NASA Technical Memorandum 87655

Scientific and Technical Information
Output of the Langley Research Center
for Calendar Year 1985

JANUARY 1986
Scientific and Technical Information
Output of the Langley Research Center
for Calendar Year 1985

Compiled by
Research Information and Applications Division
Langley Research Center
Hampton, Virginia
FOREWORD

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

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

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

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

Andrew J. Hansbrough
Assistant Chief, Research Information and Applications Division
<table>
<thead>
<tr>
<th>Title of conference</th>
<th>Date</th>
<th>Langley contacts</th>
<th>Langley</th>
<th>Non-Langley</th>
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<td>Feb. 6</td>
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<td>Tunnel Seeding Systems for Laser Velocimeters</td>
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<td>C. E. Nichols</td>
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<td>3. Government/Industry Controlled Impact Demonstration (CID)</td>
<td>Apr. 10</td>
<td>R. J. Hayduk</td>
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<td>4. Langley Symposium on Aerodynamics</td>
<td>Apr. 23-25</td>
<td>S. H. Stack</td>
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<td>5. SATA 21st Annual Meeting</td>
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<td>and Dynamics</td>
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<td>F. E. Sabo</td>
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<td>7. Symposium on Vortex Dominated Flows</td>
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<td>10. Control of Flexible Structures (COFS) Workshop</td>
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<td>11. Symposium on Vortex Flow Aerodynamics</td>
<td>Oct. 8-10</td>
<td>J. F. Campbell</td>
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<td>12. First International DIAL Data Collection and Analysis</td>
<td>Nov. 18-21</td>
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<td>13. Workshop on Interfacial Aspects of Adhesion to Carbon</td>
<td>Dec. 10-12</td>
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INTRODUCTION

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

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

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

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

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

The NASA Tech Briefs cited have either been published\(^1\) or submitted in 1985 for publication in "NASA Tech Briefs," a quarterly journal for United States industry, entrepreneurs, and academia. Free subscriptions to this journal are available through the publisher, NASA Tech Briefs, 41 East 42nd Street, Suite 921, New York, New York 10017 or the NASA Technology Utilization Program by writing to the Technology Utilization Office, NASA Scientific and Technical Information Facility, P. O. Box 8757, Baltimore/Washington International Airport, Maryland 21240.

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

\(^1\)Those submitted in 1984 (and therefore listed in the 1984 issue of this document) but published in 1985 have not been listed.
Publication of some journal articles was not known at press time for the 1984 issue of this document. These articles are therefore listed in the 1985 issue.
# AVAILABILITY

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<td>Formal Reports</td>
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<td>Quick-Release Technical Memorandums</td>
<td>5285 Port Royal Road</td>
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<td>Contractor Reports</td>
<td>Springfield, VA 22161</td>
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<td>NASA Scientific and Technical Information Facility (STIF)</td>
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<td>Baltimore/Washington International Airport, MD 21240</td>
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<td>NASA Industrial Applications Centers (IAC)</td>
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<td>Computer Programs</td>
<td>Computer Software Management and Information Center (COSMIC)</td>
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<tr>
<td></td>
<td>112 Barrow Hall</td>
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<td>University of Georgia</td>
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<td>Athens, GA 30602</td>
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<td>Patents:</td>
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<td>Patent Application Specifications</td>
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<td>Washington, DC 20231</td>
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NASA LANGLEY RESEARCH CENTER
Hampton, Virginia

CALENDAR YEAR 1985

PUBLICATIONS FOR OFFICE OF THE DIRECTOR

Formal Reports


Quick-Release Technical Memorandums


Contractor Reports


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<th>Availability</th>
<th>Subject Category</th>
<th>RTOP</th>
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<tr>
<td>61.</td>
<td>Swanson, R. C.; and Turkel, E.</td>
<td>A Multistage Time-Stepping Scheme for the Navier-Stokes Equations.</td>
<td>NAS1-17070 Institute for Computer Applications in Science and Engineering.</td>
<td>NASA CR-172527</td>
<td>February 1985</td>
<td>36 p.</td>
<td>NTIS</td>
<td>Subject Category 34</td>
<td>505-31-83</td>
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<tr>
<td>62.</td>
<td>Tadmor, E.</td>
<td>Complex Symmetric Matrices With Strongly Stable Iterates.</td>
<td>NAS1-17070 Institute for Computer Applications in Science and Engineering.</td>
<td>NASA CR-172542</td>
<td>February 1985</td>
<td>23 p.</td>
<td>NTIS</td>
<td>Subject Category 64</td>
<td>505-31-83</td>
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<td>64.</td>
<td>Tal-Ezer, H.</td>
<td>The Eigenvalues of the Pseudospectral Fourier Approximation to the Operator [ \sin(2x) ] .</td>
<td>NAS1-17070 Institute for Computer Applications in Science and Engineering.</td>
<td>NASA CR-172538</td>
<td>February 1985</td>
<td>11 p.</td>
<td>NTIS</td>
<td>Subject Category 64</td>
<td>505-31-83</td>
</tr>
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Journal Articles and Other Publications

73. Hearth, D. P.; and Boyer, W. J.: Flexibility of Space Structures Makes Design Shaky. Aerospace America, Volume 23, No. 5, May 1985, p. 100-103. (Subject Category 15)

74. Petersen, R. H.; and Driver, C.: Readying Technology for a Super SST. Aerospace America, Volume 23, No. 7, July 1985, p. 56-59. (Subject Category 01 RTOP 505-43-43)

Meeting Presentations


Technical Talks


Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.
Formal Reports
No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations


Technical Talks
No technical talks.

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
Formal Reports

No formal reports.

Quick-Release Technical Memorandums

   (Avail: NTIS Subject Category 02 RTOP 505-43-43)

   (Avail: NTIS Subject Category 01 RTOP 505-43-43)

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Contractor Reports


Journal Articles and Other Publications


Meeting Presentations

   (Subject Category 05 RTOP 505-43-43)

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   (Subject Category 99 RTOP 505-43-43)

   (Subject Category 02 RTOP 505-43-43)

Technical Talks


113. Liu, G. C.; and Liu, C-H.: Computations of Vortex Flows. Presented at the National Tsing Hua University, January 9, 1985, Hsinchu, Taiwan. (Subject Category 02 RTOP 505-43-43)

114. Maglieri, D. J.; Dean, H.; and Densmore, J.: Status and Outlook on Sonic Boom. Presented at the 1985 AIAA Annual Meeting and International Aerospace Exhibit, April 9-11, 1985, Washington, DC. (Subject Category 02 RTOP 505-43-43)


Computer Programs

No computer programs.

Tech Briefs


Patents

No patents.
PUBLICATIONS FOR SPACE TECHNOLOGY FLIGHT EXPERIMENTS OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks


Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.
PUBLICATIONS FOR SCOUT PROJECT OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports


Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

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Technical Talks

No technical talks.

Computer Programs

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Tech Briefs

tech briefs.

Patents

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Formal Reports


Quick-Release Technical Memorandums
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Contractor Reports
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Journal Articles and Other Publications
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Technical Talks
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Computer Programs
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Tech Briefs
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Patents
No patents.
Formal Reports


Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports


Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations


Technical Talks

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


Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.
PUBLICATIONS FOR OFFICE OF DIRECTOR FOR ELECTRONICS

Formal Reports
No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations
No meeting presentations.

Technical Talks
No technical talks.

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
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PUBLICATIONS FOR ANALYSIS AND COMPUTATION DIVISION

Formal Reports

   (Avail: NTIS Subject Category 59 RTOP 505-31-83)

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Quick-Release Technical Memorandums

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(Avail: NTIS Subject Category 64 RTOP 505-31-83)

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Journal Articles and Other Publications

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Meeting Presentations

(Subj ect Category 36 RTOP 506-54-73)

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Technical Talks


Computer Programs


Tech Briefs


Patents

No patents.
Formal Reports


Quick-Release Technical Memorandums


*Aerostructures Directorate, USAARTA (AVSCOM)


Contractor Reports


Journal Articles and Other Publications


Meeting Presentations


Technical Talks


245. Cantrell, J. H., Jr.: Burn Depth Diagnosis. Presented at the George Washington University School of Medicine Health Care Expo '85, August 18-24, 1985, Washington, DC. (Subject Category 71 RTOP 141-20-40)

246. Edwards, S. F.: NASA MAP Program. Presented at the National Conference of Standards Laboratories, November 14, 1985, Hampton, Virginia. (Subject Category 35 RTOP 992-19-00)


257. Zuckerwar, A. J.: Acoustical Determination of Vibrational Relaxation Frequencies in Air. Presented at the University of Rhode Island Physics Colloquium, April 26, 1985, Kingston, Rhode Island. (Subject Category 71 RTOP 505-31-33)

Computer Programs

No computer programs.

Tech Briefs


266. Schutte, P. C.; Cate, K. H.; and Young, S. D.: Dynamic Pressure Calibration Standard. NASA Tech Brief LAR-13443.

Patents


*Aerostructures Directorate, USAARTA (AVSCOM)
Formal Reports

(Avail: NTIS Subject Category 43 RTOP 618-32-33)

Quick-Release Technical Memorandums

(Avail: NTIS Subject Category 36 RTOP 506-54-23)

(Avail: NTIS Subject Category 25 RTOP 506-54-23)

Contractor Reports

(Avail: NTIS Subject Category 36 RTOP 506-54-43)

(Avail: NTIS Subject Category 61 RTOP 619-12-01)

(Avail: STIF Subject Category 33 RTOP 506-54-13)

Journal Articles and Other Publications

(Subject Category 36 RTOP 506-54-23)


Meeting Presentations


286. Devi, V. M.; Sidney, B. D.; Rinsland, C. P.; Smith, M. A. H.; Benner, D. C.; and Fridovich, B.: Tunable Diode Laser Measurements of N$_2^+$ and Air-Broadened Halfwidths: Lines of $^{12}$C$_2$H$_2$, H$_2$O, HDO, and H$_2$O$_2$ in the 1250-1380-cm$^{-1}$ Region. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 95. (Subject Category 72 RTOP 147-23-11)


Technical Talks


Computer Programs

No computer programs.

Tech Briefs


(Subject Category 33)
PUBLICATIONS FOR OFFICE OF DIRECTOR FOR STRUCTURES

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations

No meeting presentations.

Technical Talks

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

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.
PUBLICATIONS FOR STRUCTURES AND DYNAMICS DIVISION

Formal Reports

   (Avail: NTIS Subject Category 05 RTOP 505-45-14)

   (Avail: NTIS Subject Category 05 RTOP 505-45-14)

   (Avail: NTIS Subject Category 05 RTOP 505-33-53)

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   (Avail: IAC Subject Category 62 RTOP 505-33-53)

*Aerostructures Directorate, USAARTA (AVSCOM)
(Avail: NTIS Subject Category 39 RTOP 482-53-53)

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(Avail: NTIS Subject Category 39 RTOP 505-33-53)

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(Avail: NTIS Subject Category 18 RTOP 506-53-43)

(Avail: NTIS Subject Category 62 RTOP 505-33-53)

(Avail: NTIS Subject Category 24 RTOP 534-06-23)

*Aerostructures Directorate, USAARTA (AVSCOM)

Contractor Reports


Journal Articles and Other Publications


Meeting Presentations


360. Daugherty, R. H.; and Stubbs, S. M.: The Generation of Tire Cornering Forces in Aircraft With a Free-Swiveling Nose Gear. Presented at the SAE Aerospace Technology Conference & Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851939. (Subject Category 05 RTOP 505-45-14)

361. Davis, P. A.; Stubbs, S. M.; and Tanner, J. A.: Aircraft Landing Dynamics Facility, A Unique Facility With New Capabilities. Presented at the SAE Aerospace Technology Conference & Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851938. (Subject Category 09 RTOP 505-45-14)


369. Horne, W. B.; Yager, T. J.; and Ivey, D. L.: Results From Recent Studies to Improve Prediction of Ground Vehicle Tire Minimum Dynamic Hydroplaning Speed. Presented at the ASTM Symposium on Tire/Pavement Interface, June 5-7, 1985, Columbus, Ohio. ASTM STP Pending. (Subject Category 05 RTOP 505-45-14)


373. Howell, W. E.; Perez, S. E.; and Vogler, W. A.: Aircraft Tire Footprint Forces. Presented at the ASTM Symposium on Tire/Pavement Interface, June 5-7, 1985, Columbus, Ohio. ASTM STP Pending. (Subject Category 39 RTOP 505-45-14)


*Aerostructures Directorate, USAARTA (AVSCOM)


   (Subject Category 24 RTOP 505-33-33)

   (Subject Category 34 RTOP 505-45-14)

Technical Talks

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   (Subject Category 39 RTOP 505-37-37)

   (Subject Category 39 RTOP 506-43-51)

   (Subject Category 39 RTOP 506-43-51)

   (Subject Category 39 RTOP 505-37-37)


Computer Programs


Tech Briefs


Patents


PUBLICATIONS FOR LOADS AND AEROELASTICITY DIVISION

Formal Reports

(Avail: NTIS Subject Category 34 RTOP 506-51-23)

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(Avail: NTIS Subject Category 02 RTOP 505-33-43)

(Avail: NTIS Subject Category 05 RTOP 505-33-43)

(Avail: NTIS Subject Category 34 RTOP 506-51-23)

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(Avail: NTIS Subject Category 34 RTOP 506-53-53)

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Quick-Release Technical Memorandums

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(Avail: NTIS Subject Category 16 RTOP 506-53-33)

(Avail: NTIS Subject Category 08 RTOP 505-63-21)

(Avail: NTIS Subject Category 02 RTOP 505-33-43)


*Aerostructures Directorate, USAARTA (AVSCOM)
(Avail: NTIS Subject Category 05 RTOP 505-33-43)

(Avail: STIF Subject Category 26 RTOP 506-53-23)

(Avail: NTIS Subject Category 02 RTOP 505-33-43)

Contractor Reports

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(Avail: NTIS Subject Category 02 RTOP 505-33-43)


(Avail: NTIS Subject Category 02 RTOP 505-33-43)

Journal Articles and Other Publications

Subject Category 39 RTOP 505-33-43

Subject Category 34 RTOP 506-51-23

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Subject Category 02 RTOP 505-33-53

Subject Category 63 RTOP 505-33-53

Subject Category 63 RTOP 505-33-43

Subject Category 34 RTOP 506-53-53

Subject Category 02 RTOP 505-33-43

Subject Category 18 RTOP 506-53-33

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Meeting Presentations


494. Ricketts, R. H.: Selected Topics in Experimental Aeroelasticity at the NASA Langley Research Center. Presented at the DGLR/DFVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending. (Subject Category 02 RTOP 505-33-43)


496. Sandford, M. C.; Ricketts, R. H.; and Hess, R. W.: Recent Studies on Transonic Unsteady Pressure Measurements at NASA Langley Research Center. Presented at the DGLR/DFVLR Second International Symposium on Aeroelasticity and Structural Dynamics, April 1-3, 1985, Aachen, Germany. Proceedings pending. (Subject Category 02 RTOP 505-33-43)


Technical Talks


504. Macaraeg, M. G.; and Streett, C. L.: Improvements in Spectral Collocation Discretization Through a Multiple-Domain Technique. Presented at the AIAA 7th Computational Fluid Dynamics Conference, July 15-17, 1985, Cincinnati, Ohio. (Subject Category 64 RTOP 506-53-33)

505. Murrow, H. N.: A Perspective on the Status of Measurement of Atmospheric Turbulence in the U.S. Presented at the Fall AGARD/SMP 61st Panel Meeting and Specialists Meeting, September 9-13, 1985, Oberammergau, Germany. (Subject Category 47 RTOP 505-45-10)

506. Taylor, A. H.: Design Considerations for Reusable Flightweight Cryogenic Propellant Tanks. Presented at the JANNAF Composite Overwrapped Metal Lined Pressure Vessels Workshop, August 28, 1985, El Segundo, California. (Subject Category 15 RTOP 505-43-31)


Computer Programs

No computer programs.

Tech Briefs


Patents

(Subject Category 06)
Formal Reports

(Avail: NTIS Subject Category 39 RTOP 506-53-53)

Quick-Release Technical Memorandums

(Avail: NTIS Subject Category 18 RTOP 506-53-53)

(Avail: NTIS Subject Category 61 RTOP 506-83-43)

(Avail: NTIS Subject Category 61 RTOP 505-33-53)

(Avail: NTIS Subject Category 66 RTOP 505-33-53)

(Avail: NTIS Subject Category 05 RTOP 505-33-53)

Contractor Reports

(Avail: NTIS Subject Category 05 RTOP 506-53-53)

(Avail: NTIS Subject Category 05 RTOP 505-33-53)


Journal Articles and Other Publications


Meeting Presentations


Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

Patents

No patents.
PUBLICATIONS FOR MATERIALS DIVISION

Formal Reports


Quick-Release Technical Memorandums


*Aerostructures Directorate, USAARTA (AVSCOM)
   (Avail: NTIS Subject Category 27 RTOP 505-33-33)

   (Avail: STIF Subject Category 24 RTOP 506-53-23)

   (Avail: NTIS Subject Category 39 RTOP 505-33-33)

   (Avail: NTIS Subject Category 24 RTOP 505-33-33)

   (Avail: NTIS Subject Category 24 RTOP 505-33-33)

   (Avail: NTIS Subject Category 24 RTOP 505-33-33)

   (Avail: STIF Subject Category 24 RTOP 534-06-23)

   (Avail: NTIS Subject Category 24 RTOP 505-33-33)

   (Avail: NTIS Subject Category 24 RTOP 505-33-33)

   (Avail: NTIS Subject Category 27 RTOP 505-33-33)

   (Avail: NTIS Subject Category 27 RTOP 505-33-33)

* Aerostructures Directorate, USAAR TA (AVSCOM)
(Avail: NTIS Subject Category 39 RTOP 505-33-23)

(Avail: NTIS Subject Category 27 RTOP 505-33-33)

(Avail: NTIS Subject Category 27 RTOP 505-63-91)

(Avail: NTIS Subject Category 24 RTOP 505-42-23)

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(Avail: NTIS Subject Category 39 RTOP 505-33-23)

(Avail: NTIS Subject Category 39 RTOP 505-33-23)

(Avail: NTIS Subject Category 27 RTOP 534-03-13)


Journal Articles and Other Publications


*Aerostructures Directorate, USAARTA (AVSCOM)
(Subject Category 27 RTOP 505-33-33)

(Subject Category 27 RTOP 505-33-33)

(Subject Category 24 RTOP 506-53-33)

(Subject Category 16 RTOP 307-04-02)

(Subject Category 24 RTOP 534-06-23)

Meeting Presentations

(Subject Category 24 RTOP 506-53-23)

(Subject Category 27 RTOP 505-33-33)

(Subject Category 24 RTOP 505-33-33)

(Subject Category 27 RTOP 505-33-33)


*Aerostructures Directorate, USAARTA (AVSCOM)


636. Hergenrother, P. M.; Jensen, B. J.; and Havens, S. J.: Poly(arylene Ethers) From Bis-1,3 and 1,4-(4-Chlorobenzoyl) benzene. Presented at the National Meeting of the American Chemical Society, September 8-13, 1985, Chicago, Illinois. Published in Polymer Preprints, Volume 26, No. 2, 1985, p. 174. (Subject Category 27 RTOP 505-33-33)


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Technical Talks


682. Baucom, R. M.: NASA/UVA Composite Wheelchair. Presented at the University of Virginia, Research Triangle Institute, NASA Composite Wheelchair Conference, June 11, 1985, Charlottesville, Virginia. (Subject Category 24 RTOP 141-20-20)

683. Baucom, R. M.: Composite Applications to the Biomedical Field. Presented at the George Washington University School of Medicine Health Care Expo '85, August 18-24, 1985, Washington, DC. (Subject Category 24 RTOP 141-20-20)


688. Dexter, H. B.: Composite Applications to Aircraft. Presented at the Raspet Flight Research Laboratory Third Applied Composite Structure Design and Fabrication Short Course, March 4-8, 1985, Mississippi State, Mississippi. (Subject Category 24 RTOP 505-42-23)


692. Freeman, W. T., Jr.: Filament Winding for Aerospace Structures. Presented at the University of Delaware Symposium on Manufacturing Issues in Composite Materials, July 24, 1985, Newark, Delaware. (Subject Category 24 RTOP 505-33-33)

693. Hergenrother, P. M.: High Performance Adhesives. Presented at the DARPA Workshop on Advances and Opportunities in Polymer Research, July 15-17, 1985, La Jolla, California. (Subject Category 27 RTOP 505-33-33)


*Aerostructures Directorate, USAARTA (AVSCOM)
697. Hergenrother, P. M.; Jensen, B. J.; and Havens, S. J.: Polyarylene Ethers From 1,3- and 1,4-Bis(4-chlorobenzoyl)-benzene and Bisphenols. Presented at the American Chemical Society Central Regional Meeting, June 5-7, 1985, Akron, Ohio.


708. St. Clair, T. L.: Polymer Research at NASA-LaRC. Presented at the DOD/NASA High Temple Workshop V, March 5-7, 1985, Monterey, California. (Subject Category 27 RTOP 505-33-33)


713. Tenney, D. R.: Composite Applications for Spacecraft and Aircraft. Presented at the University of Tennessee Space Institute Short Course on Design and Fabrication of Aircraft and Space Structures Using Composite Materials, November 4-8, 1985, Tullahoma, Tennessee. (Subject Category 24 RTOP 505-63-01)


717. Young, P. R.: Diffuse Reflectance-FTIR Analysis of Adhesives. Presented at the Virginia Polytechnic Institute and State University Third Annual Center for Adhesion Science Program Review/Workshop, May 19-22, 1985, Blacksburg, Virginia. (Subject Category 27 RTOP 505-33-33)


Computer Programs


Tech Briefs


Patents


PUBLICATIONS FOR ACOUSTICS DIVISION

Formal Reports

(Avail: STIF Subject Category 71 RTOP 532-06-13)


(Avail: NTIS Subject Category 71 RTOP 505-33-90)

(Avail: NTIS Subject Category 71 RTOP 505-33-90)

(Avail: NTIS Subject Category 71 RTOP 505-33-53)

(Avail: NTIS Subject Category 71 RTOP 505-31-33)

(Avail: NTIS Subject Category 71 RTOP 505-31-33)

(Avail: NTIS Subject Category 71 RTOP 505-31-33)

(Avail: NTIS Subject Category 71 RTOP 505-33-53)

Quick-Release Technical Memorandums

(Avail: NTIS Subject Category 71 RTOP 505-35-13)

*Aerostructures Directorate, USAARTA (AVSCOM)

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Contractor Reports


Journal Articles and Other Publications


*Aerostructures Directorate, USAARTA (AVSCOM)*


Meeting Presentations


798. Hardin, J. C.; and Lamkin, S. L.: Computational Aeroacoustics - Present Status and Future Promise. Presented at the IUTAM Symposium on Aero- and Hydro-acoustics, July 3-6, 1985, Lyon, France. To be published by Springer Verlag. (Subject Category 71 RTOP 505-31-33)


*Aerostructures Directorate, USAARTA (AVSCOM)


Technical Talks


(Subject Category 71  RTOP 505-42-23)

(Subject Category 71  RTOP 505-61-51)

(Subject Category 71  RTOP 505-61-51)

Computer Programs

No computer programs.

Tech Briefs


Patents

No patents.
PUBLICATIONS FOR OFFICE OF DIRECTOR FOR AERONAUTICS

Formal Reports
No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations
No meeting presentations.

Technical Talks
No technical talks.

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
PUBLICATIONS FOR TRANSONIC AERODYNAMICS DIVISION

Formal Reports

(Avail: NTIS Subject Category 02 RTOP 505-40-20)

(Avail: NTIS Subject Category 02 RTOP 505-43-90)

(Avail: NTIS Subject Category 02 RTOP 505-40-90)

(Avail: STIF Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 02 RTOP 505-43-90)

(Avail: STIF Subject Category 02 RTOP 505-31-23)

(Avail: NTIS Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 02 RTOP 505-40-90)

(Avail: NTIS Subject Category 02 RTOP 505-31-23)

(Avail: NTIS Subject Category 02 RTOP 505-31-53)


(Avail: NTIS Subject Category 02 RTOP 505-40-90)

(Avail: NTIS Subject Category 02 RTOP 505-31-03)

(Avail: NTIS Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 02 RTOP 505-40-90)

Quick-Release Technical Memorandums

(Avail: NTIS Subject Category 02 RTOP 505-31-53)

(Avail: NTIS Subject Category 09 RTOP 505-61-01)

(Avail: STIF Subject Category 02 RTOP 505-31-23)

(Avail: STIF Subject Category 02 RTOP 505-31-23)

(Avail: IAC Subject Category 02 RTOP 505-31-23)
Contractor Reports

(Avail: NTIS Subject Category 02 RTOP 505-62-91)

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(Avail: NTIS Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 02 RTOP 505-45-63)

(Avail: NTIS Subject Category 02 RTOP 505-40-90)

(Avail: NTIS Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 09 RTOP 505-31-53)

(Avail: NTIS Subject Category 02 RTOP 505-61-01)

(Avail: NTIS Subject Category 02 RTOP 505-31-23)


871. Viken, J. K.: Design of a Natural Laminar Flow Multi-Element Airfoil for \( M = 0.40 \) and a Chord Reynolds Number of 10 Million. (NAS1-17950 ESCON.) NASA CR-177997, September 1985, 75 p. (Avail: STIF Subject Category 02 RTOP 505-31-23)


(Avail: NTIS Subject Category 09 RTOP 505-31-63)

(Subject Category 34)

(Subject Category 09 RTOP 505-31-53)

(Subject Category 34 RTOP 505-43-23)

(Subject Category 34 RTOP 505-31-23)

(Subject Category 02 RTOP 505-31-03)

(Subject Category 39 RTOP 506-53-23)

(Subject Category 64 RTOP 505-31-03)

(Subject Category 02 RTOP 505-31-23)

(Subject Category 02 RTOP 505-40-93)


Meeting Presentations


890. Bobbitt, P. J.; and Foughner, J. T., Jr.: Pivotable Strakes for High Angle of Attack Control. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851821. (Subject Category 02 RTOP 505-31-23)

891. Bobbitt, P. J.; Waggoner, E. G.; Harvey, W. D.; Dagenhart, J. R.; and Viken, J. K.: A Faster "Transition" To Laminar Flow. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851855. (Subject Category 02 RTOP 505-31-23)

892. Boyden, R. P.; Britcher, C. P.; and Tcheng, P.: Status of Wind Tunnel Magnetic Suspension Research. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851898. (Subject Category 09 RTOP 505-31-53)

894. Bruce, W. E., Jr.: The U.S. National Transonic Facility, I. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium.

895. Bruce, W. E., Jr.: The U.S. National Transonic Facility, II. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium.


904. Frink, N. T.: Refinements of a Vortex Flap Design Method With Systematic Applications. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending. (Subject Category 02 RTOP 505-31-23)


910. Hafez, M. M.; and Salas, M. D.: Vortex Breakdown Simulation Based on a Nonlinear Inviscid Model. Presented at the ICASE Symposium on Vortex Dominated Flows, July 9-11, 1985, Hampton, Virginia. NASA CP pending. (Subject Category 64 RTOP 505-60-01)


913. Harvey, W. D.; Harris, C. D.; Brooks, C. W., Jr.; and Bobbitt, P. J.: Experimental Results on a Swept Supercritical Airfoil With Suction in the Langley 8-Foot Transonic Pressure Tunnel. Presented at the AIAA Shear Flow Control Conference, March 12-14, 1985, Boulder, Colorado. (Subject Category 02 RTOP 505-31-23)


920. Kilgore, R. A.: Other Cryogenic Wind Tunnel Projects. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium. (Subject Category 09 RTOP 505-31-53)

921. Kilgore, R. A.: The NASA Langley 0.3-m Transonic Cryogenic Tunnel. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium. (Subject Category 09 RTOP 505-31-53)


926. Lamar, J. E.: In-Flight and Wind-Tunnel Vortex Vapor-Screen Study on F-106 Airplane. Presented at the NASA Vortex Flow Aerodynamics Conference, October 8-10, 1985, Hampton, Virginia. NASA CP pending. (Subject Category 02 RTOP 505-31-23)


935. Maestrello, L.; Bayliss, A.; Parikh, P.; and Turkel, E.: Active Control of Compressible Flows Over a Curved Surface. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851856. (Subject Category 02 RTOP 505-60-21)


947. Salas, M. D.: Progress Toward the Numerical Solution of the Euler Equations. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851792. (Subject Category 64 RTOP 505-31-03)


Technical Talks


966. Dress, D. A.: Calculation of Flow Parameters and Power Requirements for Cryogenic Wind Tunnels Using a Desktop Computer. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California. (Subject Category 09 RTOP 505-31-53)

967. Gumbert, C. R.: Incorporation of TWINTN4 Into an 0.3-m TCT Airfoil WIAC Procedure. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia. (Subject Category 02 RTOP 505-31-53)

968. Gumbert, C. R.: Sample Case Demonstration of 0.3-m TCT WIAC Procedure on Interactive Graphics Terminal. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia. (Subject Category 02 RTOP 505-31-53)

969. Harvey, W. D.; McGhee, R. J.; and Harris, C. D.: Summary of NASA Langley Advanced Low-Drag Airfoil Research. Presented at the Air Force, NASA, Navy Drag Reduction and Boundary Layer Control Symposium, October 22-25, 1985, Washington, DC. (Subject Category 02 RTOP 505-31-23)

970. Johnson, C. B.; Murthy, A. V.; Ray, E. J.; and McGee, B. S.: Preliminary Validation of the Active Sidewall-Boundary Layer Removal System of the 0.3-Meter Transonic Cryogenic Tunnel. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas. (Subject Category 09 RTOP 505-31-53)


974. Lamar, J. E.: Vortex Flow Visualization on the F-106B. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. (Subject Category 02 RTOP 307-05-01)

975. Lawing, P. L.: Cryogenic Wind Tunnels for High Reynolds Number Testing. Presented at the University of Tennessee Space Institute Short Course on Aerospace Ground Test Facilities and Flight Testing, May 8, 1985, Tullahoma, Tennessee. (Subject Category 09 RTOP 505-61-01)

976. Lawing, P. L.: The Construction of Airfoil Models by the Bonded Plate Method. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California. (Subject Category 02 RTOP 505-31-53)

977. Maestrello, L.: Active Boundary Layer Control. Presented at the NASA Seminar at David Taylor Naval Ship Research and Development Center, May 24, 1985, Bethesda, Maryland. (Subject Category 02 RTOP 505-31-23)


979. McKinney, L. W.: Update on NTF Calibration. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas. (Subject Category 09 RTOP 505-31-53)


981. Mineck, R. E.: The Adaptive Wall Test Section for the NASA Langley 0.3-m Transonic Cryogenic Tunnel. Presented at the 64th Meeting of the Supersonic Tunnel Association, October 1-3, 1985, San Diego, California. (Subject Category 02 RTOP 505-31-53)

982. Newman, P. A.: Validation of 0.3-m TCT Airfoil WIAC Procedure. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia. (Subject Category 02 RTOP 505-31-53)

983. Newman, P. A.: Wall Interference of 8- by 24-Inch Test Section Design, Transonic Correction Philosophy, and Overview of WIAC Procedure. Presented at the NASA 0.3-m TCT User Miniworkshop on Airfoil WIAC Procedure, February 6, 1985, Hampton, Virginia. (Subject Category 02 RTOP 505-31-53)
984. Salas, M. D.: Breakdown of the Conservative Potential Model. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York. (Subject Category 64 RTOP 505-31-03)

985. Salas, M. D.: Fundamentals - Mathematical and Numerical Models, Analysis of Basic Assumptions. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York. (Subject Category 64 RTOP 505-31-03)

986. Salas, M. D.: Inviscid Separation - Effects of Vorticity and Artificial Dissipation. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York. (Subject Category 64 RTOP 505-31-03)

987. Salas, M. D.: Multiple Steady States of Characteristic Initial Value Problems. Presented at the Polytechnic Institute of New York Short Course on Numerical Gas Dynamics, March 11-15, 1985, Farmingdale, New York. (Subject Category 64 RTOP 505-31-03)

988. Salas, M. D.: Recent Advances on the Numerical Solution of the Euler Equations. Presented at the University of Rome Seminar on Recent Advances in Numerical Gas-Dynamics, September 16-20, 1985, Rome, Italy. (Subject Category 64 RTOP 505-31-03)


991. Salas, M. D.: Studies on Shock-Wave Stability. Presented at the University of Rome Seminar on Recent Advances in Numerical Gas-Dynamics, September 16-20, 1985, Rome, Italy. (Subject Category 64 RTOP 505-31-03)


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

Computer Programs

No computer programs.

Tech Briefs


Patents

Formal Reports

(Avail: STIF Subject Category 02 RTOP 505-43-93)

(Avail: NTIS Subject Category 02 RTOP 535-03-12)

(Avail: STIF Subject Category 08 RTOP 505-43-13)

(Avail: STIF Subject Category 02 RTOP 533-02-33)

(Avail: NTIS Subject Category 09 RTOP 505-42-23)

(Avail: NTIS Subject Category 01 RTOP 505-31-23)

(Avail: NTIS Subject Category 01 RTOP 505-31-23)

(Avail: NTIS Subject Category 05 RTOP 505-45-43)

(Avail: NTIS Subject Category 02 RTOP 505-45-43)

*Aerostructures Directorate, USAARTA (AVSCOM)
1008. *Phelps, A. E., III; and *Berry, J. D.: Wind-Tunnel Evaluation of a 21-
Percent-Scale Powered Model of a Prototype Advanced Scout Helicopter. NASA 
(Avail: NTIS Subject Category 02 RTOP 505-45-43)

1009. Riley, D. R.: Simulator Study of the Stall Departure Characteristics of a 
Light General Aviation Airplane With and Without a Wing Leading-Edge 
(Avail: NTIS Subject Category 05 RTOP 505-45-43)

1010. Satran, D. R.; Gilbert, W. P.; and Anglin, E. L.: Low-Speed Stability and 
Control Wind-Tunnel Investigation of Effects of Spanwise Blowing on Fighter 
Flight Characteristics at High Angles of Attack. NASA TP-2431, May 1985, 
44 p. 
(Avail: NTIS Subject Category 02 RTOP 505-43-13)

1011. Sellers, W. L., III; Applin, Z. T.; Molloy, J. K.; and Gentry, G. L., Jr.: 
(Avail: NTIS Subject Category 02 RTOP 505-43-13)

1012. Stough, H. P., III; DiCarlo, D. J.; and Patton, J. M., Jr.: Flight 
Investigation of Stall, Spin, and Recovery Characteristics of a Low-Wing, 
(Avail: NTIS Subject Category 05 RTOP 505-45-23)

1013. Usry, J. W.; Dunham, R. E., Jr.; and Lee, J. T.: Comparison of Wind Velocity 
in Thunderstorms Determined From Measurements by a Ground-Based Doppler 
(Avail: NTIS Subject Category 03 RTOP 505-45-13)

1014. Whipple, R. D.; and White, W. L.: Spin-Tunnel Investigation of a 1/25-Scale 
Model of the McDonnell Douglas AV-8B V/STOL Airplane (Coord No. 
(Avail: NASC Subject Category 02 RTOP 505-43-33)

1015. Yip, L. P.: Wind-Tunnel Investigation of a Full-Scale Canard-Configured 
(Avail: NTIS Subject Category 02 RTOP 505-45-43)

Quick-Release Technical Memorandums

No quick-release technical memorandums.
Contractor Reports


1017. Hess, C. F.; and Li, P.: Optical Technique to Study the Impact of Heavy Rain on Aircraft Performance. (NAS1-17932 Spectron Development Laboratories, Inc.) NASA CR-177989, October 1985, 42 p. (Avail: NTIS Subject Category 35 RTOP 324-01-00)


Journal Articles and Other Publications


1027. Holmes, B. J.: Natural Laminar Flow Hits Smoother Air. Aerospace America, Volume 23, No. 7, July 1985, p. 6061 & 77. (Subject Category 02 RTOP 505-45-43)


Meeting Presentations


(Subject Category 02 RTOP 505-45-13)

(Subject Category 34 RTOP 505-45-43)

(Subject Category 02 RTOP 505-45-43)

(Subject Category 02 RTOP 505-45-43)

(Subject Category 02 RTOP 505-45-43)

(Subject Category 02 RTOP 505-42-23)

(Subject Category 02 RTOP 505-31-03)

*Aerostructures Directorate, USAARTA (AVSCOM)


1066. Stough, H. P., III; Jordan, F. L., Jr.; DiCarlo, D. J.; and Glover, K. E.: Leading-Edge Design for Improved Spin Resistance of Wings Incorporating Conventional and Advanced Airfoils. Presented at the SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California. SAE Paper No. 851816. (Subject Category 02 RTOP 505-43-13)


Technical Talks

1074. Crahill, N. L.: Storm Hazards Research (Lightning and Heavy Rain). Presented at the IATA Flight Operations Advisory Committee Meeting, December 3, 1985, Moffett Field, California. (Subject Category 03 RTOP 505-68-01)


   (Subject Category 03 RTOP 505-45-13)

   (Subject Category 02 RTOP 505-45-23)

   (Subject Category 34 RTOP 505-42-43)

   (Subject Category 02 RTOP 505-60-31)

Computer Programs


Tech Briefs


   (Subject Category 05)

   (Subject Category 08)
PUBLICATIONS FOR HIGH-SPEED AERODYNAMICS DIVISION

Formal Reports


(Avail: STIF Subject Category 02 RTOP 505-43-23)

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

(Avail: NTIS Subject Category 34 RTOP 505-43-83)

(Avail: STIF Subject Category 02 RTOP 505-31-23)

(Avail: STIF Subject Category 02 RTOP 505-43-23)

(Avail: STIF Subject Category 05 RTOP 505-43-83)

(Avail: NTIS Subject Category 25 RTOP 505-43-83)

(Avail: STIF Subject Category 05 RTOP 505-43-83)

(Avail: STIF Subject Category 02 RTOP 505-43-23)

(Avail: STIF Subject Category 02 RTOP 505-43-23)


Journal Articles and Other Publications


1137. Carlson, H. W.; Shrout, B. L.; and Darden, C. M.: Wing Design With Attainable Leading-Edge Thrust Considerations. Journal of Aircraft, Volume 22, No. 3, March 1985, p. 244-248. (Subject Category 02 RTOP 505-43-83)


1140. Drummond, J. P.: Numerical Study of a Ramjet Dump Combustor Flowfield. AIAA Journal, Volume 23, No. 4, April 1985, p. 604-611 (Subject Category 02 RTOP 505-43-83)


1149. Kumar, A.; and Salas, M. D.: Euler and Navier-Stokes Solutions for Supersonic Shear Flow Past a Circular Cylinder. AIAA Journal, Volume 23, No. 4, April 1985, p. 583-587. (Subject Category 25 RTOP 505-31-03)


1152. Citation deleted because of duplication.


Meeting Presentations


1177. Eidson, T. M.; Zang, T. A.; and Hussaini, M. Y.: Data Analysis of Turbulent Flow Simulations. Presented at the Technical University of Munich Direct and Large Eddy Simulation of Turbulent Flows Meeting, September 30 - October 1, 1985, Munich, West Germany. Proceedings pending. (Subject Category 02 RTOP 505-31-03)


(Subject Category 02 RTOP 505-31-13)

(Subject Category 02 RTOP 505-31-13)

(Subject Category 02 RTOP 505-60-31)

(Subject Category 25 RTOP 505-43-83)

(Subject Category 02 RTOP 505-43-23)

(Subject Category 02 RTOP 505-43-23)

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   (Subject Category 02  RTOP 505-43-83)

   (Subject Category 34  RTOP 505-31-13)

   (Subject Category 34  RTOP 505-31-13)


Technical Talks


1233. Schultz, A. E.: A Wind Tunnel Reborn. Presented at the 63rd Semiannual Supersonic Tunnel Association Meeting, April 15-16, 1985, Dallas, Texas. (Subject Category 02 RTOP 505-43-23)


Computer Programs


Tech Briefs


Patents

PUBLICATIONS FOR OFFICE OF DIRECTOR FOR SPACE

Formal Reports
No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations
No meeting presentations.

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

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
PUBLICATIONS FOR SPACE STATION OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations


Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.
Formal Reports


Quick-Release Technical Memorandums

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(Avail: NTIS Subject Category 47 RTOP 619-12-30)

(Avail: NTIS Subject Category 46 RTOP 665-10-40)

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(Avail: NTIS Subject Category 46 RTOP 672-40-04)

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(Subject Category 42 RTOP 673-62-02)


   (Subject Category 45  RTOP 199-30-26)

   (Subject Category 46  RTOP 673-41-07)

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   (Subject Category 46  RTOP 147-44-02)

   (Subject Category 92  RTOP 619-12-20)

   (Subject Category 46  RTOP 673-41-10)

   (Subject Category 46  RTOP 199-50-16)


1305. Rinsland, C. P.; Bennet, D. C.; and Devi, V. M.: Measurements of Absolute Line Intensities in Carbon Dioxide Bands Near 5.2um. Applied Optics, Volume 24, No. 11, June 1, 1985, p. 1644-1650. (Subject Category 72 RTOP 618-21-00)


1325. Yue, G. K.; and Deepak, A.: Latitudinal and Altitudinal Variation of Size Distribution of Stratospheric Aerosols Inferred From SAGE Aerosol Extinction Coefficient Measurements at Two Wavelengths. *Geophysical Research Letters*, Volume 11, October 1984, p. 999-1002. (Subject Category 46 RTOP 619-12-30)

Meeting Presentations


1333. Benner, D. C.; Devi, V. M.; and Rinsland, C. P.: Molecular Parameters for Carbon Dioxide Bands in the 2.86 - 3.18 µm Spectral Region. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 57. (Subject Category 72 RTOP 618-21-00)


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1346. Flaud, J-M.; Camy-Peyret, C.; Perrin, A.; Devi, V. M.; Rinsland, C. P.; and Smith, M. A. H.: The v$_3$ and v$_4$ Bands of the $^{16}$O$_2^{18}$O and $^{16}$O$^{18}$O$^{18}$O Isotopic Species of Ozone. Presented at the Ohio State University 40th Annual Symposium on Molecular Spectroscopy, June 17-21, 1985, Columbus, Ohio. In Volume of Abstracts, June 1985, p. 52. (Subject Category 72 RTOP 147-44-02)


Technical Talks


1374. Barkstrom, B. R.; and the ERBE Science Team: Initial Data From the Earth Radiation Budget Experiment (ERBE). Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 619-12-30)

1375. Blackshear, W. T.; and Grose, W. L.: Dynamics of a Sudden Stratospheric Warming Simulated by a Primitive Equation Atmospheric Model. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 47 RTOP 673-64-02)
1376. Butchart, N.; and Remsberg, E. E.: Area Diagnostics for the Northern Hemisphere Middle Stratosphere. Presented at the AMS Fifth Conference on the Meteorology of the Stratosphere and Mesosphere, April 23-26, 1985, Boulder, Colorado. (Subject Category 46 RTOP 673-41-10)


1378. Callis, L. B.; Boughner, R. E.; and Natarajan, M.: Middle Atmospheric Transport Derived From the LIMS, SAMS, and SBUV Data. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 673-62-02)


1380. Cofer, W. R., III: Airborne Shuttle Exhaust Cloud Measurements at Vandenberg AFB, CA. Presented at the JANNF Safety & Environmental Protection Subcommittee Workshop on "Atmospheric Transport and Diffusion Modeling," June 11-13, 1985, Los Angeles, California. (Subject Category 45 RTOP 569-81-91)

1381. Ferebee, M. T.: Color Contouring for Atmospheric Data Sets. Presented at the National Technical Association (NTA) 1985 Conference, July 22-26, 1985, Houston, Texas. (Subject Category 60 RTOP 619-12-20)


1385. Grose, W. L.; and O'Neill, A.: Application of LIMS and SSU Global Satellite to Studies of Stratospheric Dynamics. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 47 RTOP 673-64-02)

1386. Grose, W. L.; Turner, R. E.; and Nealy, J. E.: Coupling Between Photochemistry and Transport: Simulations With a 3-D Model. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 47 RTOP 673-64-02)

1387. Harrison, E. F.; and Minnis, P.: Cloud Cover Derived From ISCCP Data Using a Hybrid Bi-Spectral Threshold Technique. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-04)

1388. Keating, G. M.; and Brasseur, G.: Observed and Predicted Response of Middle Atmosphere to Short-Term Solar UV Variations. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 673-41-07)

1389. Keating, G. M.; Nicholson, J. Y., III; Brasseur, G.; and De Rudder, A.: Review of Recent Evidence of Solar Activity Effects in the Middle Atmosphere From Large Data Sets. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 673-41-07)

1390. Keating, G. M.; and Young, D. F.: Interim Reference Ozone Models for CIRA. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 673-41-07)

1391. Kent, G. S.; and McCormick, M. P.: Global Stratospheric Aerosol Climatology From Satellite Occultation and Lidar Measurements. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 665-40-40)

1392. Lawrence, J. D., Jr.: Remote Sensing of the Atmosphere. Presented at the AIAA 23rd Aerospace Sciences Meeting, January 14-17, 1985, Reno, Nevada. (Subject Category 45 RTOP 146-74-01)

1393. LeCroy, S. R.; Whitlock, C. H.; and Suttles, J. T.: Characterization of Aerosol Types by Their Extinction to Backscatter Cross Section Ratio. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-40-04)


1398. Miles, T.; and Grose, W. L.: Wave Activity in the Summer Stratosphere Observed by LIMS. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 47 RTOP 673-64-02)

1399. Minnis, P.; and Harrison, E. F.: Zenith Angle Dependence of Cloud Fraction Retrieval From Satellite. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-04)


1401. Park, J. H.; and Carli, B.: Retrieval of Stratospheric Minor Constituents From Atmospheric Emission Spectra in the Submillimeter Region. Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 8-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 147-44-02)

1402. Parker, L.; Welch, R. M.; Musil, D. J.; and Wielicki, B. A.: Spatial Inhomogeneities in Clouds. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-10)


1405. Remsberg, E. E.; and Butchart, N.: Diagnostics of the Winter Polar Vortex Using Ozone and Water Vapor From the Nimbus 7 LIMS Experiment. Presented at the AMS Fifth Conference on the Meteorology of the Stratosphere and Mesosphere, April 23-26, 1985, Boulder, Colorado. (Subject Category 46 RTOP 673-41-10)


1407. Russell, J. M., III: The Halogen Occultation Experiment (HALOE). Presented at the International Association of Geomagnetism and Aeronomy (IAGA) Fifth Scientific Assembly, August 5-17, 1985, Prague, Czechoslovakia. (Subject Category 46 RTOP 673-41-10)


1411. Smith, M. A. H.: Infrared Spectroscopy for Upper Atmospheric Measurements. Presented at the Ohio State University 40th Molecular Spectroscopy Symposium, June 17-21, 1985, Columbus, Ohio. (Subject Category 72 RTOP 147-23-11)

1412. Welch, R. M.; and Wielicki, B. A.: The Stratocumulus Nature of Fog. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-10)

1413. Wielicki, B. A.; and Suttles, J. T.: Stratocumulus Cloud Radiative Properties. Presented at the IAMAP/IAPSO Joint Assembly Meeting, August 5-16, 1985, Honolulu, Hawaii. (Subject Category 47 RTOP 672-22-10)

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(Subject Category 31 RTOP 506-55-73)

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(Subject Category 73 RTOP 199-22-76)

(Subject Category 18 RTOP 483-36-13)

(Subject Category 75 RTOP 506-55-73)


Technical Talks


1559. Walberg, G. D.: Entry Vehicles of the Twenty-First Century. Presented at the Deutsche Forschungs- und Versuchsanstalt fur luft- und Raumfahrt e.V. (DFVLR), October 14, 1985, Göttingen, Germany. (Subject Category 15 RTOP 506-51-13)


Computer Programs


Tech Briefs


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No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations
No meeting presentations.

Technical Talks
No technical talks.

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
ADVANCED TRANSPORT OPERATING SYSTEMS PROGRAM OFFICE

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports


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No journal articles and other publications.

Meeting Presentations

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Technical Talks

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Computer Programs

No computer programs.

Tech Briefs

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(Avail: NTIS Subject Category 61 RTOP 505-34-13)

(Avail: NTIS Subject Category 63 RTOP 506-54-63)

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<td>Electroacoustical Imaging Technique for Encoding Incoherent Radiance</td>
<td>Fales, C. L.; and Huck, F. O.</td>
<td>15 p</td>
<td>NASA TM-86372</td>
<td>March 1985</td>
<td>RTOP 307-04-02</td>
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<td>1585</td>
<td>Wavelength Error Analysis in a Multiple-Beam Fizeau Laser Wavemeter</td>
<td>Robinson, D. M.; Fales, C. L.; and Skolaut, M. W., Jr.</td>
<td>45 p</td>
<td>NASA TM-87614</td>
<td>December 1985</td>
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   (Subject Category 35 RTOP 307-04-02)

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   (Subject Category 62 RTOP 505-34-13)


Technical Talks


1641. Crouch, R. K.; Schuszler, A., II; Simchick, R.; and Barber, P. G.: Correspondence of the Composition of the Compound Semiconductor Lead Tin Telluride and Its Etch Pattern. Presented at the 167th Meeting of the Electrochemical Society, May 12-17, 1985, Toronto, Canada. (Subject Category 23 RTOP 505-34-13)


Computer Programs

Tech Briefs


Patents

PUBLICATIONS FOR GUIDANCE AND CONTROL DIVISION

Formal Reports


1664. Lallman, F. J.: Relative Control Effectiveness Technique With Application to Airplane Controls Coordination. NASA TP-2416, April 1985, 16 p. (Avail: NTIS Subject Category 05 RTOP 505-34-03)


Quick-Release Technical Memorandums


Contractor Reports


Journal Articles and Other Publications


Meeting Presentations


(Subject Category 04 RTOP 505-45-33)

(Subject Category 15 RTOP 506-62-43)

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Computer Programs


Tech Briefs


Patents

No patents.
PUBLICATIONS FOR FLIGHT MANAGEMENT DIVISION

Formal Reports


Quick-Release Technical Memorandums


Contractor Reports


Journal Articles and Other Publications


1752. Ricard, G. L.; and Parrish, R. V.: Pilot Differences and Motion Cuing Effects on Simulated Helicopter Hover. Human Factors, Volume 26, June 1984, p. 249-256. (Subject Category 54)
Meeting Presentations


Technical Talks


1761. Garner, H. D.: Micros in the Cockpit. Presented at the 1985 EAA Oshkosh Fly-In and Convention, July 26 - August 2, 1985, Oshkosh, Wisconsin. (Subject Category 06 RTOP 505-34-33)
1762. Knox, C. E.: MLS Advanced Applications Study. Presented at the IATA Flight Operations Advisory Committee Meeting, December 3, 1985, Moffett Field, California. (Subject Category 06 RTOP 505-66-41)


Computer Programs

No computer programs.

Tech Briefs


Patents

No patents.
FORMAL REPORTS FOR OFFICE OF DIRECTOR FOR SYSTEMS ENGINEERING AND OPERATIONS

Formal Reports
No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations
No meeting presentations.

Technical Talks
No technical talks.

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
PUBLICATIONS FOR FABRICATION DIVISION

Formal Reports

   (Avail: STIF Subject Category 24 RTOP 506-53-33)

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Quick-Release Technical Memorandums

No quick-release technical memorandums.

Contractor Reports

No contractor reports.

Journal Articles and Other Publications

No journals articles and other publications.

Meeting Presentations

   (Subject Category 24 RTOP 505-42-23)

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Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs


Patents


PUBLICATIONS FOR SYSTEMS ENGINEERING DIVISION

Formal Reports

(Avail: NTIS Subject Category 03 RTOP 505-42-23)

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1798. Young, C. P., Jr.: Design and Construction of Models for the National Transonic Facility - I. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium. (Subject Category 09 RTOP 505-31-53)

1799. Young, C. P., Jr.: Design and Construction of Models for the National Transonic Facility - II. Presented at the AGARD/VKI Special Course on Cryogenic Technology for Windtunnel Testing, April 22-26, 1985, Rhode-Saint-Genese, Belgium. (Subject Category 09 RTOP 505-31-53)

Technical Talks


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No computer programs.

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No patents.
PUBLICATIONS FOR FACILITIES ENGINEERING DIVISION

Formal Reports

No formal reports.

Quick-Release Technical Memorandums

No quick-release technical memorandums.

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No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

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No technical talks.

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PUBLICATIONS FOR OPERATIONS SUPPORT DIVISION

Formal Reports
No formal reports.

Quick-Release Technical Memorandums
No quick-release technical memorandums.

Contractor Reports
No contractor reports.

Journal Articles and Other Publications
No journal articles and other publications.

Meeting Presentations
No meeting presentations.

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No technical talks.

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No computer programs.

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PUBLICATIONS FOR OFFICE OF DIRECTOR FOR MANAGEMENT OPERATIONS

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No formal reports.

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No technical talks.
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No computer programs.

Tech Briefs

No tech briefs.

Patents

No patents.
Formal Reports


Quick-Release Technical Memorandums


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No contractor reports.

Journal Articles and Other Publications

No journal articles and other publications.

Meeting Presentations


Technical Talks

No technical talks.

Computer Programs

No computer programs.

Tech Briefs

No tech briefs.
APPENDIX

INDUSTRIAL APPLICATIONS CENTERS

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

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

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

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

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

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

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

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