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Produced by the NASA Center for Aerospace Information (CASI)
Scientific and Technical Information
Output of the Langley Research Center for Calendar Year 1984

JANUARY 1985
NASA Technical Memorandum 86336

Scientific and Technical Information
Output of the Langley Research Center for Calendar Year 1984

Compiled by
Research Information and Applications Division

Langley Research Center
Hampton, Virginia

NASA
National Aeronautics and Space Administration
Langley Research Center
Hampton, Virginia 23665
FOREWORD

This report contains a listing of Langley Research Center's scientific and technical research output for calendar year 1984.

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 1984, Langley's contributions to NASA and non-NASA literature included 150 NASA Formal Reports, 144 Quick-Release Technical Memorandums, 277 Contractor Reports, 241 Journal Articles and Other Publications, 497 Meeting Presentations, 168 Technical Talks, 30 Computer Programs, 120 Tech Briefs, and 26 Patents. In addition, during the year 18 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
CONFERENCES SPONSORED OR COSPONSORED BY LANGLEY AND HELD LOCALLY IN 1984

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<th>Langley contacts</th>
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<th>Non-Langley</th>
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<td>1. Workshop on Technology Needs for Filament Wound Composite Structures</td>
<td>Mar. 6-8</td>
<td>B. A. Stein</td>
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<td>17</td>
</tr>
<tr>
<td>3. NASA 5th NTA Region II Technical Student Symposium</td>
<td>Mar. 30-31</td>
<td>G. M. Darden and G. A. Haynes</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>4. A New Direction in Structural Analysis</td>
<td>Apr. 11-12</td>
<td>W. J. Stroud</td>
<td>1</td>
<td>7</td>
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<tr>
<td>5. NASA Recent Experiences in Multi-Disciplinary Analysis and Optimization Symposium</td>
<td>Apr. 24-26</td>
<td>J. E. Gardner</td>
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<td>52</td>
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<tr>
<td>7. 107th Meeting of the Acoustical Society of America</td>
<td>May 6-10</td>
<td>H. H. Hubbard</td>
<td>9</td>
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<tr>
<td>8. Workshop on Wind Shear/Turbulence Inputs to Flight Simulation and Systems Certification</td>
<td>May 30-June 1</td>
<td>R. L. Bowles</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>10. Joint NASA/AIAA Meeting on General Aviation Technology</td>
<td>July 10-12</td>
<td>L. J. Williams</td>
<td>8</td>
<td>60</td>
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<tr>
<td>11. Space Station Software Development Environment Workshop</td>
<td>Aug. 20-21</td>
<td>S. J. Voigt</td>
<td>0</td>
<td>2</td>
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<tr>
<td>12. Computational Structural Mechanics Workshop</td>
<td>Supt. 5-7</td>
<td>W. J. Stroud</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>13. Workshop on Theoretical Approaches to Turbulence</td>
<td>Oct. 13-12</td>
<td>D. L. Dwyer</td>
<td>2</td>
<td>18</td>
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<tr>
<td>16. SAE/NASA 2nd Aircraft Interior Noise Meeting</td>
<td>Oct. 18-19</td>
<td>J. S. Mixson</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>18. Large Space Antenna Systems Technology-1984 Conference</td>
<td>Dec. 4-6</td>
<td>C. A. Lightner</td>
<td>20</td>
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</tr>
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Total .............................................................................................................. | 97  | 534 | 835 | 2314
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 1984 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, 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 1984.

The NASA Tech Briefs cited have either been published¹ or submitted in 1984 for publication in "NASA Tech Briefs," a quarterly journal for United States industry, entrepreneurs, and academia. Free Subscriptions to this journal are available through the publisher, NASA Tech Briefs, 41 East 42nd Street, Suite 921, New York, New York 10017 or the NASA Technology Utilization Program by writing to the Technology Utilization Office, NASA Scientific and Technical Information Facility, P. O. Box 8757, Baltimore/Washington International Airport, Maryland 21240.

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

¹Those submitted in 1983 (and therefore listed in the 1983 issue of this document) but published in 1984 have not been listed.
Publication of some journal articles was not known at press time for the 1983 issue of this document. These articles are therefore listed in the 1984 issue.
<table>
<thead>
<tr>
<th>Category</th>
<th>Source</th>
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<tr>
<td>Formal Reports</td>
<td>National Technical Information Service (NTIS)</td>
</tr>
</tbody>
</table>
| Quick-Release Technical Memorandums | 5285 Port Royal Road
Springfield, VA 22161                                         |
| Contractor Reports             | NASA Scientific and Technical Information Facility (STIF)
P. O. Box 8757
Baltimore/Washington International Airport, MD 21240          |
|                                | NASA Industrial Applications Centers (IAC)
(See Appendix for addresses of IAC's)                             |
| Computer Programs              | Computer Software Management and Information Center (COSTIC)
112 Barrow Hall
University of Georgia
Athens, GA 30602                                                   |
| Langley Tech Briefs            | Office of Technology Utilization and Applications
Mail Stop 139A
NASA Langley Research Center
Hampton, VA 23665                                                   |
| Patents:                       |                                                                        |
| Patent Application Specifications | National Technical Information Service (NTIS)                          |
| Printed Copies                 | Commissioner of Patents and Trademarks
U.S. Patent and Trademark Office
Washington, DC 20231                                               |
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NASA LANGLEY RESEARCH CENTER
Hampton, Virginia

CALENDAR YEAR 1984

PUBLICATIONS FOR OFFICE OF THE DIRECTOR

Formal Reports

No formal reports.

Quick-Release Technical Memorandums


Contractor Reports


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

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

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

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


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 OFFICE OF DIRECTOR FOR PROJECTS

Formal Reports
No formal reports.

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

Contractor Reports
No contractor reports.

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

Meeting Presentations

Technical Talks

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
PUBLICATIONS FOR AERONAUTICAL SYSTEMS OFFICE

Formal Reports


Quick-Release Technical Memorandums


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

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

Contractor Reports

(Avail: STIF Subject Category 02 RTOP 533-01-43)

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

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(Avail: STIF Subject Category 02 RTOP 533-01-43)

Journal Articles and Other Publications

(Subject Category 05 RTOP 505-43-43)
Meeting Presentations


Technical Talks


Computer Programs


Tech Briefs


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


Subject Category 15 RTOP 542-03-44

TECHNICAL TALKS

No technical talks.

COMPUTER PROGRAMS

No computer programs.

TECH BRIEFS

No tech briefs.

PATENTS

No patents.
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 AIRCRAFT ENERGY EFFICIENCY PROJECT OFFICE

Formal Reports


Quick-Release Technical Memorandums


Contractor Reports


Journal Articles and Other Publications


Meeting Presentations


Technical Talks

No technical talks.
Computer Programs

No computer programs.

Tech Briefs


Patents

(Subject Category 37)
PUBLICATIONS FOR OFFICE OF DIRECTOR FOR ELECTRONICS

Formal Reports
No formal reports.

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

Contractor Reports
No contractor reports.

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

Meeting Presentations
No meeting presentations.

Technical Talks
No technical talks.

Computer Programs
No computer programs.

Tech Briefs
No tech briefs.

Patents
No patents.
FORMAL REPORTS

(Available: NTIS Subject Category 05 RTOP 505-35-33)

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

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

QUICK-RELEASE TECHNICAL MEMORANDUMS

(Available: NTIS Subject Category 59 RTOP 505-37-13)

(Available: IAC Subject Category 18 RTOP 986-15-10)

(Available: NTIS Subject Category 61 RTOP 505-31-83)

(Available: NTIS Subject Category 60 RTOP 505-37-23)

CONTRACTOR REPORTS

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

(Available: STIF Subject Category 09 RTOP 999-16-04)
(Avail: NTIS Subject Category 60 RTOP 999-16-04)

(Avail: STI Subject Category 60 RTOP 534-04-13)

(Avail: NTIS Subject Category 61 RTOP 505-37-23)

(Avail: NTIS Subject Category 61 RTOP 324-01-00)

Journal Articles and Other Publications

(Subeject Category 35 RTOP 505-31-82)

(Subeject Category 43 RTOP 505-31-83)

Meeting Presentations

(Subeject Category 16 RTOP 506-51-13)

(Subeject Category 59 RTOP 505-31-83)

(Subeject Category 61 RTOP 505-45-33)

Technical Talks


Computer Programs


Tech Briefs


Patents

No patents.
Formal Reports


Quick-Release Technical Memorandums


Contractor Reports

(Avail: STIF Subject Category 35 RTOP 506-54-13)

(Avail: STIF Subject Category 08 RTOP 506-54-13)

(Avail: NTIS Subject Category 70 RTOP 505-31-53)

(Avail: NTIS Subject Category 74 RTOP 506-54-13)

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(Subject Category 88 RTOP 179-80-70)

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   (Subject Category 71 RTOP 505-31-33)

Meeting Presentations

   (Subject Category 71 RTOP 505-33-23)

   (Subject Category 71 RTOP 505-33-23)


213. Zuckerwar, A. J.; and Meredith, R. W.: Low-Frequency Sound Absorption in Air. Presented at the 107th Meeting of the Acoustical Society of America, May 7-10, 1984, Norfolk, Virginia. Published in the Journal of the Acoustical Society of America, Supplement 1, Volume 75, Spring 1984, p. 34. (Subject Category 71 RTOP 505-31-33)

**Technical Talks**


222. Heyman, J. S.: Characterization Problems in Laminated and Fiber-Wound Composite Structures. Presented at the University of Houston, Southwest Mechanics Lecture Series - Spring 1984, April 5, 1984, Houston, Texas. (Subject Category 71 RTOP 505-33-23)


224. Tcheng, P.: Development of a Servo Transducer at LaRC for Direct Skin Friction Measurement. Presented at the 61st Semiannual Meeting of the Supersonic Tunnel Association (STA), March 12-14, 1984, Cleveland, Ohio. (Subject Category 35 RTOP 505-31-53)


Computer Programs

No computer programs.

Tech Briefs


Patents


   (Subject Category 35)

   (Subject Category 47)

   (Subject Category 35)

   (Subject Category 35)
PUBLICATIONS FOR FLIGHT DYNAMICS AND CONTROL DIVISION

Formal Reports


(Avail: NTIS Subject Category 39 RTOP 505-34-03)

(Avail: NTIS Subject Category 18 RTOP 506-57-13)

Quick-Release Technical Memorandums

(Avail: NTIS Subject Category 08 RTOP 505-34-03)

(Avail: NTIS Subject Category 62 RTOP 505-37-03)

(Avail: NTIS Subject Category 18 RTOP 505-34-03)

(Avail: NTIS Subject Category 39 RTOP 506-57-13)

(Avail: NTIS Subject Category 08 RTOP 505-34-03)

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Contractor Reports

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Journal Articles and Other Publications

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(Subj ect Category 2 RTOP 505-41-13)

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(Subj ect Category 08 RTOP 505-34-03)

(Subj ect Category 05 RTOP 505-34-03)

(Subj ect Category 63 RTOP 506-57-13)


Technical Talks


Computer Programs

320. Jones, R. L.: IMAGES - Interactive Modal Analysis and Gain Estimation System. Program No. LAR-13334. (Subject Category 08)

Tech Briefs


Patents

No patents.
PUBLICATIONS FOR FLIGHT ELECTRONICS DIVISION

Formal Reports


Quick-Release Technical Memorandums


Contractor Reports


(Avail: STIF Subject Category 61 RTOP 506-56-13)

(Avail: STIF Subject Category 33 RTOP 324-01-00)

Journal Articles and Other Publications

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(Subject Category 35 RTOP 307-03-02)

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(Subject Category 55 RTOP 307-04-02)

(Subject Category 47 RTOP 505-45-63)

(Subject Category 48 RTOP 146-40-05)

(Subject Category 19 RTOP 619-12-01)


Meeting Presentations


Technical Talks


Computer Programs

No computer programs.

Tech Briefs


388. Hearn, C. P.; and Bradshaw, E. S.: Demodulator for AM and SSB-SC Signals. NASA Tech Brief LAR-12716.


Patents

   (Subject Category 06)
PUBLICATIONS FOR FLIGHT CONTROL SYSTEMS DIVISION

Formal Reports


Quick-Release Technical Memorandums


(Avail: NTIS Subject Category 47 RTOP 505-34-13)

(Avail: NTIS Subject Category 65 RTOP 505-34-13)

(Avail: NTIS Subject Category 47 RTOP 505-34-13)

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(Avail: NTIS Subject Category 08 RTOP 534-04-13)

(Avail: IAC Subject Category 62 RTOP 505-34-13)

(Avail: NTIS Subject Category 04 RTOP 534-04-13)


Journal Articles and Other Publications


441. Spitzer, C. R.: Digital Avionics - The Best is Yet to Come! IEEE Transactions on Aerospace and Electronic Systems, Volume AES 20, No. 4, July 1984, p. 486-492. (Subject Category 33 RTOP 505-45-73)
Meeting Presentations


(Subject Category 47 RTOP 505-34-13)

(Subject Category 05 RTOP 505-35-33)

(Subject Category 53 RTOP 505-35-13)

(Subject Category 08 RTOP 505-34-13)

(Subject Category 06 RTOP 505-35-13)

AIAA Paper No. 84-1819-CP.
(Subject Category 06 RTOP 505-35-13)

(Subject Category 06 RTOP 505-35-13)

(Subject Category 05 RTOP 505-34-13)


462. Miller, R. M.; Schlam, E.; Robertson, J. B.; and Hatfield, J. J.: Recent Advances in Electroluminescent Displays Applicable to Future Crew-Station Interfaces. Presented at the AIAA/IEEE 6th Digital Avionics Systems Conference, December 3-6, 1984, Baltimore, Maryland. AIAA Paper No. 84-2663-CP. (Subject Category 06 RTOP 505-34-13)


465. Ostroff, A. J.; and Hueschen, R. M.: Investigation of Control Law
Reconfigurations to Accommodate a Control Element Failure on a Commercial
Airplane. Presented at the 1984 American Control Conference, June 6-8,
(Subject Category 08 RTOP 505-34-13)

the IEEE/AESS 6th Annual Symposium on Aerospace and Electronic Systems:
Advanced Concepts and Pioneering Perspectives, November 14-15, 1984,
Dayton, Ohio. In Proceedings, Volume 84TH0117-2, November 1984,
p. 2-10 - 2-14.
(Subject Category 03 RTOP 505-45-73)

at the 1984 Annual Meeting of the Virginia Academy of Science, May 15-18,
1984, Richmond, Virginia. Abstract to be published in the Virginia
Journal of Science.
(Subject Category 06 RTOP 505-45-33)

Technical Talks

Statistical Association Computer Science and Statistics 16th Symposium on
the Interface, March 14-16, 1984, Atlanta, Georgia.
(Subject Category 59 RTOP 505-34-13)

469. Bergeron, H. P.: Applications of Speech Technology in the Single-Pilot
Instrument Flight Rules Cockpit. Presented at the DOD Voice Interactive
Systems SubTAG Meeting, October 2-4, 1984, Orlando, Florida.
(Subject Category 04 RTOP 505-35-13)

470. Bergeron, H. P.: NASA Research to Improve General Aviation IFR
Operations. Presented at the AIAA/FAA Sixth Annual General Aviation Pilot
Safety Seminar, January 21, 1984, St. Louis, Missouri.
(Subject Category 03 RTOP 505-35-13)

Research at NASA Langley Research Center. Presented at the 13th
Department of Defense Human Factors Engineering Technical Advisory Group
Meeting, November 6-8, 1984, West Point, New York.
(Subject Category 01 RTOP 505-35-33)

472. Harris, R. L., Sr.; and Spady, A. A., Jr.: Summary of NASA Langley's Pilot
Scan Behavior Research. Presented at the Sixty-Third Annual Meeting of the
National Research Board A-3 B06-Simulation and Measurement of Driving
Committee, January 16-19, 1984, Washington, DC.
(Subject Category 53 RTOP 505-35-13)

473. Hinton, D. A.; Bergeron, H. P.; and Shaughnessy, J. D.: Automation and
Advanced Avionics Systems in the Single-Pilot Cockpit. Presented at the
1984 SAE Aerospace Congress and Exposition, October 15-18, 1984,
Long Beach, California.
(Subject Category 06 RTOP 505-35-13)


Computer Programs


Tech Briefs


Patents

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
No technical talks.

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 62 RTOP 505-37-33)

   (Avail: NTIS Subject Category 15 RTOP 506-62-43)

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

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

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

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

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

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

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

   (Avail: NTIS Subject Category 39 RTOP 505-45-14)

*Army Structures Laboratory (AVSCOM)
(Avail: NTIS Subject Category 39 RTOP 506-53-43)

(Avail: NTIS Subject Category 39 RTOP 534-03-23)

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

Quick-Release Technical Memorandums

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

(Avail: NTIS Subject Category 62 RTOP 505-37-33)

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

(Avail: NTIS Subject Category 62 RTOP 505-37-33)

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

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

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<td>512</td>
<td>Analytical Results for Postbuckling Behavior of Plates in Compression and in Shear.</td>
<td>Stein, M.</td>
<td>NASA Technical Memorandum 85766</td>
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Formal Reports

No formal reports.

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Journal Articles and Other Publications

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Meeting Presentations

No meeting presentations.

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871. *Everett, R. A., Jr.: Failure Modes of Realistic Bonded Metal to Composite Joints. Presented at the VPI&SU Center for Adhesion Science Program Review/Workshop, April 29 - May 2, 1984, Blacksburg, Virginia. (Subject Category 27 RTOP 505-33-33)


875. Hergenrother, P. M.: Status of High Temperature Adhesives. Presented at the State University of New York Short Course on Fundamentals of Adhesion, October 10-12, 1984, New Paltz, New York. (Subject Category 27 RTOP 505-33-33)

876. Hergenrother, P. M.: High Temperature Adhesives. Presented at the Plastics Institute of America Short Course on Advances in Adhesion Science and Adhesives, September 24-26, 1984, Boston, Massachusetts. (Subject Category 27 RTOP 505-33-33)

877. Hergenrother, P. M.: Status of High Temperature Polymers. Presented at the Macromolecular Research Center of the University of Michigan Seventh Annual Symposium Current Contributions in Polymer Science, October 18-19, 1984, Ann Arbor, Michigan. (Subject Category 27 RTOP 505-33-33)


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1002. Farassat, F.: Theoretical Analysis of Linearized Acoustics and Aerodynamics of Advanced Supersonic Propellers. Presented at the AGARD Fluid Dynamics Panel Symposium on Aerodynamics and Acoustics of Propellers, October 1-4, 1984, Toronto, Canada. (Subject Category 71 RTOP 535-03-12)


1012. McAninch, G. L.; and Rawls, J. W., Jr.: Effects of Boundary Layer Refraction and Fuselage Scattering on Fuselage Surface Noise From Advanced Turboprop Propellers. Presented at the AIAA 22nd Aerospace Sciences Meeting, January 9-12, 1984, Reno, Nevada. AIAA Paper No. 84-0249. (Subject Category 71 RTOP 535-03-12)

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1020. Preisser, J. S.; Silcox, R. J.; Eversman, W.; and Parrett, A. V.: A Flight Study of Tone Radiation Patterns Generated by Inlet Rods in a Small Turbofan Engine. Presented at the 22nd Aerospace Sciences Meeting, January 9-12, 1984, Reno, Nevada. AIAA Paper No. 84-0499. (Subject Category 71 RTOP 505-31-33)

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1030. Grosveld, F. W.; and Mixson, J. S.: Sound Transmission Through Honeycomb Stiffened Panels. Presented at the 107th Meeting of the Acoustical Society of America, May 7-10, 1984, Norfolk, Virginia. (Subject Category 71 RTOP 505-33-53)


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1039. Barker, L. M. (Systems Development Corporation); and Leatherwood, J. D. (Langley Research Center): Simplified NASA Ride Comfort Model Program (RIDEQUL). Program No. LAR-13289. (Subject Category 53)

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.

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1045. Bower, R. E.: Recent Developments in Aeronautical Technology Applicable to Civil Air Transports. Presented at the 1984 ASCE International Air Transportation Conference, June 4-6, 1984, Los Angeles, California. (Subject Category 01 RTOP 023-10-01)


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Tech Briefs
No tech briefs.

Patents
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1049. Capone, F. J.; and Mason, M. L.: Interference Effects of Thrust Reversing on Horizontal Tail Effectiveness of a Twin-Engine Fighter Aircraft at Mach Numbers From 0.15 to 0.90. NASA TP-2350, October 1984, 102 p.
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<td>1083</td>
<td>Goodyer, M. J.</td>
<td>Computation of Imaginary-Side Pressure Distributions Over the Flexible Walls of the Test Section Insert for the 0.3-M Transonic Cryogenic Tunnel.</td>
<td>NASI-16000 Kentron International, Inc.; Subcontractor: The University of Southampton.</td>
<td>NASA CR-172363, June 1984, 15 p. (Avail: NTIS Subject Category 02 RTOP 505-31-53)</td>
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<td>Engineering Changes to the 0.1m Cryogenic Wind Tunnel at Southampton University.</td>
<td>NASI-16000 Kentron International, Inc.; Subcontractor: University of Southampton.</td>
<td>NASA CR-172430, August 1984, 20 p. (Avail: NTIS Subject Category 09 RTOP 505-31-53)</td>
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Technical Talks

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Patents


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Computer Programs

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No computer programs.

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PUBLICATIONS FOR OFFICE OF DIRECTOR FOR SYSTEMS ENGINEERING AND OPERATIONS

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No formal reports.

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Tech Briefs
No tech briefs.

Patents
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No contractor reports.

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Computer Programs

No computer programs.

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Patents

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No technical talks.

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No patents.
APPENDIX

INDUSTRIAL APPLICATIONS CENTERS

Aerospace Research Applications Center
Indianapolis Center for Advanced Research
611 N. Capital Avenue
Indianapolis, IN 46204
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Southeastern Oklahoma State University
Station A, Box 2584
Durant, OK 74701
(405) 924-6822

NASA Industrial Applications Center
710 LIS Building
University of Pittsburgh
Pittsburgh, PA 15260
(412) 624-5211

NASA Industrial Applications Center
University of Southern California
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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
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