

Chronological Index

A86-024 Unsteady Embedded Newton-Busemann Flow Theory. Bing-Gang Tong and W. H. Hui, *University of Waterloo, Canada* (23, 2, p. 129) Article

Technical Comment by L. E. Ericsson, *Lockheed Missiles & Space Company, Inc.* (24, 1, p. 95)

Reply (24, 1, p. 96)

A86-049 Material Damping of Simple Structures in a Simulated Space Environment. Donald L. Edberg, *Stanford University* (23, 3, p. 288) Article

Technical Comment by George A. Lesieutre, *SPARTA, Inc.* (24, 3, p. 286)

A86-085 Path-Constrained Rendezvous: Necessary and Sufficient Conditions. K. M. Soileau, *NASA Johnson Space Center*; and S. A. Stern, *University of Colorado* (23, 5, p. 492) Article

Errata (24, 1, p. 96)

A87-001 Development of a Handbook for Astrobee F Flight-Performance Predictions. Robert S. Wolf, *Massachusetts Institute of Technology* (24, 1, p. 5) Synoptic based on AIAA Paper 82-1728 CP828

A87-002 Thermal Control Systems for Spacecraft Instrumentation. G. P. Peterson, *Texas A&M University* (24, 1, p. 7) Article

A87-003 Drag Predictions for Projectiles and Finned Bodies in Incompressible Flow. Walter P. Wolfe and William L. Oberkampf, *Sandia National Laboratories* (24, 1, p. 14) Article based on AIAA Paper 85-0104

A87-004 Inlets for Waveriders Derived from Elliptic-Cone Stream Surfaces. Hamdi T. Hemdan and Martin C. Jischke, *University of Oklahoma* (24, 1, p. 23) Article

A87-005 Shuttle Entry Air Data System Preflight Testing and Analysis. J. A. Cunningham, W. C. Rochelle, I. Norman, P. C. Ting and J. J. Gallegos, *Rockwell International* (24, 1, p. 33) Article based on AIAA Paper 85-1021

Errata (24, 3, p. 287)

A87-006 A Godunov Method for Supersonic Tactical Missiles. A. B. Wardlaw Jr., F. P. Baltakis, F. M. Martin, F. J. Priolo and R. U. Jettmar, *U. S. Naval Surface Weapons Center* (24, 1, p. 40) Article based on AIAA Paper 85-1812 CP857

A87-007 Control Laws for Optimal Spacecraft Navigation. Hanfried Schlingloff, *Elektronik-System GmbH, Federal Republic of Germany* (24, 1, p. 48) Article

A87-008 Evaluation of Spacecraft Modal Test Methods. Jay-Chung Chen, *Jet Propulsion Laboratory* (24, 1, p. 52) Article based on AIAA Paper 84-1069 CP845

A87-009 Deployment Analysis of the Olympus Astromast and Comparison with Test Measurements. M. Eiden, O. Brunner and C. Stavrinidis, *European Space Research and Technology Center, the Netherlands* (24, 1, p. 63) Article based on AIAA Paper 85-0695 CP851

A87-010 Comparison of Normal Eigenmodes Calculation Methods Based on Identified Complex Eigenmodes. Qiang Zhang and Gérard Lallement, *Université de Franche-Comté, France* (24, 1, p. 69) Article

A87-011 Studying Space Plasmas From a Lunar Base. E. W. Hones Jr., *Los Alamos National Laboratory* (24, 1, p. 74) Article based on AIAA Paper 86-0460

A87-012 Plasma Electron Collection Through Biased Slits in a Dielectric. M. R. Carruth Jr., *NASA Marshall Space Flight Center* (24, 1, p. 79) Article

A87-013 Automating Software Fault Tolerance. Christian Wild, *Old Dominion University* (24, 1, p. 86) Article based on AIAA Paper 85-6001 CP858

A87-014 Spacecraft Structural Model Improvement by Modal Test Results. J.-C. Chen, L. F. Peretti and J. A. Garba, *Jet Propulsion Laboratory* (24, 1, p. 90) Engineering Note based on AIAA Paper 84-1051 CP845

A87-018 Hypersonic Aerodynamics for an Entry Research Vehicle. Mark J. Cunningham, *NASA Langley Research Center* (24, 2, p. 97) Synoptic based on AIAA Paper 85-1793 CP857

A87-019 Review of Cryogenic Heat Pipes in Spacecraft Applications. G. P. Peterson, *Texas A&M University*; and G. L. Compagna, *Eastman Kodak Company* (24, 2, p. 99) Synoptic based on AIAA Paper 86-1254

A87-020 Re-Entry Thermal/Structural Finite-Element Modeling/Analysis of Shuttle Wing Configurations. K. K. Tamma, *West Virginia University*; and E. A. Thornton, *Old Dominion University* (24, 2, p. 101) Article based on AIAA Paper 84-0141

A87-021 Computer Graphic Visualization of Orbiter Lower Surface Boundary-Layer Transition. Lin C. Hartung and David A. Throckmorton, *NASA Langley Research Center* (24, 2, p. 109) Article based on AIAA Paper 84-0228

A87-022 Proposed Mechanistic Model to Simulate Transfer Line Cool-Down Process Using Liquid Helium. Y. S. Ng, J. H. Lee and P. Kittel, *NASA Ames Research Center* (24, 2, p. 115) Article based on AIAA Paper 85-0961

A87-023 Effects of Specularly Reflected Radiation on Spacecraft Temperatures and Thermal Gradients. A. F. Emery and A. Abrous, *University of Washington* (24, 2, p. 122) Article based on AIAA Paper 85-1023

A87-024 High-Speed Aerodynamics of Several Blunt-Cone Configurations. Peter F. Intrieri and Donn B. Kirk, *NASA Ames Research Center* (24, 2, p. 127) Article based on AIAA Paper 86-0300

A87-025 Infrared Emission from NO₂ and NO Desorbed from Spacecraft Surfaces. Irving L. Kofsky, *PhotoMetrics, Inc.*; and John L. Barrett, *PhotoMetrics Inc.* (24, 2, p. 133) Article

A87-026 Results From the Vehicle Charging and Potential Experiment on STS-3. P. M. Banks, *Stanford University*; W. J. Raitt and A. B. White, *Utah State University*; R. I. Bush and P. R. Williamson, *Stanford University* (24, 2, p. 138) Article

A87-027 Potential Modulation on the SCATHA Spacecraft. P. D. Craven, *NASA Marshall Space Flight Center*; R. C. Olsen,

University of Alabama; J. Fennell and D. Croley, *The Aerospace Corporation*; and T. Aggson, *NASA Goddard Space Flight Center* (24, 2, p. 150) Article

A87-028 Optimization Study of Electron-Bremsstrahlung Shielding for Manned Spacecraft. Gideon Barnea, Martin J. Berger and Stephen M. Seltzer, *National Bureau of Standards* (24, 2, p. 158) Article

A87-029 System Implications of Aperture-Shade Design for the SIRTf Observatory. J. H. Lee, W. F. Brooks and S. Maa, *NASA Ames Research Center* (24, 2, p. 162) Article based on AIAA Paper 85-1074

A87-030 A Model for Nonlinear Rotary SLOSH in Propellant Tanks. Daniel D. Kana, *Southwest Research Institute* (24, 2, p. 169) Article based on AIAA Paper 86-0937 CP863

A87-031 Influence of Muzzle Brakes upon the Trajectory of Fin-Stabilized Projectiles. E. M. Schmidt and F. J. Brandon, *U. S. Army Ballistic Research Laboratory* (24, 2, p. 178) Engineering Note

A87-032 Drag Reduction on a Bluff Body at Yaw Angles to 30 Degrees. Floyd G. Howard and Wesley L. Goodman, *NASA Langley Research Center* (24, 2, p. 179) Engineering Note

A87-033 Hypersonic Aerodynamics of Nonaxisymmetric Boat-tailed Bodies. Anthony M. Agnone and B. Prakasam, *New York University* (24, 2, p. 181) Engineering Note based on AIAA Paper 84-0324

A87-034 Alternative Methods to Fold/Deploy Tetrahedral or Pentahedral Truss Platforms. Junjiro Onoda, *The Institute of Space and Astronautical Science, Japan* (24, 2, p. 183) Engineering Note

A87-035 Transient Thermal Analysis for Electronic Packages. M. J. Chacko, Leelamma Mani and K. N. Shukla, *Vikram Sarabhai Space Centre, India* (24, 2, p. 186) Engineering Note

A87-036 Thermal Design of the ACCESS Erectable Space Truss. Obie H. Bradley Jr. and Richard A. Foss, *NASA Langley Research Center* (24, 2, p. 188) Engineering Note based on AIAA Paper 85-1024

A87-037 Development of a High-Performance Cryogenic Radiator with V-Groove Radiation Shields. Steven Bard, *Jet Propulsion Laboratory* (24, 3, p. 193) Article

A87-038 Aerothermodynamic Heating and Performance Analysis of a High-Lift Aeromaneuvering AOTV Concept. Gene P. Menees and Kevin G. Brown, *NASA Ames Research Center*; John F. Wilson and Carol B. Davies, *Sterling Software* (24, 3, p. 198) Article based on AIAA Paper 85-1060

A87-039 Aerothermodynamic Environment about a Highly Swept Wing Leading Edge. Iraj Amirkabirian and John J. Bertin, *University of Texas at Austin*; and Sam A. Mezines, *McDonnell-Douglas Astronautics Company* (24, 3, p. 205) Article based on AIAA Paper 86-0389

A87-040 Supersonic Aerodynamics of Spinning Tubular Bodies. E. Politis and R. J. Kind, *Carleton University, Canada* (24, 3, p. 212) Article based on AIAA Paper 86-0395

A87-041 Thermal/Structural Dynamic Analysis via a Transform-Method-Based Finite-Element Approach. K. K. Tamma, C. C. Spyarakos and M. A. Lambi, *West Virginia University* (24, 3, p. 219) Article based on AIAA Paper 85-0155

A87-042 Neutralization of Beam-Emitting Spacecraft by Plasma Injection. S. Sasaki, N. Kawashima, K. Kuriki, M. Yanagisawa and T. Obayashi, *Institute of Space and Astronautical Science, Japan*; W. T. Roberts and D. L. Reasoner, *NASA Marshall Space Flight Center*; P. R. Williamson, *Stanford University et al* (24, 3, p. 227) Article

A87-043 Interface Stability in a Slowly Rotating Low-Gravity Tank. Roger F. Gans, *University of Rochester*; and Fred W. Leslie, *Systems Dynamics Laboratory, NASA Marshall Space Flight Center* (24, 3, p. 232) Article based on AIAA Paper 86-0198

A87-044 Some Aspects of Space Propulsion with Extraterrestrial Resources. Kumar Ramohalli, *The University of Arizona*; Warren Dowler and James French, *Jet Propulsion Laboratory*; and Robert Ash, *Old Dominion University* (24, 3, p. 236) Article

A87-045 Theory of Plasma Contactors for Electrodynamic Tethered Satellite Systems. D. E. Parks and I. Katz, *S-CUBED* (24, 3, p. 245) Article

A87-046 Theory of Plasma Contactors Used in the Ionosphere. D. E. Hastings, *Massachusetts Institute of Technology* (24, 3, p. 250) Article

A87-047 Modeling of Environmentally Induced Transients within Satellites. N. John Stevens, Gordon J. Barbay, Michael R. Jones and R. Viswanathan, *Hughes Aircraft Company* (24, 3, p. 257) Article based on AIAA Paper 85-0387

A87-048 Microgravity Environment of the Material Science Double Rack on Spacelab-1. H. Hamacher, *Deutsche Forschungs und Versuchsanstalt für Luft und Raumfahrt, Federal Republic of Germany*; and U. Merbold, *European Space Agency, France* (24, 3, p. 264) Article based on AIAA Paper 85-7026 CP859

A87-049 Dynamic Analysis and Experiment Methods for a Generic Space Station Model. W. Keith Belvin, *NASA Langley Research Center*; and Harold H. Edighoffer, *Edighoffer, Inc.* (24, 3, p. 270) Article based on AIAA Paper 86-0838 CP863

A87-050 Definition of an Entry Research Vehicle. Delma C. Freeman, Richard W. Powell, J. Chris Naftel and Kathryn E. Wurster, *NASA Langley Research Center* (24, 3, p. 277) Article based on AIAA Paper 85-0969

A87-051 Inadequacy of Single-Impulse Transfers for Path Constrained Rendezvous. S. A. Stern, *University of Colorado*; and K. M. Soileau, *NASA Johnson Space Center* (24, 3, p. 282) Engineering Note

A87-052 Radiation Environment Models and the Atmospheric Cutoff. Andrei Konradi and Alva C. Hardy, *NASA Johnson Space Center*; and William Atwell, *Rockwell International* (24, 3, p. 284) Engineering Note

A87-055 Capture-Ejector Satellites. Ian O. MacConochie, Charles H. Eldred and James A. Martin, *NASA Langley Research Center* (24, 4, p. 289) Synoptic

A87-056 Rocket Plume Impingement Heat Transfer on Plane Surfaces. E. Mayer and R. Prickett, *Hughes Aircraft Company* (24, 4, p. 291) Article based on AIAA Paper 86-1321

A87-057 Application of Axisymmetric Analog for Calculating Heating in Three-Dimensional Flows. H. Harris Hamilton, *NASA Langley Research Center*; Fred R. DeJarnette, *North*

Carolina State University; and K. James Weilmuenster, *NASA Langley Research Center* (24, 4, p. 296) Article based on AIAA Paper 85-0245

A87-058 Assessment of Two Fast Aerodynamic Codes for Guided Projectiles. Ameer G. Mikhail, *U.S. Army Ballistic Research Laboratory* (24, 4, p. 303) Article based on AIAA Paper 85-4085

A87-059 Subsonic Aerodynamics of Rectangular Parallelepiped Shapes of Fineness Ratio of One-Half. E. F. Lucero and J. C. Hagan, *Johns Hopkins University*; and Martin E. Beyers, *National Research Council of Canada* (24, 4, p. 311) Article based on AIAA Paper 86-0399

A87-060 Vortex Unsteadiness on Slender Bodies at High Incidence. L. E. Ericsson, *Lockheed Missiles & Space Company, Inc.* (24, 4, p. 319) Article based on AIAA Paper 86-0486

A87-061 Aerodynamic Effects of Probe-Induced Flow Separation on Bluff Bodies at Transonic Mach Numbers. Bruce F. Haupt, *U. S. Air Force Armament Laboratory*; and Keith Koenig, *Mississippi State University* (24, 4, p. 327) Article based on AIAA Paper 85-0103

A87-062 Addressing the Hypersonic Simulation Problem. B. J. Griffith, J. R. Maus and B. M. Majors, *Calspan Corporation*; and J. T. Best, *Arnold Engineering Development Center* (24, 4, p. 334) Article based on AIAA Paper 86-9775

A87-063 Self-Shadowing Effects on the Thermal-Structural Response of Orbiting Trusses. Jack Mahaney, *Mercer University*; and Earl A. Thornton, *Old Dominion University* (24, 4, p. 342) Article based on AIAA Paper 84-1765

A87-064 Experimental Buckling of Cylindrical Composite Panels with Eccentrically Located Circular Delaminations. Blaise Horban and Anthony Palazotto, *U. S. Air Force Institute of Technology* (24, 4, p. 349) Article

A87-065 BUNVIS-RG: Exact Frame Buckling and Vibration Program, with Repetitive Geometry and Substructuring. M. S. Anderson, *NASA Langley Research Center*; and F. W. Williams, *University of Wales Institute of Science and Technology* (24, 4, p. 353) Article based on AIAA Paper 86-0868 CP863

A87-066 Record Charging Events from Applied Technology Satellite 6. R. C. Olsen, *University of Alabama* (24, 4, p. 362) Article

A87-067 Threshold-Determining Mechanisms for Discharges in High-Voltage Solar Arrays. D. E. Parks, G. A. Jongeward, I. Katz and V. A. Davis, *S-CUBED* (24, 4, p. 367) Article

A87-068 Chemical Kinetic Performance Losses for a Hydrogen Laser Thermal Thruster. T. Dwayne McCay, *University of Tennessee Space Institute*; and Carol E. Dexter, *Environmental Research Institute of Michigan* (24, 4, p. 372) Article based on AIAA Paper 85-0907

A87-069 Multiple-Zone Strategy for Supersonic Missiles. Andrew B. Wardlaw Jr., Francis J. Priolo and Jay M. Solomon, *U. S. Naval Surface Weapons Center* (24, 4, p. 377) Article

A87-070 Computed and Experimental Surface Pressure and Heating on 70-Deg Sphere Cones. K. James Weilmuenster and H. Harris Hamilton II, *NASA Langley Research Center* (24, 5, p. 385) Article based on AIAA Paper 86-0567

A87-071 Prediction of the Nonlinear Aerodynamic Characteristics of Maneuvering Missiles. Michael R. Mendenhall, Stanley C. Perkins Jr. and Daniel J. Lesieutre, *Nielsen Engineering & Research, Inc.* (24, 5, p. 394) Article based on AIAA Paper 85-1776 CP857

A87-072 Computations of Supersonic Flow over a Missile Afterbody Containing an Exhaust Jet. Jubaraj Sahu, *U.S. Army Ballistic Research Laboratory* (24, 5, p. 403) Article based on AIAA Paper 85-1815 CP857

A87-073 Design Nomograms for Metallic Rocket Motor Cases Reinforced with a Viscoelastic Fiber Overwind. A. Groves and J. Margetson, *Ministry of Defence, Royal Armament Research and Development Establishment, England*; and P. Stanley, *Simon Engineering Laboratories, University of Manchester, England* (24, 5, p. 411) Article

A87-074 Integrated Structural Analysis for Rapid Design Support. D. G. Wong and C. R. Fuller, *Lockheed Missiles and Space Company* (24, 5, p. 416) Article based on AIAA Paper 86-1010 CP863

A87-075 Modal Test/Analysis Correlation for the Centaur G Prime Launch Vehicle. J. Chen, T. Rose, M. Trubert and B. Wada, *Jet Propulsion Laboratory*; and F. Shaker, *NASA Lewis Research Center* (24, 5, p. 423) Article based on AIAA Paper 86-1002 CP863

A87-076 Finite-Element Model for the Thermoelastic Analysis of Large Composite Space Structures. J. D. Lutz, D. H. Allen and W. E. Haisler, *Texas A&M University* (24, 5, p. 430) Article based on AIAA Paper 86-0875 CP863

A87-077 30-cm Electron Cyclotron Plasma Generator. Hank Goede, *TRW Space and Technology Group* (24, 5, p. 437) Article

A87-078 Results From a Series of Tethered Rocket Experiments. S. Sasaki, K. I. Oyama, N. Kawashima, Y. Watanabe and T. Obayashi, *Institute of Space and Astronautical Science, Japan*; W. J. Raitt and A. B. White, *Utah State University*; P. M. Banks, *Stanford University et al* (24, 5, p. 444) Article

A87-079 Translational Energy Dependence of the Reaction of Atomic Oxygen with Polyimide Films. Graham S. Arnold, Daniel R. Peplinski and Franklin M. Cascarano, *The Aerospace Corporation* (24, 5, p. 454) Article based on AIAA Paper 85-7016 CP859

A87-080 Laser Satellite Constellations for Strategic Defense--An Analytic Model. John A. Parmentola, *West Virginia University*; and A. Fenner Milton, *Roosevelt Center for American Policy Studies* (24, 5, p. 459) Article

A87-081 Verification of Large Beam-Type Space Structures. Choon-Foo Shih, *Jet Propulsion Laboratory* (24, 5, p. 469) Article based on AIAA Paper 86-0860 CP863

A87-082 Experimental Validation of a Performance Model for Scarfed Nozzles. J. S. Lilley, *U.S. Army Missile Command, Redstone Arsenal* (24, 5, p. 474) Article

A87-083 Shock-Capturing Technique for Hypersonic, Chemically Relaxing Flows. Scott Eberhardt, *University of Washington*; and Kevin Brown, *NASA Ames Research Center* (24, 6, p. 481) Article based on AIAA Paper 86-0231

A87-084 Performance Evaluation of an Entry Research Vehicle. Richard W. Powell, J. Chris Naftel and Mark J. Cunningham, *NASA Langley Research Center* (24, 6, p. 489) Article based on AIAA Paper 86-0270

A87-085 Theoretical Analysis of Aircraft Afterbody Flow. George S. Deiwert and Alison E. Andrews, *NASA Ames Research Center*; and Kazuhiro Nakahashi, *National Aerospace Laboratory, Japan* (24, 6, p. 496) Article based on AIAA Paper 84-1524

A87-086 Orbital Acceleration Research Experiment. R. C. Blanchard, *NASA Langley Research Center*; M. K. Hendrix, *NASA Johnson Space Center*; J. C. Fox and D.J. Thomas, *KMS Fusion Inc.*; and J. Y. Nicholson, *Vigyan Research Associates Inc.* (24, 6, p. 504) Article based on AIAA Paper 86-1195 CP866

A87-087 Numerical Analysis of Interaction of a High-Voltage Solar Array with Ionospheric Plasma. Hitoshi Kuninaka and Kyoichi Kuriki, *Institute of Space and Astronautical Science, Japan* (24, 6, p. 512) Article

A87-088 High-Energy Orbit Refueling for Orbital Transfer Vehicles. Bruce P. Dunn, *University of British Columbia, Canada* (24, 6, p. 518) Article

A87-089 Sloss Dynamics in a Toroidal Tank. J. S. Meserole and A. Fortini, *Boeing Aerospace Company* (24, 6, p. 523) Article based on AIAA Paper 86-1717

A87-090 Flat Spin of Axisymmetric Bodies in the Critical Reynolds Number Region. L. E. Ericsson, *Lockheed Missiles & Space Company* (24, 6, p. 532) Article based on AIAA Paper 86-2083 CP868

A87-091 Spacecraft Contamination from Scarfed Nozzle Exhausts. S. Boraas, *Morton Thiokol, Inc.* (24, 6, p. 539) Article

A87-092 Evaluation of Rocket Plume Signature Uncertainties. H. F. Nelson, *University of Missouri—Rolla* (24, 6, p. 546) Article

A87-093 High-Performance Missile Synthesis with Trajectory and Propulsion System Optimization. P. K. A. Menon, V. H. L. Cheng, C. A. Lin and M. M. Briggs, *Integrated Systems Inc.* (24, 6, p. 552) Article

A87-094 Digital Group Demodulation System for Multiple PSK Carriers. Tomoki Ohsawa and Junji Namiki, *NEC Corporation, Japan* (24, 6, p. 558) Article based on AIAA Paper 86-0652 CP862

A87-095 Spacecraft Glow. Harold A. Papazian, *Martin Marietta Aerospace* (24, 6, p. 565) Engineering Note

U.S. Postal Service STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Required by 39 U.S.C. 3685)			
1A. TITLE OF PUBLICATION Journal of Spacecraft and Rockets		1B. PUBLICATION NO. 282080	2. DATE OF FILING 9/28/87
3. FREQUENCY OF ISSUE Bi-Monthly		3A. NO. OF ISSUES PUBLISHED ANNUALLY 6	3B. ANNUAL SUBSCRIPTION PRICE \$20.00
4. COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION (Street, City, County, State and ZIP+4 Code) (Not printer)			
370 L'Enfant Promenade SW, Washington, DC 20024			
5. COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OF GENERAL BUSINESS OFFICES OF THE PUBLISHER (Not printer)			
same as above			
6. FULL NAMES AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR, AND MANAGING EDITOR (This item MUST NOT be blank)			
PUBLISHER (Name and Complete Mailing Address) American Institute of Aeronautics and Astronautics, Inc. same as above			
EDITOR (Name and Complete Mailing Address) Frank J. Redd -- same as above			
MANAGING EDITOR (Name and Complete Mailing Address) William O'Connor -- same as above			
7. OWNER (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given. If the publication is published by a nonprofit organization, its name and address must be stated.) (Item must be completed.)			
FULL NAME American Institute of Aeronautics and Astronautics, Inc.		COMPLETE MAILING ADDRESS same as above	
8. KNOWN BONDHOLDERS, MORTGAGEES AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES (If none are none, so state)			
FULL NAME None		COMPLETE MAILING ADDRESS	
9. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 427 (2) DCMR only) The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes (Check one)			
<input checked="" type="checkbox"/> HAS NOT CHANGED DURING PRECEDING 12 MONTHS <input type="checkbox"/> HAS CHANGED DURING PRECEDING 12 MONTHS <input type="checkbox"/> IF CHANGED, Publisher must submit explanation of change with this statement			
10. EXTENT AND NATURE OF CIRCULATION (See instructions on reverse side)		AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	
A. TOTAL NO. COPIES (Net Press Run)		3850	
B. PAID AND/OR REQUESTED CIRCULATION 1. Sales through dealers and carriers, street vendors and counter sales		---	
2. Mail Subscriptions (Paid and/or requested)		3400	
C. TOTAL PAID AND/OR REQUESTED CIRCULATION (Sum of B1 and B2)		3400	
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS (Samples, complimentary and other free copies)		70	
E. TOTAL DISTRIBUTION (Sum of C and D)		3470	
F. COPIES NOT DISTRIBUTED 1. Office use, left over, unaccounted (including after printing)		380	
2. Return from News Agents		---	
G. TOTAL (Sum of E, F1 and F2 should equal net press run shown in A)		3850	
H. TOTAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE		3700	
11. I certify that the statements made by me above are correct and complete		SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER OR OWNER CHRIS TROLL, CONTROLLER	