

Chronological Index

C70 001 Application of Oscillatory Aeodynamic Theory Estimation of Dynamic Stability Derivatives William P Rodden, *The MacNeal Schwendler Corporation*; and Joseph P Giesing, *McDonnell Douglas Corporation* (7, 3, p 272) Engineering Note

Errata (21, 1, p 93)

C81 195 Aeroelastic Divergence of Unrestrained Vehicles William P Rodden, *La Canada Flintridge* (18, 12, p 1072) Engineering Note

Errata (21, 1, p 94)

C83 019 Aerodynamic Penalties of Heavy Rain on Landing Airplanes. P Haines and J Luers, *University of Dayton Research Institute* (20, 2, p 111) Article

Technical Comment by Gaurav Rajen, *Indian Institute of Technology* (21, 1, p 92)

Reply (21, 1, p 92)

C84-001 Free-Flight and Wind-Tunnel Data for a Generic Fighter Configuration Winchenbach, G L., *Eglin Air Force Base*; R L Uelton, *Calspan Field Services*; W H Hathaway, *General Electric Company*; and R M Chelekis, *Air Force Armament Laboratory* (21, 1, p 5) Article based on AIAA Paper 82-1365

C84 002 Flight Dynamics of Rotorcraft in Steep High g Turns Robert T N Chen, *NASA Ames Research Center* (21, 1, p 14) Article based on AIAA Paper 82 1345

C84 003 Computation of Three-Dimensional Boundary Layers on Fuselages E.H. Hirschel, *Messerschmitt Bolkow Blohm GmbH* (21, 1, p 23) Article

C84 004 Dynamic Load Measurements with Delta Wings Undergoing Self-Induced Roll Oscillations Daniel Levin and Joseph Katz, *Technion -Israel Institute of Technology* (21, 1, p 30) Article

C84 005 Computations and Aeroelastic Applications of Unsteady Transonic Aerodynamics About Wings P Guruswamy, *Informatics General Corporation*; and P M Goorjian, *NASA Ames Research Center* (21, 1, p 37) Article based on AIAA Paper 82 0690 CP823

C84 006 Performance Degradation of Propeller Systems Due to Rime Ice Accretion K D Korkan, *Texas A & M University*; L Dadone, *Boeing Vertol Company*; and R J Shaw, *NASA Lewis Research Center* (21, 1, p 44) Article based on AIAA Paper 82 0286

C84 007 Aerodynamics of Very Slender Rectangular Wing Bodies to High Incidence Erik S Larson, *Aeronautical Research Institute of Sweden* (21, 1, p 50) Article

C84 008 Wind Tunnel Wall Interference Corrections for Aircraft Models in the Transonic Regime Magdi H Rizk *Flow Industries Inc*; and Earl M Murman, *Flow Industries Inc* (21, 1, p 54) Article

C84 009 A Dynamic Model for Aircraft Poststall Departure M A Hreha and F H Lutze, *Virginia Polytechnic Institute and State University* (21, 1, p 62) Article

C84 010 Aeroelastic Flutter and Divergence of Stiffness Coupled, Graphite/Epoxy Cantilevered Plates Steven J Hollowell, *Flight Dynamics Laboratory Wright Patterson AFB*; and John Dugundji *Massachusetts Institute of Technology* (21, 1, p 69) Article based on AIAA Paper 82 0722

C84 011 Fracture, Longevity, and Damage Tolerance of Graphite/Epoxy Filamentary Composite Material James W Mar, *Massachusetts Institute of Technology* (21, 1, p 77) Article

C84 012 Helicopter Rotor Performance Degradation in Natural Icing Encounter K D Korkan, *Texas A & M University*; L Dadone, *Boeing Vertol Company*; and R J Shaw, *NASA Lewis Research Center* (21, 1, p 84) Engineering Note

C84 013 A Method for Predicting Wing Response to Buffet Loads. B H K Lee, *National Aeronautical Establishment National Research Council Canada* (21, 1, p 85) Engineering Note

C84 014 Airfoil Probe for Angle of Attack Measurement Paul J Hermann, *Iowa State University*; Dennis B Finley, *General Dynamics Corporation*; Steven C Rehfeldt, *McDonnell Douglas Astronautics Company*; and Lowell C Benishek, *McDonnell Douglas Technical Services Company* (21, 1, p 87) Engineering Note

C84 015 Minimum Induced Drag of Wings with Curved Planform J Ashenberg and D Weihs, *Technion Israel Institute of Technology* (21, 1, p 89) Engineering Note

C84 020 Computation of the Flow Around Wings with Rear Separation K Jacob, *German Aerospace Research Establishment* (21, 2, p 97) Synoptic

C84 021 Close-Coupled Canard Wing Vortex Interaction Wladimiro Calarese, *Wright Patterson Air Force Base* (21, 2, p 99) Synoptic based on AIAA Paper 82 1368

C84 022 Flutter Analysis Using Nonlinear Aerodynamic Forces T Ueda and E H Dowell, *Princeton University* (21, 2, p 101) Article based on AIAA Paper 82-0728 CP823

C84 023 F100 Engine Diagnostic System (EDS)- Summary of Results James A Boyless, *US Air Force Academy*; and Dwell C Butts, *Wright Patterson AFB* (21, 2, p 110) Article based on AIAA Paper 81 1448

C84 024 Benefits of Dual Wings over Single Wings for High Performance Business Airplanes. Mark, D Rhodes and Bruce P Selberg, *University of Missouri* (21, 2, p 116) Article

C84 025 Circulation Controlled STOL Wing Optimization John L Loth and Michael Boasson, *W Virginia University* (21, 2, p 128) Article based on AIAA Paper 83 0082

C84 026 Tone Generation by Rotor Downstream Strut Interaction Richard P Woodward and Joseph R Balombin, *NASA Lewis Research Center* (21, 2, p 135) Article

C84 027 A Multi Grid Method for Transonic Wing Analysis and Design Pradeep Raj, *Lockheed California Company* (21, 2, p 143) Article

C84 028 The Fallacy of Using NII in Analyzing Aircraft Operations Robert G Melton, *Pennsylvania State University*; and Ira D Jacobson, *The University of Virginia* (21, 2, p 151) Article

C84 029 A Computer System for Aircraft Flyover Acoustic Data Acquisition and Analysis D W Boston, E E Cashar, D A Cope and B M Glover Jr, *The Boeing Company* (21, 2, p 155) Article

Errata (21, 6, p 448)

C84 030 Equivalence of Damping from Flight Flutter Test Evaluation and Eigenvalue Calculation Valter J E Stark, *Saab Scania AB*; and Helmut Wittmeyer, *Consultant* (21, 2, p 159) Engineering Note

C84 031 PAN AIR Applications to Aero Propulsion Integration A W Chen and E N Tinoco, *Boeing Commercial Airplane Company* (21, 3, p 161) Article based on AIAA Paper 83 1368

Technical Comment by Wilson C Chin, *Applied Aero Nalysis* (21, 11, p 927)

Reply (21, 11, p 927)

C84 032 A Method for Predicting Low-Speed Aerodynamic Characteristics of Transport Aircraft Luis E Murillo and John H McMasters, *Boeing Commercial Airplane Company* (21, 3, p 168) Article based on AIAA Paper 82 1845

C84 033 NASA's B 57B Gust Gradient Program Dennis Camp and Warren Campbell, *NASA Marshall Space Flight Center*; Walter Frost, *University of Tennessee Space Institute*; Harold Murrow, *NASA Langley Research Center*; and Wenneth Painter, *NASA Dryden Flight Research Facility* (21, 3, p 175) Article based on AIAA Paper 83 0208

C84 034 Aerodynamic Design Optimization Trim Analysis of Canard Conventional Configurations Keith, Michael W and Selberg, Bruce P, *University of Missouri Rolla* (21, 3, p 183) Article

C84 035 Elastic-Plastic Behavior of Coldworked Holes H Arman, Alvin Levy and H L Eidinoff, *Grumman Aerospace Corporation* (21, 3, p 193) Article based on AIAA Paper 83-0865 CP831

C84 036 Active Suppression of Aeroelastic Instabilities on a Forward Swept Wing T E Noll, *Air Force Wright Aeronautical Laboratories*; F E Eastep, *University of Dayton*; and R A Calico, *Air Force Institute of Technology* (21, 3, p 202) Article

C84 037 Airfoil Shape and Thickness Effects on Transonic Airloads and Flutter Samuel R Bland and John W. Edwards, *NASA Langley Research Center* (21, 3, p 209) Article

C84 038 Potential Flow Past Axisymmetric Bodies at Angle of Attack John M Kuhlman and Jin Yea Shu, *Old Dominion University* (21, 3, p 218) Engineering Note

C84 039 Modifying TRANDES to Obtain Given Lift Coefficient G F Hall, *Texas A & M University* (21, 3, p 220) Engineering Note

C84 040 Analytic Extrapolation to Full Scale Aircraft Dynamics Lars E Ericsson, *Lockheed Missiles & Space Company*; and J Peter Reding, *Lockheed Missiles & Space Company* (21, 3, p 222) Engineering Note

C84 041 Fatigue and Crack Propagation Analysis of Mechanically Fastened Joints J M Waraniak and A F Liu, *Northrop Corporation* (21, 4, p 225) Synoptic based on AIAA Paper 83 0839 CP831

C84 042 Treatment of Supersonic Configurations by an Updated Low Order Panel Method Luciano Fornasier, *Messerschmitt Bolkow Blohm, GmbH* (21, 4, p 227) Article based on AIAA Paper 83 0010

C84 043 Turboprop Engine Propulsion for the 1990's Henry J Banach and Charles N Reynolds, *Pratt & Whitney Aircraft Group* (21, 4, p 238) Article based on AIAA Paper 81 1648

C84 044 Numerical Simulation of Two-Dimensional Inlet Flow fields S Biringen, *Old Dominion University* (21, 4, p 244) Article based on AIAA Paper 81 0187

C84 045 Heating Experiments for Flowability Improvement of Near Freezing Aviation Fuel Robert Friedman, *NASA Lewis Research Center*; and Francis J Stockemer, *Lockheed California Company* (21, 4, p 250) Article based on AIAA Paper 82 1234

C84 046 Slender Body Theory and Optimization Procedures for Transonic Lifting Wing Bodies N D Malmuth, *Rockwell International Science Center*; C C Wu, *University of California at Los Angeles*; and J D Cole, *Rensselaer Polytechnic Institute* (21, 4, p 256) Article based on AIAA Paper 83-0184

C84 047 Aerodynamic Measurements About a Rotating Propeller with a Laser Velocimeter J Lepicovsky and W A Bell, *Lockheed Georgia Company* (21, 4, p 264) Article based on AIAA Paper 83 1354

C84 048 Analytical Comparison of Two Wing Structures for Mach 5 Cruise Airplanes Allan H. Taylor and L Robert Jackson, *NASA Langley Research Center*; Jeffrey A Cerro, *Kentron International Inc*; and Stephen J Scotti, *Kentron International Inc* (21, 4, p 272) Article

C84 049 The Coupled Response of Turbomachinery Blading to Aerodynamic Excitations Daniel Hoyniak and Sanford Fleeter, *Purdue University* (21, 4, p 278) Article based on AIAA Paper 83 0844 CP831

C84 050 Rate of Climb for Light Propeller Powered Airplanes E V Laitone, *University of California* (21, 4, p 287) Engineering Note

C84 051 Twenty-five Years of Handling Qualities Research. Irving L Ashkenas, *Systems Technology, Inc* (21, 5, p 289) Survey Paper based on AIAA Paper 82 1353

C84 052 Aerodynamic Response of Airfoils in Sinusoidal Oblique Gust T Nagashima and Y Tanida, *University of Tokyo* (21, 5, p 302) Article

C84 053 The Use of a Panel Method in the Prediction of External Store Separation. Gerrit J van den Broek, *National Institute of Aeronautics and Systems Technology* (21, 5, p 309) Article

C84 054 Shock Induced Dynamic Stall L E Ericsson and J P Reding, *Lockheed Missiles & Space Company* (21, 5, p 316) Article

C84 055 The Fluid Mechanics of Slender Wing Rock. L E Ericsson *Lockheed Missiles & Space Company* (21, 5, p 322) Article based on AIAA Paper 82 1320

C84 056 Wind Tunnel Correlation Study of Aerodynamic Modeling for F/A 18 Wing Store Tip Missile Flutter William E Triplett, *McDonnell Aircraft Company* (21, 5, p 329) Article

C84 057 Feasibility of a Full-Scale Degradar for Antimisting Kerosene R J Mannheimer, *Southwest Research Institute* (21, 5, p 335) Article based on AIAA Paper 83 1137

C84-058 Proposed Arrangement to Improve Turboprop Efficiency W S Gearhart *Pennsylvania State University* (21, 5, p 341) Article based on AIAA Paper 83 0059

C84 059 Comparison of Model Helicopter Rotor Primary and Secondary Blade/Vortex Interaction Blade Slap James E Hubbard Jr and Kenneth P Leighton, *Massachusetts Institute of Technology* (21, 5, p 346) Article based on AIAA Paper 83 0723

C84 060 Short, Multi-Step, Afterbody Fairings J A C Kent field, *University of Calgary* (21, 5, p 351) Engineering Note

C84-061 Design and Experimental Verification of the USB Flap Panel Structure for NAL STOL Research Aircraft Masaaki Sano, *National Aerospace Laboratory*; Yoshinori Fujimori, *National Space Development Agency of Japan*; and Shoji Maekawa, *Kawasaki Heavy Industries Ltd* (21, 6, p 353) Synoptic

C84-062 Application of Computational Aerodynamics to Airplane Design Luis R Miranda, *Lockheed California Company* (21, 6, p 355) Survey Paper based on AIAA Paper 82 0018

C84 063 An Experimental Investigation of VTOL Flying Qualities Requirements in Shipboard Landings Robert C Radford, *Calspan Advanced Technology Center*; and Dominick Andrisani II, *Purdue University* (21, 6, p 371) Article based on AIAA Paper 80-1625

C84 064 Computation of Transonic Flow Around Airfoils with Trailing Edge and Shock/Boundary Layer Interactions M M S Khan, *Lockheed Georgia Company*; G R Inger, *University of West Virginia*; and S G Lekoudis, *Georgia Institute of Technology* (21, 6, p 380) Article based on AIAA Paper 82-0989

C84-065 Specification, Design, and Test of Aircraft Engine Isolators for Reduced Interior Noise J F Unruh, *Southwest Research Institute* (21, 6, p 389) Article

C84-066 Worldwide Aviation Outlook Bjorn J Elle, *International Civil Aviation Organization* (21, 6, p 397) Article based on AIAA Paper 83 1597

C84 067 Thrust Reverser Exhaust Plume Reingestion Model Tests. Nasim F Amin and Clifford J Richards, *Northrop Corporation* (21, 6, p 401) Article based on AIAA Paper 83-1229

C84 068 Thrust Vector Control of a V/STOL Airship B L Nagabhushan and G D Faiss, *Goodyear Aerospace Corporation* (21, 6, p 408) Article

C84 069 Two-Dimensional Wind Tunnel Interference from Measurements on Two Contours Edward T Schairer, *NASA Ames Research Center* (21, 6, p 414) Article

C84 070 On the Convergence of Unsteady Generalized Aerodynamic Forces William S Rowe, *Boeing Commercial Airplane Company*; and Herbert J Cunningham, *NASA Langley Research Center* (21, 6, p 420) Article

C84-071 Aerodynamics of Pointed Forebodies at High Angles of Attack V J Modi, *The University of British Columbia*; T Ries, A Kwan and E. Leung, *The University of British Columbia* (21, 6, p 428) Article

C84 072 Efficient Method for Calculating the Axial Velocities Induced Along Rotating Blades by Trailing Helical Vortices O Rand and A Rosen, *Technion Israel Institute of Technology* (21, 6, p 433) Engineering Note

C84 073 Divergence Boundary Prediction from Random Responses: NAL's Method Yuji Matsuzaki and Yasukatsu Ando, *National Aerospace Laboratory* (21, 6, p 435) Engineering Note

C84 074 Calculation of Potential Flow Past Simple Bodies Using Axial Sources and a Least Squares Method George S Campbell (21, 6, p 437) Engineering Note

C84-075 Unsteady Pressures and Forces During Transonic Buffeting of a Supercritical Airfoil B H K Lee, *National Aeronautical Establishment*; and L H Ohman *National Aeronautical Establishment* (21, 6, p 439) Engineering Note
Errata (21, 11, p 928)

C84 076 Measurements of Ground Effect for Delta Wings Joseph Katz and Daniel Levin, *Technion Israel Institute of Technology* (21, 6, p 441) Engineering Note

C84 077 Profile Drag from Laser Doppler Velocimeter Measurement Sukeyuki Kobayashi, *ORI Inc* (21, 6, p 444) Engineering Note

C84 078 Engineering Analysis of Drooped Leading Edge Wings Near Stall Tae Hwan Cho and John D Anderson Jr, *University of Maryland* (21, 6, p 446) Engineering Note

C84 080 Compressibility Correction for Flow About Wing Surfaces D A Dietrich, S L Kromer and N O Stockman, *General Electric Company* (21, 7, p 449) Synoptic based on AIAA Paper 83-0183

C84 081 Prediction of Vortex Lift on Interacting Delta Wings in Incompressible Flow S S Dodbele and A Plotkin, *University of Maryland* (21, 7, p 451) Synoptic based on AIAA Paper 84 0136

C84 082 Flight Effects on Fan Noise with Static and Wind Tunnel Comparisons John S Preisser and David Chestnutt, *NASA Langley Research Center* (21, 7, p 453) Article based on AIAA Paper 83 0678

C84-083 Monte Carlo Simulation of the Engine Development Process D G Culy and J J Gossen, *Garrett Turbine Engine Company* (21, 7, p 462) Article based on AIAA Paper 83 1405

C84 084 Effects of Compressor Hub Treatment and Stator Stall and Pressure Rise P Cheng, M E Prell, E M Greitzer and C S Tan, *Massachusetts Institute of Technology* (21, 7, p 469) Article
Errata (21, 11, p 928)

C84 085 Development of Advanced Circulation Control Wing High-Lift Airfoils Robert J Englar, *David Taylor Naval Ship Research and Development Center*; and Gregory G Huson, *David Taylor Naval Ship Research and Development* (21, 7, p 476) Article

C84 086 Surface Pressures on a Flat Plate with Dual Jet Configurations Joseph A. Schetz and Antoni K Jakubowski, *Virginia Polytechnic Institute and State University*; and Kiyoshi Aoyagi, *NASA Ames Research Center* (21, 7, p 484) Article

C84 087 Design and Flight Test of a Kevlar Acoustic Liner Harold C Lester, John S Preisser and Tony L. Parrott *NASA Langley Research Center* (21, 7, p 491) Article based on AIAA Paper 83-0781

C84 088 Parameter Identification Applied to the Oscillatory Motion of an Airplane Near Stall James G Batterson, *NASA Langley Research Center*; and Vladislav Klein *JIAFS/GWU Langley Research Center* (21, 7, p 498) Article

C84 089 Effect of Geometry on Airfoil Icing Characteristics Michael, B Bragg, *Ohio State University* (21, 7, p 505) Article

C84 090 Nonlinear Finite Element Method in Crashworthiness Analysis of Aircraft Seats Akif O Bolukbasi, *Simula Incorporated*; and David H Laananen, *Arizona State University* (21, 7, p 512) Article based on AIAA Paper 83 0926

C84 091 Analytical and Experimental Investigation of Bird Impact on Fan and Compressor Blading A F Storace, R P Nimmer and R Ravenhall, *General Electric Company* (21, 7, p 520) Article based on AIAA Paper 83 0954

C84 092 Noise Transmission Characteristics of Advanced Composite Structural Materials Louis A Roussos and Clemans A Powell, *NASA Langley Research Center*; Ferdinand W Grosveld, *Bionetics Corporation*; and L R Koval, *University of Missouri* (21, 7, p 528) Article based on AIAA Paper 83 0694

C84 093 Thermodynamic Performance of an Airplane Wing Leading Edge Anti Icing System R Ross, *Ross Aviation Associates* (21, 7, p 536) Engineering Note

C84 094 Application of Panel Methods in External Store Load Calculations. Gerrit J van den Broek, *National Institute for Aeronautics and Systems Technology* (21, 7, p 537) Engineering Note

C84 095 A Nonlinear Analysis of the Cushion Stability of Slowly Oscillating ACV's Hideo Matsuo, *Kumamoto University*; and Kensuke Matsuo, *Kumamoto Institute of Technology* (21, 7, p 539) Engineering Note

C84 096 An Inverse Solution for Component Positioning Using Homogeneous Coordinate Transformations D P Raymer and R A Maier, *Rockwell International*; and M J Killian, *Rockwell International* (21, 7, p 541) Engineering Note based on AIAA Paper 83 2460

C84 097 A Method for Measuring Skin Friction Drag on a Flat Plate in Contaminated Gas Flows R B Oetting and G K Patterson, *University of Missouri* (21, 7, p 543) Engineering Note

C84 098 Applying Slender Wing Benefits to Military Aircraft (Wright Brothers Lecture) Edward C Polhamus *NASA Langley Research Center* (21, 8, p 545) Article based on AIAA Paper 83 2566

C84 099 A Cost Modeling Approach to Engine Optimization D G Culy and R C Gunness, *Garrett Turbine Engine Company* (21, 8, p 560) Article

C84 100 Experimental Performance Evaluation of Ventilated Mixers A New Mixer Concept for High Bypass Turbofan Engines J S Sokhey, *Boeing Commercial Airplane Company* (21, 8, p 567) Article based on AIAA Paper 82 1136

C84 101 Transonic Pressure Distributions on a Rectangular Supercritical Wing Oscillating in Pitch. Rodney H Ricketts, Maynard C Sandford, David A Seidel and Judith J Watson *NASA Langley Research Center* (21, 8, p 576) Article based on AIAA Paper 83 0923

C84 102 Comparison of Broadband Noise Mechanisms, Analyses, and Experiments on Rotors A R George and S T

Chou *Cornell University* (21, 8, p 583) Article based on AIAA Paper 83 0690

C84 103 Maximum Loading Capability of Axial Flow Compressors J K Schweitzer and J E Garberoglio, *Pratt & Whitney Aircraft* (21, 8, p 593) Article based on AIAA Paper 30300

C84 104 Unsteady Flow Concepts for Dynamic Stall Analysis L E Ericsson and J P Reding, *Lockheed Missiles & Space Company* (21, 8, p 601) Article based on AIAA Paper 82 1324

C84 105 Lightning Strikes to an Airplane in a Thunderstorm Vladislav Mazur, *University of Oklahoma*; Bruce D Fisher, *NASA Langley Research Center*; and John C Gerlach, *NASA Goddard Space Flight Center* (21, 8, p 607) Article based on AIAA Paper 84-0468

C84 106 Design Integration of Laminar Flow Control for Transport Aircraft Roy H Lange, *Lockheed Georgia Company* (21, 8, p 612) Article based on AIAA Paper 83 2440

C84 107 Feasibility Analysis of a Spiral Groove Ring Seal for Counter-Rotating Shafts Eliseo DiRusso, *NASA Lewis Research Center* (21, 8, p 618) Article

C84-108 Application of Transonic Codes to Aeroelastic Modeling of Airfoils Including Active Controls J T Batina and T Y Yang, *Purdue University* (21, 8, p 623) Article

C84 109 Divergence/Flutter Suppression System for a Forward Swept Wing Configuration with Wing Mounted Stores M Rimer, R Chipman and R Mercadante, *Grumman Aerospace Corporation* (21, 8, p 631) Article

C84 110 Visually Coupled Systems as Simulation Devices Michael W Haas, *Air Force Aerospace Medical Research Laboratory* (21, 8, p 639) Engineering Note

C84 111 The Influence of Blade Wakes on the Performance of Combustor Shortened Prediffusers S J Stevens and S P Harasgama, *University of Technology*; and P Wray, *Rolls Royce Ltd* (21, 9, p 641) Article based on AIAA Paper 81 1387

C84 112 Advanced Airfoil Design for General Aviation Propellers Frank Taverna, *Grumman Aerospace Corporation* (21, 9, p 649) Article based on AIAA Paper 83 1791

C84-113 Boundary Layer Characteristics of the Miley Airfoil at Low Reynolds Numbers Lawrence J Pohlen and Thomas J Mueller, *University of Notre Dame* (21, 9, p 658) Article

C84 114 Low Flight Speed Fan Noise from a Supersonic Inlet Richard P Woodward, Frederick W Glaser and James G Lucas, *NASA Lewis Research Center* (21, 9, p 665) Article based on AIAA Paper 83 1415

C84 115 The Use of Multipoles for Calculating the Aerodynamic Interference Between Bodies of Revolution P A T Christopher and C T Shaw *Cranfield Institute of Technology* (21, 9, p 673) Article

C84 116 Leaside Flows over Delta Wings at Supersonic Speeds David S Miller and Richard M Wood, *NASA Langley Research Center* (21, 9, p 680) Article based on AIAA Paper 83 1816

C84 117 Aerodynamic Characteristics of a Two Dimensional Moving Spoiler in Subsonic and Transonic Flow H Consigny, *Office National d Etudes et de Recherches Aerospatiales*; A

Gravelle and R. Molinaro, *Office National d'Etudes et de Recherches Aeronautiques* (21, 9, p 687) Article

C84 118 Transonic Wind Tunnel Wall Interference Minimization James L. Grunnet, *Fluidyne Engineering Corporation* (21, 9, p 694) Article

C84-119 Effects of Viscosity on Transonic-Aerodynamic and Aeroelastic Characteristics of Oscillating Airfoils P. Guruswamy and P. M. Goorjian, *NASA Ames Research Center* (21, 9, p 700) Article based on AIAA Paper 83-0888

C84 120 Effects of Icing on Performance of a Research Airplane William A. Cooper, Wayne R. Sand, Marcia K. Politovich and Donald L. Veal, *University of Wyoming* (21, 9, p 708) Article

C84 121 Recent Developments in the F 16 Flutter Suppression with Active Control Program. R. P. Peloubet Jr., R. L. Haller and R. M. Bolding, *General Dynamics* (21, 9, p 716) Article based on AIAA Paper 00200

C84 122 Improved Damage-Tolerance Analysis Methodology J. B. Chang, *Rockwell International*; and R. M. Engle, *Wright Patterson Air Force Base* (21, 9, p 722) Article based on AIAA Paper 83 0863

C84 123 Collapse Analysis of Cylindrical Composite Panels with Cutouts T. C. Janisse and A. N. Palazotto, *Air Force Institute of Technology* (21, 9, p 731) Engineering Note based on AIAA Paper 83-0875

C84 124 Flutter Characteristics of High Aspect Ratio Tailless Aircraft J. R. Banerjee, *University of Wales Institute of Science and Technology* (21, 9, p 733) Engineering Note

C84 125 Structure of Lift Generated Rolled Up Vortices R. W. Staufenbiel, *Technical University Aachen, Federal Republic of Germany* (21, 10, p. 737) Article

C84-126 The Role of Computational Fluid Dynamics in Aero propulsion Ground Testing. J. M. Barton, *Sverdrup Technology, Inc.* (21, 10, p 745) Article based on AIAA Paper 83-0149

C84 127 Slender Wings with Leading-Edge Vortex Separation: A Challenge for Panel Methods and Euler Solvers S. M. Hitzel and W. Schmidt, *Dornier GmbH (FRG)* (21, 10, p 751) Article based on AIAA Paper 83 0562

C84 128 High-Lift Airfoil Design from the Hodograph M. J. Cohen, *Ben Gurion University of the Negev* (21, 10, p 760) Article

C84 129 Status Review of a Supersonically Biased Fighter Wing Design Study. R. M. Wood, *NASA Langley Research Center*; D. S. Miller and Hahne D. E., *NASA Langley Research Center*; L. G. Niedling and J. R. Klein, *McDonnell Aircraft Company* (21, 10, p 767) Article based on AIAA Paper 83 1857

C84 130 Computer Control for Automated Flight Test Maneuvering E. L. Duke and F. P. Jones, *NASA Ames Research Center* (21, 10, p 776) Article based on AIAA Paper 83-2137

C84 131 Motion of Aircraft Trailing Vortices near the Ground M. Atias and D. Weihs, *Technion Israel Institute of Technology* (21, 10, p 783) Article based on AIAA Paper 83 2130

C84-132 Predicted TF41 Performance with the AGARD Research Fuel. J. E. Peters, *University of Illinois at Urbana Champaign* (21, 10, p 787) Article

C84 133 Airborne Infrared Low Altitude Wind Shear Detection Test P. M. Kuhn and R. L. Kurkowski, *NASA Ames Research Center* (21, 10, p 792) Article based on AIAA Paper 84-0356

C84 134 Simulated Flight Through JAWS Wind Shear W. Frost and H. P. Chang, *The University of Tennessee Space Institute*; K. L. Elmore and J. McCarthy, *National Center for Atmospheric Research* (21, 10, p 797) Article based on AIAA Paper 84 0276

C84 135 PAN AIR Applications to Mutual Interference Effects A. Cenko, *Grumman Aerospace Corporation*; E. N. Tinoco, *Boeing Commercial Airplane Company*; and J. Tustaniwsky, *Burroughs Corporation* (21, 10, p 803) Article based on AIAA Paper 84 0217

C84 136 Nonlinear Aerodynamic Effects on Bodies in Supersonic Flow J. L. Pittman, *NASA Langley Research Center*; and M. J. Siclari, *Grumman Aerospace Corporation* (21, 10, p 809) Article based on AIAA Paper 84 0231

C84 137 Evaluation of NCOREL, PAN AIR, and W12SC3 for Supersonic Wing Pressures M. Siclari, M. Visich, A. Cenko, B. Rosen and W. Mason, *Grumman Aerospace Corporation* (21, 10, p. 816) Article based on AIAA Paper 84 0218

C84 138 Performance Degradation of a Model Helicopter Rotor with a Generic Ice Shape K. D. Korkan, E. J. Cross Jr. and T. L. Miller, *Texas A&M University* (21, 10, p 823) Article based on AIAA Paper 84-0184

C84 139 Experimental Investigation of Dynamic Stall for a Pitching Airfoil D. C. Daley, *Foreign Technology Division, Wright Patterson AFB*; and E. J. Jumper, *Air Force Institute of Technology Wright Patterson AFB* (21, 10, p 831) Engineering Note

C84 140 Induced Drag and Lift of Wing by the Piecewise Continuous Kernel Function Method I. Lottati, *Technion Israel Institute of Technology* (21, 11, p 833) Synoptic

C84 141 Euler Equation Simulation of Propeller-Wing Interaction in Transonic Flow D. L. Whitfield, *Mississippi State University*; and A. Jameson, *Princeton University* (21, 11, p 835) Article

C84 142 A Physical Basis for NEXRAD Data Update Rates P. R. Mahapatra and Dusan S. Zrnic, *National Severe Storms Laboratory* (21, 11, p 840) Article

C84 143 GASP Cloud Encounter Statistics: Implications for Laminar Flow Control Flight W. H. Jasperson and G. D. Nastrom, *Control Data Corporation*; R. E. Davis, *NASA Langley Research Center*; and J. D. Holdeman, *NASA Lewis Research Center* (21, 11, p 851) Article

C84 144 Computation of Vortex Flow Around a Canard/Delta Combination Lars Erik Eriksson and Arthur Rizzi, *FFA The Aeronautical Research Institute of Sweden* (21, 11, p 858) Article

C84-145 Wind Shear Terms in the Equations of Aircraft Motion Walter Frost, *The University of Tennessee Space Institute*; and Roland L. Bowles, *NASA Langley Research Center* (21, 11, p 866) Article

C84 146 Computational Transonic Analysis of Canted Winglets Bruce S. Rosen, *Grumman Aerospace Corporation* (21, 11, p 873) Article

C84 147 Wing Design for Minimum Drag with Practical Constraints Tad McGeer, *Simon Fraser University* (21, 11, p 879) Article

C84 148 Fuel Effects on Gas Turbine Combustion-Liner Temperature, Pattern Factor, and Pollutant Emissions A H Lefebvre, *Purdue University* (21, 11, p 887) Article

C84 149 J Integral Finite Element Analysis for Three-Dimensional Cracks Gein Wang, *East China Engineering Institute* (21, 11, p 899) Article

C84 150 Measurement of Transonic Dips in the Flutter Boundaries of a Supercritical Wing in a Wind Tunnel A J Persoon, J J Horsten and J J Meijer, *National Aerospace Laboratory, The Netherlands* (21, 11, p 906) Article based on AIAA Paper 83 1031 CP832

C84 151 Bending Effects on Structural Dynamic Instabilities of Transonic Wings N D Malmuth and S R Chakravarthy *Rockwell International Science Center*; J D Cole, *Rensselaer Polytechnic Institute*; and T. P Goebel, *Rockwell International North American Aircraft Operations* (21, 11, p 913) Article based on AIAA Paper 83 0920 CP831

C84 152 Divergence Speed Degradation of Forward Swept Wings with Damaged Composite Skin. F. E Eastep, *University of Dayton*; V. B Venkayya and V A Tishler, *AFWAL, Wright Patterson Air Force Base* (21, 11, p. 921) Engineering Note

C84-153 A Method for Designing Three-Dimensional Configurations with Prescribed Skin Friction S G. Lekoudis, N L. Sankar and S F Radwan, *Georgia Institute of Technology* (21, 11, p. 924) Engineering Note

C84 158 A Spatial Model of Wind Shear and Turbulence. C. Warren Campbell, *NASA Marshall Space Flight Center*; and V A Sanborn, *Colorado State University* (21, 12, p 929) Article based on AIAA Paper 84-0277

C84 159 Practical Flight Test Method for Determining Reciprocating Engine Cooling Requirements D T. Ward and S J Miley, *Texas A&M University* (21, 12, p 936) Article

C84 160 Estimation of Aerodynamic Forces and Moments on a Steadily Spinning Airplane. B N Pamadi and L W. Taylor Jr., *NASA Langley Research Center* (21, 12, p 943) Article based on AIAA Paper 82 1368

C84-161 A Simple and Safe Takeoff or Landing Procedure with Wing Surface Contaminations Mark A Dietenberger, *University of Dayton Research Institute* (21, 12, p 955) Article based on AIAA Paper 83 0604

C84 162 A User-Operated Model to Study Strategy in Aircraft Evacuation D E. Cagliostro, *NASA Ames Research Center* (21, 12, p. 962) Article

C84 163 Microwave-Powered, Unmanned, High Altitude Airplanes. Charles E K Morris Jr., *NASA Langley Research Center* (21, 12, p 966) Article based on AIAA Paper 83-1825

C84-164 Optimizing the Use of Surface Sensors for Wind Shear Detection A J Bedard Jr, *NOAA/ERL* (21, 12, p 971) Article based on AIAA Paper 84-0353

C84 165 Turbulent Roughness Drag Due to Surface Waviness at Low Roughness Reynolds Numbers, John C Lin and Michael J. Walsh, *NASA Langley Research Center* (21, 12, p. 978) Engineering Note