NASA SCIENTIFIC AND TECHNICAL PUBLICATIONS

A CATALOG OF SPECIAL PUBLICATIONS, REFERENCE PUBLICATIONS, CONFERENCE PUBLICATIONS, AND TECHNICAL PAPERS 1991-1992

National Aeronautics and Space Administration
Scientific and Technical Information Program
Washington, DC 1993
The pursuit of human knowledge through scientific research and technical endeavor has vastly expanded understanding of our world and the universe we live in. The contributions of NASA through scientific and technical research and development affect not only our understanding and use of aeronautics and space but also touch our daily lives. Geologists, oceanographers, meteorologists, archaeologists, aircraft engineers, aerospace decision makers, land-use planners, historians, and rescue teams all make use of the results of NASA's research. The findings of this research and development are published in NASA's scientific and technical report series as a part of NASA's mandate to disseminate the results of the agency's far-reaching work.


Two monthly abstract journals cover all aspects of aeronautics and space research, NASA and non-NASA, nationally and worldwide. STAR (Scientific and Technical Aerospace Reports), focuses on scientific and technical reports, and IAA (International Aerospace Abstracts), covers the open literature. These are available by subscription from the NASA Center for AeroSpace Information and the American Institute of Aeronautics and Astronautics, Inc.

This catalog includes publicly available reports from four NASA report series: Special Publications (SPs), Reference Publications (RPs), Conference Publications (CPs), and Technical Papers (TPs). The scope of each series is defined as follows:

- **Special Publications** are often concerned with subjects of substantial public interest. They report scientific and technical information derived from NASA programs for audiences of diverse technical backgrounds.

- **Reference Publications** contain compilations of scientific and technical data of continuing reference value.

- **Conference Publications** record the proceedings of scientific and technical symposia and other professional meetings sponsored or cosponsored by NASA.

- **Technical Papers** present the results of significant research conducted by NASA scientists and engineers.

Presented here are citations for reports from each of these series. An explanation of the elements in a typical citation follows. Accession numbers (N numbers) at the end of a citation are separate citations to articles within the report. Please use STAR to locate these citations.

Also note that some bibliographies in the NASA SP-7000 series are issued periodically. This catalog lists only the last accessioned report in each bibliography series. The periodicity of each bibliography is as follows:

- NASA SP-7011 Aerospace Medicine and Biology: Monthly plus A Continuing Bibliography with Indexes annual cumulative index

- NASA SP-7037 Aeronautical Engineering: Monthly plus A Continuing Bibliography with Indexes annual cumulative index

NASA SP-7085  Large Space Structures and Systems in the Space Station Era:  A Bibliography with Indexes  Semiannual

NASA SP-7500  Management:  A Bibliography for NASA Managers  Annual

Please note that the reports cited in this catalog are available for purchase from the NASA Center for AeroSpace Information. They are also available at any Federal Regional Depository Library. Additional availability information including current CASI price schedules, can be found in the Appendix at the back of this publication.
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45 ENVIRONMENT POLLUTION
Includes atmospheric, noise, thermal, and water pollution.

46 GEOPHYSICS
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Includes biological, dynamic, and physical oceanography, and marine resources. For related information see also 43 Earth Resources and Remote Sensing.

LIFE SCIENCES

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52 AEROSPACE MEDICINE
Includes physiological factors; biological effects of radiation; and effects of weightlessness on man and animals.

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Includes psychological factors; individual and group behavior; crew training and evaluation; and psychiatric research.

54 MAN/SYSTEM TECHNOLOGY AND LIFE SUPPORT
Includes human engineering; biotechnology; and space suits and protective clothing. For related information see also 16 Space Transportation.

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61 COMPUTER PROGRAMMING AND SOFTWARE
Includes computer programs, routines, algorithms, and specific applications, e.g., CAD/CAM.

62 COMPUTER SYSTEMS
Includes computer networks and special application computer systems.
63 CYBERNETICS
Includes feedback and control theory, artificial intelligence, robotics and expert systems. For related information see also 54 Man/System Technology and Life Support.

64 NUMERICAL ANALYSIS
Includes iteration, difference equations, and numerical approximation.

65 STATISTICS AND PROBABILITY
Includes data sampling and smoothing; Monte Carlo method; and stochastic processes.

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Includes mathematical modeling; network analysis; and operations research.

67 THEORETICAL MATHEMATICS
Includes topology and number theory.

PHYSICS For related information see also Engineering.

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For precision time and time interval (PTTI) see 35 Instrumentation and Photography; for geophysics, astrophysics or solar physics see 46 Geophysics, 90 Astrophysics, or 92 Solar Physics.

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GENERAL
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The aging characteristics and lifetimes of tungsten filament encoder lamps were determined as a function of operating voltage and filament material. For pure tungsten and thoria doped (1 pct.) filament lamps, crystal grain growth over the center portion of the filament leads to the ultimate failure of the lamp. The development of notches associated with this grain growth is the cause of lamp burn out. Eventually, one of the notches will 'etch' through the filament, causing it to fail open. For rhenium doped (3 pct.) filament lamps, distortion of the filament leads to the ultimate failure of the lamp. The lifetime of these lamps is about 1 year at an operating voltage of 5.0 volts. The pure tungsten filament lamps have the longest average lifetime, and the thoria doped filament lamps have the shortest at 5.0 volts. The lifetimes of these lamps is about 7 years at an operating voltage of 3.5 volts. Data suggest that the rhenium doped lamps will have the longest average lifetime at 3.5 volts, and the thoria doped will have the shortest. These lifetimes are comparable to the desired lifetimes of 7 years.

Author
SCIENTIFIC AND TECHNICAL PUBLICATIONS 1991-1992

February 1993

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AERONAUTICS (GENERAL)

N91-10002* National Aeronautics and Space Administration, Washington, DC.
AERONAUTICAL ENGINEERING: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 256) Sep. 1990 129 p (NASA-SP-7037(256); NAS 1.21:7037(256)) Avail: CASI HC A07
This bibliography lists 426 reports, articles, and other documents introduced into the NASA scientific and technical information system in August 1990. Subject coverage includes: design, construction, and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author

N91-12589* National Aeronautics and Space Administration, Washington, DC.
AERONAUTICAL ENGINEERING: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 257) Oct. 1990 156 p (NASA-SP-7037(257); NAS 1.21:7037(257)) Avail: CASI HC A08
This bibliography lists 560 reports, articles, and other documents introduced into the NASA scientific and technical information system in September 1990. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author

N91-13399* National Aeronautics and Space Administration, Washington, DC.
This bibliography lists 536 reports, articles, and other documents introduced into the NASA scientific and technical information system in October 1990. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author

N91-15978* National Aeronautics and Space Administration, Washington, DC.
This bibliography lists 405 reports, articles, and other documents introduced into the NASA scientific and technical information system in December, 1990. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author

N91-15979* National Aeronautics and Space Administration, Washington, DC.
This bibliography lists 774 reports, articles, and other documents introduced into the NASA scientific and technical information system in November, 1990. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author

N91-19024* National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
AIR TRANSPORTATION, AIRCRAFT PERFORMANCE, AVIONICS, CONTROL THEORY, EXPERT SYSTEMS, GUIDANCE (MOTION), NAVIGATION, UNIVERSITY PROGRAM

N91-23073* National Aeronautics and Space Administration.
AIR TRANSPORTATION, AIRCRAFT PERFORMANCE, AVIONICS, CONTROL THEORY, EXPERT SYSTEMS, GUIDANCE (MOTION), NAVIGATION, UNIVERSITY PROGRAM

N91-23074* National Aeronautics and Space Administration, Washington, DC.
This publication is a cumulative index to the abstracts contained in Supplements 249 through 260 of Aeronautical Engineering: A Continuing Bibliography. The bibliographic series is compiled through the cooperative efforts of the American Institute of Aeronautics and Astronautics (AIAA) and the National Aeronautics and Space Administration (NASA). Seven indexes are included – subject, personal author, corporate source, foreign technology, contract number, report number and accession number. Author

N91-23075* National Aeronautics and Space Administration, Washington, DC.
AERONAUTICAL ENGINEERING: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 262) Feb. 1991 142 p (NASA-SP-7037(262); NAS 1.21:7037(262)) Avail: CASI HC A07
This bibliography lists 474 reports, articles, and other documents introduced into the NASA scientific and technical information system in January, 1991. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems...
and theoretical and applied aspects of aerodynamics and general fluid dynamics.  

**N91-24095** National Aeronautics and Space Administration, Washington, DC.  
**AERONAUTICAL ENGINEERING: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 265)**  
May 1991 152 p  
(NASA-SP-7037(265); NAS 1:21:7037(265)) Avail: CASEI HC A08  
This bibliography lists 554 reports, articles, and other documents introduced into the NASA scientific and technical information system in Apr. 1991. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics.  

**N91-24096** National Aeronautics and Space Administration, Washington, DC.  
**AERONAUTICAL ENGINEERING: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 266)**  
Jul. 1991 184 p  
(NASA-SP-7037(266); NAS 1:21:7037(266)) Avail: CASEI HC A08  
This bibliography lists 661 reports, articles, and other documents introduced into the NASA scientific and technical information system in July, 1991. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; theoretical and applied aspects of aerodynamics and general fluid dynamics.  

**N91-24097** National Aeronautics and Space Administration, Washington, DC.  
**AERONAUTICAL ENGINEERING: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 267)**  
Aug. 1991 131 p  
(NASA-SP-7037(267); NAS 1:21:7037(267)) Avail: CASEI HC A07  
This bibliography lists 406 reports, articles, and other documents introduced into the NASA scientific and technical information system in July, 1991. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment and systems; ground support systems; theoretical and applied aspects of aerodynamics and general fluid dynamics.
AERODYNAMICS


AIR TRANSPORTATION, AIRCRAFT SAFETY, NATIONAL AIRSPACE SYSTEM, NAVIGATION, UNIVERSITY PROGRAM


This bibliography lists 808 reports, articles, and other documents introduced into the NASA scientific and technical information system in Dec. 1991. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment, and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author


This bibliography lists 719 reports, articles, and other documents introduced into the NASA scientific and technical information system in Nov. 1991. Subject coverage includes: design, construction and testing of aircraft and aircraft engines; aircraft components, equipment, and systems; ground support systems; and theoretical and applied aspects of aerodynamics and general fluid dynamics. Author


The High Resolution Accelerometer Package (HiRAP) instrument is a triaxial, orthogonal system of gas damped accelerometers with a resolution of 1 x 10(exp -6) g (1 micro-g). The purpose of HiRAP is to measure the low frequency component of the total acceleration along the orbiter vehicle (OV) body axes while the OV descends through the rarefied flow flight regime. Two HiRAP instruments have flown on a total of 10 Space Transport System (STS) missions. The aerodynamic component of the acceleration measurements was separated from the total acceleration. Instrument bias and orbiter mechanical system acceleration effects were incorporated into one bulk bias. The bulk bias was subtracted from the acceleration measurements to produce aerodynamic descent data sets for all 10 flights. The aerodynamic acceleration data sets were input to an aerodynamic coefficient model. The aerodynamic acceleration data and coefficient model were used to estimate the atmospheric density for the altitude range of 140 to 60 km and a downrange distance of 600 km. For 8 of 10 flights results from this model agree with expected results. For the results that do not agree with expected results, a variety of error sources have been explored. Author


This bibliography lists 467 reports, articles, and other documents introduced into the NASA scientific and technical information system in Mar. 1992. Subject coverage includes: the engineering and theoretical aspects of design, construction, evaluation, testing, operation, and performance of aircraft (including aircraft engines); and associated aircraft components, equipment, and systems. It also includes research and development in ground support systems, theoretical and applied aspects of aerodynamics, and general fluid dynamics. Author


This bibliography lists 414 reports, articles, and other documents introduced into the NASA scientific and technical information system in Apr. 1992. Author


This bibliography lists 379 reports, articles, and other documents introduced into the NASA scientific and technical information system in Jan. 1991. Author


This bibliography lists 647 reports, articles, and other documents introduced into the NASA scientific and technical information system in June, 1991. Subject coverage includes: aerodynamics, air transportation safety, aircraft communication and navigation, aircraft design and performance, aircraft instrumentation, aircraft propulsion, aircraft stability and control, research facilities, astronautics, chemistry and materials, engineering, geosciences, computer sciences, physics, and social sciences. Author

02 AERODYNAMICS

Includes aerodynamics of bodies, combinations, wings, rotors, and control surfaces; and internal flow in ducts and turbomachinery.


Includes computer programs, Euler equations of motion, finite volume method, lifting rotors, rotor aerodynamics, transonic flow.
02 AERODYNAMICS

N91-10839*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
NASA COMPUTATIONAL FLUID DYNAMICS CONFERENCE. VOLUME 1: SESSIONS 1-6
(NASA-CP-10038-VOL-1; A-89160-VOL-1; NAS 1.55:10038-VOL-1) Avail: CASI HC A20/MF A04; 25 functional color pages
COMPUTATIONAL FLUID DYNAMICS, COMPUTATIONAL GRIDS, CONFERENCES, GRID GENERATION (MATHEMATICS), MATHEMATICAL MODELS, SIMULATION, SUPERCOMPUTERS, TURBULENCE MODELS

N91-10866*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
NASA COMPUTATIONAL FLUID DYNAMICS CONFERENCE. VOLUME 2: SESSIONS 7-12
(NASA-CP-10038-VOL-2; A-89160-VOL-2; NAS 1.55:10038-VOL-2) Avail: CASI HC A22/MF A04; 30 functional color pages
ALGORITHMS, COMPUTATIONAL FLUID DYNAMICS, CONFERENCES, HYPERSONICS, SHORT TAKEOFF AIRCRAFT, SPACECRAFT DESIGN, SUPERCOMPUTERS

N91-10902*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
PREDICTION OF EFFECTS OF WING CONTOUR MODIFICATIONS ON LOW-SPEED MAXIMUM LIFT AND TRANSONIC PERFORMANCE FOR THE EA-6B AIRCRAFT
DENNIS O. ALLISON and E. G. WAGGONER Washington Nov. 1990  48 p (RTOP 505-61-21-03)
(NASA-TP-3046; L-16741; NAS 1.60:3046) Avail: CASI HC A03/MF A01
COMPUTER PROGRAMS, CONTOURS, MANEUVERABILITY, PANEL METHOD (FLUID DYNAMICS), PERFORMANCE PREDICTION, TRANSONIC FLOW, WIND TUNNEL TESTS, WING PROFILES

N91-13401*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
NAVIER-STOKES AND EULER SOLUTIONS FOR LEE-SIDE FLOWS OVER SUPERSONIC DELTA WINGS. A CORRELATION WITH EXPERIMENT
S. NAO MI MCMILLIN (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), JAMES L. THOMAS (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and EARILL M. MURMAN (Massachusetts Inst. of Tech., Cambridge.) Washington Dec. 1990  103 p Original contains color illustrations (RTOP 505-61-71-01)
(NASA-TP-3035; L-16751; NAS 1.60:3035) Avail: CASI HC A06/MF A02; 19 functional color pages
COMPUTER PROGRAMS, DELTA WINGS, EULER EQUATIONS, MODIFICATIONS OF EQUATION, FLOW DISTRIBUTION, NAVIER-STOKES EQUATION, SUPERSONIC FLOW

N91-13402*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
EFFECT OF LOCATION OF AFT-MOUNTED NACELLES ON THE LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF A HIGH-WING TRANSPORT AIRPLANE
(NASA-TP-3047; L-16743; NAS 1.60:3047) Avail: CASI HC A05/MF A02
AERODYNAMIC INTERFERENCE, AIRCRAFT DESIGN, ENGINE AIRFRAME INTEGRATION, TRANSPORT AIRCRAFT, WING NACELLE CONFIGURATIONS

N91-14315*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
PARAMETRIC STUDY OF AFTERBODY/NOZZLE DRAG ON TWIN TWO-DIMENSIONAL CONVERGENT-DIVERGENT NOZZLES AT MACH NUMBERS FROM 0.60 TO 1.20
(NASA-TP-2640; L-16158; NAS 1.60:2640) Avail: CASI HC A12/MF A03
AERODYNAMIC COEFFICIENTS, AFTERBODIES, CONVERGENT-DIVERGENT NOZZLES, DRAG MEASUREMENT, PARAMETERIZATION

N91-16990*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
A PARAMETRIC EXPERIMENTAL INVESTIGATION OF A SCRAMJET NOZZLE AT MACH 6 WITH FREON AND ARGON OR AIR USED FOR EXHAUST SIMULATION
(NASA-TP-3048; L-16707; NAS 1.60:3048) Avail: CASI HC A06/MF A02
EXHAUST FLOW SIMULATION, EXHAUST GASES, EXHAUST NOZZLES, FLOW DISTRIBUTION, NOZZLE FLOW, SUPERSONIC COMBUSTION RAMJET ENGINES

N91-18030*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
DETAILED FLOW-FIELD MEASUREMENTS OVER A 75 DEG SWEEP DELTA WING
(NASA-TP-2997; L-16718; NAS 1.60:2997) Avail: CASI HC A03/MF A01; 16 functional color pages
DETAILED FLOW-FIELD MEASUREMENTS OVER A 75 DEG SWEEP DELTA WING

N91-18031*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
PHYSICALLY WEIGHTED APPROXIMATIONS OF UNSTEADY AERODYNAMIC FORCES USING THE MINIMUM-STATE METHOD
MORDECHAY KARPEL (Technion - Israel Inst. of Tech., Haifa,) and SHERWOOD TIFFANY HOADLEY Washington Mar. 1991  46 p (RTOP 505-63-21-04)
(NASA-TP-3025; L-16491; NAS 1.60:3025) Avail: CASI HC A03/MF A01
AERODYNAMIC COEFFICIENTS, COMPUTER PROGRAMS, LEAST SQUARES METHOD, MATRICES (MATHEMATICS), UNSTEADY AERODYNAMICS

N91-18032*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
AN EXPLICIT UPWIND ALGORITHM FOR SOLVING THE PARABOLIZED NAVIER-STOKES EQUATIONS
(NASA-TP-3050; L-16753; NAS 1.60:3050) Avail: CASI HC A04/MF A01; 1 functional color page
ALGORITHMS, FLOW DISTRIBUTION, GAS FLOW, HYPERSONIC FLOW, NAVIER-STOKES EQUATION, PARABOLIC DIFFERENTIAL EQUATIONS

N91-19042*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. EXPERIMENTAL INVESTIGATION OF POROUS-FLOOR EFFECTS ON CAVITY FLOW FIELDS AT SUPERSONIC SPEEDS FLOYD J. WILCOX, JR. Washington Nov. 1990 105 p (RTOP 505-61-71-01) (NASA-TP-3032; L-16711; NAS 1.60:3032) Avail: CASI HC A06/MF A02 CAVITIES, CAVITY FLOW, FLOW DISTRIBUTION, MACH NUMBER, POROSITY, SUPERSONIC SPEED, VENTS, WIND TUNNEL MODELS


N91-22069*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. AEROPROPULSIVE CHARACTERISTICS OF CANTED TWIN PITCH-VectORIZATION NOZZLES AT MACH 0.20 TO 1.20 FRANCIS J. CAPONE, MARY L. MASON, and GEORGE T. CARSON, JR. Washington May 1991 257 p (RTOP 505-62-71-01) (NASA-TP-3060; L-16823; NAS 1.60:3060) Avail: CASI HC A12/MF A03 CONVERGENT-DIVERGENT NOZZLES, FLAPS (CONTROL SURFACES), FLOW DISTRIBUTION, NOZZLE GEOMETRY, PROPULSIVE EFFICIENCY, THRUST VECTOR CONTROL


MACH NUMBER, PRESSURE DISTRIBUTION, SUBSONIC FLOW, TRANSONIC FLOW, YAW

N91-27140*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
SHOCK WAVE INTERACTION WITH AN ABRUPT AREA CHANGE
(RTOP 505-62-31-07)
(NASA-TP-3113; L-16878; NAS 1.60:3113) Avail: CASI HC
A03/MF A01

COMPUTATIONAL FLUID DYNAMICS, EUCLER EQUATIONS OF MOTION, MATHEMATICAL MODELS, NUMERICAL ANALYSIS, SHOCK WAVE INTERACTION, SHOCK WAVES, UNIQUENESS THEOREM

N91-28135*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
EVALUATION OF A TECHNIQUE TO GENERATE ARTIFICIALLY THICKENED BOUNDARY LAYERS IN SUPERSONIC AND HYPERSONIC FLOWS
(RTOP 505-60-21)
(NASA-TP-3142; E-5660; NAS 1.60:3142) Avail: CASI HC
A03/MF A01

BOUNDARY LAYERS, COMPRESSIBLE FLOW, HONEYCOMB STRUCTURES, HYPERSONIC FLOW, SUPERSONIC FLOW, TURBULENT BOUNDARY LAYER, WIND TUNNEL MODELS

N91-28143*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF A SUBSONIC, ENERGY-EFFICIENT TRANSPORT CONFIGURATION IN THE NATIONAL TRANSONIC FACILITY
PETER F. JACOBS and BLAIR B. GLOSS Aug. 1989 70 p
(RTOP 505-61-21-03)
(NASA-TP-2922; L-16569; NAS 1.60:2922) Avail: CASI HC
A04/MF A01

AEROELASTICITY, BOUNDARY LAYER TRANSITION, LONGITUDINAL STABILITY, NONADIABATIC CONDITIONS, SUBSONIC SPEED, SUPERCritical WINGS, WALL TEMPERATURE

N91-30098*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
FULL-SCALE SEMISPAN TESTS OF A BUSINESS-JET WING WITH A NATURAL LAMINAR FLOW AIRFOIL
DAVID E. HAHNE and FRANK L. JORDAN, JR. Sep. 1991 52 p 
(RTOP 505-61-41-01)
(NASA-TP-3133; L-16905; NAS 1.60:3133) Avail: CASI HC
A04/MF A01

AIRFOIL PROFILES, FLAPPING, FULL SCALE TESTS, JET AIRCRAFT, LAMINAR FLOW AIRFOILS, LOW SPEED, SEMISPAN MODELS, WIND TUNNEL TESTS

N92-10005*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
MEASUREMENTS OF FORCES, MOMENTS, AND PRESSURES ON A GENERIC STORE SEPARATING FROM A BOX CAVITY AT SUPERSONIC SPEEDS
(RTOP 505-68-91-12)
(NASA-TP-3110; L-16866; NAS 1.60:3110) Avail: CASI HC
A09/MF A02

CAVITIES, EXTERNAL STORE SEPARATION, FLAT PLATES, FLOW DISTRIBUTION, MOMENTS, PRESSURE MEASUREMENT, SUPERSONIC SPEED

N92-10011*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
TRANSONIC AND SUPersonic EUCLER COMPUTATIONS OF VORTEX-DOMINATED FLOW FIELDS ABOUT A GENERIC FIGHTER
AGA M. GOODSELL and JOHN E. MELTON Nov. 1991 44 p
(RTOP 505-60-11)
(NASA-TP-3156; A-90161; NAS 1.60:3156) Avail: CASI HC
A03/MF A01

ANGLE OF ATTACK, BODY-WING CONFIGURATIONS, EUCLER EQUATIONS OF MOTION, FIGHTER AIRCRAFT, FLOW DISTRIBUTION, PRESSURE DISTRIBUTION

N92-10975*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
STATIC INTERNAL PERFORMANCE OF VENTRAL AND REAR NOZZLE CONCEPTS FOR SHORT-TAKEOFF AND VERTICAL-LANDING AIRCRAFT
(RTOP 505-62-30-01)
(NASA-TP-3103; L-16902; NAS 1.60:3103) Avail: CASI HC
A04/MF A01

AIRCRAFT CONFIGURATIONS, EXHAUST NOZZLES, EXHAUST SYSTEMS, FIGHTER AIRCRAFT, PROPULSION SYSTEM CONFIGURATIONS, SHORT TAKEOFF AIRCRAFT, VERTICAL LANDING

N92-10981*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
NACA 0015 WING PRESSURE AND TRAILING VORTEX MEASUREMENTS
(RTOP 505-61-51)
(NASA-TP-3151; A-91056; NAS 1.60:3151; AVSCOM-TR-91-A-003) Avail: CASI HC A07/MF A02

LOW SPEED, PRESSURE MEASUREMENT, SEMISPAN MODELS, TRAILING EDGES, VELOCITY MEASUREMENT, VORTICES, WING TIPS, WINGS

N92-12994*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
WIND TUNNEL INVESTIGATION OF THE INTERACTION AND BREAKDOWN CHARACTERISTICS OF SLENDER WING VORTICES AT SUBSONIC, TRANSONIC, AND SUPersonic SPEEDS
(RTOP 505-68-71-03)
(NASA-TP-3114; L-16803; NAS 1.60:3114) Avail: CASI HC
A11/MF A03

AERODYNAMIC CHARACTERISTICS, DELTA WINGS, FLOW DISTRIBUTION, LASERS, LEADING EDGES, SLENDER WINGS, VORTICES

N92-14968*# National Aeronautics and Space Administration. Langley Research Center, Cleveland, OH.
WIND TUNNEL INVESTIGATION OF VORTEX FLOWS ON F/A-18 CONFIGURATION AT SUBSONIC THROUGH TRANSONIC SPEED
(RTOP 505-68-30-03)
(NASA-TP-3111; L-16799; NAS 1.60:3111) Avail: CASI HC
A08/MF A02

F-18 AIRCRAFT, FOREBODIES, INTERACTIONAL AERODYNAMICS, LEADING EDGES, VORTEX BREAKDOWN, VORTICES, WIND TUNNEL TESTS, WINGS
EQUATIONS, MATHEMATICAL MODELS, THREE DIMENSIONAL FLOW, TRANSONIC FLOW, UNSTEADY FLOW, VISCOUS FLOW

N92-28980*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
LASER ANEMOMETER MEASUREMENTS AND COMPUTATIONS IN AN ANNULAR CASCADE OF HIGH TURNING CORE TURBINE VANES
LOUIS J. GOLDMAN and RICHARD G. SEASHOLTZ Jul. 1992 38 p
(RTOP 505-62-52) (NASA-TP-3252; E-6354; NAS 1.60:3252) Avail: CASI HC A03/MF A01
ANNULAR FLOW, CASCADE FLOW, CRITICAL VELOCITY, LASER ANEMOMETERS, TURBINE BLADES, TURBOMACHINERY, TURBULENCE, TURBULENT FLOW, VANES

N92-29625*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
NASA WORKSHOP ON FUTURE DIRECTIONS IN SURFACE MODELING AND GRID GENERATION
(RTOP 505-59-00) (NASA-CP-10092; A-92072; NAS 1.55:10092) Avail: CASI HC A03/MF A01
COMPUTATIONAL FLUID DYNAMICS, CONFERENCES, GRID GENERATION (MATHEMATICS), NASA PROGRAMS

N92-30295*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
VALIDATION OF THREE-DIMENSIONAL INCOMPRESSIBLE SPATIAL DIRECT NUMERICAL SIMULATION CODE: A COMPARISON WITH LINEAR STABILITY AND PARABOLIC STABILITY EQUATION THEORIES FOR BOUNDARY-LAYER TRANSITION ON A FLAT PLATE
(RTOP 505-59-50-01) (NASA-TP-3205; L-17026; NAS 1.60:3205) Avail: CASI HC A03/MF A01
BOUNDARIES, BOUNDARY CONDITIONS, BOUNDARY LAYER TRANSITION, BOUNDARY LAYERS, COMPUTERIZED SIMULATION, FINITE DIFFERENCE THEORY, FLAT PLATES, FLUID DYNAMICS, FOURIER SERIES, INCOMPRESSIBLE FLOW, RUNGE-KUTTA METHOD, WAVE REFLECTION

N92-30394*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
TWO-DIMENSIONAL AERODYNAMIC CHARACTERISTICS OF SEVERAL POLYGON-SHAPED CROSS-SECTIONAL MODELS APPLICABLE TO HELICOPTER FUSELAGES
HENRY L. KELLEY, CYNTHIA A. CROWELL, and JOHN C. WILSON Aug. 1992 30 p
(DA PROJ. 1L2-36003-D-313; RTOP 505-59-36-01) (NASA-TP-3233; L-16951; NAS 1.60:3233; AVSCOM-TR-92-B-002) Avail: CASI HC A03/MF A01
AERODYNAMIC CHARACTERISTICS, AIRCRAFT MODELS, BLUNT BODIES, CROSS SECTIONS, FUSELAGES, HELICOPTERS, POLYGONS, WIND TUNNEL TESTS

N92-30747*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
TRAJECTORY FITTING IN FUNCTION SPACE WITH APPLICATION TO ANALYTIC MODELING OF SURFACES

N92-30909*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
APPLICATION TO ANALYTIC MODELING OF SURFACES
TRAJECOTRY FITTING IN FUNCTION SPACE WITH AVSCOM-TR-92-B-002) Avail: CASI HC A03/MF A01
AERODYNAMIC CHARACTERISTICS, AIRCRAFT MODELS, SMOOTHING, TRAJECTORIES

N92-31532*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
WIND TUNNEL AERODYNAMIC CHARACTERISTICS OF A TRANSITION-TYPE AIRFOIL IN A SIMULATED HEAVY RAIN ENVIRONMENT
(RTOP 505-68-01-02) (NASA-TP-3184; L-16959; NAS 1.60:3184) Copyright Avail: CASI HC A04/MF A01
AERODYNAMIC CHARACTERISTICS, AIRFOILS, ENVIRONMENT EFFECTS, ENVIRONMENT SIMULATION, PERFORMANCE PREDICTION, RAIN, SCALE MODELS, WIND TUNNEL TESTS

N92-32480*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
A METHOD FOR DESIGNING BLENDED WING-BODY CONFIGURATIONS FOR LOW WAVE DRAG
RAYMOND L. BARGER Sep. 1992 19 p
(RTOP 505-59-53-01) (NASA-TP-3261; L-17095; NAS 1.60:3261) Avail: CASI HC A03/MF A01
AERODYNAMIC CONFIGURATIONS, AIRCRAFT DESIGN, BODY-WING CONFIGURATIONS, COMPUTATIONAL GRIDS, DRAG REDUCTION, SUPERSONIC AIRCRAFT, WAVE DRAG

N92-33484*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
APPLICATIONS OF A DIRECT/ITERATIVE DESIGN METHOD TO COMPLEX TRANSONIC CONFIGURATIONS
LEIGH ANN SMITH and RICHARD L. CAMPBELL Sep. 1992 36 p
(RTOP 505-59-10-03) (NASA-TP-3234; L-16962; NAS 1.60:3234) Avail: CASI HC A03/MF A01
AERODYNAMIC DRAG, AIRCRAFT CONFIGURATIONS, AIRCRAFT DESIGN, DRAG REDUCTION, INDUCED DRAG, INTERFERENCE DRAG, NACELLES, TRANSPORT AIRCRAFT

N92-33625*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
A NOZZLE INTERNAL PERFORMANCE PREDICTION METHOD
JOHN R. CARLSON Oct. 1992 50 p
(RTOP 505-62-30-01) (NASA-TP-3221; L-16965; NAS 1.60:3221) Avail: CASI HC A03/MF A01
DISCHARGE COEFFICIENT, FLOW DISTRIBUTION, NAVIER-STOKES EQUATION, NOZZLE DESIGN, NOZZLE
EFFICIENCY, NOZZLE FLOW, NOZZLE THRUST COEFFICIENTS, PERFORMANCE PREDICTION, PITCHING MOMENTS, ROLLING MOMENTS, YAWING MOMENTS

N92-3365* # National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. SURVEY AND ANALYSIS OF RESEARCH ON SUPersonic DRAG-DUE-TO-LIFT MINIMIZATION WITH RECOMMENDATIONS FOR WING DESIGN HARRY W. CARLSON (Lockheed Engineering and Sciences Co., Hampton, VA.) and MICHAEL J. MANN Sep. 1992 158 p (RTOP 505-68-70-02) (NASA-TP-3202; L-16963; NAS 1.60:3202) Avail: CASI HC A08/MF A02

AIRCRAFT DESIGN, BODY-WING CONFIGURATIONS, CAMBERED WINGS, SUPERSONIC AIRCRAFT, SUPERSONIC DRAG, SURVEYS, TWISTED WINGS, WINGS


AERODYNAMIC CHARACTERISTICS, AFTERBODIES, AIRCRAFT CONFIGURATIONS, AIRCRAFT MODELS, BOATTAILS, FIGHTER AIRCRAFT, INTERACTIONAL AERDYNAMICS, WIND TUNNEL MODELS, WIND TUNNEL TESTS


AERODYNAMIC COEFFICIENTS, AERODYNAMIC DRAG, CONVERGENT NOZZLES, CONVERGENT-DIVERGENT NOZZLES, MACH NUMBER, NOZZLE DESIGN, NOZZLE FLOW, PROPULSION SYSTEM PERFORMANCE, WIND TUNNEL TESTS

03 AIR TRANSPORTATION AND SAFETY

Includes passenger and cargo air transport operations; and aircraft accidents.


AIR TRAFFIC CONTROL, AIRCRAFT SAFETY, AVIONICS, COCKPIT, CONFERENCES, HUMAN FACTORS ENGINEERING, MAN-MACHINE SYSTEMS, MAN-COMPUTER INTERFACE, TEST FACILITIES


AIRBORNE EQUIPMENT, AIRCRAFT HAZARDS, CONFERENCES, DETECTION, WARNING SYSTEMS, WIND SHEAR


AIRCRAFT GUIDANCE, CONFERENCES, DETECTION, MICROBURSTS (METEOROLOGY), WARNING SYSTEMS, WIND SHEAR


AIR TRAFFIC CONTROL, AIR TRAFFIC CONTROLLERS (PERSONNEL), COMPUTER TECHNIQUES, CONFERENCES, FLIGHT MANAGEMENT SYSTEMS, WORKSTATIONS


AIRBORNE EQUIPMENT, CONFERENCES, DOPPLER RADAR, METEOROLOGICAL RADAR, MICROBURSTS (METEOROLOGY), OPTICAL RADAR, RADAR DETECTION, WARNING SYSTEMS, WIND SHEAR


AIRBORNE EQUIPMENT, CONFERENCES, DOPPLER RADAR, METEOROLOGICAL RADAR, MICROBURSTS (METEOROLOGY), OPTICAL RADAR, RADAR DETECTION, WARNING SYSTEMS, WIND SHEAR
03 AIR TRANSPORTATION AND SAFETY


AERODYNAMICS, AIRCRAFT PERFORMANCE, FLIGHT HAZARDS, FLIGHT MANAGEMENT SYSTEMS, FLIGHT TESTS, MICROBURSTS (METEOROLOGY), RAIN, WARNING SYSTEMS, WIND SHEAR

N91-70436*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
THE DEVELOPMENT OF THE NASA AVIATION SAFETY REPORTING SYSTEM

N92-10994*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
A COMPARISON OF AIRBORNE WAKE VORTEX DETECTION MEASUREMENTS WITH VALUES PREDICTED FROM POTENTIAL THEORY
ERIC C. STEWART Washington Nov. 1991 38 p (RTOP 505-68-10-01) (NASA-TP-3125; L-16899; NAS 1.60:3125) Avail: CASI HC A03/MF A01

ALGORITHMS, FLIGHT SAFETY, FLOW DISTRIBUTION, IN-FLIGHT MONITORING, NEAR WAKES, VORTICES, WAKES

N92-30395*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
LEWIS ICING RESEARCH TUNNEL TEST OF THE AERODYNAMIC EFFECTS OF AIRCRAFT GROUND DEICING/ANTI-ICING FLUIDS

AERODYNAMIC CHARACTERISTICS, BOEING AIRCRAFT, DEICING, ICE FORMATION, NEWTONIAN FLUIDS, RHEOLOGY, WIND TUNNEL TESTS

04 AIRCRAFT COMMUNICATIONS AND NAVIGATION

Includes digital and voice communication with aircraft; air navigation systems (satellite and ground based); and air traffic control.

N92-21459*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
FLIGHT DECK BENEFITS OF INTEGRATED DATA LINK COMMUNICATION

AIR TRAFFIC CONTROL, AIRCRAFT COMMUNICATION, COMPUTERIZED SIMULATION, DATA LINKS, DATA MANAGEMENT, DATA TRANSMISSION, DIGITAL DATA, GROUND-AIR-GROUND COMMUNICATION, PULSE COMMUNICATION

05 AIRCRAFT DESIGN, TESTING AND PERFORMANCE

Includes aircraft simulation technology.

N91-14323*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
A METHOD FOR THE DESIGN OF TRANSONIC FLEXIBLE WINGS

AERODYNAMIC LOADS, AEROELASTICITY, AIRCRAFT DESIGN, AIRFOIL PROFILES, FLEXIBLE WINGS, TRANSONIC SPEED

N91-17014*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
STATIC FOOTPRINT LOCAL FORCES, AREAS, AND ASPECT RATIOS FOR THREE TYPE 7 AIRCRAFT TIRES

AIRCRAFT TIRES, AREA, ASPECT RATIO, LOAD DISTRIBUTION (FORCES), VEHICULAR TRACKS

N91-19082*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
STATE ESTIMATION APPLICATIONS IN AIRCRAFT FLIGHT-DATA ANALYSIS: A USER'S MANUAL FOR SMACK

The evolution in the use of state estimation is traced for the analysis of aircraft flight data. A unifying mathematical framework for state estimation is reviewed, and several examples are presented that illustrate a general approach for checking instrument accuracy and data consistency, and for estimating variables that are difficult to measure. Recent applications associated with research aircraft flight tests and airline turbulence upset are described. A computer program for aircraft state estimation is described in some detail. This document is intended to serve as a user’s manual for the program called SMACK (SMoothing for Aircraft Kinematics). The diversity of the applications described emphasizes the potential advantages in using SMACK for flight-data analysis.

Author

N91-20071*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
ANNIVERSARY CELEBRATION
Hugh L. Dryden Flight Research facility, Edwards, CA.
PROCEEDINGS OF THE X-15 FIRST FLIGHT 30TH ANNIVERSARY CELEBRATION
AIRCRAFT DESIGN, CONFERENCES, HISTORIES, HYPERSONIC FLIGHT, NASA PROGRAMS, RESEARCH AND DEVELOPMENT, SPACE FLIGHT, X-15 AIRCRAFT

N91-21127*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
SPAN REDUCTION EFFECTS ON THE FLUTTER CHARACTERISTICS OF ARROW-WING SUPersonic TRANSPORT CONFIGURATIONS
DONALD F. KELLER and ELLEN PARKER BULLOCK 26 Dec. 1990 55 p
(RTOP 505-63-21)
(NASA-TP-3077; L-16807; NAS 1.60:3077) Avail: CASI HC A04/MF A01
AIRCRAFT CONFIGURATIONS, ARROW WINGS, DYNAMIC PRESSURE, FLUTTER ANALYSIS, SUPersonic TRANSPORTS, TRANSONIC FLUTTER, WIND TUNNEL TESTS, WING SPAN

N91-24199*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
EVALUATION OF CLOUD DETECTION INSTRUMENTS AND PERFORMANCE OF LAMINAR-FLOW LEADING-EDGE TEST ARTICLES DURING NASA LEADING-EDGE FLIGHT-TEST PROGRAM
RICHARD E. DAVIS (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), DAL V. MADDALON (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), RICHARD D. WAGNER (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), DAVID F. FISHER (National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.), and RONALD YOUNG (National Aeronautics and Space Administration. Hugh L. Dryden Flight Research Facility, Edwards, CA.) Apr. 1989 58 p
(RTOP 505-60-31-01)
(NASA-TP-2888; L-16509; NAS 1.60:2888) Avail: CASI HC A04/MF A01
AIRCRAFT DESIGN, AIRLINE OPERATIONS, BOUNDARY LAYER CONTROL, CLOUDS, DETECTION, FLIGHT SIMULATION, HAZE, LAMINAR BOUNDARY LAYER, LEADING EDGES

N91-24200*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
NASA-LARC FLIGHT-CRITICAL DIGITAL SYSTEMS TECHNOLOGY WORKSHOP
(RTOP 505-65-21-03)
(NASA-CP-10028; REPT-412U-3161-29; NAS 1.55:10028) Avail: CASI HC A09/MF A02
COMPUTER SYSTEMS DESIGN, DIGITAL SYSTEMS, FLIGHT CONTROL, QUALITY CONTROL, RELIABILITY ENGINEERING, SYSTEMS ENGINEERING, TECHNOLOGY ASSESSMENT

N92-33837*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
HIGH-SPEED RESEARCH: SONIC BOOM, VOLUME 1
(RTOP 537-03-21-01)
(NASA-CP-3172; L-17145-VOL-1; NAS 1.55:3172) Avail: CASI HC A09/MF A03
ATMOSPHERIC EFFECTS, ATMOSPHERIC TURBULENCE, SHOCK WAVE PROPAGATION, SONIC BOOMS, TURBULENCE EFFECTS

06 AIRCRAFT INSTRUMENTATION

Includes cockpit and cabin display devices; and flight instruments.

N91-17020*# National Aeronautics and Space Administration, Washington, DC.
SPACE TRANSPORTATION AVIONICS TECHNOLOGY SYMPOSIUM. VOLUME 2: CONFERENCE PROCEEDINGS
Aug. 1990 742 p Symposium held in Williamsburg, VA, 7-9 Nov. 1989
(NASA-TP-3081-VOL-2; NAS 1.55:3081-VOL-2) Avail: CASI HC A09/MF A06
AVIONICS, COMPUTER PROGRAMMING, CONFERENCES, SOFTWARE ENGINEERING, SPACE TRANSPORTATION SYSTEM, SYSTEMS ENGINEERING, SYSTEMS INTEGRATION

N91-21143*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
FLIGHT TESTS WITH A DATA LINK USED FOR AIR TRAFFIC CONTROL INFORMATION EXCHANGE
CHARLES E. KNOX and CHARLES H. SCANLON Sep. 1991 38 p
(RTOP 505-64-13-01)
(NASA-TP-3135; L-16936; NAS 1.60:3135) Avail: CASI HC A03/MF A01
AIR TRAFFIC CONTROL, CIVIL AVIATION, DATA LINKS, FLIGHT OPERATIONS, RADIO FREQUENCIES, SAFETY FACTORS, SYSTEMS ENGINEERING, VOICE COMMUNICATION

N92-13065*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
EFFECT OF SHORT-TERM EXPOSURE TO STEREOSCOPIC THREE-DIMENSIONAL FLIGHT DISPLAYS ON REAL-WORLD DEPTH PERCEPTION
(DA PROJ. 1L1-61102-AH-45; RTOP 505-64-13-32)
(NASA-TP-3117; L-16897; NAS 1.60:3117; AVSOM-TR-91-B-014; AD-A242333) Avail: CASI HC A03/MF A01
DEPTH, DISPLAY DEVICES, FLIGHT INSTRUMENTS, HUMAN FACTORS ENGINEERING, PILOT PERFORMANCE, SPACE PERCEPTION, STEREOSCOPIC VISION

N92-20546*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
VENTURI AIR-JET VACUUM EJECTORS FOR HIGH-VOLUME ATMOSPHERIC SAMPLING ON AIRCRAFT PLATFORMS
GERALD F. HILL (Lockheed Engineering and Sciences Co., Hampton, VA.), GLEN W. SACHSE, DOUGLAS C. YOUNG, LARRY O. WADE (Lockheed Engineering and Sciences Co., Hampton, VA.), and LEWIS G. BURNEY Apr. 1992 38 p
(RTOP 464-54-17-70)
(NASA-TP-3183; L-16937; NAS 1.60:3183) Avail: CASI HC A03/MF A01

11
AIRCRAFT PROPULSION AND POWER

Includes prime propulsion systems and systems components, e.g., gas turbine engines and compressors; and onboard auxiliary power plants for aircraft.

N91-20086*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
AEROPROPULSION 1987
AIR BREATHING ENGINES, AIRCRAFT DESIGN, AIRCRAFT ENGINES, COMPUTER PROGRAMS, CONTROL SYSTEMS DESIGN, FLUID MECHANICS, PROPULSION SYSTEM CONFIGURATIONS, STRUCTURAL DESIGN

N92-22510*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
AEROPROPULSION 1987
AIRCRAFT ENGINES, CONFERENCES, ENGINE DESIGN, PROPULSION SYSTEM CONFIGURATIONS, PROPULSION SYSTEM PERFORMANCE

N92-22863*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
DESIGN AND PERFORMANCE OF CONTROLLED-DIFFUSION STATOR COMPARED WITH ORIGINAL DOUBLE-CIRCULAR-ARC STATOR
DIFFUSION, ENERGY CONVERSION EFFICIENCY, FAN BLADES, STATOR BLADES, STATORS

N92-25712*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
WORKSHOP ON GRID GENERATION AND RELATED AREAS
COMPUTATIONAL GRIDS, CONFERENCES, GRID GENERATION (MATHEMATICS), MULTIGRID METHODS, SURFACES

N92-25808*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
COMPUTATIONAL FLUID DYNAMICS
ALGORITHMS, COMPUTATIONAL FLUID DYNAMICS, FLOW DISTRIBUTION, MATHEMATICAL MODELS, NUMERICAL ANALYSIS, REAL GASES, RESEARCH AND DEVELOPMENT

FLIGHT CHARACTERISTICS OF A MODIFIED SCHWEIZER SGS1-36 SAILPLANE AT LOW AND VERY HIGH ANGLES OF ATTACK
AERODYNAMIC STABILITY, ANGLE OF ATTACK, FLIGHT CHARACTERISTICS, GLIDERS, PARAMETER IDENTIFICATION, PILOT PERFORMANCE

N91-21028*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
A CONTROLS ENGINEERING APPROACH FOR ANALYZING AIRPLANE INPUT-OUTPUT CHARACTERISTICS
AIRCRAFT CONTROL, AIRCRAFT MODELS, CONTROL SYSTEMS DESIGN, MODAL RESPONSE

N91-25151*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
DEVELOPMENT OF AN ADAPTIVE FAILURE DETECTION AND IDENTIFICATION SYSTEM FOR DETECTING AIRCRAFT CONTROL ELEMENT FAILURES
ADAPTIVE CONTROL, AIRCRAFT CONTROL, ATMOSPHERIC TURBULENCE, FAILURE ANALYSIS, FAULT TOLERANCE

APPLICATION AND FLIGHT TEST OF LINEARIZING TRANSFORMATIONS USING MEASUREMENT FEEDBACK TO THE NONLINEAR CONTROL PROBLEM
AIRCRAFT CONTROL, CONTROL SYSTEMS DESIGN, CONTROLLERS, F-15 AIRCRAFT, FEEDBACK CONTROL, FLIGHT CONTROL, NONLINEAR SYSTEMS, TRAJECTORY CONTROL
N91-17073” National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

**FLIGHT MECHANICS/ESTIMATION THEORY SYMPOSIUM, 1990**


AERODYNAMICS, ATTITUDE (INCLINATION), CONFERENCES, ESTIMATES, FLIGHT MECHANICS, SATELLITE ATTITUDE CONTROL, SPACECRAFT ORBITS, SPACECRAFT TRAJECTORIES

N92-14070” National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

**FLIGHT MECHANICS/ESTIMATION THEORY SYMPOSIUM, 1991**


ATTITUDE (INCLINATION), MISSION PLANNING, ORBIT CALCULATION, ORBIT DECAY

**GROUND SUPPORT SYSTEMS AND FACILITIES (SPACE)**

Includes launch complexes, research and production facilities; ground support equipment, e.g., mobile transporters; and simulators.

N92-12010” National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX

**CONTROL CENTER TECHNOLOGY CONFERENCE PROCEEDINGS**


ARCHITECTURE (COMPUTERS), COMMUNICATION NETWORKS, COMPUTER NETWORKS, CONFERENCES, FLIGHT CONTROL, GROUND BASED CONTROL, GROUND SUPPORT EQUIPMENT, GROUND SUPPORT SYSTEMS, INTEGRATED MISSION CONTROL CENTER

N92-30307” National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH

**THREE-DIMENSIONAL LASER WINDOW FORMATION**

VINCENT G. VERHOFF Jul. 1992 12 p
(RTOF 506-49-31-01)
(NASA-CP-10073; NAS 1.55:10073) Avail: CASI HC A03/MF A01

The NASA Lewis Research Center has developed and implemented a unique process for forming flawless three-dimensional laser windows. These windows represent a major part of specialized, nonintrusive laser data acquisition systems used in a variety of compressor and turbine research test facilities. This report discusses in detail the aspects of three-dimensional laser window formation. It focuses on the unique methodology and the peculiarities associated with the formation of these windows. Included in this discussion are the design criteria, bonding mediums, and evaluation testing for three-dimensional laser windows.

Author

**LAUNCH VEHICLES AND SPACE VEHICLES**

Includes boosters; operating problems of launch/space vehicle systems; and reusable vehicles.

N91-18180” National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**PARAMETRIC TRADE STUDIES ON A SHUTTLE 2 LAUNCH SYSTEM ARCHITECTURE**

(RTOF 506-40-61-01)
(NASA-TP-3059; L-16790; NAS 1.60:3059) Avail: CASI HC A04/MF A01

BOOSTER ROCKET ENGINES, LAUNCH VEHICLE CONFIGURATIONS, PROPULSION SYSTEM CONFIGURATIONS, SPACECRAFT CONFIGURATIONS, SPACECRAFT DESIGN, THRUST-WEIGHT RATIO

N91-20177” National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**BENEFITS FROM SYNERGIES AND ADVANCED TECHNOLOGIES FOR AN ADVANCED-TECHNOLOGY SPACE STATION**

(NASA-TP-3067; L-16618; NAS 1.60:3067) Avail: CASI HC A03/MF A01

ARTIFICIAL GRAVITY, SPACE STATIONS, SPACECRAFT CABINS, SPACECRAFT CONFIGURATIONS, SYSTEMS ANALYSIS

N91-27177” National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**TECHNOLOGY FOR THE FUTURE: IN-SPACE TECHNOLOGY EXPERIMENTS PROGRAM, PART 1**

(RTOF 506-44-41-01)
(NASA-CP-10073-PT-1; NAS 1.55:10073-PT-1) Avail: CASI HC A14/MF A03

CONFERENCES, INDUSTRIES, NASA SPACE PROGRAMS, SPACE STATIONS, UNIVERSITY PROGRAM


N92-31251* # National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH. GRAPHITE/EPOXY COMPOSITE ADAPTERS FOR THE SPACE SHUTTLE/CENTAUR VEHICLE HAROLD J. KASPER and DARRYL S. RING (General Dynamics Corp., San Diego, CA.) Sep. 1990 34 p (NAS3-2290) (NASA-TP-3014; E-4969; NAS 1.60:3014) Avail: CASI HC A03/MF A01 ADAPTERS, CENTAUR LAUNCH VEHICLE, COMPOSITE STRUCTURES, GRAPHITE-EPOXY COMPOSITES, LAUNCH VEHICLE CONFIGURATIONS, SPACE SHUTTLE PAYLOADS, SPACECRAFT CONSTRUCTION MATERIALS, SPACECRAFT DESIGN, SPACECRAFT STRUCTURES, STRUCTURAL ANALYSIS, UPPER STAGE ROCKET ENGINES


N92-20676* # National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL. PAYLOAD BAY DOORS AND RADIATOR PANELS FAMILIARIZATION HANDBOOK JOHN A. GODBOLD 1992 92 p LIMITED REPRODUCIBILITY: More than 20% of this document may be affected by color photographs Original contains color illustrations (NASA-TM-107793; NASA-TP-POD-2; NAS 1.15:107793) AERODYNAMIC FORCES, BAYS (STRUCTURAL UNITS), CONTAMINATION, DOORS, FAIRINGS, PANELS, PAYLOADS, SPACE SHUTTLES, THERMAL PROTECTION


N91-27180* # National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. LAUNCH VEHICLE INTEGRATION OPTIONS FOR A LARGE EARTH SCIENCES GEOSTATIONARY PLATFORM CONCEPT JAMES L. GARRISON and LAWRENCE F. ROWELL Jul. 1991 49 p (NASA-CP-10073-PT-2; NAS 1.55:10073-PT-2) Avail: CASI HC A14/MF A03 EARTH SCIENCES, GEOFYCHRONOUS ORBITS, LAUNCH VEHICLES, ORBIT TRANSFER VEHICLES, ORBITAL ASSEMBLY, PAYLOAD INTEGRATION, SPACE ERECTABLE STRUCTURES, SPACE STATIONS, SPACECRAFT LAUNCHING, SYNCHRONOUS PLATFORMS


Includes passenger and cargo space transportation, e.g., shuttle operations; and space rescue techniques.
17 SPACE COMM., SPACECRAFT COMM., COMMAND & TRACKING

17 SPACE COMM., SPACECRAFT COMM., COMMAND & TRACKING

Includes telemetry; space communications networks; astronautics and guidance; and radio blackout.


N92-19762* National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH. DESTINATION-DIRECTED, PACKET-SWITCHING ARCHITECTURE FOR 30/30-GHZ FDMA/TDM GEOSTATIONARY COMMUNICATIONS SATELLITE NETWORK WILLIAM D. IVANCIC and MARY JO SHALKHAUSER Feb. 1992 14 p Previously announced as N92-14204 (RTOP 650-60-21) (NASA-TP-3201; E-6539; NAS 1.60:3201) Avail: CASI HC A03/MF A01 ARCHITECTURE (COMPUTERS), COMMUNICATION SATELLITES, FREQUENCY DIVISION MULTIPLEXING, PACKET SWITCHING, SATELLITE COMMUNICATION, SATELLITE NETWORKS, TIME DIVISION MULTIPLEXING


18 SPACECRAFT DESIGN, TESTING AND PERFORMANCE

Includes satellites; space platforms; space stations; spacecraft systems and components such as thermal and environmental controls; and attitude controls.


N91-17114* National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. ON-ORBIT STRUCTURAL DYNAMIC PERFORMANCE OF A 15-METER MICROWAVE RADIOMETER ANTEenna DEBORAH M. WAHLS (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), JEFFERY T. FARMER (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and DAVID W. SLEIGHT (Illinois Univ., Urbana.) Washington Dec. 1990 44 p (RTOP 506-49-21-02) (NASA-TP-3041; L-16795; NAS 1.60:3041) Avail: CASI HC A03/MF A01 ANTENNA DESIGN, COMPUTER AIDED DESIGN, GEOSYNCHRONOUS ORBITS, MICROWAVE RADIOMETERS, MODAL RESPONSE, STRUCTURAL DESIGN, SYNCHRONOUS PLATFORMS


COMPUTER AIDED TOMOGRAPHY, CONFERENCES, INSPECTION, NONDESTRUCTIVE TESTS, ULTRASONIC FLAW DETECTION

N91-18199* National Aeronautics and Space Administration, Washington, DC.

LARGE SPACE STRUCTURES AND SYSTEMS IN THE SPACE STATION ERA: A BIBLIOGRAPHY WITH INDEXES
JOHN J. FERRAINOLO, ed. (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.) Nov. 1990 350 p
(NASA-SP-7085(01); NASA-SP-7085(01)) Avail: CASI HC A15

Bibliographies and abstracts are listed for 1372 reports, articles, and other documents introduced into the NASA scientific and technical information system between January 1, 1990 and June 30, 1990. Its purpose is to provide helpful information to the researcher, manager, and designer in technology development and mission design according to system, interactive analysis and design, structural and thermal analysis and design, structural concepts and control systems, electronics, advanced materials, assembly concepts, propulsion, and solar power satellite systems. Author

N91-18112* National Aeronautics and Space Administration.

THE 5TH ANNUAL NASA SPACECRAFT CONTROL LABORATORY EXPERIMENT (Scole) WORKSHOP, PART 2
Workshop held in Lake Arrowhead, CA, 31 Oct. 1988
(RTOP 506-46-11-01)
(NASA-CP-10057-PT-2; NAS 1.55:10057-PT-2) Avail: CASI HC A16/MF A03
CONFERENCES, CONTROL SYSTEMS DESIGN, DYNAMIC STRUCTURAL ANALYSIS, FLEXIBLE SPACECRAFT, LARGE SPACE STRUCTURES, MATHEMATICAL MODELS, SPACECRAFT CONTROL

N91-18158* National Aeronautics and Space Administration.

SIXTEENTH SPACE SIMULATION CONFERENCE CONFIRMING SPACEWORTHINESS INTO THE NEXT MILLENNIUM
Symposium held in Albuquerque, NM, 5-8 Nov. 1990; sponsored by NASA, Inst. of Environmental Sciences, AIAA, and the American Society for Testing and Materials
(NASA-CP-5096; REPT-50600146; NAS 1.55:5096) Avail: CASI HC A20/MF A04
CONFERENCES, SPACE ENVIRONMENT SIMULATION, SPACECRAFT CONTAMINATION, THERMAL SIMULATION

N91-22305* National Aeronautics and Space Administration.

A NEW FABRICATION METHOD FOR PRECISION ANTENNA REFLECTORS FOR SPACE FLIGHT AND GROUND TEST
(RTOP 650-60-20)
(NASA-TP-35708; E-5176; NAS 1.60:3078) Avail: CASI HC A03/MF A01; 2 functional color pages
ANTENNA DESIGN, COMMUNICATION SATELLITES, DESIGN ANALYSIS, FABRICATION, REFLECTOR ANTENNAS, REFLECTORS, SATELLITE ANTENNAS

N91-22286* National Aeronautics and Space Administration.

AEROSPACE APPLICATIONS OF MAGNETIC SUSPENSION TECHNOLOGY, PART 1
NELSON J. GROOM, ed. (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.) and COLIN P. BRITCHER, ed. (Old Dominion Univ., Norfolk, VA.) Mar. 1991 377 p
Workshop held in Hampton, VA, 25-27 Sep. 1990
(RTOP 506-46-11-01)
(NASA-CP-10066-PT-1; NAS 1.55:10066-PT-1) Avail: CASI HC A17/MF A03
AEROSPACE ENGINEERING, MAGNETIC SUSPENSION, REDUCED GRAVITY, SUPERCONDUCTIVITY, TECHNOLOGY UTILIZATION

N91-22030* National Aeronautics and Space Administration.

AEROSPACE APPLICATIONS OF MAGNETIC SUSPENSION TECHNOLOGY, PART 2
NELSON J. GROOM, ed. (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.) and COLIN P. BRITCHER, ed. (Old Dominion Univ., Norfolk, VA.) Mar. 1991 394 p
Workshop held in Hampton, VA, 25-27 Sep. 1990
(RTOP 506-46-11-02)
(NASA-CP-10066-PT-2; NAS 1.55:10066-PT-2) Avail: CASI HC A17/MF A04
CONTROL SYSTEMS DESIGN, CONTROL THEORY, MAGNETIC BEARINGS, MAGNETIC SUSPENSION, POINTING CONTROL SYSTEMS, SUPERCONDUCTIVITY

N91-22307* National Aeronautics and Space Administration.

FOURTH NASA WORKSHOP ON COMPUTATIONAL CONTROL OF FLEXIBLE AEROSPACE SYSTEMS, PART 1
Workshop held in Williamsburg, VA, 11-13 Jul. 1990
(RTOP 506-46-11-01)
(NASA-CP-10065-PT-1; NAS 1.55:10065-PT-1) Avail: CASI HC A20/MF A04
AEROSPACE SYSTEMS, CONTROL SYSTEMS DESIGN, CONTROL THEORY, FLEXIBLE SPACECRAFT, ROBOT CONTROL, SPACECRAFT CONTROL

N91-22310* National Aeronautics and Space Administration.

FOURTH NASA WORKSHOP ON COMPUTATIONAL CONTROL OF FLEXIBLE AEROSPACE SYSTEMS, PART 2
Workshop held in Williamsburg, VA, 11-13 Jul. 1990
(RTOP 506-46-11-01)
(NASA-CP-10065-PT-2; NAS 1.55:10065-PT-2) Avail: CASI HC A20/MF A04
AEROSPACE SYSTEMS, AIRCRAFT CONTROL, CONTROL CONFERENCES, DYNAMIC STRUCTURAL ANALYSIS, FLEXIBLE SPACECRAFT, FLEXIBLE WINGS, FLUTTER, LARGE SPACE STRUCTURES, OPTIMAL CONTROL, ROBOTICS, VIBRATION DAMPING

N91-27182* National Aeronautics and Space Administration.

PACKAGING, DEVELOPMENT, AND ON-ORBIT ASSEMBLY OPTIONS FOR LARGE GEOSTATIONARY SPACECRAFT
WILLIAM T. DAVIS (National Aeronautics and Space
18 SPACECRAFT DESIGN, TESTING AND PERFORMANCE


GEOSYNCHRONOUS ORBITS, LARGE SPACE STRUCTURES, LAUNCH VEHICLES, ORBITAL ASSEMBLY, PAYLOAD INTEGRATION, SPACE ERECTABLE STRUCTURES, SPACECRAFT DESIGN, SYNCHRONOUS SATELLITES

N91-28191* National Aeronautics and Space Administration, Washington, DC.

LARGE SPACE STRUCTURES AND SYSTEMS IN THE SPACE STATION ERA: A BIBLIOGRAPHY WITH INDEXES JOHN J. FERRAINOLO, comp. and GEORGE F. LAWRENCE, comp. May 1991 329 p (NASA-SP-7085(02); NAS 1.21:7085(02)) Avail: CASI HC A15

Bibliographies and abstracts are listed for 1219 reports, articles, and other documents introduced into the NASA scientific and technical information system between July 1, 1990 and December 31, 1990. The purpose is to provide helpful information to the researcher, manager, and designer in technology development and mission design according to system, interactive analysis and design, structural and thermal analysis and design, structural concepts and control systems, electronics, advanced materials, assembly concepts, propulsion, and solar power satellite systems. Author

N92-11087*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

MULTIDISCIPLINARY OPTIMIZATION OF CONTROLLED SPACE STRUCTURES WITH GLOBAL SENSITIVITY EQUATIONS SHARON L. PADULA, BENJAMIN B. JAMES, PHILIP C. GRAVES (Vigyan Research Associates, Inc., Hampton, VA.), and STANLEY E. WOODARD Nov. 1991 39 p (RTOP 506-49-4-1-01)

(NASA-TP-3130; NAS 1.60:3130) Avail: CASI HC A03/MF A01

CONTROL SYSTEMS DESIGN, LARGE SPACE STRUCTURES, OPTIMIZATION, SPACECRAFT CONTROL, SPACECRAFT DESIGN, SPACECRAFT STRUCTURES, WEIGHT REDUCTION

N92-17098*# National Aeronautics and Space Administration, Washington, DC.


SPACE STATION FREEDOM, SPACECRAFT CONFIGURATIONS, SPACECRAFT DESIGN, USER REQUIREMENTS

N92-17348*# National Aeronautics and Space Administration, Washington, DC.


CONFERENCEs, EVOLUTION (DEVELOPMENT), PROJECT PLANNING, SOFTWARE ENGINEERING, SPACE STATION FREEDOM, SYSTEMS ENGINEERING

N92-17409*# National Aeronautics and Space Administration, Washington, DC.


CONFERENCEs, EXPERT SYSTEMS, SPACE STATION FREEDOM

N92-17768*# National Aeronautics and Space Administration, Washington, DC.


AEROSPACE ENGINEERING, CONFERENCES, DISTRIBUTED PARAMETER SYSTEMS, FUNCTIONAL DESIGN SPECIFICATIONS, MISSION PLANNING, PROJECT PLANNING, SPACE STATION FREEDOM, SPACECRAFT DESIGN, USER REQUIREMENTS

N92-22317* National Aeronautics and Space Administration, Washington, DC.

LARGE SPACE STRUCTURES AND SYSTEMS IN THE SPACE STATION ERA: A BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 03) Dec. 1991 324 p (NASA-SP-7085(03); NAS 1.21:7085(03)) Avail: CASI HC A14

Bibliographies and abstracts are listed for 1221 reports, articles, and other documents introduced into the NASA scientific and technical information system between January 1, 1991 and June 30, 1991. Topics covered include large space structures and systems, space stations, extravehicular activity, thermal environments and control, tethering, spacecraft power supplies, structural concepts and control systems, electronics, advanced materials, propulsion, policies and international cooperation, vibration and dynamic controls, robotics and remote operations, data and communication systems, electric power generation, space commercialization, orbital transfer, and human factors engineering. Author

N92-27721*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.


CONFERENCES, CONTROL EQUIPMENT, MAGNETIC BEARINGS, MAGNETIC CONTROL, MAGNETIC LEVITATION VEHICLES, MAGNETIC SUSPENSION, SUPERCONDUCTING MAGNETS

N92-27788*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.


CONFERENCES, SYSTEMS DESIGN, MAGNETIC BEARINGS, MAGNETIC SUSPENSION, SUPERCONDUCTING MAGNETS, SUPERCONDUCTIVITY
N92-28730*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
ONGOING PROGRESS IN SPACECRAFT CONTROLS
DAVE GHOSH, ed. (Lockheed Engineering and Sciences Co.,
Hampton, VA.) Jul. 1992 143 p Workshop held in Hampton,
VA, 13 Jan. 1992
(RTOP 506-59-61-01)
(NASA-CP-10099; NAS 1.55:10099) Avail: CASI HC A07/MF A02
ADAPTIVE CONTROL, CONTROL SYSTEMS DESIGN,
DYNAMIC STRUCTURAL ANALYSIS, MANNED MARS MISSIONS,
MANNED SPACECRAFT, NASA SPACE PROGRAMS, ROBOTICS,
SPACE EXPLORATION, SPACECRAFT CONTROL

19

SPACECRAFT INSTRUMENTATION

N92-25147*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
FEASIBILITY STUDY OF A LOW-ENERGY GAMMA RAY
SYSTEM FOR MEASURING QUANTITY AND FLOW RATE OF
SLUSH HYDROGEN
JAG J. SINGH, CHIH-PING SHEN, and DANNY R. SPRINKLE
(Old Dominion Univ., Norfolk, VA.) Apr. 1992 14 p
(RTOP 307-50-10-02)
(NASA-TP-3150; L-16980; NAS 1.60:3150) Avail: CASI HC A03/MF A01
FEASIBILITY ANALYSIS, FLOW VELOCITY, GAMMA RAYS,
SLUSH HYDROGEN, X RAYS

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SPACECRAFT PROPULSION AND POWER
Includes main propulsion systems and components, e.g., rocket
engines; and spacecraft auxiliary power sources.

N91-11800*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
METALLIZED PROPELLANTS FOR THE HUMAN
EXPLORATION OF MARS
BRYAN A. PALASZEWSKI Nov. 1990 14 p
(RTOP 506-42-00)
(NASA-TP-3062; E-5544; NAS 1.60:3062) Avail: CASI HC A03/MF A01
EARTH ORBITS, LAUNCHING, MANNED MARS MISSIONS,
METAL PROPELLANTS, MISSION PLANNING, PAYLOADS,
SPACE TRANSPORTATION

N91-15308*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
LUNAR MISSIONS USING CHEMICAL PROPULSION: SYSTEM
DESIGN ISSUES
BRYAN PALASZEWSKI Jan. 1991 13 p Presented at the
sponsored in part by AIAA, ASME, SAE, and ASEE Previously
announced as A90-47221
(RTOP 506-42-51)
(NASA-TP-3065; E-5542; NAS 1.60:3065) Avail: CASI HC A03/MF A01
CHEMICAL PROPULSION, HYDRAZINES, LUNAR BASES,
METAL PROPELLANTS, PAYLOADS, PROPellant ADDITIVES,
PROPULSION SYSTEM CONFIGURATIONS, PROPULSION
SYSTEM PERFORMANCE, SPACE TRANSPORTATION

N91-19182*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
SPACE PHOTOVOLTAIC RESEARCH AND TECHNOLOGY,
1989
Washington Jan. 1991 515 p Tenth conference held in
Cleveland, OH, 7-9 Nov. 1989
(RTOP 506-41-11)
(NASA-CP-3107; E-5728; NAS 1.55:3107) Avail: CASI HC A22/MF A04
CONFERENCES, PHOTOVOLTAIC CELLS, PHOTOVOLTAIC
CONVERSION, SOLAR ARRAYS, SOLAR CELLS, SPACECRAFT
POWER SUPPLIES

N91-24307*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
STRUCTURAL INTEGRITY AND DURABILITY OF REUSABLE
SPACE PROPULSION SYSTEMS
Apr. 1989 259 p Conference held in Cleveland, OH, 18-19
Apr. 1989
(RTOP 553-13-00)
(NASA-CP-10030; E-4628; NAS 1.55:10030) Avail: CASI HC A12/MF A03
CONFERENCES, DYNAMIC STRUCTURAL ANALYSIS, LIFE
(DURABILITY), PREDICTION ANALYSIS TECHNIQUES,
PROPULSION SYSTEM CONFIGURATIONS, REUSABLE ROCKET
ENGINES

N91-28193*# National Aeronautics and Space Administration,
Washington, DC.
SPACE TRANSPORTATION PROPULSION TECHNOLOGY
SYMPOSIUM. VOLUME 1: EXECUTIVE SUMMARY
May 1991 36 p Symposium held in State College, PA, 25-29
Jun. 1990
(NASA-CP-3112; NAS 1.55:3112) Avail: CASI HC A03/MF A01
BOOSTER ROCKET ENGINES, PROPULSION, PROPULSION
SYSTEM CONFIGURATIONS, SPACE TRANSPORTATION,
SPACE TRANSPORTATION SYSTEM

N91-28235*# National Aeronautics and Space Administration,
Washington, DC.
SPACE TRANSPORTATION PROPULSION TECHNOLOGY
SYMPOSIUM. VOLUME 2: SYMPOSIUM PROCEEDINGS
May 1991 693 p Symposium held in State College, PA, 25-29
Jun. 1990
(NASA-CP-3112-VOL-2; NAS 1.55:3112-VOL-2) Avail: CASI HC A99/MF A06
PROPULSION SYSTEM CONFIGURATIONS, PROPULSION
SYSTEM PERFORMANCE, SPACE TRANSPORTATION, SPACE
TRANSPORTATION SYSTEM, SPACECRAFT POWER SUPPLIES

N91-28235*# National Aeronautics and Space Administration,
Washington, DC.
SPACE TRANSPORTATION PROPULSION TECHNOLOGY
SYMPOSIUM. VOLUME 3: PANEL SESSION SUMMARIES AND
PRESENTATIONS
May 1991 620 p Symposium held in State College, PA, 25-29
Jun. 1990
(NASA-CP-3112-VOL-3; NAS 1.55:3112-VOL-3) Avail: CASI HC A99/MF A06
CONFERENCES, PROPULSION SYSTEM CONFIGURATIONS,
SPACE TRANSPORTATION, SPACE TRANSPORTATION
SYSTEM, SPACECRAFT PROPULSION

N91-30203*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
SPACE PHOTOVOLTAIC RESEARCH AND TECHNOLOGY
CONFERENCE
Aug. 1991 471 p The 11th Conference was held in Cleveland,
OH, 7-9 May 1991
(RTOP 506-41-11)
(NASA-CP-3121; E-6161; NAS 1.55:3121) Avail: CASI HC A20/MF A04
AEROSPACE ENVIRONMENTS, CONFERENCES, ELECTRON
IRRADIATION, EXPOSURE, PHOTOVOLTAIC CONVERSION, PROTON IRRADIATION, RADIATION DAMAGE, SOLAR CELLS, SPACECRAFT POWER SUPPLIES

N92-10044* # National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
MAGNETOPLASMA Dynamic THRUSTER WORKSHOP
(RTOP 506-42-31)
(NASA-CP-10084; E-6518; NAS 1.55:10084) Avail: CASI HC A09/MF A02
CONFERENCES, ELECTRIC ROCKET ENGINES, LOW THRUST PROPULSION, MAGNETOPLASMA DYNAMICS, PLASMA PROPULSION

N92-11088* # National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
NUCLEAR THERMAL PROPULSION: A JOINT NASA/DOE/DOD WORKSHOP
JOHN S. CLARK, ed. 1991 500 p Workshop held in Cleveland, OH, 10-12 Jul. 1990
(RTOP 593-71-00)
(NASA-CP-10079; E-6456; NAS 1.55:10079) Avail: CASI HC A21/MF A04
NUCLEAR ENGINE FOR ROCKET VEHICLES, NUCLEAR PROPULSION, PROJECT MANAGEMENT, PROJECT PLANNING, PROPULSION SYSTEM CONFIGURATIONS, PROPULSION SYSTEM PERFORMANCE, REACTOR DESIGN, REACTOR TECHNOLOGY, RESEARCH PROJECTS, PROJECT ENGINE DESIGN

N92-12052* # National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
AUTOMATING A SPACECRAFT ELECTRICAL POWER SYSTEM USING EXPERT SYSTEMS
(NASA-TP-3161; M-670; NAS 1.60:3161) Avail: CASI HC A03/MF A01
AUTOMATIC CONTROL, AUTONOMY, BREADBOARD MODELS, EXPERT SYSTEMS, SPACE STATION FREEDOM, SPACECRAFT POWER SUPPLIES

N92-14108* # National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
LIMIT CYCLE VIBRATIONS IN TURBOMACHINERY
S. G. RYAN Dec. 1991 84 p
(NASA-TP-3181; M-676; NAS 1.60:3181) Avail: CASI HC A05/MF A01
ROTOR DYNAMICS, ROTORS, SPACE SHUTTLE MAIN ENGINE, TURBINE PUMPS, TURBOMACHINERY, VIBRATION

N92-17151* # National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
UPPER STAGES USING LIQUID PROPULSION AND METALIZED PROPELLANTS
BRYAN A. PALASZEWSKI Washington Feb. 1992 22 p
(RTOP 506-42-72)
(NASA-TP-3191; E-6105; NAS 1.60:3191) Avail: CASI HC A03/MF A01
GELLED PROPELLANTS, INERTIAL UPPER STAGE, LAUNCH VEHICLES, METAL PROPELLANTS, PROPELLANT ADDITIVES, SPACE MISSIONS, SPACE TRANSPORTATION, SPACE TRANSPORTATION SYSTEM, SPACECRAFT PROPULSION

N92-20949* # National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
OPTICAL MEASUREMENTS ON SOLID SPECIMENS OF SOLID ROCKET MOTOR EXHAUST AND SOLID ROCKET MOTOR SLAG
(RTOP 476-50-03)
(NASA-TP-3177; M-674; NAS 1.60:3177) Avail: CASI HC A03/MF A01
ABSORPTIVITY, COMBUSTION PRODUCTS, EXHAUST EMISSION, OPTICAL MEASUREMENT, ROCKET EXHAUST, SLAGS, SOLID PROPELLANT ROCKETS, SOLID ROCKET PROPELLANTS, SPACE DEBRIS, SPACE SHUTTLE BOOSTERS, THERMAL EMISSION

N92-21517* # National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
ROCKET-BASED COMBINED-CYCLE (RBCC) PROPULSION TECHNOLOGY WORKSHOP. TUTORIAL SESSION
(RTOP 590-21-11)
(NASA-CP-10090; E-6929; NAS 1.55:10090) Avail: CASI HC A12/MF A03
AEROSPACE PLANES, ENGINE PARTS, HYPERSONIC FLIGHT, ROCKET ENGINE DESIGN, ROCKET ENGINES

N92-27130* # National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
THE 1990 NASA AEROSPACE BATTERY WORKSHOP
Workshop held in Huntsville, AL, 4-6 Dec. 1990
(NASA-CP-3119; M-661; NAS 1.55:3119) Avail: CASI HC A99/MF A10
AEROSPACE ENGINEERING, CONFERENCES, LITHIUM SULFUR BATTERIES, NICKEL CADMIUM BATTERIES, NICKEL HYDROGEN BATTERIES, SILVER ZINC BATTERIES, SPACECRAFT POWER SUPPLIES, TECHNOLOGY ASSESSMENT

23

CHEMISTRY AND MATERIALS (GENERAL)

N91-20207* # National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
NATIONAL EDUCATORS' WORKSHOP: UPDATE 1988. STANDARD EXPERIMENTS IN ENGINEERING MATERIALS
SCIENCE AND TECHNOLOGY
JAMES E. GARDNER, comp. (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.) and JAMES A. JACOBS, comp. (Norfolk State Univ., VA.)
Washington Jan. 1990 888 p
(NAG1-976; RTOP 505-63-01-15)
(NASA-CP-3060; L-16732; NAS 1.55:3060) Avail: CASI HC A05/MF A01
CONFERENCES, EDUCATION, EXPERIMENTATION, FRACTURE MECHANICS, FRACTURING, HIGH TEMPERATURE SUPERCONDUCTORS, INSPECTION, RADIOGRAPHY, RESEARCH AND DEVELOPMENT, TECHNOLOGIES

24

COMPOSITE MATERIALS

Includes physical, chemical, and mechanical properties of laminates and other composite materials.

N91-10127* # National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
STRUCTURAL PROPERTIES OF LAMINATED DOUGLAS FIR/EPOXY COMPOSITE MATERIAL
AN INVESTIGATION OF MICROSTRUCTURAL CHARACTERISTICS OF CONTACT-LENS POLYMERS
JAG J. SINGH (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), ABE EFTEKHARI (Analytical Services and Materials, Inc., Hampton, VA.), BILLY T. UPHURCH (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and KAREN S. BURNS (Old Dominion Univ., Norfolk, VA.) Washington Dec. 1990 12 p

OUTGASSING DATA FOR SELECTING SPACECRAFT MATERIALS, REVISION 2
WILLIAM A. CAMPBELL, JR. and JOHN J. SCIALDONE Washington Nov. 1990 398 p

COMPRESSION BEHAVIOR OF GRAPHITE-THERMOPLASTIC AND GRAPHITE-EPOXY PANELS WITH CIRCULAR HOLES OR IMPACT DAMAGE

COOLING, MICROSTRUCTURE, PEEK, POSITRON ANNIHILATION, SPECTROSCOPY, TEMPERATURE EFFECTS
A. J. HODGE and A. T. NETTLES Langley Research Center, Hampton, VA.

PROPERTIES OF THREE GRAPHITE/TOUGHENED RESIN COMPOSITES
DONALD L. SMITH (Lockheed Engineering and Sciences Co., Hampton, VA.) and MARVIN B. DOW Washington Sep. 1991 50 p

AN EXAMINATION OF THE DAMAGE TOLERANCE ENHANCEMENT OF CARBON/EPOXY USING AN OUTER LAMINA OF SPECTRA (R) Final Report

OPTIMIZATION OF COMPOSITE SANDWICH COVER PANELS SUBJECTED TO COMpressive LOADings
JUAN R. CRUZ Langley Research Center, Hampton, VA.
24 COMPOSITE MATERIALS

(NASA-TP-3173; L-16942; NAS 1.60:3173) Avail: CASI HC A03/MF A01

COMPOSITE STRUCTURES, COMPRESSION LOADING, COMPUTER PROGRAMS, DESIGN ANALYSIS, OPTIMIZATION, SANDWICH STRUCTURES, STRUCTURAL DESIGN, WING PANELS

N92-20950*# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.

A STATISTICAL COMPARISON OF TWO CARBON FIBER/EPOXY FABRICATION TECHNIQUES
(NASA-TP-3179; M-673; NAS 1.60:3179) Avail: CASI HC A03/MF A01

AUTOCLAVES, CARBON FIBER REINFORCED PLASTICS, CARBON FIBERS, COMPRESSIVE STRENGTH, CURING, EPOXY MATRIX COMPOSITES, PRESSES

N92-21605*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

AMSAHTS 1990: ADVANCES IN MATERIALS SCIENCE AND APPLICATIONS OF HIGH TEMPERATURE SUPERCONDUCTORS
LARRY H. BENNETT, ed., YURY FLOM, ed., and KISHIN MOORJANI, ed. (Johns Hopkins Univ., Laurel, MD.) Jan. 1991 488 p Conference held in Greenbelt, MD, 2-6 Apr. 1990; sponsored in cooperation with NASA, NIST, JHU, and DARPA. Previously announced as N90-27792
(NASA-CP-3100; REPT-90800018; NAS 1.55:3100) Avail: CASI HC A21/MF A04

HIGH TEMPERATURE SUPERCONDUCTORS, OXIDES, REACTION KINETICS, SURFACE REACTIONS, THERMODYNAMIC PROPERTIES

N92-23981*# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.

EFFECT OF LOW-SPEED IMPACT DAMAGE AND DAMAGE LOCATION ON BEHAVIOR OF COMPOSITE PANELS
(RTOP 505-63-50-08)
(NASA-TP-3196; L-17031; NAS 1.60:3196) Avail: CASI HC A03/MF A01

BUCKLING, GRAPHITE-EPOXY COMPOSITES, IMPACT DAMAGE, IMPACT TESTS, LAMINATES, LOW SPEED

N92-25160*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

BUCKLING BEHAVIOR OF LONG SYMMETRICALLY LAMINATED PLATES SUBJECTED TO COMBINED LOADINGS
(RTOP 505-63-50-07)
(NASA-TP-3195; L-17035; NAS 1.60:3195) Avail: CASI HC A03/MF A01

ANISOTROPIC PLATES, BENDING, BUCKLING, LAMINATES, LOADS (FORCES), STIFFNESS, STRUCTURAL ANALYSIS

N92-32513*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

EIGHTH DOD/NASA/FAA CONFERENCE ON FIBROUS COMPOSITES IN STRUCTURAL DESIGN, PART 1
(RTOP 505-63-01-09)
(NASA-CP-3087-PT-1; L-16832-PT-1; NAS 1.55:3087-PT-1) Avail: CASI HC A17/MF A03

AIRCRAFT DESIGN, COMPOSITE STRUCTURES, CONFERENCES, FIBER COMPOSITES, FINITE ELEMENT METHOD, MATHEMATICAL MODELS, MECHANICAL PROPERTIES, STRUCTURAL DESIGN

N92-32576*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

EIGHTH DOD/NASA/FAA CONFERENCE ON FIBROUS COMPOSITES IN STRUCTURAL DESIGN, PART 2
(RTOP 505-63-01-09)
(NASA-CP-3087-PT-2; L-16832-PT-2; NAS 1.55:3087-PT-2) Avail: CASI HC A14/MF A03

AIRCRAFT CONSTRUCTION MATERIALS, COMPOSITE STRUCTURES, CONFERENCES, FIBER COMPOSITES, STRUCTURAL ANALYSIS, STRUCTURAL DESIGN

25 INORGANIC AND PHYSICAL CHEMISTRY
Includes chemical analysis, e.g., chromatography; combustion theory; electrochemistry; and photochemistry.

N92-28374*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

AN ANALYSIS OF COMBUSTION STUDIES IN SHOCK EXPANSION TUNNELS AND REFLECTED SHOCK TUNNELS
CASIMIR J. JACHIMOWSKI Jul. 1992 12 p
(RTOP 505-62-40-04)
(NASA-TP-3224; L-17025; NAS 1.60:3224) Avail: CASI HC A03/MF A01

COMBUSTION CHAMBERS, COMBUSTION CHEMISTRY, COMBUSTION PHYSICS, HYPERSONIC FLIGHT, REACTION KINETICS, SHOCK TUNNELS

26 METALLIC MATERIALS
Includes physical, chemical, and mechanical properties of metals, e.g., corrosion; and metallurgy.

N91-13522*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

OXIDATION CHARACTERISTICS OF Ti-25AL-10NB-3V-1MO INTERMETALLIC ALLOY
(RTOP 505-43-71-01)
(NASA-TP-3044; L-16808; NAS 1.60:3044) Avail: CASI HC A03/MF A01

ALUMINIDES, OXIDATION, REACTION KINETICS, TEMPERATURE EFFECTS, TITANIUM ALLOYS

N91-17208*# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.

ELECTROCHEMICAL STUDIES OF CORROSION INHIBITORS
M. D. DANFORD Washington Nov. 1990 21 p
(NASA-TP-3066; NAS 1.60:3066) Avail: CASI HC A03/MF A01
CERAMIC COATINGS, GIHS FREE ENERGY, HYDROGEN, PRESSURE DEPENDENCE, SILICON NITRIDES, SURFACE REACTIONS, TEMPERATURE DEPENDENCE, THERMODYNAMICS, WATER

27 NONMETALLIC MATERIALS

Includes physical, chemical, and mechanical properties of plastics, elastomers, lubricants, polymers, textiles, adhesives, and ceramic materials.


N92-27194*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. EFFECT OF TEMPERATURE AND GAP OPENING RATE ON THE RESILIENCY OF CANDIDATE SOLID ROCKET BOOSTER O-RING MATERIALS CYNTHIA L LACH Jul. 1992 14 p (RTOP 505-63-50-03) (NASA-TP-3226; L-17023; NAS 1.60:3226) Avail: CASI HC A03/MF A02 DEFLECTION, ELASTOMERS, O RING SEALS, RESILIENCE, SEALING, TEMPERATURE EFFECTS

MATERIALS PROCESSING

Includes space-based development of products and processes for commercial applications.

N92-13340*# National Aeronautics and Space Administration.
Lyndon B. Johnson Space Center, Houston, TX.
ANALYSIS OF GRAVITY-INDUCED PARTICLE MOTION AND FLUID PERFUSION FLOW IN THE NASA-DESIGNED ROTATING ZERO-HEAD-SPACE TISSUE CULTURE VESSEL.
(RTOP 694-01-23-05)
(NASA-TP-3143; S-644; NAS 1.60:3143) Avail: CASI HC A03/MF A01
CULTURE TECHNIQUES, DIFFUSION, FLOW VELOCITY, FLUID MECHANICS, GRAVITATIONAL EFFECTS, PARTICLE MOTION, REDUCED GRAVITY, TISSUES (BIOLOGY)

MATERIALS PROCESSING

ENGINEERING (GENERAL)

Includes vacuum technology; control engineering; display engineering; cryogenics; and fire prevention.

N92-13343*# National Aeronautics and Space Administration.
Marshall Space Flight Center, Huntsville, AL.
A NONLINEAR ESTIMATOR FOR RECONSTRUCING THE ANGULAR VELOCITY OF A SPACECRAFT WITHOUT RATE GYROS.
(NASA-TP-3178; M-675; NAS 1.60:3178) Avail: CASI HC A03/MF A01
ANGULAR VELOCITY, ATTITUDE GYROS, AXES (REFERENCE LINES), ESTIMATORS, KALMAN FILTERS, NONLINEAR SYSTEMS, SATELLITE ATTITUDE CONTROL

31

ENGINEERING (GENERAL)

Includes vacuum technology; control engineering; display engineering; cryogenics; and fire prevention.

N92-11218*# National Aeronautics and Space Administration.
Marshall Space Flight Center, Huntsville, AL.
A GENERALIZED METHOD FOR MULTIPLE ROBOTIC MANIPULATOR PROGRAMMING APPLIED TO VERTICAL-UP WELDING.
(NASA-TP-3163; M-672; NAS 1.60:3163) Avail: CASI HC A03/MF A01
ALGORITHMS, MANIPULATORS, NUMERICAL CONTROL, PLASMA ARC WELDING, ROBOT ARMS, ROBOT CONTROL, ROBOT DYNAMICS

INTERNATIONAL WORKSHOP ON VIBRATION ISOLATION TECHNOLOGY FOR MICROGRAVITY SCIENCE APPLICATIONS
JOSEPH F. LUBOMSKI, ed. May 1992 405 p Workshop held in Cleveland, OH, 23-25 Apr. 1991 (RTOP 694-03-0C)
(NASA-CP-10094; E-7035; NAS 1.55:10094) Avail: CASI HC A18/MF A04
CONFERENCES, CONTROLLERS, REDUCED GRAVITY, SPACE MANUFACTURING, SPACE SHUTTLES, SPACE STATION FREEDOM, VIBRATION ISOLATORS

N92-29677*# National Aeronautics and Space Administration.
Marshall Space Flight Center, Huntsville, AL.
DEFINITION AND DESIGN OF AN EXPERIMENT TO TEST RASTER SCANNING WITH ROTATING UNBALANCED-MASS DEVICES ON GIMBALED PAYLOADS.
(NASA-TP-3249; M-691; NAS 1.60:3249) Avail: CASI HC A03/MF A01
EXPERIMENT DESIGN, FEASIBILITY ANALYSIS, PAYLOADS, RASTER SCANNING, ROTATING BODIES, SERVOMECHANISMS, SERVOMOTORS

N92-30378*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, MD.
CABLE COMPLIANCE.
J. KERLEY, W. EKLUND (NSI Technology Services Corp.,...
34 FLUID MECHANICS AND HEAT TRANSFER

Includes boundary layers; hydrodynamics; fluidics; mass transfer; and ablation cooling.

N91-15499*# National Aeronautics and Space Administration.
Ames Research Center, Moffett Field, CA.
FLOW-INDUCED RESONANCE OF SCREEN-COVERED CAVITIES
PAUL T. SODERMAN Oct. 1990 48 p
(RTOP 505-61-11)
(NASA-TP-3052; A-89252; NAS 1.60:3052) Avail: CASI HC
A03/MF A01
ACOUSTIC EXCITATION, AEROACOUSTICS, CAVITIES,
PRESSURE OSCILLATIONS, RESONANT VIBRATION, SCREENS,
VISCOUS FLOW, VORTEX SHEDDING

33 ELECTRONICS AND ELECTRICAL ENGINEERING

Includes test equipment and maintainability; components, e.g.,
tunnel diodes and transistors; microminiaturization; and integrated
circuitry.

N92-11252*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
THE 23 TO 300°C DEMAGNETIZATION RESISTANCE
OF SAMARIUM-COBALT PERMANENT MAGNETS
JANIS M. NIEDRA (Sverdrup Technology, Inc., Brook Park, OH.)
and ERIC OVERTON Washington Nov. 1991 11 p
(RTOP 590-13-11)
(NASA-TP-3119; E-6123; NAS 1.60:3119) Avail: CASI HC
A03/MF A01
COBALT, DEMAGNETIZATION, PERMANENT MAGNETS,
SAMARIUM, TEMPERATURE EFFECTS

Greenbelt, MD.), R. BURKHARDT (NSI Technology Services Corp.,
Greenbelt, MD.), and P. ROSSONI Jun. 1992 128 p
(NASA-TP-3216; NAS 1.60:3216; REPT-92800026) Avail: CASI
HC A07/MF A02
CABLES (ROPES), HUMAN FACTORS ENGINEERING, JOINTS
(JUNCTIONS), MAN MACHINE SYSTEMS, PROSTHETIC
DEVICES, ROBOT ARMS, ROBOTICS

32 COMMUNICATIONS AND RADAR

Includes radar; land and global communications; communications
theory; and optical communications.

N91-27436*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
A THREE-DIMENSIONAL FINITE-ELEMENT
THERMAL/MECHANICAL ANALYTICAL TECHNIQUE FOR
HIGH-PERFORMANCE TRAVELING WAVE TUBES
KAREN F. BARTOS, E. BRIAN FITE, KURT A. SHALKHAUSER,
Original contains color illustrations
(RTOP 650-60-20)
(NASA-TP-3081; E-5917; NAS 1.60:3081) Avail: CASI HC
A03/MF A01; 5 functional color pages
COMPUTER PROGRAMS, FAILURE ANALYSIS, FINITE
ELEMENT METHOD, STRUCTURAL FAILURE, THERMAL
ANALYSIS, THREE DIMENSIONAL MODELS, TRAVELING WAVE
TUBES

N92-14202*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
SPACE COMMUNICATIONS TECHNOLOGY CONFERENCE:
ONBOARD PROCESSING AND SWITCHING
Washington Nov. 1991 288 p Conference held in Cleveland,
OH, 12-14 Nov. 1991
(RTOP 650-60-21)
(NASA-CP-3132; E-6548; NAS 1.60:3132)Avail: CASI HC
A13/MF A03
COMMUNICATION NETWORKS, COMMUNICATION
SATellites, CONFERENCES, NETWORK CONTROL,
ONBOARD DATA PROCESSING, SATELLITE COMMUNICATION,
SATELLITE NETWORKS, SPACE COMMUNICATION,
SWITCHING

N92-20404*# Johns Hopkins Univ., Laurel, MD. Applied Physics
Lab.
PROPAGATION EFFECTS FOR LAND MOBILE SATELLITE
SYSTEMS: OVERVIEW OF EXPERIMENTAL AND MODELING
RESULTS
JULIUS GOLDBIRSH and WOLFHARD J. VOGEL Feb. 1992
142 p Prepared in cooperation with Texas Univ., Austin
(RTOP 643-10-03)
(NASA-RP-1274; NAS 1.61:1274) Avail: CASI HC A07/MF A02
Models developed and experiments performed to characterize
the propagation environment associated with land mobile
communication using satellites are discussed. Experiments were
carried out with transmitters on stratospheric balloons, remotely
piloted aircraft, helicopters, and geostationary satellites. This text
is comprised of compiled experimental results for the expressed
use of communications engineers, designers of planned Land
Mobile Satellite Systems (LMSS), and modelers of propagation
effects. The results presented here are mostly derived from
systematic studies of propagation effects for LMSS geometries in
the United States associated with rural and suburban regions.
Where applicable, the authors also draw liberally from the results
of other related investigations in Canada, Europe, and Australia.
Frequencies near 1500 MHz are emphasized to coincide with
frequency bands allocated for LMSS by the International
Telecommunication Union, although earlier experimental work at
870 MHz is also included. Author
MATHMATICAL MODELS, NATIONAL AEROSPACE PLANE PROGRAM, SKIN TEMPERATURE (NON-BIOLOGICAL), THERMAL PROTECTION

N91-24542# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX. SATURATION POINT MODEL FOR THE FORMATION OF METAL NITRATE IN NITROGEN TETROXIDE OXIDIZER PAUL R. TORRANCE Washington May 1991 19 p (NASA-TP-3107; S-630; NAS 1.60:3107) Avail: CASI HC A03/MF A01 DIFFUSION, NITRATES, NITROGEN TETROXIDE, OXIDIZERS, SATURATION (CHEMISTRY)


N92-11285# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. CALCULATIONS AND CURVE FITS OF THERMODYNAMIC AND TRANSPORT PROPERTIES FOR EQUILIBRIUM AIR TO 30000 K K. JAMES WEILMUENSTER, ROBERT E. SMITH, JR., FRANCIS A. GREENE, and ROBERT N. GUPTA (Vigyan Research Associates, Inc., Hampton, VA.), KAM-PAI LEE, RICHARD A. THOMPSON, and JERROLD M. YOS (Textron Defense Systems, Wilmington, MA.) Washington Oct. 1991 76 p (RTOP 506-40-91-01) (NASA-TP-1260; L-16907; NAS 1.61:1260) Avail: CASI HC A05/MF A01 A self-consistent set of equilibrium air values were computed for enthalpy, total specific heat at constant pressure, compressibility factor, viscosity, total thermal conductivity, and total Prandtl number from 500 to 30,000 K over a range of 10(exp -4) atm to 10(exp 2) atm. The mixture values are calculated from the transport and thermodynamic properties of the individual species provided in a recent study by the authors. The concentrations of the individual species, required in the mixture relations, are obtained from a free energy minimization calculation procedure. Present calculations are based on an 11-species air model. For pressures less than 10(exp -2) atm and temperatures of about 15,000 K and greater, the concentrations of N(+) and O(+) become important, and consequently, they are included in the calculations determining the various properties. The computed properties are curve fitted as a function of temperature at a constant value of pressure. These curve fits reproduce the computed values within 5 percent accuracy.
for the entire temperature range considered here at specific pressures and provide an efficient means for computing the flowfield properties of equilibrium air, provided the elemental composition remains constant at 0.24 for oxygen and 0.76 for nitrogen by mass. Author

**N92-11299**# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

**MODELING OF THE HEAT TRANSFER IN BYPASS TRANSITIONAL BOUNDARY-LAYER FLOWS**


**BOUNDARY LAYER FLOW, BOUNDARY LAYER TRANSITION, BYPASSES, COMPUTERIZED SIMULATION, HEAT TRANSFER, K- EPSILON TURBULENCE MODEL, LEADING EDGES, PREDICTION ANALYSIS TECHNIQUES, TRANSITION FLOW**

**N92-20677**# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**SIMULATION OF REAL-GAS EFFECTS ON PRESSURE DISTRIBUTIONS FOR AEROASSIST FLIGHT EXPERIMENT VEHICLE AND COMPARISON WITH PREDICTION**

JOHN R. MICOL Apr. 1992 70 p (RTOP 506-40-41-01) (NASA-TP-3157; L-16923; NAS 1.60:3157) Avail: CASI HC

**AEROASSIST, BASE PRESSURE, BLUNT BODIES, DENSITY DISTRIBUTION, FOREBODIES, HYPERSONIC SPEED, ORBIT TRANSFER VEHICLES, PRESSURE DISTRIBUTION, REAL GASES, SIMULATION**

**N92-24514**# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

**WORKSHOP ON ENGINEERING TURBULENCE MODELING**


**COMPUTATIONAL FLUID DYNAMICS, CONFERENCES, PROPULSION, TURBULENCE, TURBULENCE MODELS**

**N92-24797**# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**A SIMPLIFIED METHOD FOR THERMAL ANALYSIS OF A COWL LEADING EDGE SUBJECT TO INTENSE LOCAL SHOCK-WAVE-INTERFERENCE HEATING**


**AERODYNAMIC HEATING, AERODYNAMIC INTERFERENCE, COWLINGS, HEAT AFFECTED ZONE, LEADING EDGES, SHOCK WAVES, THERMAL ANALYSIS**

**N92-31281**# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**STAGNATION-POINT HEAT-TRANSFER RATE PREDICTIONS AT AEROASSIST FLIGHT CONDITIONS**


**AEROASSIST, COMPUTATIONAL FLUID DYNAMICS, FLIGHT CONDITIONS, HYPERSONIC FLOW, HYPERSONIC HEAT TRANSFER, NAVIER-STOKES EQUATION, RADIATIVE HEAT TRANSFER, REACTING FLOW, SHOCK LAYERS, STAGNATION POINT, VISCOUS FLOW**

**N92-32245**# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

**TENTH WORKSHOP FOR COMPUTATIONAL FLUID DYNAMIC APPLICATIONS IN ROCKET PROPULSION, PART 2**


**COMPUTATIONAL FLUID DYNAMICS, CONFERENCES, HYDROGEN OXYGEN ENGINES, LIQUID PROPELLANT ROCKET ENGINES, PROPULSION SYSTEM CONFIGURATIONS, ROCKET ENGINE DESIGN, SOLID PROPELLANT ROCKET ENGINES, SPACE SHUTTLE MAIN ENGINE, SPACECRAFT PROPULSION, TURBOMACHINERY**

**N92-32278**# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

**TENTH WORKSHOP FOR COMPUTATIONAL FLUID DYNAMIC APPLICATIONS IN ROCKET PROPULSION, PART 1**


**COMPUTATIONAL FLUID DYNAMICS, CONFERENCES, GRID GENERATION (MATHEMATICS), HEAT TRANSFER, LIQUID PROPELLANT ROCKET ENGINES, PROPELLANT COMBUSTION, SOLID PROPELLANT ROCKET ENGINES, SPACECRAFT PROPULSION, TURBOMACHINERY**

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**35 INSTRUMENTATION AND PHOTOGRAPHY**

Includes remote sensors; measuring instruments and gages; detectors; cameras and photographic supplies; and holography.

**N91-14574**# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

**HIGH RESOLUTION, HIGH FRAME RATE VIDEO TECHNOLOGY**

Washington May 1990 102 p Workshop held in Cleveland, OH, 11-12 May 1988 List of attendees included as supplement (RTOP 694-03-03) (NASA-CP-3080; E-5044; NAS 1.55:3080) Avail: CASI HC

**DATA COMPRESSION, DATA TRANSMISSION, FRAMES (DATA PROCESSING), HIGH RESOLUTION, IMAGE PROCESSING, IMAGING TECHNIQUES, VIDEO DATA**

**N91-22538**# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

**LOW-ENERGY POSITRON FLUX GENERATOR FOR MICROSTRUCTURAL CHARACTERIZATION OF THIN FILMS**


**FILM THICKNESS, INSULATORS, MICROSTRUCTURE, POSITRON ANNIHILATION, SPECTROSCOPY, THIN FILMS, TUNGSTEN**
35 INSTRUMENTATION AND PHOTOGRAPHY

N92-29228*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

SIXTEENTH INTERNATIONAL LASER RADAR CONFERENCE, PART 1

(RTOP 665-45-20-21)
(NASA-CP-3158-PT-1; L-17126-PT-1; NAS 1.55:3158-PT-1)
Avail: CASI HC A03/MF A01
ATMOSPHERIC CIRCULATION, ATMOSPHERIC EFFECTS, BACKSCATTERING, CLIMATE CHANGE, IMAGING TECHNIQUES, OPTICAL RADAR, RADAR MEASUREMENT, REMOTE SENSING, RESEARCH FACILITIES, STRATOSPHERE, VOLCANOES

N92-31013*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

SIXTEENTH INTERNATIONAL LASER RADAR CONFERENCE, PART 2

(RTOP 665-45-20-21)
(NASA-CP-3158-PT-2; L-17126-PT-2; NAS 1.55:3158-PT-2)
Avail: CASI HC A16/MF A03
CONFERENCES, DOPPLER RADAR, IMAGING TECHNIQUES, LASERS, MESOSPHERE, OPTICAL RADAR, OZONE, REMOTE SENSING, TROPOSPHERE

37 MECHANICAL ENGINEERING

Includes auxiliary systems (nonpower); machine elements and processes; and mechanical equipment.

N91-12956*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

EXPERIMENTAL AND ANALYTICAL EVALUATION OF EFFICIENCY OF HELICOPTER PLANETARY STAGE
TIMOTHY L. KRANTZ Nov. 1990 20 p Prepared in cooperation with Army Aviation Systems Command, Cleveland, OH
(DA PROJ. 1L1-6221147-A; RTOP 505-63-51)
(NASA-TP-3063; E-5268; NAS 1.60:3063; AVSCOM-TR-91-C-001)
Avail: CASI HC A03/MF A01
HELICOPTER PROPELLER DRIVE, HELICOPTERS, POWER LOSS, SYSTEM EFFECTIVENESS, TRANSMISSIONS (MACHINE ELEMENTS)

N91-30531*# Ohio State Univ., Columbus. Dept. of Mechanical Engineering

FUNDAMENTALS OF FLUID LUBRICATION
BERNARD J. HAMROCK Washington NASA Aug. 1991 670 p Sponsored by NASA. Lewis Research Center
(RTOP 505-90-21)
(NASA-RP-1255; E-3758; NAS 1.61:1255)
Avail: CASI HC A99/MF A06

The aim is to coordinate the topics of design, engineering dynamics, and fluid dynamics in order to aid researchers in the area of fluid film lubrication. The lubrication principles that are covered can serve as a basis for the engineering design of machine elements. The fundamentals of fluid film lubrication are presented clearly so that students that use the book will have confidence in their ability to apply these principles to a wide range of lubrication situations. Some guidance on applying these fundamentals to the solution of engineering problems is also provided. Author

N91-30540*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

THE EFFECT OF BANDWIDTH ON TELEROBOT SYSTEM PERFORMANCE
MARK UEBEL (Maryland Univ., College Park.), MICHAEL S. ALI (National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.), and IOANNIS MINIS (Maryland Univ., College Park.). Sep. 1991 44 p
(NASA-TP-3152; REPT-91E02561; NAS 1.60:3152)
Avail: CASI HC A03/MF A01
BANDWIDTH, FEEDBACK CONTROL, ROBOT CONTROL, TELEROBOTICS

N92-10195*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

A METHOD FOR DETERMINING SPIRAL-BEVEL GEAR TOOTH GEOMETRY FOR FINITE ELEMENT ANALYSIS
(DA PROJ. 1L1-62211-A-47-A; RTOP 505-63-51)
(NASA-TP-3096; E-5837; NAS 1.60:3096; AVSCOM-TR-91-C-020; AD-A242332)
Avail: CASI HC A03/MF A01; 1 functional color page
APPLICATIONS PROGRAMS (COMPUTERS), COMPUTER AIDED DESIGN, FINITE ELEMENT METHOD, GEAR TEETH, MATHEMATICAL MODELS, SURFACE GEOMETRY, THREE DIMENSIONAL MODELS

N92-14346*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

ROTOR DYNAMIC INSTABILITY PROBLEMS IN HIGH-PERFORMANCE TURBOMACHINERY, 1990
Washington Oct. 1991 458 p Workshop held in College Station, TX, 21-23 May 1990; sponsored by Texas A and M Univ. and NASA. Lewis Research Center
(RTOP 553-13-00)
(NASA-CP-3122; E-5628; NAS 1.55:3122)
Avail: CASI HC A20/MF A04
CONFERENCES, ROTOR DYNAMICS, STRUCTURAL VIBRATION, TURBOMACHINERY, VIBRATION DAMPING

N92-30396*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

DEVELOPMENT OF A FULL-SCALE TRANSMISSION TESTING PROCEDURE TO EVALUATE ADVANCED LUBRICANTS
(DA PROJ. 1L1-62211-A-47-A; RTOP 505-63-36)
(NASA-TP-3265; E-6531; NAS 1.60:3265; AVSCOM-TR-91-C-026)
Avail: CASI HC A03/MF A01
GEARS, HELICOPTER PROPELLER DRIVE, LUBRICANT TESTS, LUBRICATING OILS, LUBRICATION, ROTARY WINGS, TEST STANDS, TRANSMISSIONS (MACHINE ELEMENTS), WEAR TESTS

38 QUALITY ASSURANCE AND RELIABILITY

Includes product sampling procedures and techniques; and quality control.

N91-14618*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

AXISYMMETRIC SHELL ANALYSIS OF THE SPACE SHUTTLE SOLID ROCKET BOOSTER FIELD JOINT
MICHAEL P. NEMETH (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.) and MELVIN S. ANDERSON (Old Dominion Univ., Norfolk, VA.) Washington Jan. 1991 55 p

(NASA-TP-3033; L-16746; NAS 1.60:3033) Avail: CASI HC A04/MF A01

DYNAMIC STRUCTURAL ANALYSIS, JOINTS (JUNCTIONS), O RING SEALS, SOLID PROPELLANT ROCKET ENGINES, SPACE SHUTTLE BOOSTERS

39 STRUCTURAL MECHANICS

Includes structural element design and weight analysis; fatigue; and thermal stress.

N91-10301*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

RESEARCH IN STRUCTURES, STRUCTURAL DYNAMICS AND MATERIALS, 1990

(RTOP 505-63-01-07)
(NASA-CP-3064; L-16735; NAS 1.55:3064) Avail: CASI HC A13/MF A03

BEAMS (SUPPORTS), BUCKLING, COMPOSITE STRUCTURES, CONFERENCES, CONTROL SYSTEMS DESIGN, DYNAMIC RESPONSE, DYNAMIC STRUCTURAL ANALYSIS, LOADS (FORCES)

N91-10328*# National Aeronautics and Space Administration. Langley Research Facility, Edwards, CA.

DESIGN OF CONTROL LAWS FOR FLUTTER SUPPRESSION BASED ON THE AERODYNAMIC ENERGY CONCEPT AND COMPARISONS WITH OTHER DESIGN METHODS
ELI NISSIM (Technion - Israel Inst. of Tech., Haifa.) Oct. 1990 59 p Previously announced in IAA as A89-31100

(RTOP 505-66-71)
(NASA-TP-3056; H-1549; NAS 1.60:3056; AIAA PAPER 89-1212) Avail: CASI HC A04/MF A01

AEREOELASTIC RESEARCH WINGS, CONTROL SYSTEMS DESIGN, CONTROL THEORY, ENERGY METHODS, FLUTTER ANALYSIS, VIBRATION DAMPING

N91-13750*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

FREE VIBRATIONS OF THIN-WALLED SEMICIRCULAR GRAPHITE-EPOXY COMPOSITE FRAMES
AHMED K. NOOR (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), HUEY D. CARDEN (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and JEANNE M. PETERS (Joint Inst. for Advancement of Flight Sciences, Hampton, VA.) Washington Nov. 1990 43 p Original contains color illustrations

(NAG1-730; RTOP 505-63-01-11)
(NASA-TP-3010; L-16726; NAS 1.60:3010) Avail: CASI HC A03/MF A01; 4 functional color pages

COMPOSITE STRUCTURES, FRAMES, GRAPHITE-EPOXY COMPOSITES, LAMINATES, STRUCTURAL ANALYSIS, STRUCTURAL VIBRATION, VIBRATION EFFECTS

N91-13751*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

FAILURE BEHAVIOR OF GENERIC METALLIC AND COMPOSITE AIRCRAFT STRUCTURAL COMPONENTS UNDER CRASH LOADS

(RTOP 505-63-01-11)
(NASA-CP-1239; L-16744; NAS 1.61:1239) Avail: CASI HC A03/MF A01

Failure behavior results are presented from crash dynamics research using concepts of aircraft elements and substructure not necessarily designed or optimized for energy absorption or crash loading considerations. To achieve desired new designs incorporating improved energy absorption capabilities often requires an understanding of how more conventional designs behave under crash loadings. Experimental and analytical data are presented which indicate some general trends in the failure behavior of a class of composite structures including individual fuselage frames, skeleton subfloors with stringers and floor beams without skin covering, and subfloors with skin added to the frame-stringer arrangement. Although the behavior is complex, a strong similarity in the static/dynamic failure behavior among these structures is illustrated through photographs of the experimental results and through analytical data of generic composite structural models.

Author
39 STRUCTURAL MECHANICS

(RTOP 505-63-01-11)
(NASA-TP-3084; L-16852; NAS 1.60:3084; AD-A235901) Avail: CASI HC A04/MF A01

ATTENUATORS, BRAKES (FOR ARRESTING MOTION), CARTS, COLUMNS (SUPPORTS), HONEYCOMB STRUCTURES, RAIL TRANSPORTATION, SHOCK ABSORBERS, SPACE STATIONS

N91-22576# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
COMPUTATIONAL METHODS FOR FRICTIONLESS CONTACT WITH APPLICATION TO SPACE SHUTTLE ORBITER NOSE-GEAR TIRES
KYUN O. KIM (George Washington Univ., Hampton, VA.), JOHN A. TANNER (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), AHMED K. NOOR (Virginia Univ., Charlottesville), and MARTHA P. ROBINSON Washington May 1991 36 p. Original contains color illustrations (RTOP 505-63-41-02)
(NASA-TP-3073; L-16750; NAS 1.60:3073) Avail: CASI HC A03/MF A01; 2 functional color pages AIRCRAFT TIRES, COMPUTATION, FINITE ELEMENT METHOD, FRICTIONLESS ENVIRONMENTS, LANDING GEAR, ROCKET NOSE CONES, ROLLING CONTACT LOADS, SPACE SHUTTLE ORBITERS, VARIATIONAL PRINCIPLES

N91-24603# Jet Propulsion Lab., California Inst. of Tech., Pasadena.
THE 25TH AEROSPACE MECHANISMS SYMPOSIUM
May 1991 346 p Symposium held in Pasadena, CA, 8-10 May 1991; sponsored by NASA, Washington, California Inst. of Tech., and LMSC
(NAS7-918) (NASA-TP-3113; NAS 1.55:3113) Avail: CASI HC A03/MF A01

N91-18053# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
EFFECT OF CRASH PULSE SHAPE ON SEAT STROKE REQUIREMENTS FOR LIMITING LOADS ON OCCUPANTS OF AIRCRAFT
(RTOP 505-63-50-09)
(NASA-TP-3126; L-16941; NAS 1.60:3126) Avail: CASI HC A03/MF A01

CRASHES, CRASHWORTHINESS, DYNAMIC TESTS, GENERAL AVIATION AIRCRAFT, LOADS (FORCES), SEATS, SHAPES

N92-19355# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
STRUCTURAL DETERMINISTIC SAFETY FACTORS
SELECTION CRITERIA AND VERIFICATION
V. VERDERAIME Feb. 1992 50 p
(NASA-TP-3203; M-683; NAS 1.60:3203) Avail: CASI HC A03/MF A01

METALS, PROBABILITY THEORY, RELIABILITY ANALYSIS, SAFETY FACTORS, STANDARD DEVIATION, STRESS ANALYSIS, STRUCTURAL FAILURE, STRUCTURAL RELIABILITY

N92-21457# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
THE EFFECT OF ACCELERATION VERSUS DISPLACEMENT METHODS ON STEADY-STATE BOUNDARY FORCES
(NASA-TP-3218; M-686; NAS 1.60:3218) Avail: CASI HC A03/MF A01

CONTRANTS, COUPLED MODES, DYNAMIC STRUCTURAL ANALYSIS, LOADS (FORCES), MODAL RESPONSE, STEADY STATE, TRUNCATION ERRORS

N92-22227# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
IMPROVED ACCURACY FOR FINITE ELEMENT STRUCTURAL ANALYSIS VIA A NEW INTEGRATED FORCE METHOD
SURYA N. PATNAIK (Ohio Aerospace Inst., Brook Park), DALE A. HOPKINS, ROBERT A. AIELLO, and LASZLO BERKE Apr. 1992 28 p
(RTOP 505-63-5B)
(NASA-TP-3204; E-5638; NAS 1.60:3204) Avail: CASI HC A03/MF A01

COMPUTER PROGRAMS, FINITE ELEMENT METHOD, MATHEMATICAL MODELS, MEASURE AND INTEGRATION, SOLID MECHANICS, STRESS-STRAIN RELATIONSHIPS, STRUCTURAL ANALYSIS

N92-23115# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
EXPERIMENTAL BEHAVIOR OF GRAPHITE-EPOXY Y-STIFFENED SPECIMENS LOADED IN COMPRESSION
P. DANIEL SYDOW and MARK J. SHUARD May 1992 20 p
(RTOP 505-63-50-08)
(NASA-TP-3171; L-16918; NAS 1.60:3171) Avail: CASI HC A03/MF A01

COMPRESSION TESTS, GRAPHITE-EPOXY COMPOSITES, REINFORCED PLATES, STIFFENING, WEB (SUPPORTS)

N92-24205# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
THERMAL AND STRUCTURAL TESTS OF RENE 41 HONEYCOMB INTEGRAL-TANK CONCEPT FOR FUTURE SPACE TRANSPORTATION SYSTEMS
(RTOP 506-43-71-05)
(NASA-TP-3145; L-16752; NAS 1.60:3145) Avail: CASI HC A05/MF A01

HIGH TEMPERATURE TESTS, HONEYCOMB STRUCTURES, RENE 41, SANDWICH STRUCTURES, STRAIN MEASUREMENT, STRESS ANALYSIS, THERMAL ANALYSIS

N92-24324# Computer Software Management and Information Center, Athens, GA.
TWENTIETH NASTRAN (R) USERS' COLLOQUIUM
(NASA-CP-3145; NAS 1.55:3145) Avail: CASI HC A05/MF A02

FINITE ELEMENT METHOD, NASTRAN, STRUCTURAL ANALYSIS

N92-24546# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
STIFFNESS AND STRENGTH TAILORING IN UNIFORM SPACE-FILLING TRUSS STRUCTURES
(RTOP 506-43-41-02)
(NASA-TP-3210; L-17001; NAS 1.60:3210) Avail: CASI HC A03/MF A01

CRYSTALLOGRAPHY, LOADS (FORCES), SPACECRAFT STRUCTURES, STIFFNESS, STRUCTURAL DESIGN, STRUCTURAL DESIGN CRITERIA, TRUSSES

N92-25067# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
THE 25TH AEROSPACE MECHANISMS SYMPOSIUM
Washington May 1992 368 p Symposium held in Greenbelt,
39  STRUCTURAL MECHANICS


ACTUATORS, AEROSPACE ENGINEERING, CONFERENCES, CONNECTORS, LARGE SPACE STRUCTURES, LATCHES

N92-25911*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

COMPUTATIONAL STRUCTURES TECHNOLOGY FOR AIRFRAMES AND PROPULSION SYSTEMS


AIRCRAFT DESIGN, AIRCRAFT STRUCTURES, AIRFRAMES, CIVIL AVIATION, COMPUTER AIDED DESIGN, CONFERENCES, PROPULSION SYSTEM CONFIGURATIONS, SPACECRAFT DESIGN, SPACECRAFT STRUCTURES, STRUCTURAL ANALYSIS, STRUCTURAL DESIGN, SUPERSONIC TRANSPORTS

N92-25997*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

STRESS CONCENTRATIONS FOR STRAIGHT-SHANK AND COUNTERSINK HOLEs IN PLATES SUBJECTED TO TENSION, BENDING, AND PIN LOADING


BEND TESTS, FINITE ELEMENT METHOD, HOLES (MECHANICS), STRESS CONCENTRATION, TENSILE TESTS, THREE DIMENSIONAL MODELS

N92-26537*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

IDENTIFICATION OF LINEAR SYSTEMS BY AN ASYMMETRICALLY STABLE OBSERVER


EIGENVALUES, LINEAR SYSTEMS, MARKOV PROCESSES, NUMERICAL STABILITY, SYSTEM IDENTIFICATION

N92-26869*# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL

EFFECT OF TYPE OF LOAD ON STRESS ANALYSIS OF THIN-WALLED DUCTS


DUCTS, LOADS (FORCES), PIPES (TUBES), SPACE SHUTTLE MAIN ENGINE, STRESS ANALYSIS, THIN WALLS

N92-27974*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

DEVELOPMENT OF A TRUSS JOINT FOR ROBOTIC ASSEMBLY OF SPACE STRUCTURES


(ASSIGNMENT, ROBOTS, SPACE COMMERCIALIZATION, SPACE ERECTABLE STRUCTURES, TRUSS)
42 GEOSCIENCES (GENERAL)

N91-20541*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
WEST ANTARCTIC ICE SHEET INITIATIVE. VOLUME 1: SCIENCE AND IMPLEMENTATION PLAN
ANTARCTIC REGIONS, CLIMATE CHANGE, ICE, ICE ENVIRONMENTS, METEOROLOGICAL PARAMETERS, PREDICTION ANALYSIS TECHNIQUES

N91-26573*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
WEST ANTARCTIC ICE SHEET INITIATIVE. VOLUME 2: DISCIPLINE REVIEWS
ANTARCTIC REGIONS, CLIMATOLOGY, ICE, SEA LEVEL

43 EARTH RESOURCES AND REMOTE SENSING

Includes remote sensing of earth resources by aircraft and spacecraft, photogrammetry, and aerial photography.

N91-16515*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
MULTISOURCE DATA INTEGRATION IN REMOTE SENSING
DATA ACQUISITION, DATA INTEGRATION, IMAGE ANALYSIS, IMAGE PROCESSING, MULTISENSOR APPLICATIONS, REMOTE SENSING, REMOTE SENSORS

N91-30588*# National Aeronautics and Space Administration, Washington, DC.
EARTH OBSERVATIONS AND GLOBAL CHANGE DECISION MAKING: A SPECIAL BIBLIOGRAPHY, 1991
The first section of the bibliography contains 294 bibliographic citations and abstracts of relevant reports, articles, and documents announced in 'Scientific and Technical Aerospace Reports (STAR)' and 'International Aerospace Abstracts (IAA)'. These abstracts are categorized by the following major subject divisions: aeronautics, astronautics, chemistry and materials, engineering, geosciences, life sciences, mathematical and computer sciences, physics, social sciences, space sciences and general. Following the abstract section, seven indexes are provided for further assistance.

N91-32528*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
INTERNATIONAL WORKSHOP ON STRATOSPHERIC AEROSOLS: MEASUREMENTS, PROPERTIES, AND EFFECTS
AEROSOLS, CLIMATOLOGY, ICE CLOUDS, POLAR METEOROLOGY, Soot, STRATOSPHERE, VOLCANOES

N92-10208*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
MISSION DESCRIPTION AND IN-FLIGHT OPERATIONS OF ERBE INSTRUMENTS ON ERBS AND NOAA 9 SPACECRAFT, NOVEMBER 1984 - JANUARY 1986
Instruments of the Earth Radiation Budget Experiment (ERBE) are operating on three different Earth orbiting spacecraft: the Earth Radiation Budget Satellite (ERBS), NOAA-9, and NOAA-10. An overview is presented of the ERBE mission, in-orbit environments, and instrument design and operational features. An overview of science data processing and validation procedures is also presented. In-flight operations are described for the ERBE instruments aboard the ERBS and NOAA-9. Calibration and other operational procedures are described, and operational and instrument housekeeping data are presented and discussed.

Author

N92-32127*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
Instruments of the Earth Radiation Budget Experiment (ERBE) are operating on three different Earth-orbiting spacecraft. The Earth Radiation Budget Satellite (ERBS) is operated by NASA, and NOAA 9 and NOAA 10 weather satellites are operated by the National Oceanic and Atmospheric Administration (NOAA). This paper is the second in a series that describes the ERBE mission, and data processing and validation procedures. This paper describes the spacecraft and instrument operations for the second full year of in-orbit operations, which extend from February 1986 through January 1987. Validation and archival of radiation measurements made by ERBE instruments during this second year of operation were completed in July 1991. This period includes the only time, November 1986 through January 1987, during which all ERBE instruments aboard the ERBE, NOAA 9, and NOAA 10 spacecraft were simultaneously operational. This paper covers normal and special operations of the spacecraft and instruments, operational anomalies, and the responses of the instruments to in-orbit and seasonal variations in the solar environment.

Author
ENERGY PRODUCTION AND CONVERSION

Includes specific energy conversion systems, e.g., fuel cells; global sources of energy; geophysical conversion; and windpower.

N91-32549*# National Aeronautics and Space Administration.
Lewis Research Center, Cleveland, OH.
SPACE ELECTROCHEMICAL RESEARCH AND TECHNOLOGY
Sep. 1991 244 p Third Conference held in Cleveland, OH, 9-10 Apr. 1991
(NASA-CP-3125; E-6088; NAS 1.55:3125) Avail: CASI HC
A11/MF A03
ELECTRIC BATTERIES, ELECTROCHEMISTRY, FUEL CELLS

N92-22740** National Aeronautics and Space Administration.
Marshall Space Flight Center, Huntsville, AL.
THE 1991 NASA AEROSPACE BATTERY WORKSHOP
Workshop held in Huntsville, AL, 29-31 Oct. 1991
(NASA-CP-3140; M-682; NAS 1.55:3140) Avail: CASI HC
A99/MF A10
CONFERENCES, ELECTRIC BATTERIES, METAL AIR BATTERIES, NICKEL CADMIUM BATTERIES, NICKEL HYDROGEN BATTERIES, SILVER ZINC BATTERIES, SODIUM SULFUR BATTERIES, SPACECRAFT POWER SUPPLIES, ZINC-OXYGEN BATTERIES

N92-26895*# Lockheed Missiles and Space Co., Sunnyvale, CA.
MILSTAR'S FLEXIBLE SUBSTRATE SOLAR ARRAY: LESSONS LEARNED, ADDENDUM
JOHN GIBB 1990 17 p Presented at the 26th Aerospace Mechanisms Symposium
(NASA-CP-3147-ADD; NAS 1.55:3147-ADD) Avail: CASI HC
A03/MF A01
SOLAR ARRAYS, SPACE STATION FREEDOM

45
ENVIRONMENT POLLUTION

Includes atmospheric, noise, thermal, and water pollution.

N91-16466*# National Aeronautics and Space Administration.
Washington, DC.
THE ATMOSPHERIC EFFECTS OF STRATOSPHERIC AIRCRAFT: A TOPICAL REVIEW
(NASA-RA-1250; NAS 1.61:1250) Avail: CASI HC A03/MF A01
In the late 1960s the aircraft industry became interested in developing a fleet of supersonic transports (SSTs). Between 1972 and 1975, the Climatic Impact Assessment Program (CIAP) studied the possible environmental impact of SSTs. For environmental and economic reasons, the fleet of SSTs was not developed. The Upper Atmosphere Research Program (UARP) has recently undertaken the responsibility of directing scientific research needed to assess the atmospheric impact of supersonic transports. The UARP and the High-Speed Research Program asked Harold Johnston to review the current understanding of aircraft emissions and their effect on the stratosphere. Johnston and his colleagues have recently re-examined the SST problem using current models for stratospheric ozone chemistry. A unique view is given here of the current scientific issues and the lessons learned since the beginning of CIAP, and it links the current research program with the assessment process that began two years ago. Author

N91-16467*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, MD.
THE ATMOSPHERIC EFFECTS OF STRATOSPHERIC AIRCRAFT: A CURRENT CONSENSUS
A. R. DOUGLASS (National Aeronautics and Space Administration.
(NASA-RP-1251; NAS 1.61:1251) Avail: CASI HC A03/MF A01
In the early 1970s, a fleet of supersonic aircraft flying in the lower stratosphere was proposed. A large fleet was never built for economic, political, and environmental reasons. Technological improvements may make it economically feasible to develop supersonic aircraft for current markets. Some key results of earlier scientific programs designed to assess the impact of aircraft emissions on stratospheric ozone are reviewed, and factors that must be considered to assess the environmental impact of aircraft exhaust are discussed. These include the amount of nitrogen oxides injected in the stratosphere, horizontal transport, and stratosphere/troposphere assessment models are presented. Areas in which improvements in scientific understanding and model representation must be made to reduce the uncertainty in model calculations are identified. Author

N92-19121*# National Aeronautics and Space Administration.
Washington, DC.
THE ATMOSPHERIC EFFECTS OF STRATOSPHERIC AIRCRAFT: A FIRST PROGRAM REPORT
(NASA-RP-1272; NAS 1.61:1272) Avail: CASI HC A11/MF A03
Studies have indicated that, with sufficient technology development, high speed civil transport aircraft could be economically competitive with long haul subsonic aircraft. However, uncertainty about atmospheric pollution, along with community noise and sonic boom, continues to be a major concern; and this is addressed in the planned 6 yr HSRP begun in 1990. Building on NASA’s research in atmospheric science and emissions reduction, the AESA studies particularly emphasizing stratospheric ozone effects. Because it will not be possible to directly measure the impact of an HSCT aircraft fleet on the atmosphere, the only means of assessment will be prediction. The process of establishing credibility for the predicted effects will likely be complex and involve continued model development and testing against climatological patterns. Lab simulation of heterogeneous chemistry and other effects will continue to be used to improve the current models. For individual titles, see N92-19122 through N92-19127.

46
GEOPHYSICS

Includes aeronomy; upper and lower atmosphere studies; ionospheric and magnetospheric physics; and geomagnetism.

N91-18505*# National Aeronautics and Space Administration.
Langley Research Center, Hampton, VA.
L. R. MCMASTER (National Aeronautics and Space Administration.
The Stratospheric Aerosol Measurement (SAM) II sensor aboard Nimbus 7 is providing 1.0 micron extinction measurements of Antarctic and Arctic stratospheric aerosols with a vertical resolution of 1 km. Representative examples and weekly averages including corresponding temperature profiles provided by NOAA for the time and place of each SAM II measurement are presented. Contours of aerosol extinction as a function of altitude and longitude or time are plotted, and aerosol optical depths are calculated for each week. Typical values of aerosol extinction and stratospheric optical depth in the Arctic are unusually large due to the presence of material from the El Chichon volcano eruption in the Spring of 1982. For example, the optical depth peaked at 0.068, more than 50 times background values. Typical values of aerosol extinction and stratospheric optical depth in the Antarctic varied considerably during this period due to the transport and arrival of the material from the El Chichon eruption. For example, the stratospheric optical depth varied from 0.002 in October 1982, to 0.021 in January 1983. Polar stratospheric clouds were observed during the Arctic winter, as expected. A representative sample is provided of the ninth 6-month period of data to be used in atmospheric and climatic studies.

The archived Earth radiation budget (ERB) products produced from the Nimbus-7 ERB narrow field-of-view scanner are described. The principal products are broadband outgoing longwave radiation (4.5 to 50 microns), reflected solar radiation (0.2 to 4.8 microns), and the net radiation. Daily and monthly averages are presented on a fixed global equal area (500 sq km) grid for the period May 1979 to May 1980. Two independent algorithms are used to estimate the outgoing fluxes from the observed radiances. The algorithms are described and the results compared. The products are divided into three subsets: the Scene Radiance Tapes (SRT) contain the calibrated radiances; the Sorting into Angular Bins (SAB) tape contains the SAB produced shortwave, longwave, and net radiation products; and the Maximum Likelihood Cloud Estimation (MLCE) tapes contain the MLCE products. The tape formats are described in detail.

Limb-darkening functions as derived from along-track operation of the ERBE scanning radiometers for August 1985. Includes weather forecasting and modification.
darkening functions are presented and shown as figures for day and night for each spacecraft. The scene types were computed using measurements within 10 deg of zenith. The models have values near zenith of 1.02 to 1.05, with values near 1.06 being typical. The typical value of the model is 1.06 for both day and night for ERBS, and for NOAA-9, the typical value at zenith is 1.06 for day and 1.05 for night. Mean models are formed for the ERBS and for the NOAA-9 results and are found to differ less than 1 percent, the ERBS results being the higher. The models vary about 1 percent with latitude near zenith. Author

N91-16500**# National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL.
NASA/MSFC FY90 GLOBAL SCALE ATMOSPHERIC PROCESSES RESEARCH PROGRAM REVIEW

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AEROSPACE INFORMATION Video Recording $12

SHEAR

Wallops Flight Facility, Wallops Island, VA.

OSCILLATIONS, ROTATION, THUNDERSTORMS, VERTICAL AIR

COMPUTERIZED SIMULATION, MATHEMATICAL MODELS,

ICAL MODELS, OSCILLATIONS, THUNDERSTORMS, WIND

PHERIC PHYSICS, CORIOLIS EFFECT, INERTIA, MATHEMAT-

A03/MF A01; 1 functional color page

STEVEN R. LONG Jun. 1992 34 p

N91-32693*# National Aeronautics and Space Administration.

John F. Kennedy Space Center, Cocoa Beach, FL.

THE 1991 INTERNATIONAL AEROSPACE AND GROUND

CONFERENCE ON LIGHTNING AND STATIC ELECTRICITY,

VOLUME 2

Aug. 1991 459 p Conference held in Cocoa Beach, FL, 16-19

Apr. 1991; sponsored in part by NASA, the National Interagency

Coordination Group, and Florida Inst. of Tech.

(NASA-CP-3106-VOL-2; NAS 1.55:3106-VOL-2) Avail: CASI HC

A03/MF A01

ELECTROMAGNETIC COUPLING, ELECTROMAGNETIC

PULSES, LIGHTNING, STATIC ELECTRICITY, WEATHER

FORECASTING

N92-33482*# National Aeronautics and Space Administration.

Langley Research Center, Hampton, VA.

INERTIAL OSCILLATION OF A VERTICAL ROTATING DRAFT

WITH APPLICATION TO A SUPERCELL STORM

ROBERT C. COSTEN and LARRY V. STOCK (Hampton Univ.,

VA.) Sept. 1991 47 p A video recording supplement L-0592-97

N92-24346 is available from CASI $12 Original contains color

illustrations

(RTOP 506-41-41-01)

(NASA-TP-3230; L-16987; NAS 1.60:3230) Avail: CASI HC

A03/MF A01; 1 functional color page

ANTICYCLONES, ATMOSPHERIC CIRCULATION, ATMOS-

PHERIC PHYSICS, CORIOLIS EFFECT, INERTIA, MATHEMAT-

ICAL MODELS, OSCILLATIONS, THUNDERSTORMS, WIND

SHEAR

N92-34246* National Aeronautics and Space Administration.

Langley Research Center, Hampton, VA.

INERTIAL OSCILLATION OF A VERTICAL ROTATING DRAFT

WITH APPLICATION TO A SUPERCELL STORM: VIDEO

SUPPLEMENT TO NASA TECHNICAL PAPER 3230 (Video

Recording)

ROBERT C. COSTEN and LARRY V. STOCK (Hampton Univ.,

VA.) 15 Sep. 1992 This supplements NASA-TP-3230; N92-34348

Video Recording: 8 min., color, sound, VHS

(RTOP 506-41-41-01)

(NASA-TP-3230-VIDEO-SUPPL; L-0592-97; NAS

1.60:3230-VIDEO-SUPPL) Avail: Issuing Activity (Center for

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ATMOSPHERIC CIRCULATION, ATMOSPHERIC MODELS,

COMPUTERIZED SIMULATION, MATHEMATICAL MODELS,

OSCILLATIONS, Rotation, THUNDERSTORMS, VERTICAL AIR

CURRENTS

MEASUREMENTS

A SELF-ZEROING CAPACITANCE PROBE FOR WATER WAVE

Wallops Flight Facility, Wallops Island, VA.

THE wave probe developed at the Air-Sea Interaction Research

Facility was designed to measure the surface elevation fluctuations of

water waves. Design criteria included being linear in response,

self-zeroing to the mean water level, having multiple operating

ranges so that the instrument’s maximum output could be matched to

the maximum surface elevation over varying conditions, and be

as noise-free as possible. The purpose of this publication is to

provide a detailed description of the design and construction of

this probe.

Author

51

LIFE SCIENCES (GENERAL)

N91-13842* National Aeronautics and Space Administration,

Washington, DC.

BIOMATIC LIFE SUPPORT TECHNOLOGIES: COMMERCIAL

OPPORTUNITIES

MARK NELSON, ed. (Space Biospheres Ventures, Oracle, AZ.)

and GERALD SOFFEN, ed. (Space Biospheres Ventures, Oracle,

AZ.) Nov. 1990 117 p Workshop held in Tucson, AZ, 30

Oct. - 1 Nov. 1989

(NASA-CP-3094; NAS 1.55:3094) Avail: CASI HC A06/MF A02

BIOSPHERE, CLOSED ECOCOLOGICAL SYSTEMS,

ENVIRONMENTAL ENGINEERING, REGENERATION (PHYSIOL-

OGY), SPACE COMMERCIALIZATION

52

AEROSPACE MEDICINE

Includes physiological factors; biological effects of radiation; and
effects of weightlessness on man and animals.

N91-10574* National Aeronautics and Space Administration.

Lyndon B. Johnson Space Center, Houston, TX.

WORKSHOP ON EXERCISE PRESCRIPTION FOR

LONG-DURATION SPACE FLIGHT

BERNARD A. HARRIS, JR., ed. and DONALD F. STEWART, ed.

Washington Oct. 1989 125 p Workshop held in Houston, TX,

1986

(RTRO 073-36-00-00-72)

(NASA-CP-3051; S-597; NAS 1.55:3051) Avail: CASI HC

A06/MF A02

BONE DEMINERALIZATION, CARDIOVASCULAR SYSTEM,

DECONDITIONING, EXERCISE PHYSIOLOGY, LONG DURATION

SPACE FLIGHT, MUSCULOSKELETAL SYSTEM, PHYSICAL

EXERCISE, WEIGHTLESSNESS
This bibliography lists 125 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during October 1990. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-13063* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 342) 
Nov. 1990 81 p 
(NASA-SP-7011(342); NAS 1.21:7011(342)) Avail: CASI HC A05 
This bibliography lists 208 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during October 1990. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-14711* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 343) 
Dec. 1990 82 p 
(NASA-SP-7011(343); NAS 1.21:7011(343)) Avail: CASI HC A05 
This bibliography lists 125 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during October 1990. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-14712* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 344) 
Jan. 1991 92 p 
(NASA-SP-7011(344); NAS 1.21:7011(344)) Avail: CASI HC A05 
This bibliography lists 125 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Jan. 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-16547* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CUMULATIVE INDEX TO A CONTINUING BIBLIOGRAPHY (SUPPLEMENT 345) 
Jan. 1991 233 p 
(NASA-SP-7011(345); NAS 1.21:7011(345)) Avail: CASI HC A11 
This publication is a cumulative index to the abstracts contained in Supplements 333 through 344 of Aerospace Medicine and Biology: A Continuing Bibliography. Seven indexes are included -- subject, personal author, corporate source, foreign technology, contract number, report number, and accession number. 

Author

N91-18573*# National Aeronautics and Space Administration. 
Lyndon B. Johnson Space Center, Houston, TX. 
MICROBIOLOGY ON SPACE STATION FREEDOM 
DUANE L. PIERSON, ed. (National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX.), 

MICHAEL R. MCGINNIS, ed. (Texas Univ., Galveston.), S. K. MISHRA, ed. (Krug Life Sciences, Inc., Houston, TX.), and CHRISTINE F. WOGAN, ed. (Krug International, Houston, TX.) 
Washington Feb. 1991 40 p Conference held in Houston, TX, 6-8 Nov. 1989 
(NASA-CP-3108; S-619; NAS 1.55:3108) Avail: CASI HC A03/MF A01 
EXOBIOLOGY, HEALTH, MICROBIOLOGY, MICROORGANISMS, RESEARCH AND DEVELOPMENT, SPACE STATION FREEDOM, SPACE STATIONS, SPACECREWS

N91-19711*# National Aeronautics and Space Administration. 
John F. Kennedy Space Center, Cocoa Beach, FL. 
RESPONSES OF WOMEN TO ORTHOSTATIC AND EXERCISE STRESSES Technical Report, 1976 - 1977 
G. W. HOFFLER (National Aeronautics and Space Administration, John F. Kennedy Space Center, Lompoc, CA.), M. M. JACKSON (National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX.), R. L. JOHNCHON (National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX.), J. T. BAKER (Krug International, San Antonio, TX), and D. TATRO (Bionetics Corp., Cocoa Beach, FL.) 
Washington Oct. 1990 77 p 
(NASA-14880; NAS10-11624) 
(NASA-TP-3043; NAS 1.50:3043) Avail: CASI HC A05/MF A01 
ANTHROPOMETRY, DATA BASES, FEMALES, HISTORIES, PHYSICAL EXERCISE, PHYSIOLOGY, REDUCED GRAVITY, STATISTICAL CORRELATION

N91-23700* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 346) 
Feb. 1989 50 p 
(NASA-SP-7011(346); NAS 1.21:7011(346)) Avail: CASI HC A03 
This bibliography lists 134 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Jan. 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-23701* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 347) 
Feb. 1991 50 p 
(NASA-SP-7011(347); NAS 1.21:7011(347)) Avail: CASI HC A04 
This bibliography lists 166 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Feb. 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-23702* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 348) 
Apr. 1991 60 p 
(NASA-SP-7011(348); NAS 1.21:7011(348)) Avail: CASI HC A04 
This bibliography lists 154 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Mar. 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance. 

Author

N91-24731* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 349)
This bibliography lists 149 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during October, 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance.  

Author: N92-15538* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 356)

Dec. 1991 71 p  
(NASA-SP-7011(356); NAS 1.21:7011(356)) Avail: CASI HC A04

This bibliography lists 192 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during November 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance.

Author: N92-15554*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

EVALUATION OF NONINVASIVE CARDIAC OUTPUT METHODS DURING EXERCISE

(NASA-TP-3175; S-658; NAS 1.60:3174; S-658; NAS 1.60:3174) Avail: CASI HC A02/MF A01

BIOMEDICAL DATA, CARBON DIOXIDE, CARDIAC OUTPUT, REBREATHING

N92-17022*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

TECHNIQUES FOR DETERMINATION OF IMPACT FORCES DURING WALKING AND RUNNING IN A ZERO-G ENVIRONMENT

MICHAEL GREENIEN (Krug Life Sciences, Inc., Houston, TX.), MARLEI WALTON (Alabama Univ., Tuscaloosa), PHILLIP BISHOP, and WILLIAM SQUIRES (Texas Lutheran Coll., Seguin.) Washington Jan. 1992 18 p  
(NASA-TP-3159; S-651; NAS 1.60:3159) Avail: CASI HC A03/MF A01

BONE DEMINERALIZATION, GRAVITATIONAL PHYSIOLOGY, IMPACT LOADS, MUSCULOSKELETAL SYSTEM, REDUCED GRAVITY, WALKING, WEIGHTLESSNESS SIMULATION

N92-12404* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 354)

Oct. 1991 86 p  
(NASA-SP-7011(354); NAS 1.21:7011(354)) Avail: CASI HC A05

This bibliography lists 225 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during September, 1991. Subject coverage includes aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance.

Author: N92-12412* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 355)

Nov. 1991 59 p  
(NASA-SP-7011(355); NAS 1.21:7011(355)) Avail: CASI HC A04

This bibliography lists 147 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during October, 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance.

Author: N92-15538* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 356)

Dec. 1991 71 p  
(NASA-SP-7011(356); NAS 1.21:7011(356)) Avail: CASI HC A04

This bibliography lists 192 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during November 1991. Subject coverage includes: aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance.

Author: N92-15554*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

EVALUATION OF NONINVASIVE CARDIAC OUTPUT METHODS DURING EXERCISE

(NASA-TP-3175; S-658; NAS 1.60:3174; S-658; NAS 1.60:3174) Avail: CASI HC A02/MF A01

BIOMEDICAL DATA, CARBON DIOXIDE, CARDIAC OUTPUT, REBREATHING

N92-17022*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

TECHNIQUES FOR DETERMINATION OF IMPACT FORCES DURING WALKING AND RUNNING IN A ZERO-G ENVIRONMENT

MICHAEL GREENIEN (Krug Life Sciences, Inc., Houston, TX.), MARLEI WALTON (Alabama Univ., Tuscaloosa), PHILLIP BISHOP, and WILLIAM SQUIRES (Texas Lutheran Coll., Seguin.) Washington Jan. 1992 18 p  
(NASA-TP-3159; S-651; NAS 1.60:3159) Avail: CASI HC A03/MF A01

BONE DEMINERALIZATION, GRAVITATIONAL PHYSIOLOGY, IMPACT LOADS, MUSCULOSKELETAL SYSTEM, REDUCED GRAVITY, WALKING, WEIGHTLESSNESS SIMULATION

N92-12404* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 354)

Oct. 1991 86 p  
(NASA-SP-7011(354); NAS 1.21:7011(354)) Avail: CASI HC A05

This bibliography lists 225 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during September, 1991. Subject coverage includes aerospace medicine and psychology, life support systems and controlled environments, safety equipment, exobiology and extraterrestrial life, and flight crew behavior and performance.

Author: N92-12412* National Aeronautics and Space Administration, Washington, DC.
53 BEHAVIORAL SCIENCES

N92-17645* # National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

ECCENTRIC AND CONCENTRIC MUSCLE PERFORMANCE FOLLOWING 7 DAYS OF SIMULATED WEIGHTLESSNESS


(NASA-TP-3182; S-665; NAS 1.60:3182) Avail: CASI HC A03/MF A01

BED REST, HUMAN PERFORMANCE, MUSCLES, MUSCULAR FUNCTION, MUSCULOSKELETAL SYSTEM, WEIGHTLESSNESS SIMULATION

N92-21714* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 357)

Jan. 1992 69 p

(NASA-SP-7011(357); NAS 1.21:7011(357)) Avail: CASI HC A04

This bibliography lists 186 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Dec. 1991. Subject coverage includes: aerospace medicine and physiology, life support systems and man/system technology, protective clothing, exobiology and extraterrestrial life, planetary biology, and flight crew behavior and performance.

Author

N92-21715* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 359)

Feb. 1992 60 p

(NASA-SP-7011(359); NAS 1.21:7011(359)) Avail: CASI HC A04

This bibliography lists 164 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Jan. 1992. Subject coverage includes: aerospace medicine and physiology, life support systems and man/system technology, protective clothing, exobiology and extraterrestrial life, planetary biology, and flight crew behavior and performance.

Author

N92-22026* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CUMULATIVE INDEX TO A CONTINUING BIBLIOGRAPHY (SUPPLEMENT 358)

Jan. 1992 229 p

(NASA-SP-7011(358); NAS 1.21:7011(358)) Avail: CASI HC A11

This publication is a cumulative index to the abstracts contained in Supplements 346 through 357 of Aerospace Medicine and Biology: A Continuing Bibliography. It includes seven indexes: subject, personal author, corporate source, foreign technology, contract number, report number and accession number.

Author

N92-22186* # National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

MULTIPLE LESION TRACK STRUCTURE MODEL

JOHN W. WILSON, FRANCIS A. CUCINOTTA, and JUDY L. SHINN Mar. 1992 14 p Sponsored in part by the Armed Forces Radiobiology Research Institute

(RTOP 199-04-16-11)

(NASA-TP-3185; L-16988; NAS 1.60:3185) Avail: CASI HC A03/MF A01

CELL DIVISION, CELLS (BIOLOGY), HEAVY IONS, LESIONS, MATHEMATICAL MODELS, RADIATION DAMAGE, RADIATION EFFECTS, X RAYS

N92-27068* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 362)

May 1992 118 p

(NASA-SP-7011(362); NAS 1.21:7011(362)) Avail: CASI HC A06

This bibliography lists 357 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during May 1992. Subject coverage includes: aerospace medicine and physiology, life support systems and man/system technology, protective clothing, exobiology and extraterrestrial life, planetary biology, and flight crew behavior and performance.

Author

N92-27433* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 361)

Apr. 1992 56 p

(NASA-SP-7011(361); NAS 1.21:7011(361)) Avail: CASI HC A04

This bibliography lists 141 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Mar. 1992. Subject coverage includes: aerospace medicine and physiology, life support systems and man/system technology, protective clothing, exobiology and extraterrestrial life, planetary biology, and flight crew behavior and performance.

Author

N92-30987* National Aeronautics and Space Administration, Washington, DC.

AEROSPACE MEDICINE AND BIOLOGY: A CONTINUING BIBLIOGRAPHY WITH INDEXES (SUPPLEMENT 363)

Jun. 1992 69 p

(NASA-SP-7011(363); NAS 1.21:7011(363)) Avail: CASI HC A04/MF A01

This bibliography lists 164 reports, articles and other documents introduced into the NASA Scientific and Technical Information System during Jan. 1992. Subject coverage includes aerospace medicine and physiology, life support systems and man/system technology, protective clothing, exobiology and extraterrestrial life, planetary biology, and flight crew behavior and performance.

Author

N92-34154* # National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

TRACK STRUCTURE MODEL OF CELL DAMAGE IN SPACE FLIGHT


(RTOP 199-04-16-11)

(NASA-TP-3235; L-17058; NAS 1.60:3235) Avail: CASI HC A03/MF A01

BIOLOGICAL EFFECTS, CELLS (BIOLOGY), EXPOSURE, EXTRATERRESTRIAL RADIATION, LINEAR ENERGY TRANSFER (LET), RADIATION DAMAGE, RELATIVE BIOLOGICAL EFFECTIVENESS (RBE), SURVIVAL

53 BEHAVIORAL SCIENCES

Includes psychological factors; individual and group behavior; crew training and evaluation; and psychiatric research.

N92-21467* # National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.

VISUALLY GUIDED CONTROL OF MOVEMENT

54 MAN/SYSTEM TECHNOLOGY AND LIFE SUPPORT

Includes human engineering; biotechnology; and space suits and protective clothing.

N91-24744*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
CONTROLLED ECOLOGICAL LIFE SUPPORT SYSTEMS: NATURAL AND ARTIFICIAL ECOSYSTEMS
ALGAE, CLOSED ECOLOGICAL SYSTEMS, ECOSYSTEMS, REGENERATION (PHYSIOLOGY), WASTE TREATMENT

N92-11638*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.
HUMAN MACHINE INTERFACES FOR TELEOPERATORS AND VIRTUAL ENVIRONMENTS CONFERENCE
Mar. 1990 175 p Conference held in Santa Barbara, CA, 4-9 Mar. 1990 (NASA-CP-10071; NAS 1.55:10071; AD-A240716) Avail: CASI HC A03/MF A02
COMPUTERIZED SIMULATION, FLIGHT SIMULATION, MAN-COMPUTER INTERFACE, OPERATORS (PERSONNEL), SENSORY PERCEPTION, TELEOPERATORS

N92-16582*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.
RELIABILITY OF A SHUTTLE REACTION TIMER
ASTRONAUT PERFORMANCE, AUDITORY STIMULI, BIOASTRONAUTICS, COMPONENT RELIABILITY, REACTION TIME, SPACE SHUTTLES, SWITCHES, TIMING DEVICES, VISUAL STIMULI

N92-19772*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.
A METHOD OF EVALUATING EFFICIENCY DURING SPACE-SUITED WORK IN A NEUTRAL BUOYANCY ENVIRONMENT
EXTRAVEHICULAR ACTIVITY, FATIGUE TESTS, NEUTRAL BUOYANCY SIMULATION, PHYSICAL EXERCISE, SPACE SUITS, WORK CAPACITY

N92-25961*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.
NUTRITIONAL REQUIREMENTS FOR SPACE STATION FREEDOM CREWS
ASTRONAUTS, BIOLOGICAL EFFECTS, NUTRITIONAL REQUIREMENTS, SPACE FLIGHT FEEDING, SPACE STATION FREEDOM

N92-26538*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.
THE VALIDATION OF A HUMAN FORCE MODEL TO PREDICT DYNAMIC FORCES RESULTING FROM MULTI-JOINT MOTIONS
HUMAN PERFORMANCE, INVERSE KINEMATICS, MUSCULAR STRENGTH, SHOULDERS, TORQUE, WRIST

N92-26682*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.
CORRELATION AND PREDICTION OF DYNAMIC HUMAN ISOLATED JOINT STRENGTH FROM LEAN BODY MASS
BIONDYNAMICS, DYNAMIC MODELS, HUMAN BEINGS, JOINTS (ANATOMY), LEAST SQUARES METHOD, PREDICTION ANALYSIS TECHNIQUES, REGRESSION ANALYSIS, STATISTICAL CORRELATION, TORQUE

N92-26897*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.
EXPERIMENTAL MEASUREMENT OF THE ORBITAL PATHS OF PARTICLES SEDIMENTING WITHIN A ROTATING VISCOUS FLUID AS INFLUENCED BY GRAVITY
BIOREACTORS, CELLS (BIOLOGY), CULTURE TECHNIQUES, REDUCED GRAVITY, ROTATING FLUIDS, SEDIMENTS, TISSUES (BIOLOGY), VISCOUS FLUIDS
55

SPACE BIOLOGY

Includes exobiology; planetary biology; and extraterrestrial life.

N91-14725*# National Aeronautics and Space Administration.
Ames Research Center, Moffett Field, CA.
EXOBIOLOGY IN EARTH ORBIT: THE RESULTS OF SCIENCE WORKSHOPS HELD AT NASA, AMES RESEARCH CENTER

The Workshops on Exobiology in Earth Orbit were held to explore concepts for orbital experiments of exobiological interest and make recommendations on which classes of experiments should be carried out. Various observational and experimental opportunities in Earth orbit are described including those associated with the Space Shuttle laboratories, spacecraft deployed from the Space Shuttle and expendable launch vehicles, the Space Station, and lunar bases. Specific science issues and technology needs are summarized. Finally, a list of recommended experiments in the areas of observational exobiology, cosmic dust collection, and in situ experiments is presented. M.G.

N91-15691*# National Aeronautics and Space Administration.
Ames Research Center, Moffett Field, CA.
EXOBIOLOGY ON MARS

EQUIPMENT SPECIFICATIONS, EXOBIOLOGY, EXPERIMENT DESIGN, MARS (PLANET), MISSION PLANNING, NASA SPACE PROGRAMS, SPACE EXPLORATION, U.S.S.R. SPACE PROGRAM

N91-20641*# National Aeronautics and Space Administration.
Lyndon B. Johnson Space Center, Houston, TX.
FOURTH ANNUAL WORKSHOP ON SPACE OPERATIONS APPLICATIONS AND RESEARCH (SOAR 90)

CONFERENCES, HUMAN FACTORS ENGINEERING, LIFE SCIENCES, OPERATIONS RESEARCH, ROBOTICS

N91-20702*# National Aeronautics and Space Administration.
Lyndon B. Johnson Space Center, Houston, TX.
FOURTH ANNUAL WORKSHOP ON SPACE OPERATIONS APPLICATIONS AND RESEARCH (SOAR 90)

CONFERENCES, EXPERT SYSTEMS, HUMAN FACTORS ENGINEERING, MAN-COMPUTER INTERFACE, OXIDATION, SPACE SHUTTLE ORBITERS, SPACE STATIONS, SPACECRAFT CONSTRUCTION MATERIALS

N92-12425*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, MD.
SPACE AND EARTH SCIENCE DATA COMPRESSION WORKSHOP

DATA COMPRESSION, EARTH OBSERVATIONS (FROM SPACE), IMAGE PROCESSING, INFORMATION SYSTEMS, SIGNAL PROCESSING, SPACE OBSERVATIONS (FROM EARTH)

N92-13588*# National Aeronautics and Space Administration.
Washington, DC.
FOURTH SYMPOSIUM ON CHEMICAL EVOLUTION AND THE ORIGIN AND EVOLUTION OF LIFE Abstracts Only

BIological EVOLUTION, CHEMICAL EVOLUTION, CONFERENCES, COSMIC DUST, EXOBIOLOGY, GEOCHEMISTRY

N92-22324*# National Aeronautics and Space Administration.
Lyndon B. Johnson Space Center, Houston, TX.
FIFTH ANNUAL WORKSHOP ON SPACE OPERATIONS APPLICATIONS AND RESEARCH (SOAR 1991), VOLUME 2

CONFERENCES, HUMAN FACTORS ENGINEERING, LIFE SCIENCES, ROBOTICS, SPACE DEBRIS, SPACE PLASMAS, SPACE SHUTTLES, SPACE STATIONS, SPACECRAFT CONTROL

41
COMPUTER PROGRAMMING AND SOFTWARE

Includes computer programs, routines, and algorithms, and specific applications, e.g., CAD/CAM.


N91-25624*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. GUIDANCE, NAVIGATION, AND CONTROL SUBSYSTEM EQUIPMENT SELECTION ALGORITHM USING EXPERT SYSTEM METHODS CHERYL L. ALLEN Washington May 1991 12 p (RTOP 506-49-21-02) (NASA-TP-3082; L-16986; NAS 1.60:3082) Avail: CASI HC A03/MF A01 ALGORITHMS, ARCHITECTURE (COMPUTERS), COMPUTER AIDED DESIGN, CONTROL SYSTEMS DESIGN, EXPERT SYSTEMS, SPACECRAFT DESIGN, SPACECRAFT INSTRUMENTS


N92-16568# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX. SECOND CLIPS CONFERENCE PROCEEDINGS, VOLUME 1 JOSEPH GIARRATANO, ed. (Houston Univ., Clear Lake, TX) and CHRISTOPHER J. CULBERT, ed. Sep. 1991 232 p Conference held in Houston, TX, 23-25 Sep. 1991 (NASA-CP-10085-VOL-2; S-662-VOL-2; NAS 1.55:10085-VOL-2) Avail: CASI HC A11/MF A03 COMPUTER AIDED DESIGN, CONFERENCES, EXPERT SYSTEMS, KNOWLEDGE REPRESENTATION

N92-16590# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX. SECOND CLIPS CONFERENCE PROCEEDINGS, VOLUME 2

COMPUTER SYSTEMS

Includes computer networks and special application computer systems.
63

CYBERNETICS

Includes feedback and control theory, artificial intelligence, robotics and expert systems.

N91-20811*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX. PROCEEDINGS OF THE SECOND JOINT TECHNOLOGY WORKSHOP ON NEURAL NETWORKS AND FUZZY LOGIC, VOLUME 2 ROBERT N. LEA, ed. and JAMES A. VILLARREAL, ed. Feb. 1991 278 p Workshop held in Houston, TX, 10-13 Apr. 1990; sponsored by NASA, Washington, NASA. Johnson Space Center, and Houston Univ. (NASA-CP-10061-VOL-2; S-624-VOL-2; NAS 1.55:10061-VOL-2) Avail: CASI HC A13/MF A03 AUTOMATIC CONTROL, CONFERENCES, CONTROLLERS, DECISION MAKING, FUZZY SETS, IMAGE PROCESSING, NEURAL NETS, PATTERN RECOGNITION, SET THEORY, SPEECH RECOGNITION


65

STATISTICS AND PROBABILITY

Includes data sampling and smoothing; Monte Carlo method; and stochastic processes.


66

SYSTEMS ANALYSIS

Includes mathematical modeling; network analysis; and operations research.

N91-18753*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. STRUCTURAL FACTORING APPROACH FOR ANALYZING STOCHASTIC NETWORKS KELLY J. HAYHURST (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.) and DOUGLAS R. SHIER (College of William and Mary, Williamsburg, VA.) Washington Mar. 1991 24 p (RTOP 505-66-21-01) (NASA-TP-3069; L-16794; NAS 1.60:3069) Avail: CASI HC A03/MF A01 COMMUNICATION NETWORKS, CRITICAL PATH METHOD, DATA LINKS, STOCHASTIC PROCESSES

N92-33483*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA. ADVANCED TECHNIQUES IN RELIABILITY MODEL REPRESENTATION AND SOLUTION DANIEL L. PALUMBO and DAVID M. NICOL (College of William and Mary, Williamsburg, VA.) Oct. 1992 18 p...
70 PHYSICS (GENERAL)

(405-64-10-07)
(NASA-TP-3242; L-17048; NAS 1.60:3242) Avail: CASI HC A03/MF A01

70 PHYSICS (GENERAL)

ATOMIC CLOCKS, FREQUENCY STANDARDS, HYDROGEN MASERS, METEOROLOGY, SATELLITE INSTRUMENTS, TELECOMMUNICATION, TIME, TIME MEASUREMENT

N92-13756*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
ATOMIC CLOCKS, FREQUENCY STANDARDS, HYDROGEN MASERS, METEOROLOGY, SATELLITE INSTRUMENTS, TELECOMMUNICATION, TIME, TIME MEASUREMENT

N92-33350*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
CONFERENCE, FREQUENCY STANDARDS, NAVIGATION SATELLITES, OPTICAL TRACKING, SATELLITE INSTRUMENTS, TIME MEASUREMENT, TRACKING NETWORKS, TRAPPED PARTICLES

71 ACOUSTICS

Includes sound generation, transmission, and attenuation.

N91-12315*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
WAKE GEOMETRY EFFECTS ON ROTOR BLADE-VORTEX INTERACTION NOISE DIRECTIVITY R. M. MARTIN (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), MICHAEL A. MARCOLINI (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), W. R. SPLETTSTOESSER (Fuglwissenschaftliche Forschungsanstalt, Munich (Germany, F.R.),), and K.-J. SCHULTZ (Deutsche Forschungsanstalt fuer Luft- und Raumfahrt, Brunswick, Germany, F.R.) Nov. 1990 23 p Original contains color illustrations (RTOP 505-63-51-06) (NASA-TP-3015; L-16723; NAS 1.60:3015) Avail: CASI HC A03/MF A01; 6 functional color pages
BLADE TIPS, BLADE-VORTEX INTERACTION, INTERACTIONAL AERODYNAMICS, WAKES, WIND TUNNEL TESTS

N91-15848*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.
After reviewing and evaluating the existing material on sound propagation in curved ducts without flow, it seems strange that, except for Lord Rayleigh in 1878, no book on acoustics has treated the case of wave motion in bends. This monograph reviews the available analytical and experimental material, nearly 30 papers published on this subject so far, and concisely summarizes what has been learned about the motion of sound in hard-wall and acoustically lined cylindrical bends.

N91-16679*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
WIND TURBINE ACOUSTICS HARVEY H. HUBBARD and KEVIN P. SHEPHERD Dec. 1990 49 p Submitted for publication Prepared in cooperation with NASA, Lewis Research Center and American Society of Mechanical Engineers (DE-A101-76ET-20320; RTOP 776-33-41) (NASA-TP-3057; E-5663; DOE/NASA/20320-77; NAS 1.60:3057) Avail: CASI HC A03/MF A01
ACOUSTICS, DYNAMIC, STRUCTURAL ANALYSIS, HARMONICS, NOISE MEASUREMENT, PREDICTION ANALYSIS TECHNIQUES, SOUNDS WAVES, SPECTRA, WIND SHEAR, WIND TURBINES

N91-16682*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
ACOUSTIC MEASUREMENT, ACOUSTIC PROPAGATION, AIRCRAFT NOISE, CONFERENCES, NOISE INTENSITY, SOUND PROPAGATION
ACOUSTIC AND AERODYNAMIC STUDY OF A
Ames Research Center, Moffett Field, CA.

J-85 JET ENGINE NOISE MEASURED IN THE ONERA S1
WIND TUNNEL AND EXTRAPOLATED TO FAR FIELD
(RTOP 307-50-81)
(NASA-TP-3053; A-89265; NAS 1.60:3053) Avail: CASI HC A09/MF A02

ANOMALIES, ENGINE NOISE, FAR FIELDS, J-85 ENGINE, SOUND FIELDS, SUBSONIC FLOW, WIND TUNNEL TESTS

LARGE-SCALE AEROACOUSTIC RESEARCH FEASIBILITY
AND CONCEPTUAL DESIGN OF TEST-SECTION INSERTS
FOR THE AMES 80- BY 120-FOOT WIND TUNNEL
PAUL T. SODERMAN and LARRY E. OLSEN Dec. 1990 50 p
(RTOP 307-50-65-11)
(NASA-TP-3020; A-89007; NAS 1.60:3020) Avail: CASI HC A03/MF A01

ACOUSTIC MEASUREMENT, ACOUSTIC PROPERTIES, AEROACOUSTICS, AERODYNAMIC CHARACTERISTICS, INSERTS, INSTALLING, LININGS, WALLS, WEDGES, WIND TUNNEL APPARATUS, WIND TUNNEL TESTS

AEROSTRUCTURES, PROPULSIVE NOISE, TURBOFAN ENGINE NOISE, JUDGMENTS, TAKEOFF, LANDING, OPERATIONAL NOISE, SCREENING, COMPARISON OF DIFFERENT AIRCRAFT NOISE, EXHAUST NOISE, INTERIOR NOISE, HYDRODYNAMIC NOISE, PSYCHOACOUSTICS, TURBOPROP AIRCRAFT, TURBOFAN AIRCRAFT

PROPELLER NOISE, PROPELLERS, PSYCHOACOUSTICS, TURBOFAN AIRCRAFT, TURBOPROP AIRCRAFT

A LOUDNESS CALCULATION PROCEDURE APPLIED TO SHAPED SONIC BOOMS
(RTOP 537-03-21-03)
(NASA-TP-3134; L-16913; NAS 1.60:3134) Avail: CASI HC A03/MF A01

LOUDNESS, SONIC BOOMS, SUPERSONIC TRANSPORTS

AERODYNAMICS OF FLIGHT VEHICLES: THEORY AND
PRACTICE. VOLUME 2: NOISE CONTROL
Sponsored in cooperation with the Army Aviation Systems Command
(F33615-84-C-3202; RTOP 535-03-11-03)
(NASA-TP-1258-VOL-2; L-16926-VOL-2; NAS 1.61:1258-VOL-2;

Flight vehicles and the underlying concepts of noise generation, noise propagation, noise prediction, and noise control are studied. This volume includes the chapters that relate to flight vehicle noise control and operations: human response to aircraft noise; atmospheric propagation; theoretical models for duct acoustic propagation and radiation; design and performance of duct acoustic treatment; jet noise suppression; interior noise; flyover noise measurement and prediction; and quiet aircraft design and operational characteristics. For individual titles, see N92-14780 through N92-14787.

AERODYNAMICS OF FLIGHT VEHICLES: THEORY AND
PRACTICE. VOLUME 1: NOISE SOURCES
Sponsored in cooperation with Wright Research and Development Center and Army Aviation Systems Command
(F33615-84-C-3202; RTOP 535-03-11-03)
(NASA-TP-1258-VOL-1; L-16926-VOL-1; NAS 1.61:1258-VOL-1;
WRDC-TR-90-3052-VOL-1; AD-A241141) Avail: CASI HC A04/MF A06

Methodology recommended to evaluate aeroacoustic related problems is provided, and approaches to their solutions are suggested without extensive tables, nomographs, and derivations. Orientation is toward flight vehicles and emphasis is on underlying physical concepts. Theoretical, experimental, and applied aspects are covered, including the main formulations and comparisons of theory and experiment. The topics covered include: propeller and propfan noise, rotor noise, turbomachinery noise, jet noise classical theory and experiments, noise from turbulent shear flows, jet noise generated by large-scale coherent motion, airframe noise, propulsive lift noise, combustion and core noise, and sonic booms. For individual titles, see N92-10599 through N92-10608.

NAOYANCE CAUSED BY ADVANCED TURBOPROP
AIRCRAFT FLYOVER NOISE: COMPARISON OF DIFFERENT
PROPELLER CONFIGURATIONS
(RTOP 505-63-51-09)
(NASA-TP-3104; L-16850; NAS 1.60:3104) Avail: CASI HC A04/MF A01

AERODYNAMIC NOISE, AIRCRAFT NOISE, PROPELLER NOISE, PROPELLERS, PSYCHOACOUSTICS, TURBOFAN AIRCRAFT, TURBOPROP AIRCRAFT

A LOUDNESS CALCULATION PROCEDURE APPLIED TO SHAPED SONIC BOOMS
(RTOP 537-03-21-03)
(NASA-TP-3134; L-16913; NAS 1.60:3134) Avail: CASI HC A03/MF A01

LOUDNESS, SONIC BOOMS, SUPERSONIC TRANSPORTS
NUCLEAR AND HIGH-ENERGY PHYSICS

Includes elementary and nuclear particles; and reactor theory.

N91-13985* National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

INCLUSIVE INELASTIC SCATTERING OF HEAVY IONS AND NUCLEAR CORRELATIONS
FRANCIS A. CUCINOTTA (Rockwell International Corp., Houston, TX), LAWRENCE W. TOWNSEND (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA), JOHN W. WILSON (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA), and GOVIND S. KHANDELWAL (Old Dominion Univ., Norfolk, VA) Washington Nov. 1990 22 p
(RTOP 199-04-16-11) (NASA-TP-3026; L-16793; NAS 1.60:3026) Avail: CASI HC A03/MF A01

ANGULAR DISTRIBUTION, HEAVY IONS, INELASTIC SCATTERING, ION SCATTERING, IONIC COLLISIONS, MOMENTUM TRANSFER, RELATIVISTIC PARTICLES

SOLID-STATE PHYSICS

Includes superconductivity.

N92-10677* National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

POSITRON LIFETIME MEASUREMENTS IN CHIRAL NEMATIC LIQUID CRYSTALS
JAG J. SINGH (Hampton Univ., VA), ABE EFTEKHARI (Hampton Inst., VA), and DEVENDRA S. PARMAR Oct. 1991 14 p
(NASA-TP-3122; L-16948; NAS 1.60:3122) Avail: CASI HC A03/MF A01

LIQUID CRYSTALS, OPTICAL ACTIVITY, POSITRON ANNihilation, POSITRONS, TIME MEASUREMENT

ADMINISTRATION AND MANAGEMENT

Includes management planning and research.

N91-11591* National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL.

TWENTY-SECOND ANNUAL NASA SUPPLY AND EQUIPMENT MANAGEMENT CONFERENCE
1989 384 p Conference held in Cocoa Beach, FL, 5-7 Dec. 1989
(NASA-CP-10042; NAS 1.55:10042) Avail: CASI HC A17/MF A03

CONFERENCES, INVENTORIES, LOGISTICS, MANAGEMENT METHODS, PROJECT MANAGEMENT, REGULATIONS, SAFETY

N91-13347* National Aeronautics and Space Administration, Washington, DC.

ISSUES IN NASA PROGRAM AND PROJECT MANAGEMENT
FRANCIS T. HOBAN, ed. Jul. 1990 57 p
(NASA-SP-6101(03); NAS 1.21:6101(03)) Avail: CASI HC A04/MF A01

This volume is the third in an ongoing series on aerospace project management at NASA. Articles in this volume cover the attitude of the program manager, program control and performance measurement, risk management, cost plus award fee contracting, lessons learned from the development of the Far Infrared Absolute Spectrometer (FIRAS), small projects management, and age distribution of NASA scientists and engineers. A section on resources for NASA managers rounds out the publication.

Author

N91-24936* National Aeronautics and Space Administration, Washington, DC.

MANAGEMENT: A BIBLIOGRAPHY FOR NASA MANAGERS
Mar. 1991 195 p
(NASA-SP-7500(25); NAS 1.21:7500(25)) Avail: CASI HC A09

This bibliography lists 731 reports, articles and other documents introduced into the NASA Scientific and Technical Information System in 1990. Items are selected and grouped according to their usefulness to the manager as manager. Citations are grouped into ten subject categories: human factors and personnel issues; management theory and techniques; industrial management and manufacturing; robotics and expert systems; computers and information management; research and development; economics, costs and markets; logistics and operations management; reliability and quality control; and legality, legislation, and policy.

Author

N91-28026* National Aeronautics and Space Administration, Washington, DC.

ISSUES IN NASA PROGRAM AND PROJECT MANAGEMENT
FRANCIS T. HOBAN, ed. 1991 62 p
(NASA-SP-6101(04); NAS 1.21:6101(04)) Avail: CASI HC A04/MF A01
This volume is the third in an ongoing series on aerospace project management at NASA. Articles in this volume cover the attitude of the program manager, program control and performance measurement, risk management, cost plus award fee contracting, lessons learned from the development of the Far Infrared Absolute Spectrometer (FIRAS), small projects management, and age distribution of NASA scientists and engineers. A section on resources for NASA managers rounds out the publication. Author

Feb. 1992 59 p
(NASA-SP-7097; NAS 1.21:7097) Avail: CASI HC A04
This bibliography contains 198 annotated references to reports and journal articles entered into the NASA Scientific and Technical Information Data base during 1989 to 1991. Author

MANAGEMENT: A BIBLIOGRAPHY FOR NASA MANAGERS
Mar. 1992 168 p
(NASA-SP-7500(26); NAS 1.21:7500(26)) Avail: CASI HC A08
This bibliography lists 630 reports, articles and other documents introduced into the NASA Scientific and Technical Information System in 1991. Items are selected and grouped according to their usefulness to the manager as manager. Citations are grouped into ten subject categories: human factors and personnel issues; management theory and techniques; industrial management and manufacturing; robotics and expert systems; computers and information management; research and development; economics, costs and markets; logistics and operations management; reliability and quality control; and legality, legislation, and policy. Author

ISSUES IN NASA PROGRAM AND PROJECT MANAGEMENT
FRANCIS T. HOBAN, ed. 1992 58 p
(NASA-SP-6101(05); NAS 1.21:6101(05)) Avail: CASI HC A04/MF A01
This volume is the fifth in an ongoing series on aerospace project management at NASA. Articles in this volume cover: an overview of the project cycle; SE&I management for manned space flight programs; shared experiences from NASA Programs and Projects - 1975; cost control for Mariner Venus/Mercury 1973; and the Space Shuttle - a balancing of design and politics. A section on resources for NASA managers rounds out the publication. Author

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DOCUMENTATION AND INFORMATION SCIENCE
Includes information management; information storage and retrieval technology; technical writing; graphic arts; and micrography.

N91-1084* # National Aeronautics and Space Administration, Washington, DC.

Sep. 1990 26 p
(NASA-SP-7064-SUPPL-4; NAS 1.21:7064-SUPPL-4) Avail: CASI HC A03/MF A01
The four-part cumulative supplement to the 1988 edition of the NASA Thesaurus includes the Hierarchical Listing (Part 1), Access Vocabulary (Part 2), Definitions (Part 3), and Changes (Part 4). The semiannual supplement gives complete hierarchies and accepted upper/lowercase forms for new terms. Author

N91-13374* # National Aeronautics and Space Administration, Washington, DC.

NASA SCIENTIFIC AND TECHNICAL PUBLICATIONS: A CATALOG OF SPECIAL PUBLICATIONS, REFERENCE PUBLICATIONS, CONFERENCE PUBLICATIONS, AND TECHNICAL PAPERS, 1989
Feb. 1990 61 p
(NASA-SP-7063(04); NAS 1.21:7063(04)) Avail: NTIS HC free as PR-889; NASA Scientific and Technical Information Facility, BWI Airport, MD free
This catalog lists 190 citations of all NASA Special Publications, NASA Reference Publications, NASA Conference Publications, and NASA Technical Papers that were entered into the NASA scientific and technical information database during accession year 1989. The entries are grouped by subject category. Indexes of subject terms, personal authors, and NASA report numbers are provided. Author

N91-17833* # National Aeronautics and Space Administration, Washington, DC.

NASA PATENT ABSTRACTS BIBLIOGRAPHY: A CONTINUING BIBLIOGRAPHY. SECTION 1: ABSTRACTS (SUPPLEMENT 38)
Jan. 1991 64 p
(NASA-SP-7039(38)-SECT-1; NAS 1.21:7039(38)-SECT-1) Avail: CASI HC A04
Abstracts are provided for 132 patents and patent applications entered into the NASA scientific and technical information system during the period July 1990 through December 1990. Each entry consists of a citation, an abstract, and in most cases, a key illustration selected from the patent or patent application. Author

N91-17834* # National Aeronautics and Space Administration, Washington, DC.

NASA PATENT ABSTRACTS BIBLIOGRAPHY: A CONTINUING BIBLIOGRAPHY. SECTION 2: INDEXES (SUPPLEMENT 38)
Jan. 1991 49 p
(NASA-SP-7039(38)-SECT-2; NAS 1.21:7039(38)-SECT-2) Avail: CASI HC A23
A subject index is provided for over 4900 patents and patent applications for the period May 1969 through December 1990. Additional indexes list personal authors, corporate authors, contract numbers, NASA case numbers, U.S. patent class numbers, U.S. patent numbers, and NASA accession numbers. Author

N91-19962* # National Aeronautics and Space Administration, Washington, DC.

Mar. 1991 49 p
(NASA-SP-7064-SUPPL-5; NAS 1.21:7064-SUPPL-5) Avail: CASI HC A03/MF A01
The four-part cumulative supplement to the 1988 edition of the NASA Thesaurus includes the Hierarchical Listing (Part 1), Access Vocabulary (Part 2), Definitions (Part 3), and Changes (Part 4). The semiannual supplement gives complete hierarchies and accepted upper/lowercase forms for new terms. Author

N91-24939* # National Aeronautics and Space Administration, Washington, DC.

NASA SCIENTIFIC AND TECHNICAL PUBLICATIONS: A CATALOG OF SPECIAL PUBLICATIONS, REFERENCE PUBLICATIONS, CONFERENCE PUBLICATIONS, AND TECHNICAL PAPERS, 1987-1990
Feb. 1991 174 p
(NASA-SP-7063(05); NAS 1.21:7063(05); AD-A235956) Avail: NTIS HC free as PR-890; NASA Center for AeroSpace Information, BWI Airport, MD free
N92-31455*  National Aeronautics and Space Administration, Washington, DC.

NASA PATENT ABSTRACTS BIBLIOGRAPHY: A CONTINUING BIBLIOGRAPHY. SECTION 2: INDEXES (SUPPLEMENT 41)
Jul. 1992  578 p  
(NASA-SP-7039(41)-SECT-2; NAS 1.21:7039(41)-SECT-2)  
Avail: CASI HC A25

A subject index is provided for over 5200 patents and patent applications for the period May 1969 through June 1992. Additional indexes list personal authors, corporate authors, contract numbers, NASA case numbers, U.S. patent class numbers, U.S. patent numbers, and NASA accession numbers.  

Author

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SPACE SCIENCES (GENERAL)

N91-12401*  National Aeronautics and Space Administration.  
Marshall Space Flight Center, Huntsville, AL.

MEASUREMENT AND CHARACTERIZATION OF THE ACCELERATION ENVIRONMENT ON BOARD THE SPACE STATION  
Workshop held in Huntsville, AL, 11-14 Aug. 1988; sponsored by Teledyne Brown Engineering (NAS-36122)  
(NASA-CP-3088; M-639; NAS 1.55:3088)  
Avail: CASI HC A99/MF A06

ACCELERATION (PHYSICS), ACCELEROMETERS, CONFERENCE, REDUCED GRAVITY, SPACE COMMERCIALIZATION, SPACE PROCESSING, SPACE STATIONS, SPACECRAFT ENVIRONMENTS, SPACELAB, SPACELAB PAYLOADS

N91-14897*  National Aeronautics and Space Administration.  
Ames Research Center, Moffett Field, CA.

INTERSTELLAR DUST: CONTRIBUTED PAPERS  
Avail: CASI HC A29/MF A04

ASTRONOMICAL MODELS, CONFERENCES, COSMIC DUST, INFRAREDASTRONOMY, INFRARED RADIATION, INTERSTELLAR EXTINCTION, INTERSTELLAR MATTER, MOLECULAR CLOUDS, STAR FORMATION

N91-15930*  National Aeronautics and Space Administration.  
Marshall Space Flight Center, Huntsville, AL.

SPACE STATION FREEDOM TOXIC AND REACTIVE MATERIALS HANDLING  
Workshop held in Huntsville, AL, 29 Nov. - 1 Dec. 1988; sponsored by Teledyne Brown Engineering (NAS-36122)  
(NASA-CP-3085; M-638; NAS 1.55:3085)  
Avail: CASI HC A99/MF A06

CONFERENCES, HAZARDS, MATERIALS HANDLING, MICROGRAVITY APPLICATIONS, SPACE PROCESSING, SPACE STATION FREEDOM, SPACE STATION PAYLOADS, TOXICITY

N92-11930*  National Aeronautics and Space Administration.  
Lyndon B. Johnson Space Center, Houston, TX.

THE MICROGRAVITY ENVIRONMENT OF THE SPACE SHUTTLE COLUMBIA MIDDECK DURING STS-32  
81 LUNAR AND PLANETARY EXPLORATION

59 p
(NASA-TP-3140; S-640; NAS 1.60:3140) Avail: CASI HC

ACCELERATION (PHYSICS), ACCELEROMETERS, COLUMBIA (ORBITER), REDUCED GRAVITY, SPACE SHUTTLE PAYLOADS, SPACEBORNE EXPERIMENTS

80 ASTROPHYSICS

Includes cosmology; celestial mechanics; space plasmas; and interstellar and interplanetary gases and dust.

59 LUNAR AND PLANETARY EXPLORATION

91 p
(NASA-TP-3141; S-641; NAS 1.60:3141) Avail: CASI HC

ACCELERATION (PHYSICS), ACCELEROMETERS, BAYS (STRUCTURAL UNITS), COLUMBIA (ORBITER), GRAVITATIONAL EFFECTS, REDUCED GRAVITY, SPACE SHUTTLE MISSION 61-C, SPACE SHUTTLE PAYLOADS, SPACEBORNE EXPERIMENTS

89 ASTRONOMY

Includes radio, gamma-ray, and infrared astronomy; and astrometry.

90 LUNAR AND PLANETARY EXPLORATION

Includes planetology; and manned and unmanned flights.
N91-27057*# National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA.

SAND AND DUST ON MARS
CHEMICAL PROPERTIES, DUST, DUST STORMS, ELECTROSTATICS, MARS SURFACE, MINERALOGY, SANDS, WIND TUNNEL TESTS

N91-28345*# National Aeronautics and Space Administration, Washington, DC.

PLANETARY GEOSCIENCES, 1989-1990

N92-SP-508; NAS 1.21:508; LC-91-33408; ISBN-0-16-036173-7)

N92-30302*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, OH.

AEROSPACE ENVIRONMENTS, CHEMICAL COMPOSITION, CONFERENCES, ELECTRICAL PROPERTIES, ENVIRONMENT MODELS, INTERACTIONS, MARS SURFACE, SPACE EXPLORATION

N91-12456*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.

CLIMATE IMPACT OF SOLAR VARIABILITY
CLIMATE, CLIMATE CHANGE, CLIMATOLOGY, CONFERENCES, ENVIRONMENT EFFECTS, GREENHOUSE EFFECT, LUMINOSITY, MAN ENVIRONMENT INTERACTIONS, SOLAR ACTIVITY EFFECTS, SOLAR RADIATION, SUN

N91-31061*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX.

ANALYSES OF RISKS ASSOCIATED WITH RADIATION EXPOSURE FROM PAST MAJOR SOLAR PARTICLE EVENTS MARK D. WEYLAND (Rockwell International Corp., Houston, TX.), WILLIAM ATWELL (Rockwell International Corp., Houston, TX.), FRANCIS A. CUCINOTTA (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), JOHN W. WILSON (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and ALVA C. HARDY Aug. 1991 37 p (NASA-TP-3137; S-639; NAS 1.60:3137) Avail: CASI HC A03/MF A01
AEROSPACE ENVIRONMENTS, COMPUTERIZED SIMULATION, HEMATOPOIETIC SYSTEM, RADIATION DOSAGE, RADIATION HAZARDS, RADIATION SHIELDING, SOLAR CORPUScular RADIATION

N91-16981*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

CELLULAR TRACK MODEL OF BIOLOGICAL DAMAGE TO MAMMALIAN CELL CULTURES FROM GALACTIC COSMIC RAYS
FRANCIS A. CUCINOTTA (Rockwell International Corp., Houston, TX.), ROBERT KATZ (Nebraska Univ., Lincoln.), JOHN W. WILSON (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), LAWRENCE W. TOWNSEND (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), JOHN E. NEALY (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and ALVA C. HARDY Aug. 1991 37 p (NASA-TP-3137; S-639; NAS 1.60:3137) Avail: CASI HC A03/MF A01
AEROSPACE ENVIRONMENTS, COMPUTERIZED SIMULATION, HEMATOPOIETIC SYSTEM, RADIATION DOSAGE, RADIATION HAZARDS, RADIATION SHIELDING, SOLAR CORPUScular RADIATION

N91-17999*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

RADIATION PROTECTION FOR HUMAN MISSIONS TO THE MOON AND MARS

92

SOLAR PHYSICS

Includes solar activity, solar flares, solar radiation and sunspots.

N91-16581*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

CELLULAR TRACK MODEL OF BIOLOGICAL DAMAGE TO MAMMALIAN CELL CULTURES FROM GALACTIC COSMIC RAYS
FRANCIS A. CUCINOTTA (Rockwell International Corp., Houston, TX.), ROBERT KATZ (Nebraska Univ., Lincoln.), JOHN W. WILSON (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), LAWRENCE W. TOWNSEND (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), JOHN E. NEALY (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and ALVA C. HARDY Aug. 1991 37 p (NASA-TP-3137; S-639; NAS 1.60:3137) Avail: CASI HC A03/MF A01
AEROSPACE ENVIRONMENTS, COMPUTERIZED SIMULATION, HEMATOPOIETIC SYSTEM, RADIATION DOSAGE, RADIATION HAZARDS, RADIATION SHIELDING, SOLAR CORPUScular RADIATION

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SPACE RADIATION

Includes cosmic radiation; and inner and outer earth's radiation belts.

N91-16981*# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

CELLULAR TRACK MODEL OF BIOLOGICAL DAMAGE TO MAMMALIAN CELL CULTURES FROM GALACTIC COSMIC RAYS
FRANCIS A. CUCINOTTA (Rockwell International Corp., Houston, TX.), ROBERT KATZ (Nebraska Univ., Lincoln.), JOHN W. WILSON (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), LAWRENCE W. TOWNSEND (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), JOHN E. NEALY (National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.), and ALVA C. HARDY Aug. 1991 37 p (NASA-TP-3137; S-639; NAS 1.60:3137) Avail: CASI HC A03/MF A01
AEROSPACE ENVIRONMENTS, COMPUTERIZED SIMULATION, HEMATOPOIETIC SYSTEM, RADIATION DOSAGE, RADIATION HAZARDS, RADIATION SHIELDING, SOLAR CORPUScular RADIATION

93

SPACE RADIATION

Includes cosmic radiation; and inner and outer earth's radiation belts.
A review of the program in space radiation protection at the Langley Research Center is given. The relevant Boltzmann equations are discussed in detail. Transport computer code validation is discussed through analytical benchmarking, comparison with other codes, comparison with laboratory experiments and measurements in space. Applications to lunar and Mars missions are discussed.

Author

N92-15959# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

HZETRN: A HEAVY ION/NUCLEON TRANSPORT CODE FOR SPACE RADIATIONS


COMPUTER PROGRAMS, HEAVY IONS, NUCLEONS, PARTICLE INTERACTIONS, RADIATION SHIELDING, SPACECRAFT SHIELDING

N92-22218# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

AN EFFICIENT HZETRN (A GALACTIC COSMIC RAY TRANSPORT CODE)


COMPUTER PROGRAMS, ENERGETIC PARTICLES, GALACTIC COSMIC RAYS, GRID GENERATION (MATHEMATICS), INTERPOLATION, MATHEMATICAL MODELS, RADIATION SHIELDING, SPATIAL MARCHING, TRANSPORT THEORY

N92-25100# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

MIRACAL: A MISSION RADIATION CALCULATION PROGRAM FOR ANALYSIS OF LUNAR AND INTERPLANETARY MISSIONS


COMPUTER PROGRAMS, MANNED SPACE FLIGHT, MATHEMATICAL MODELS, RADIATION DOSAGE, RADIATION TOLERANCE, SPACE EXPLORATION

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GENERAL

N91-15975# National Aeronautics and Space Administration, Washington, DC.

ENGINES AND INNOVATION: LEWIS LABORATORY AND AMERICAN PROPULSION TECHNOLOGY

VIRGINIA PARKER DAWSON 1991 277 p (NASA-SP-4306; NAS 1.21:4306; LC-90-20747) Avail: CASI HC A13/MF A03

This book is an institutional history of the NASA Lewis Research Center, located in Cleveland, Ohio, from 1940, when Congress authorized funding for a third laboratory for the National Advisory Committee for Aeronautics, through the 1980s. The history of the laboratory is discussed in relation to the development of American propulsion technology, with particular focus on the transition in
the 1940s from the use of piston engines in airplanes to jet propulsion and that from air-breathing engines to rocket technology when the National Aeronautics and Space Administration was established in 1958. The personalities and research philosophies of the people who shaped the history of the laboratory are discussed, as is the relationship of Lewis Research Center to the Case Institute of Technology.

Author

N91-23021# National Aeronautics and Space Administration, Washington, DC.
TECHNOLOGY 2000, VOLUME 1
ARTIFICIAL INTELLIGENCE, COMPUTER PROGRAMS, COMPUTER SYSTEMS DESIGN, ROBOTICS, TECHNOLOGY UTILIZATION

N91-24041# National Aeronautics and Space Administration, Washington, DC.
TECHNOLOGY 2000, VOLUME 2
(NASA-CP-3109-VOL-2; NAS 1.55:3109-VOL-2) Avail: CASI HC A16/MF A03
CONFERENCE, INFORMATION DISSEMINATION, NASA PROGRAMS, PRODUCT DEVELOPMENT, TECHNOLOGY TRANSFER, TECHNOLOGY UTILIZATION

N91-24972# National Aeronautics and Space Administration, Langley Research Center, Hampton, VA.
FIRST LDEF POST-RETRIEVAL SYMPOSIUM ABSTRACTS
(RTOP 196-88-00-03)
(NASA-CP-10072; NAS 1.55:10072) Avail: CASI HC A07/MF A02
ATMOSPHERIC EFFECTS, EXTRATERRESTRIAL RADIATION, LONG DURATION EXPOSURE FACILITY, LONG TERM EFFECTS, RADIATION DOSAGE

N91-28060# National Aeronautics and Space Administration, Langley Research Center, Hampton, VA.
FIRST AMONG EQUALS: THE SELECTION OF NASA SPACE SCIENCE EXPERIMENTS
JOHN E. NAUGLE 1990 145 p
(NASA-SP-4215; NAS 1.21:4215) Avail: CASI HC A07/MF A02
The process is recounted by which NASA and the scientific community have, since 1958, selected individual experiments for NASA space missions. It explores the scientific and organizational issues involved in the selection process and discusses the significance of the process in the character and accomplishments of U.S. space activities.

Author

N92-22423# National Aeronautics and Space Administration, Washington, DC.
TECHNOLOGY 2001: THE SECOND NATIONAL TECHNOLOGY TRANSFER CONFERENCE AND EXPOSITION, VOLUME 1
Dec. 1991 527 p Conference held in San Jose, CA, 3-5 Dec. 1991
ARTIFICIAL INTELLIGENCE, BIOTECHNOLOGY, CONFERENCES, MANUFACTURING, ROBOTICS, TECHNOLOGY TRANSFER

N92-22676# National Aeronautics and Space Administration, Washington, DC.
TECHNOLOGY 2001: THE SECOND NATIONAL TECHNOLOGY TRANSFER CONFERENCE AND EXPOSITION, VOLUME 2
Dec. 1991 518 p Conference held in San Jose, CA, 3-5 Dec. 1991
GOVERNMENT/INDUSTRY RELATIONS, MANUFACTURING, ROBOTICS, TECHNOLOGY TRANSFER

N92-23280# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
LDEF: 69 MONTHS IN SPACE. FIRST POST-RETRIEVAL SYMPOSIUM, PART 1
(RTOP 196-88-00-03)
(NASA-CP-3134-PT-1; L-17042-PT-1; NAS 1.55:3134-PT-1) CONFERENCES, LONG DURATION EXPOSURE FACILITY, POSTFLIGHT ANALYSIS, SPACEBORNE EXPERIMENTS

N92-24806# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
LDEF: 69 MONTHS IN SPACE. FIRST POST-RETRIEVAL SYMPOSIUM, PART 2
(RTOP 196-88-00-03)
(NASA-CP-3134-PT-2; L-17042-PT-2; NAS 1.55:3134-PT-2) LIFE SCIENCES, LONG DURATION EXPOSURE FACILITY, RADIATION EFFECTS, SPACEBORNE EXPERIMENTS

N92-24987# National Aeronautics and Space Administration, Langley Research Center, Hampton, VA.
THE FEDERAL CONFERENCE ON INTELLIGENT PROCESSING EQUIPMENT
Apr. 1992 205 p Conference held in San Jose, CA, 3-5 Dec. 1991
(NASA-CP-3138; NAS 1.55:3138) Avail: CASI HC A10/MF A03
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N92-27083# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
LDEF: 69 MONTHS IN SPACE. FIRST POST-RETRIEVAL SYMPOSIUM, PART 3
(RTOP 196-88-00-03)
(NASA-CP-3134-PT-3; L-17042-PT-3; NAS 1.55:3134-PT-3) Avail: CASI HC A21/MF A04; 1 functional color page
CONFERENCES, LIFE SCIENCES, LONG DURATION EXPOSURE FACILITY, PROPULSION, SATELLITE TEMPERATURE, TEMPERATURE CONTROL, THERMAL CONTROL COATINGS

N92-27218# National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.
SECOND LDEF POST-RETRIEVAL SYMPOSIUM ABSTRACTS
Abstracts Only
(RTOP 196-88-00-03)
(NASA-CP-10097; NAS 1.55:10097) Avail: CASI HC A07/MF A02
EXTRATERRESTRIAL ENVIRONMENTS, LONG DURATION EXPOSURE FACILITY, RADIATION EFFECTS, SPACEBORNE EXPERIMENTS

N92-28344# National Aeronautics and Space Administration, Washington, DC.
NASA ENGINEERS AND THE AGE OF APOLLO
A historical account of NASA's Apollo era engineers is presented. This book is based on interviews that were conducted with fifty-one "typical" engineers.
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MIRACAL: A mission radiation calculation program for analysis of lunar and interplanetary missions  
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