. E.: 168  
Pearson, S. D.: 1202  
Pearsons, K. S.: 1066  
Pegg, R. J.: 169  
Pellett, G. L.: 479  
Pennock, S. T.: 534  
Perrin, A.: 815  
Perry, B., III: 164, 170, 175  
Perry, C. A.: 718  
Person, L. H., Jr.: 220  
Peters, J. M.: 372  
Pew, R. W.: 134  
Phan, M.: 507  
Phan, M. Q.: 719, 963  
Philippe, J. J.: 1072  
Phillips, M. R.: 207, 220  
Phillips, M. S.: 1191  
Phillips, W. P.: 87  
Piascik, R. S.: 376, 414, 427, 428, 430  
Piatak, D. J.: 171  
Pierce, R. B.: 776, 816, 817  
Pinelli, T. E.: 1184, 1185, 1187, 1188, 1192,  
1193, 1194, 1195, 1196, 1197, 1198, 1199  
Pinker, R. T.: 889, 895  
Pinson, L. D.: 695  
Pinto, J. P.: 740  
Pippin, H. G.: 272, 303, 304, 307, 309, 312,  
313, 314  
Pirzadeh, S.: 46  
Pitts, M. C.: 787, 818, 838  
Plentovich, E. B.: 105  
Poe, C. C., Jr.: 184, 344, 377, 378, 379, 401  
Poggio, A. J.: 534  
Polak, W.: 982  
Poling, D. R.: 51  
Ponsardin, P.: 627  
Ponton, M. K.: 1103, 1112  
Poole, L. R.: 819, 820, 849, 855, 856, 857  
Pope, A. T.: 908, 909  
Pope, D. S.: 55, 1077  
Popelka, D.: 380  
Popernack, T. G., Jr.: 226  
Portanova, M. A.: 363, 364, 381, 382, 383,  
384, 385  
Porter, L.: 609  
Portmann, R. W.: 810



Posenau, M-A.: 917  
 Pothen, A.: 950  
 Pototzky, A. S.: 175, 188, 290  
 Potter, B. D.: 480  
 Potter, R. C.: 125  
 Pougatchev, N. S.: 821, 822  
 Powell, C. A.: 1104, 1105  
 Powell, K. A.: 839  
 Powell, R. W.: 237, 238, 239, 250, 1044,  
 1201  
 Prasad, C. B.: 322, 323, 325, 331, 678  
 Pratt, J. R.: 490, 494, 497  
 Preisser, J. S.: 1072, 1099, 1100  
 Press, H. N.: 165, 166  
 Preston, O. W.: 211  
 Pretlow, R. A.: 1131  
 Price, D. B.: 284  
 Price, J. M.: 549, 550, 584, 585  
 Prichard, D. S.: 1106  
 Principe, J. C.: 231  
 Pritchard, J. I.: 183  
 Proctor, F. H.: 132  
 Proffitt, M. H.: 780  
 Progar, D. J.: 495, 496  
 Prosser, W. H.: 386, 387, 388, 429  
 Protz, R.: 748  
 Pruett, C. D.: 88, 589, 590  
 Pueschel, R.: 787  
 Puram, C. K.: 637  
 Purcell, P. N.: 829

## Q

Quach, C. C.: 291  
 Quackenbush, T. R.: 820  
 Qualls, G. D.: 1222  
 Queen, E. M.: 246  
 Quigley, C. J.: 701, 702

## R

Radespiel, R.: 89  
 Radloff, H. D.: 389  
 Ragsdale, W. A.: 214  
 Rahier, G.: 1123  
 Rahman, Z-U.: 629, 638  
 Rai, M. M.: 591  
 Raj, P.: 69  
 Rajagopalan, G.: 1121  
 Raju, I. S.: 390, 391, 392, 729  
 Ralston, J.: 86  
 Rancourt, J. D.: 481  
 Randall, D. A.: 897  
 Raney, D. L.: 220, 290  
 Rankin, C. C.: 723  
 Ransom, J. B.: 694

Ransone, P. O.: 357, 393  
 Raper, O. F.: 834  
 Rash, L. C.: 221  
 Rault, D. F.: 247, 592, 593, 594, 595, 610  
 Rausch, R. D.: 15  
 Reaves, M. C.: 276  
 Reddy, C. J.: 256, 257, 258, 513, 514, 519,  
 520, 521, 522  
 Reed, J. C.: 596  
 Regan, C. R.: 1107  
 Reginatto, M.: 1221, 1223  
 Rehder, J. J.: 172, 967  
 Rehfield, L. W.: 720  
 Reichle, H. G., Jr.: 759, 760  
 Reinhart, W. F.: 940  
 Reisinger, A. R.: 823  
 Remsberg, E. E.: 824, 825, 832  
 Rezaeepazhand, J.: 721  
 Rhew, R. D.: 639  
 Rhode, M. N.: 90  
 Rhodes, M. D.: 291, 667  
 Ribner, H. S.: 1108  
 Richey, E., III: 394  
 Richter, D.: 1164  
 Rickard, S. J.: 91  
 Ricks, W. R.: 4, 1038  
 Riggins, D. W.: 5, 204  
 Riggs, H. R.: 726  
 Rightler, K. S.: 790  
 Riley, C. J.: 119, 597, 968  
 Rimbey, P. R.: 133  
 Rinsland, C. P.: 757, 770, 794, 815, 821,  
 822, 826, 827, 834, 854, 1134, 1136,  
 1141  
 Riris, H.: 663  
 Ristorcelli, J. R.: 598, 599, 1078  
 Ritchey, N. A.: 895  
 Ritter, J. A.: 748  
 Ritter, J. R.: 21, 670  
 Rivera, J. A., Jr.: 2  
 Rivers, H. K.: 393  
 Rivers, R. A.: 7, 214  
 Rizi, V.: 855  
 Rizzi, S. A.: 651, 1082, 1102, 1124  
 Roback, V. E.: 111  
 Roberts, W. L.: 1152  
 Robinson, D. F.: 92, 93  
 Robinson, D. M.: 735  
 Robinson, J. C.: 709  
 Robinson, J. H.: 1109  
 Roche, A. E.: 762  
 Rock, K. E.: 202, 205  
 Rodi, P. E.: 200, 600  
 Roe, P. L.: 1030

- Roettker, W. A.: 292  
 Rogers, C.: 374  
 Rogers, D. P.: 881  
 Rogers, J. L., Jr.: 969, 970  
 Rogers, R. C.: 204  
 Rogers, W. H.: 134, 165, 166  
 Rogers, W. P.: 1087  
 Rogowski, R. S.: 1153, 1155, 1157, 1158,  
 1159  
 Rohrbach, W. R.: 1107  
 Roland, G.: 794  
 Romero, J.: 872  
 Rood, R. B.: 786  
 Roosta, M.: 735  
 Rosback, T.: 138  
 Rose, F. G.: 870  
 Rose, W.: 1058  
 Rosenfield, J. E.: 786  
 Ross, H. M.: 148, 161, 173  
 Rothmayer, A. P.: 141  
 Roulet, N. T.: 748  
 Rouse, M.: 324, 395  
 Rouse, W. R.: 748  
 Rousseau, C. Q.: 396, 397, 684  
 Rubinstein, R.: 601, 617  
 Rubira, A. F.: 481  
 Rudisill, M.: 174  
 Rumsey, C. L.: 94, 95  
 Rushby, J.: 971  
 Russell, J. M., III: 762, 780, 781, 782, 809,  
 817, 824, 828, 829, 830, 831, 833  
 Russell, J. W.: 277  
 Russinoff, D. M.: 992  
 Rutledge, C. K.: 1101, 1110, 1129
- S**
- Saaltink, M.: 982  
 Sadrehaghighi, I.: 923  
 Saether, E.: 727, 728  
 Salas, M. D.: 71, 602, 1017  
 Saltz, J.: 586  
 Sandford, S. P.: 1162  
 Sandholm, S. T.: 739, 749  
 Sandusky, D. A.: 351, 398, 399, 446  
 Sanetrik, M. D.: 79, 94, 113  
 Sankar, B. V.: 358, 400  
 Santa Maria, O. L.: 1111, 1122  
 Sarkis, M.: 1009  
 Sawyer, J. W.: 1230  
 Scallion, W. I.: 96  
 Schaefer, J.: 437  
 Scheidegger, A. P.: 1156  
 Scherner, M. J.: 255, 259  
 Schiermeier, J. E.: 694  
 Schimmel, M. L.: 143, 261, 503  
 Schimmerling, W.: 1211, 1214, 1220  
 Schmidlin, F. J.: 765  
 Schmidt, E. O.: 890  
 Schmidt, M.: 283  
 Schmunk, R. B.: 965, 990  
 Schneider, J. P.: 1147, 1148  
 Schott, T. D.: 1160  
 Schroeder, L. C.: 255, 259, 532  
 Schultz, K.: 269  
 Schultz, K. J.: 1070  
 Schuster, G. L.: 664  
 Schwoerke, S.: 682  
 Scott, A. D., Jr.: 744, 745, 746  
 Scott, M. A.: 267  
 Scott, R. C.: 175  
 Scotti, S. J.: 722  
 Sebacher, D. I.: 792, 793  
 Seidel, G.: 1231  
 Seiner, J. M.: 1058, 1112, 1113, 1128  
 Sen, J. K.: 375  
 Sergeev, V. K.: 318  
 Settles, G. S.: 603  
 Setzer, A. W.: 790  
 Sewall, W. G.: 13  
 Shah, G. H.: 219, 222  
 Shannon, D. T., Jr.: 251  
 Shapiro, A.: 1058  
 Sharaf El-Din, H. H.: 67  
 Sharma, S. K.: 400  
 Shenoy, R. N.: 430  
 Shepherd, K. P.: 1081, 1114  
 Sheplak, M.: 97, 634  
 Sherrill, R. T.: 1182  
 Shinn, J. L.: 904, 1207, 1208, 1211, 1212,  
 1213, 1215, 1216, 1217, 1218, 1220,  
 1221, 1222, 1224  
 Shipham, M. C.: 738, 891  
 Shipulski, E. M.: 476  
 Shirinzadeh, B.: 1161  
 Shivakumar, K.: 401  
 Shivakumar, K. N.: 371, 409, 410  
 Shively, D. G.: 515, 516  
 Shortis, M. R.: 640, 641, 642  
 Shortis, T. A.: 604  
 Shu, C-W.: 1018  
 Shuart, M. J.: 331  
 Siddiqi, S. A.: 457  
 Sidilkover, D.: 1030  
 Siegel, M.: 1001  
 Sihver, L.: 904  
 Sikorski, K.: 953  
 Silberberg, R.: 1215, 1218  
 Silcox, R. J.: 1003, 1004, 1086, 1115, 1116  
 Silva, W. A.: 176

Silverman, E. M.: 293, 294  
 Simha, R.: 933  
 Simitzes, G. J.: 721  
 Simmons, J. M.: 609  
 Simonsen, L. C.: 1204, 1205, 1214, 1219,  
 1222  
 Simpson, J. O.: 482  
 Simpson, J. W.: 426  
 Singer, B. A.: 98, 99, 927  
 Singh, H. B.: 739  
 Singh, M. P.: 1125  
 Sinha, N.: 1058  
 Sinha, R.: 264  
 Siochi, E. J.: 483, 484, 485, 486  
 Siskind, D. E.: 832  
 Situ, W.: 1140  
 Skeens, K. M.: 842  
 Skinner, K.: 609  
 Sleight, D. W.: 6, 184, 729, 730  
 Slemp, W. S.: 499  
 Smith, B. T.: 387, 388  
 Smith, C. D.: 1091, 1092  
 Smith, G. L.: 892, 893  
 Smith, J. G., Jr.: 448, 449, 450, 451, 452,  
 453, 454, 458, 464, 486  
 Smith, L. A.: 100  
 Smith, M. A.: 1134, 1136, 1141  
 Smith, M. W.: 605  
 Smith, P. J.: 945  
 Smith, R. C.: 1003, 1004  
 Smith, R. E.: 917, 923, 924, 925  
 Smith, R. M.: 993  
 Smith, R. W.: 667  
 Smith, W. L., Jr.: 870, 885, 886, 887, 894  
 Sneddon, M. D.: 1066  
 Snoha, J. J.: 500  
 Snow, W. L.: 640, 641, 642  
 So, R. M.: 101, 102  
 Sobieszczanski-Sobieski, J.: 158, 177, 180,  
 181, 1231, 1232  
 Soderman, P. T.: 1111  
 Solomon, S.: 810  
 Somani, A. K.: 949  
 Somerday, B. P.: 419  
 Sommer, T. P.: 102  
 Song, K. D.: 1139  
 Soucek, M. D.: 478, 487  
 South, B. W.: 1138  
 South, J. C., Jr.: 1117  
 Southward, R. E.: 488, 489  
 Spall, R. E.: 103  
 Sparks, D. W., Jr.: 288, 681, 731  
 Spence, P. L.: 1080  
 Spencer, B., Jr.: 104  
 Spencer, D. A.: 252  
 Spencer, R.: 1120  
 Speziale, C. G.: 101, 606, 607, 608  
 Spiegel, P.: 1070  
 Spina, E. F.: 97, 634  
 Spletstoeser, W. R.: 1070  
 Srinathkumar, S.: 185  
 Srinivas, V.: 178  
 Srivas, M. K.: 972  
 St. Clair, A. K.: 444, 476, 481, 488, 489,  
 490, 491, 492, 497, 499  
 St. Clair, T. L.: 315, 316, 402, 445, 474,  
 475, 482, 491, 493, 494, 495, 496, 497  
 Stadler, J. H.: 295  
 Stalker, R. J.: 609  
 Stallings, R. L., Jr.: 105  
 Stanley, D. O.: 239, 241, 302  
 Starke, E. A., Jr.: 431  
 Starnes, J. H., Jr.: 325, 326, 345, 372, 678,  
 689, 690, 708, 718, 721, 723  
 Staton, L. D.: 254  
 Stauder, J.: 735, 833  
 Staylor, W. F.: 895  
 Stephens, D. G.: 1118, 1119, 1142  
 Stephens, R. M.: 634  
 Stern, S. A.: 492  
 Sternfeld, H.: 1120  
 Stevens, R. K.: 740  
 Stewart, E. C.: 2, 7  
 Stewart, S. H.: 1191  
 Stiller, G. P.: 834  
 Stoakley, D. M.: 444, 476  
 Stocks, B. J.: 734, 736, 737, 741, 742, 790  
 Stockum, R. W.: 323  
 Stockwell, A. E.: 179  
 Stoica, I.: 950  
 Stone, K. V.: 829  
 Stone, R. S.: 890  
 Storaasli, O. O.: 724, 973, 974  
 Stouffer, S. D.: 203  
 Stough, H. P., III: 137, 138  
 Stoughton, J. W.: 966  
 Stoumbos, T.: 326  
 Stowe, L. L.: 774, 775  
 Straub, F.: 1059, 1060  
 Streett, C. L.: 106, 543  
 Striz, A. G.: 180, 181  
 Stroud, W. J.: 694  
 Stuever, R. A.: 7  
 Suchkov, A. B.: 206  
 Sulla, J. L.: 731  
 Sullivan, B. M.: 1114  
 Sumpter, R.: 361  
 Sun, X-H.: 951, 952

Sutherland, L. C.: 1050  
Sutton, M. A.: 408, 409, 410  
Swaminathan, P. K.: 247  
Swanson, R. C., Jr.: 89  
Switzer, G. F.: 132  
Syed, H. I.: 1179, 1180  
Syed, O.: 990  
Sze, N. D.: 827

## T

Ta'asan, S.: 71, 1011, 1015, 1016, 1031  
Tabachnick, B. G.: 1066  
Tabibi, B. M.: 655  
Tadghighi, H.: 1059, 1060, 1091, 1121  
Taghavi, R. R.: 228  
Tai, H.: 904, 1143, 1207, 1217  
Takallu, M. A.: 17  
Talay, T. A.: 241, 249  
Talbot, R. W.: 739, 743  
Tam, C. K.: 1078  
Taminger, K. M.: 432  
Tanner, J. A.: 703, 716  
Tanner, S. E.: 118, 1126  
Tansock, J.: 735  
Tanveer, S.: 1001  
Tappan, N. D.: 1171, 1172  
Tartabini, P. V.: 233, 235, 610  
Tatum, K. E.: 107, 976  
Taylor, A. C., III: 58, 59, 84  
Taylor, J. C.: 247, 551, 552  
Taylor, L. T.: 481  
Taylor, L. W., Jr.: 269  
Taylor, T. D.: 1170  
Tcheng, P.: 226, 643, 645, 646  
Temple, D.: 1151  
Tenney, D. R.: 317  
Tenney, Y. J.: 134  
Tessler, A.: 679, 680, 725, 726, 727, 728  
Teter, J. E., Jr.: 276  
Thibeault, S. A.: 1214, 1220  
Thomas, A. M.: 925  
Thomas, J. L.: 108, 109, 1117  
Thomas, M. E.: 1171, 1172  
Thomas, R. H.: 1122  
Thomas, S.: 879, 880  
Thomason, L. W.: 804, 818, 835, 836, 837,  
838, 857  
Thompson, A.: 246  
Thompson, D. S.: 488, 489  
Thompson, D. W.: 488, 489  
Tidriri, M. D.: 1032, 1033  
Tiemsin, P. I.: 512  
Ting, L.: 538, 1068  
Tischner, L.: 283  
Tiwari, S. N.: 923, 1181

Tobbe, P. A.: 234  
Tolson, R. H.: 996  
Tong, E.: 283  
Torres-Pomales, W.: 994  
Towe, E.: 632, 633  
Townsend, J. C.: 172  
Townsend, L. W.: 898, 1144, 1149, 1150,  
1208, 1215, 1218  
Tracy, M. B.: 105  
Tran, S. Q.: 182  
Treiber, D. A.: 110  
Treppe, C. R.: 804, 814, 839, 850, 851  
Trexler, C. A.: 200, 201  
Tribble, A. C.: 318  
Trilling, T. W.: 219  
Tripathi, R. K.: 898, 904, 1150, 1215, 1218,  
1224  
Tripp, J. S.: 226, 535, 643, 644, 645, 646  
Trollope, W. S.: 790  
Troutman, P. A.: 264  
Tsao, C. H.: 1215, 1218  
Tsay, S.-C.: 890  
Tsou, J. J.: 758, 832, 840  
Tsui, T.: 727, 728  
Tuck, A. F.: 781  
Tung, C.: 1070, 1123  
Turkel, E.: 1012, 1013  
Turner, C. P.: 298  
Turner, R. E.: 761, 762, 777  
Turner, T. L.: 1124, 1125  
Tuttle, S. L.: 609  
Tweed, J.: 1061  
Tyson, R. W.: 665

## U

Ueng, S. K.: 953  
Ulrey, M. L.: 948, 1045  
Unal, R.: 253, 302, 1046  
Upchurch, B. T.: 636, 637  
Usry, J. W.: 661

## V

Vadnais, C. M.: 883  
Vairo, D. M.: 45  
Van Dam, C. P.: 80, 111, 125, 126  
Van Rosendale, J.: 942, 1117  
Van der Wall, B. G.: 1123  
Vanek, M.: 735  
Vannell, E. C.: 296  
Vasquez, P.: 1156, 1162  
Vatsa, V. N.: 83, 95, 112, 113, 1013  
Vaughn, W. L.: 357  
Veazie, D. R.: 403, 416  
Vedeler, E.: 511, 523

Veiga, R. E.: 841, 855  
Venkatakrisnan, V.: 1008, 1025, 1026,  
1028, 1034, 1035, 1036  
Verhaagen, N. G.: 114, 611  
Vijgen, P. M.: 126  
Virgin, L. N.: 1102  
Visconti, G.: 855  
Voland, R. T.: 205  
Vondran, R. F.: 1197

## W

Wagner, J. A.: 420, 433  
Wagner, W.: 1123  
Wahls, R. A.: 115, 230  
Wait, J. L.: 905  
Walen, D. B.: 133  
Walker, B. S.: 14  
Walker, G. H.: 666  
Walker, G. W.: 223  
Wallace, T. A.: 434, 435  
Walsh, B. M.: 1175  
Walsh, J. L.: 56, 116, 183  
Walter, M. A.: 323  
Wang, J. T.: 6, 184, 395, 729, 730  
Wang, L-G.: 632, 633  
Wang, P-H.: 765, 842, 843, 855, 856, 857  
Ware, G. M.: 37  
Warren, E. S.: 117  
Washburn, A. E.: 91, 114, 611  
Waszak, M. R.: 185, 206  
Waters, J. W.: 762, 777  
Waters, W. A., Jr.: 322, 323  
Watson, W. R.: 118, 1079, 1126, 1132  
Watts, E.: 318  
Watzlavick, R. L.: 80  
Weathers, J. M.: 234  
Weidner, J. P.: 201  
Weilmuenster, K. J.: 23, 119, 237, 238, 558  
Weinstein, L. M.: 135, 603, 1163  
Weir, D. S.: 1127  
Weisenborn, M. D.: 975  
Weisenstein, D. W.: 827  
Weiser, E. S.: 347, 498, 500  
Welch, S. S.: 270, 482, 717  
Wen, J. T.: 998  
Wendt, M.: 609  
Wesseling, P.: 1037  
West, J. W.: 526, 621  
Weston, R. P.: 172  
Whipple, R. D.: 45  
White, A. L.: 1039  
White, J. A.: 47  
White, N. H.: 245  
Whitehead, J. H.: 125  
Whitehead, P. R.: 665

Whiteman, D.: 765  
Whitlock, C. H.: 871, 889, 895, 1047  
Whitlock, M.: 63  
Wiedemann, K. E.: 412, 435  
Wielicki, B. A.: 874, 875, 890, 896, 897  
Wieseman, C. D.: 186  
Wilcox, F. J., Jr.: 44, 120  
Wilhite, A. W.: 241  
Wilkinson, J. E.: 1128  
Wilkinson, S. P.: 352, 404, 466, 467  
Will, R. W.: 291  
Willard, P. E.: 80, 125  
Willard, S. A.: 376, 405, 428  
Williams, D. H.: 131  
Williams, M. D.: 655, 666  
Williams, R. L., II: 996  
Williams, S. B.: 956, 975  
Williams, S. P.: 167, 187, 1154  
Williams-Byrd, J. A.: 1169  
Williford, C. B.: 1103  
Wilmoth, R. G.: 275, 550, 551, 552, 586,  
610, 612  
Wilson, J. C.: 236, 787  
Wilson, J. W.: 898, 899, 900, 901, 904,  
1135, 1144, 1146, 1206, 1207, 1208,  
1209, 1210, 1211, 1212, 1213, 1214,  
1215, 1216, 1217, 1218, 1219, 1220,  
1221, 1222, 1223, 1224  
Wilson, L. F.: 954  
Wilson, L. G.: 479  
Wilson, M.: 925  
Wilson, M. L.: 406  
Wilson, M. R.: 1101, 1110, 1129  
Wilson, R. S.: 879, 880  
Wincheski, R. A.: 425, 426  
Winfree, W. P.: 491, 501, 1048  
Wing, D. J.: 41, 121, 122  
Winker, D. M.: 783, 814, 839, 844, 845,  
846, 847, 848, 849, 850, 851  
Winstead, E. L.: 740, 741, 742, 791, 792,  
793, 796  
Wise, S. A.: 1170, 1171, 1172, 1176, 1177  
Witkowski, D. P.: 115  
Witte, D. W.: 976  
Wleziem, R. W.: 123  
Wofsy, S. C.: 739  
Wolfe, H. F.: 1082  
Won, C-C.: 731  
Wong, D. T.: 647  
Wong, T-C.: 68  
Wood, D. V.: 208  
Wood, J. S.: 1222  
Wood, W. A.: 613  
Woodard, S. E.: 283, 297

Woodell, G. A.: 631  
Woods, D. C.: 787, 814, 852, 853  
Woods, W. C.: 124  
Woods-Vedeler, J. A.: 188  
Woodson, M. B.: 407  
Worden, H.: 854  
Working, D. C.: 468, 493  
Woronowicz, M. S.: 595  
Wortman, J. J.: 300  
Wrenn, G. A.: 146  
Wright, F. L.: 115  
Wright, K. D., II: 648  
Wu, K. C.: 709, 732  
Wu, S. F.: 614  
Wu, S. M.: 524  
Wu, X.: 1029  
Wu, X. R.: 409, 410  
Wu, Z.: 180, 181  
Wu, Z.-X.: 620

#### X

Xue, D. Y.: 730

#### Y

Yager, T. J.: 189, 190, 191, 192, 193, 194,  
195  
Yalamanchili, S. R.: 331  
Yamamoto, H.: 492  
Yamamoto, K. J.: 1130  
Ybarra, G. A.: 524  
Yee, J. H.: 811  
Yetter, J. A.: 136

Yip, L. P.: 80, 111, 125, 126  
Yost, W. T.: 905, 1055, 1131, 1178  
Young, C. P., Jr.: 225, 226, 232  
Young, D. B.: 1181  
Young, D. F.: 883, 884, 886, 887  
Young, K. C.: 56, 116, 183  
Young, P. R.: 484, 485, 499  
Young, S. D.: 130  
Yu, E.: 649  
Yu, Y. H.: 1072  
Yuan, F. G.: 480  
Yuan, K. A.: 196  
Yue, G. K.: 827, 842, 843, 855, 856, 857  
Yue, J. J.: 354

#### Z

Zander, R.: 794, 826, 827, 834  
Zang, T. A.: 590  
Zawodny, J. M.: 786, 837, 858  
Zeitlin, C. J.: 1224  
Zhang, C. X.: 903  
Zhang, H. S.: 101  
Zhang, T.: 949  
Zhao, W.: 408, 409, 410  
Zhou, Y.: 537, 556, 557, 579, 615, 616, 617  
Zhu, J.: 952  
Ziegenbein, P.: 1120  
Zischka, P. J.: 720  
Zollinger, L.: 735, 833  
Zorumski, W. E.: 1079, 1132  
Zubair, M.: 52, 65  
Zuckerwar, A. J.: 650, 651, 652, 1050, 1133

## Organization Index

### Office of Director

#### Office of Director (A)

27, 537, 538, 539, 541, 544, 545, 546, 547, 548, 555, 556, 557, 563, 570, 575, 579, 588, 596, 598, 599, 601, 602, 604, 606, 607, 611, 615, 616, 617, 910, 911, 912, 914, 918, 926, 927, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 941, 942, 943, 944, 945, 947, 948, 949, 950, 951, 952, 953, 954, 1000, 1001, 1003, 1004, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1078, 1117

#### Office of Education (AE)

1181, 1225

#### Office of Safety, Environmental and Mission Assurance (AF)

531

### Aeronautics Program Group

#### Aeronautics Systems Analysis Division (BA)

37, 128, 147, 150, 162, 163

#### Subsonic Transportation Office (BB)

82, 156, 249, 329

### Space and Atmospheric Sciences Program Group

#### Atmospheric Sciences Division (CA)

505, 571, 578, 619, 620, 624, 627, 630, 664, 733, 734, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 748, 749, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 957, 1047, 1134, 1136, 1140, 1141

#### Space Systems and Concepts Division (CB)

235, 237, 238, 239, 240, 242, 245, 250, 251, 252, 264, 277, 569, 709, 1041, 1044, 1046, 1182, 1200, 1201, 1204, 1205, 1214

#### Space Projects Office (CC)

735

Spacecraft Office (CE)

262, 263, 268, 271, 272, 303, 304, 307, 309, 312, 313, 314, 318, 1202

## Research and Technology Group

Research and Technology Group (D)

40, 172, 967, 991

Aerodynamics Division (DA)

8, 9, 10, 13, 16, 17, 18, 19, 20, 28, 29, 34, 35, 41, 42, 44, 46, 48, 50, 51, 62, 63, 69, 75, 76, 81, 83, 85, 100, 105, 110, 115, 120, 121, 122, 136, 144, 145, 149, 221, 223, 227, 228, 230, 232, 236, 554

Flight Dynamics and Control Division (DC)

1, 3, 4, 7, 12, 45, 72, 73, 74, 80, 86, 91, 111, 125, 126, 127, 129, 131, 132, 134, 137, 138, 139, 148, 155, 160, 161, 165, 166, 167, 168, 173, 174, 185, 187, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 222, 224, 234, 243, 244, 246, 248, 260, 265, 269, 278, 279, 280, 281, 282, 284, 285, 286, 287, 288, 289, 290, 296, 504, 524, 525, 635, 731, 906, 907, 908, 940, 961, 995, 997, 998, 999, 1038

Fluid Mechanics and Acoustics Division (DF)

11, 14, 15, 22, 30, 31, 32, 33, 49, 52, 53, 54, 55, 56, 57, 58, 59, 64, 65, 66, 67, 68, 71, 78, 79, 84, 88, 92, 93, 94, 95, 97, 98, 99, 101, 102, 103, 106, 108, 109, 112, 113, 114, 116, 117, 118, 123, 135, 406, 417, 527, 536, 540, 542, 543, 564, 572, 573, 574, 589, 590, 591, 600, 603, 608, 614, 634, 653, 657, 658, 659, 660, 661, 909, 913, 921, 922, 970, 1049, 1051, 1052, 1053, 1054, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1132, 1137, 1138, 1139, 1142, 1152, 1154, 1161, 1163

Gas Dynamics Division (DG)

21, 23, 24, 25, 26, 36, 43, 47, 60, 61, 70, 87, 89, 90, 96, 104, 107, 119, 124, 197, 198, 199, 200, 201, 202, 203, 205, 229, 241, 247, 275, 479, 549, 550, 551, 552, 558, 559, 560, 561, 562, 565, 566, 567, 568, 577, 580, 581, 582, 583, 584, 585, 586, 587, 592, 593, 594, 595, 597, 605, 609, 612, 613, 666, 668, 669, 670, 968, 976, 1150

Flight Electronics Technology Division (DI)

130, 133, 254, 255, 256, 257, 258, 259, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 532, 534, 629, 631, 638, 654, 662, 663, 675, 915, 916, 928, 929, 958, 962, 966, 971, 972, 977, 978, 979, 980, 982, 983, 985, 986, 987, 988, 989, 992, 994, 996, 1039, 1042, 1043, 1045

Materials Division (DM)

274, 293, 294, 305, 306, 310, 311, 315, 316, 317, 319, 327, 328, 330, 332, 333, 334, 335, 341, 342, 343, 344, 345, 346, 347, 348, 351, 352, 354, 355, 356, 357, 358, 359, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 373, 374, 375, 376, 377, 378, 379, 381, 382, 383,



384, 385, 386, 387, 388, 390, 391, 392, 393, 394, 398, 399, 400, 401, 402, 403, 404, 405, 408, 409, 410, 411, 412, 413, 414, 415, 416, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 473, 474, 475, 476, 477, 478, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 529, 530, 655, 671, 672, 673, 674, 685, 686, 687, 688, 689, 690, 714, 898, 899, 900, 901, 902, 903, 904, 905, 919, 1048, 1055, 1087, 1131, 1135, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1153, 1155, 1157, 1158, 1159, 1172, 1176, 1177, 1178, 1179, 1180, 1203, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1227, 1228, 1229

#### Structures Division (DS)

2, 6, 39, 77, 140, 141, 142, 146, 151, 152, 153, 154, 157, 158, 164, 170, 171, 175, 176, 177, 178, 179, 180, 181, 183, 184, 186, 188, 189, 190, 191, 192, 193, 194, 195, 196, 233, 266, 267, 270, 276, 283, 291, 297, 302, 320, 321, 322, 323, 324, 325, 326, 331, 336, 337, 338, 339, 340, 349, 350, 353, 360, 361, 372, 380, 389, 395, 396, 397, 407, 506, 507, 610, 618, 667, 677, 678, 679, 680, 681, 682, 683, 684, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 710, 711, 712, 713, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 732, 875, 963, 969, 973, 974, 1002, 1005, 1006, 1230, 1231, 1232

## **Technology Applications Group**

#### Technology Applications Group (E)

253, 308

## **Internal Operations Group**

#### Facilities Program Development Office (GF)

1226

#### Facility Systems Engineering Division (GG)

231, 676, 1040

#### Experimental Testing Technology Division (GH)

300, 526, 535, 621, 622, 623, 625, 626, 628, 636, 637, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 1050, 1133, 1160

#### Fabrication Division (GJ)

182, 472, 1156, 1162

#### Aerospace Mechanical Systems Division (GK)

143, 225, 226, 261, 273, 292, 295, 298, 502, 503, 576, 656, 691, 692, 715, 955

#### Aerospace Electronic Systems Division (GK)

299, 528, 533, 632, 633, 1107, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1173, 1174, 1175

Information and Systems Services Division (GM)

917, 920, 923, 924, 925, 946, 956, 959, 960, 964, 965, 975, 984, 990, 993, 981, 1151, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199

**High-Speed Research Project Office**

High-Speed Research Project Office (I)

38, 747, 750

**Hypersonic Vehicles Office**

Hypersonic Vehicles Office (J)

5, 169, 204, 301, 665

**U.S. Army Aviation and Troop Command**

U.S. Army Aviation and Troop Command (Y)

159

## RTOP Index

RTOP 142-20-14 1170	551, 558, 562, 582, 585, 586, 592, 613, 655, 664
RTOP 146-09-04 788, 792	RTOP 232-01-06 237, 238, 239
RTOP 146-90-04 505, 733, 734, 736, 737, 740, 741, 742, 790, 791, 793, 796, 885, 886, 887, 894	RTOP 233-01-01 179, 255, 266, 270, 274, 276, 278, 280, 281, 283, 285, 286, 287, 288, 289, 293, 294, 296, 297, 444, 618, 681, 691, 693, 706, 707, 717
RTOP 148-65-41 865, 866, 867, 868, 882	RTOP 233-01-03 259, 532, 629, 631, 638, 654, 662, 663, 958, 962, 966, 1164, 1165, 1166, 1167, 1173, 1174, 1175
RTOP 148-65-42 778, 780, 817	RTOP 233-01-06 273
RTOP 199-45-16 899, 900, 901, 902, 903, 904, 1135, 1144, 1145, 1146, 1147, 1148, 1149, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1217, 1219, 1220, 1222, 1223, 1224	RTOP 233-02-02 476
RTOP 225-12-02 576	RTOP 233-02-03 481, 488, 489
RTOP 229-01-02 859, 893, 896	RTOP 233-03-02 262, 263, 268, 271, 272, 300, 318, 447, 450, 451, 1202, 1227, 1228, 1229
RTOP 229-02-06 757	RTOP 233-03-03 234, 996
RTOP 229-18-45 872, 878, 880	RTOP 236-01-01 1172, 1176, 1177
RTOP 229-71-45 892	RTOP 236-02-03 298
RTOP 229-81-02 874, 877, 890, 897	RTOP 237-02-02 21, 292
RTOP 229-81-38 761, 776, 777	RTOP 237-03-01 1182
RTOP 232-01-04 23, 24, 87, 90, 119, 124, 229, 246, 248,	RTOP 242-10-01 250, 252, 709, 1041, 1044, 1046, 1200, 1201

RTOP 242-20-05 433	RTOP 424-20-02 1002
RTOP 242-20-08 104, 235, 240, 245, 249, 275, 568, 1204, 1205	RTOP 432-78-00 735
RTOP 242-80-01 70, 96, 243, 244, 247, 265, 552, 559, 581, 583, 584, 597, 668, 669, 670	RTOP 460-21-42 656
RTOP 243-10-01 308, 472, 502	RTOP 460-21-49 627, 863
RTOP 274-00-95 649	RTOP 460-22-93 765, 799, 801, 802, 814, 841
RTOP 297-40-00 359, 394	RTOP 460-41-41 783, 795, 798, 800, 836, 845, 849
RTOP 297-50-00 143, 261, 503	RTOP 460-41-97 843
RTOP 307-50-14 228	RTOP 460-42-09 875
RTOP 307-51-11 789	RTOP 460-44-41 881, 884
RTOP 307-51-13 1140	RTOP 460-48-40 752, 773, 785, 787, 797, 846, 847, 852, 853
RTOP 307-51-14 417	RTOP 464-13-19 840
RTOP 323-17-04 1171	RTOP 464-13-23 758
RTOP 323-43-33 913	RTOP 464-14-34 619, 620
RTOP 370-21-08 753, 754, 755	RTOP 464-23-08 1134, 1136, 11
RTOP 410-10-04 1151	

RTOP 464-23-22  
763, 806, 807, 808, 809, 810, 829, 833

RTOP 464-34-02  
770, 794, 821, 822, 823

RTOP 464-51-01  
578, 764, 766, 769, 813

RTOP 464-54-03  
738, 744, 746

RTOP 464-54-07  
745

RTOP 464-54-11  
739, 743, 748, 749

RTOP 464-54-16  
772, 774, 775, 860, 861, 864

RTOP 466-02-01  
60, 197, 200, 1150

RTOP 466-05-01  
5

RTOP 466-10-04  
665

RTOP 477-40-00  
242

RTOP 477-50-00  
569

RTOP 478-87-00  
264

RTOP 505-53-60  
452

RTOP 505-59-10  
10, 13, 17, 28, 63, 78, 80, 81, 100, 111,  
115, 125, 126, 230

RTOP 505-59-20  
44

RTOP 505-59-30  
8, 18, 35, 76, 120, 121, 227

RTOP 505-59-36  
34, 50, 51, 144, 145, 149, 223

RTOP 505-59-40  
589

RTOP 505-59-50  
11, 26, 52, 57, 64, 65, 66, 88, 97, 98, 99,  
101, 103, 106, 123, 536, 540, 542, 564,  
573, 574, 603, 608, 1139, 1163

RTOP 505-59-52  
53, 118, 1049, 1058, 1075, 1077, 1085,  
1096, 1108, 1132

RTOP 505-59-53  
14, 15, 22, 32, 33, 46, 49, 54, 55, 58,  
59, 67, 68, 79, 84, 94, 95, 102, 108, 109,  
112, 113, 114, 917, 919, 924, 925, 1137

RTOP 505-59-54  
226, 231, 554, 622, 624, 636, 637, 643,  
645, 646, 647, 657, 659, 660, 661, 1050

RTOP 505-59-70  
9, 19, 29, 41

RTOP 505-59-85  
221, 225, 232

RTOP 505-59-88  
203

RTOP 505-60-01  
591

RTOP 505-61-01  
1133

RTOP 505-61-05  
641

RTOP 505-62-30  
20, 122

RTOP 505-62-40  
47, 89, 204

RTOP 505-63-01

729

RTOP 505-63-10

189, 702

RTOP 505-63-36

56, 116, 171, 178, 183, 196, 380, 396,  
397, 921, 922, 1054, 1056, 1059, 1060,  
1069, 1070, 1072, 1084, 1091, 1101,  
1106, 1110, 1123, 1129

RTOP 505-63-50

2, 39, 40, 77, 140, 141, 142, 146, 151,  
152, 153, 157, 158, 162, 164, 170, 175,  
176, 177, 180, 181, 186, 188, 190, 191,  
192, 193, 194, 195, 310, 317, 320, 321,  
322, 326, 327, 328, 331, 334, 335, 341,  
342, 347, 348, 351, 353, 354, 355, 356,  
358, 360, 361, 362, 363, 364, 365, 366,  
367, 370, 374, 375, 381, 382, 383, 384,  
385, 389, 390, 391, 392, 399, 400, 403,  
404, 405, 407, 411, 415, 416, 419, 420,  
421, 422, 432, 434, 437, 438, 440, 441,  
443, 446, 453, 454, 455, 456, 457, 458,  
461, 463, 464, 466, 467, 468, 470, 471,  
473, 474, 475, 480, 482, 483, 484, 485,  
486, 487, 493, 495, 496, 678, 697, 698,  
699, 704, 705, 708, 712, 713, 716, 721,  
970, 991, 1051, 1057, 1065, 1067, 1068,  
1079, 1088, 1090, 1094, 1095, 1109, 1143

RTOP 505-63-53

679, 680, 684, 694, 695, 701, 703, 710,  
711, 724, 725, 726, 727, 728, 730

RTOP 505-64-10

928, 929, 971, 972, 977, 978, 979, 980,  
982, 985, 986, 987, 988, 989, 992, 994

RTOP 505-64-13

4, 7, 134, 187

RTOP 505-64-20

139, 185, 208

RTOP 505-64-30

12, 212

RTOP 505-64-50

915, 916, 983, 1042, 1043

RTOP 505-64-52

3, 155, 160, 168, 206, 213, 214, 215, 256,  
510, 512, 513, 514, 515, 516, 518, 519,  
522

RTOP 505-64-53

906, 907, 908, 909

RTOP 505-64-70

257, 258, 504, 511, 520, 521, 523, 525

RTOP 505-68-20

72, 74, 207

RTOP 505-68-30

42, 69, 86, 110, 148, 161, 173, 210, 216,  
217, 218, 219, 222

RTOP 505-68-70

45, 48, 73, 91, 105, 147, 640

RTOP 505-69-20

128

RTOP 505-69-50

150

RTOP 505-70-59

590

RTOP 505-70-62

30, 31, 36, 43, 61, 92, 93, 107, 198, 199,  
201, 202, 205, 479, 577, 600, 605, 609

RTOP 505-70-63

357, 412, 682, 1230

RTOP 505-70-64

220, 290

RTOP 505-70-69

169, 301

RTOP 505-70-91

1138

RTOP 505-90

1183, 1184, 1185, 1186, 1187, 1188,  
1192, 1193, 1194, 1195, 1196, 1197,  
1198, 1199

RTOP 505-90-52

537, 538, 539, 541, 544, 545, 546, 547,  
548, 555, 556, 557, 563, 570, 575, 579,  
588, 598, 599, 601, 602, 604, 606, 607,  
611, 614, 615, 616, 617, 910, 911, 912,  
914, 918, 926, 927, 930, 931, 932, 933,  
934, 935, 936, 937, 938, 939, 941, 942,  
943, 944, 945, 947, 948, 949, 950, 951,  
952, 953, 954, 1000, 1001, 1003, 1004,  
1007, 1008, 1009, 1010, 1011, 1012,  
1013, 1014, 1015, 1016, 1017, 1018,  
1019, 1020, 1021, 1022, 1023, 1024,  
1025, 1026, 1027, 1028, 1029, 1030,  
1031, 1032, 1033, 1034, 1035, 1036,  
1037, 1078, 1117

RTOP 505-90-53

920, 923, 946, 964, 965, 981, 984, 990,  
993, 1189, 1190

RTOP 505-90-59

163

RTOP 506-40-41

565, 566, 567, 580

RTOP 506-40-61

37

RTOP 506-40-91

549, 550, 560, 561, 593, 594, 595, 610,  
612

RTOP 506-42-11

233

RTOP 506-43-11

469, 477, 478, 498, 499, 1087

RTOP 506-43-31

418, 587

RTOP 506-43-41

267, 291

RTOP 506-43-61

303, 304, 307, 309, 312, 313, 314

RTOP 506-43-71

435

RTOP 506-49-11

302

RTOP 509-10-01

1231, 1232

RTOP 509-10-11

71, 172, 967

RTOP 510-02-10

325

RTOP 510-02-11

332, 344, 373, 377, 378, 379, 388, 401

RTOP 510-02-12

6, 184, 324, 349, 350, 395, 677, 700, 718,  
720

RTOP 510-02-13

82

RTOP 510-20-11

386, 387

RTOP 527-10-00

732

RTOP 532-02-11

429

RTOP 532-06-37

1127

RTOP 537-02-22

650, 1053, 1076, 1112, 1113, 1126, 1128

RTOP 537-03-21

38, 1093, 1114

RTOP 537-03-23

117, 543, 572

RTOP 537-06-20 319, 431, 436, 442, 462	RTOP 538-03-13 1100, 1130
RTOP 537-06-21 372, 722, 1005, 1006	RTOP 538-03-14 1073, 1083, 1086, 1115, 1116, 1125
RTOP 537-06-22 1082, 1102, 1118, 1124, 1142	RTOP 538-03-15 1062, 1066, 1074, 1105, 1119
RTOP 537-07-20 62	RTOP 538-04-11 131, 517
RTOP 537-08-20 167, 209, 940	RTOP 538-04-13 211
RTOP 537-08-21 127, 165, 166, 174	RTOP 538-04-14 129, 132, 393, 642, 820, 856
RTOP 537-09-21 1216, 1221	RTOP 538-04-30 130
RTOP 537-09-23 750	RTOP 538-05-13 83, 136
RTOP 538-01-12 675, 1045	RTOP 538-05-14 16
RTOP 538-01-13 133, 534	RTOP 538-07-11 137, 138
RTOP 538-02-01 425	RTOP 538-07-12 345
RTOP 538-02-10 330, 333, 343, 368, 369, 376, 409, 410, 413, 414, 427, 428, 430, 686, 687, 688, 689, 690, 714, 723	RTOP 538-07-13 1121
RTOP 538-02-11 329, 423, 424, 685, 1048, 1055, 1153, 1157, 1179, 1180	RTOP 538-07-14 1092
RTOP 538-03-11 999, 1052, 1061, 1063, 1064, 1080, 1097, 1098, 1099, 1104, 1122	RTOP 538-07-15 1120
RTOP 538-03-12 653, 1071, 1111, 1161	RTOP 538-07-19 1
	RTOP 538-08-12 747, 883



RTOP 547-60-00

1203

RTOP 578-12-23

889, 895, 1047

RTOP 578-12-25

870, 871

RTOP 578-12-70

869

RTOP 579-21-17

816

RTOP 579-21-44

825, 832

RTOP 579-21-51

767, 768

RTOP 579-21-61

873

RTOP 582-03-31

1169

RTOP 583-02-10

408

RTOP 585-03-11

260, 269, 282

RTOP 590-14-21

683, 719

RTOP 590-14-51

279, 284, 997, 998

RTOP 590-14-61

731

RTOP 592-01-11

524

RTOP 593-11-11

253

RTOP 618-01-02

756

RTOP 618-21-00

815, 826, 827, 834, 854

RTOP 618-22-31

759, 760, 771, 812

RTOP 618-32-33

571, 630, 784, 862, 876

RTOP 665-25-00

805, 811, 824

RTOP 665-25-30

781

RTOP 665-25-31

782, 828, 830, 831

RTOP 665-45-20

803, 818, 837, 838, 839, 848, 850, 851,  
879, 888, 891

RTOP 665-45-53

751, 804, 819, 835, 844, 858

RTOP 665-45-54

842, 855, 857

RTOP 665-45-55

786

RTOP 665-70-01

779

RTOP 673-41-10

762

RTOP 763-23-41

346

RTOP 763-23-71

651

RTOP 776-33-41

1081

RTOP 963-89-00

251, 277

RTOP 967-10-10

241

RTOP 967-30-40

295, 528, 639



REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE January 1996	3. REPORT TYPE AND DATES COVERED Technical Memorandum		
4. TITLE AND SUBTITLE NASA Langley Scientific and Technical Information Output— 1995			5. FUNDING NUMBERS	
6. AUTHOR(S) Susan H. Stewart and Marilou S. Phillips, Compilers				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) NASA Langley Research Center Hampton, VA 23681-0001			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) National Aeronautics and Space Administration Washington, DC 20546-0001			10. SPONSORING/MONITORING AGENCY REPORT NUMBER NASA TM-110220, Volume I	
11. SUPPLEMENTARY NOTES Highlights of the major research accomplishments and applications made at the Langley Research Center are included in NASA TM-4708 entitled "Research and Technology Highlights 1994."				
12a. DISTRIBUTION/AVAILABILITY STATEMENT  Unclassified-Unlimited Subject Category 82 Availability: NASA CASI (301) 621-0390			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This document is a compilation of the scientific and technical information that the Langley Research Center has produced during the calendar year 1995. Included are citations for Formal Reports, High-Numbered Conference Publications, High-Numbered Technical Memorandums, Contractor Reports, Journal Articles and Other Publications, Meeting Presentations, Technical Talks, Computer Programs, Tech Briefs, and Patents.				
14. SUBJECT TERMS Bibliographies; Scientific and technical information; Documentation; Indexes			15. NUMBER OF PAGES 168	
			16. PRICE CODE A08	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

100

