

Epitome

Technical Expertise: *Aerodynamics* *Flight Testing*
 Aerothermodynamics *Wind Tunnel Testing*
 Hypersonics *Computational Fluid Dynamics*
 Gas Dynamics *6-DOF Aerodynamics Modeling*
 Planetary Entry *Missile Stability and Control*
 Flight Simulation *Aircraft Stability and Control*
 Aerospace History *Aircraft Performance*

Professional Career: 35 Years; Rockwell International, General Dynamics, National Aeronautics and Space Administration, Hughes Missile Systems, Raytheon Missile Systems, Manpower Technical Services, Analytical Services and Materials, Inc., TYBRIN Corporation, Inc. and White Eagle Aerospace, LLC

Teaching Career: 26 Years; University and Professional Training Programs; More than 20 different types of aerospace courses taught

Significant Programs: *NASA Space Shuttle Program*
 United States Navy STANDARD Missile Program
 NASA HYPER-X Flight Research Program
 MDA Kinetic Energy Interceptors Program

Academic Degrees Earned

M.S.E., California State Polytechnic University, Pomona (CSPUP); June 1976
Academic Load: 48 Units Between January 1975 and Mach 1976
Accentuation: Fluid Dynamics, Gas Dynamics
Applicable Courses: *Boundary Layer Concepts, Advanced Gas Dynamics, Tensor Analysis, Advanced Fluid Dynamics, Radiation Heat Transfer, Hydronautics*

B.S.A.E, State Polytechnic University, Pomona (CSPUP); June 1973
Academic Load: 230 Units Between September 1968 and June 1973
Accentuation: Aerodynamics, Fluid Dynamics, Vehicle Performance
Applicable Courses: *Supersonic Aerodynamics, Subsonic Aerodynamics, Gas Dynamics, Mass, Momentum and Energy Transfer, Dynamics of Aerospace Vehicles, Advanced Aerospace Analysis, Aircraft Design, Experimentation Systems*

Post-Graduate Studies

Standard Courses: *Hypersonic Aerodynamics*
 Complex Variables

Short Courses: *Hypersonic Aerodynamics*
 Hypersonic Technologies and the National Aerospace Plane

Professional Experience

- 2006 to Present: White Eagle Aerospace, LLC
Aerospace Consulting, Training, and History of Flight Lectures
President/CEO
- 2008 to Present: TYBRIN Corporation, Inc.
NASA Dryden Flight Research Center (DFRC)
Senior Technical Consultant
- 1999 to 2008: Analytical Services and Materials, Inc.
NASA Dryden Flight Research Center (DFRC)
Senior Technical Consultant
- 1999 to 2010: Raytheon Missile Systems (RMS)
Aerodynamics Department
Senior Engineering Fellow
- 1996 to 1999: NASA Dryden Flight Research Center (DFRC)
Aerodynamics Branch (RA)
Aerospace Engineer (GS-14)
- 1996 to 1999: Manpower Technical Services (MTS)
Raytheon Missile Systems
Engineering Consultant
- 1992 to 1996: Hughes Missile Systems Company (HMSC)
Aerodynamics Group
Senior Engineering Specialist
- 1978 to 1992: General Dynamics Pomona Division
Aerothermodynamics Section
Engineering Specialist
- 1973 to 1975: Rockwell International
Shuttle Airloads Group
Member Technical Staff
-

Teaching Experience

- 2009 to Present: White Eagle Aerospace, LLC
Technical Training Program
President/CEO

Teaching Experience (continued)

2005 to 2009: Society of Flight Test Engineers (SFTE)
Technical Training Program
Technical Course Instructor

2000 to 2009: Raytheon Missile Systems (RMS)
Raytheon Professional Services (RPS)
RPS Faculty Member

1996: Hughes Missile Systems Company (HMSC)
Advanced Technical Development Program (ATEP)
ATEP Faculty Member

1979 to 1994: California State Polytechnic University, Pomona (CSPUP)
Aerospace Engineering Department
Adjunct Faculty Member

Technical Courses Taught and/or Developed

University: *Introduction to Aeronautics*
Gas Dynamics
Supersonic Aerodynamics
Aerospace Fundamentals
Subsonic Wind Tunnel Testing
Aircraft Performance
Computer Programming
Aerospace Experimentation Systems
Experimental Techniques in Aerodynamics
Senior Project

Professional Development: *Aerodynamics For Engineers*
Basic Missile Aerodynamics
Advanced Missile Aerodynamics
Missile Simulation Systems
Fundamentals of Gas Dynamics
Aerospace Vehicle Performance
Fundamentals of Hypersonics
Fundamentals of Earth Reentry
Introduction to Planetary Entry
Aerospace Lessons-Learned

Invited Lectures: USAF Test Pilot School Heritage Lectures
 Society of Experimental Test Pilots Aviation History Lecture
 NASA Dryden Flight Research Center Aerospace History Lectures
 Raytheon Missile Systems Engineering Seminars
 Raytheon MMTN Invited Lecturer
 Raytheon Management Club Invited Speaker
 AIAA Technical Conference Presentation Lectures
 University of Arizona Aerospace History Invited Speaker
 Tucson AIAA Section Invited Speaker
 California State Polytechnic University Guest Speaker
 Numerous Civic, Service and Church Group Speaking Opportunities

Awards and Patents

2006 SFTE James S. McDonnell Team Award; Member, X-43A Flight Test Team
2005 NASA Group Achievement Award; Member, X-43A Flight Test No. 3 Team
2005 Raytheon Senior Fellow Honors Recipient
2003 Interceptor Dual Nose Cone Assembly Patent
2002 Raytheon Senior Principal Engineer Honors Recipient
1997 NASA Dryden Flight Research Center Technical Performance Award
1996 Hughes Missile Systems/US Navy Technical Merit Award
1994 California State Polytechnic University Instructional Service Award
1991 General Dynamics Air Defense Systems Eagle Award Nominee
1991 California State Polytechnic University Aerospace Faculty Service Award
1982 California State Polytechnic University Educational Service Recognition

Professional Organizations

American Institute of Aeronautics and Astronautics (AIAA)
National Space Society (NSS)
Society of Flight Test Engineers (SFTE)
International Test and Evaluation Association (ITEA)
National Aeronautics Association (NAA)
Flight Test Historical Foundation (FTHF)
Air Force Association (AFA)
Navy League of the United States (NLUS)
American Aviation Historical Society (AAHS)
National Air and Space Society (NASS)

Technical Publications

1. "X-43A Flush Air Data System Flight Test Results"; Journal of Spacecraft and Rockets, pp. 48-61, Volume 47, Number 1, January-February 2010.
2. "Zoom Flight: Flying the USAF NF-104A"; Presented at the 53rd Annual Symposium of the Society of Experimental Test Pilots (SETP), 26 September 2009.
3. AIAA-2008-6570, "The X-43A Flush Air Data Sensing System Flight Test Results"; AIAA Atmospheric Flight Mechanics Conference and Exhibit, 18-21 August 2008.
4. "X-43A Flight-Determined Aerodynamic Force and Moment Characteristics at Mach 7.0"; Journal of Spacecraft and Rockets, pp. 472-484, Volume 45, No. 3, May-June 2008.
5. AIAA-2006-8028, "Flight-Test-Determined Aerodynamic Force and Moment Characteristics of the X-43A at Mach 7.0"; 14th AIAA/AHI Space Planes and Hypersonic Systems and Technologies Conference, Canberra, Australia, November 6-9, 2006.
6. NASA/TP-2006-213683, "Flight-Test-Determined Aerodynamic Force and Moment Characteristics of the X-43A at Mach 7.0"; NASA Dryden Flight Research Center, Edwards, California, July 2006.
7. IDC 10837-06/045, "Dorsal Cover Estimated Loads"; Raytheon Missile Systems, Tucson, Arizona, 13 July 2006.
8. AIAA-2005-4521, "To the Limits and Beyond: X-Aircraft From the XS-1 to the X-20A"; 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Tucson, Arizona, July 10-13, 2005.
9. AIAA-2005-3537, "Boom and Zoom: The History of the NF-104A Aerospace Trainer"; 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Tucson, Arizona, July 10-13, 2005.
10. ATN-04-003, "Pressure Integration Relations For Bodies of Arbitrary Cross-Sectional Shape"; Raytheon Missile Systems, 09 June 2004.
11. ATN-04-004, "High Speed Anti-Radiation Missile (HARM) 6-DOF Aerodynamic Modeling Scheme"; Raytheon Missile Systems, Tucson, Arizona, 08 June 2004.
12. ATN-04-001, "Raindrop Motion Through a Missile Shock Layer"; Raytheon Missile Systems, Tucson, Arizona, 06 April 2004.
13. ATN-04-006, "HYPER-X Flight Project Review Update"; Raytheon Missile Systems, Tucson, Arizona, 12 February 2004.
14. HX-DFRC-0266, "Pegasus Hybrid Launch Vehicle Flight-Extracted Aerodynamic Forces and Moments For Flights No. 8, No. 24, and No. 30"; NASA Dryden Flight Research Center, Edwards, California, 12 December 2003.

15. HX-DFRC-0308, "Results of the HYPER-X Research Vehicle (HXRV) Flush Air Data Sensing (FADS) System Wind Tunnel Test (AEDC VA435)"; NASA Dryden Flight Research Center, Edwards, California, 14 April 2003.
16. HX-DFRC-0384, "HXRV Flight-Measured 6-DOF Aerodynamics For HYPER-X Flight II"; NASA Dryden Flight Research Center, Edwards, California, 06 December 2003.
17. ATN-03-015, "Moldline and Surface Slope Relations For Rotationally-Symmetric Nose Shapes"; Raytheon Missile Systems, Tucson, Arizona, 06 December 2003.
18. ATN-03-012, "The 6-DOF Equations of Motion For Flight of a Rigid Body Over a Flat Earth"; Raytheon Missile Systems, Tucson, Arizona, 14 October 2003.
19. ATN-03-014, "Missile Airframe and Environmental Models"; Raytheon Missile Systems, Tucson, Arizona, 31 July 2003.
20. ATN-03-010, "STANDARD Missile Coordinate Systems"; Raytheon Missile Systems, Tucson, Arizona, 19 May 2003.
21. ATN-03-011, "Wave Drag Characteristics for Common Forebody Shapes"; Tucson, Arizona, 16 May 2003.
22. ATN-03-009, "Fundamentals of 6-DOF Aerodynamic Force and Moment Modeling"; Raytheon Missile Systems, Tucson, Arizona, 05 May 2003.
23. ATN-03-008, "Flight Aerodynamic Force and Moment Extraction"; Raytheon Missile Systems, Tucson, Arizona, 30 April 2003.
24. ATN-03-005, "Common Axis System Transformations"; Raytheon Missile Systems, Tucson, Arizona, 21 April 2003.
25. ATN-03-006, "Launch Vehicle Ascent Axial and Lateral Accelerations"; Raytheon Missile Systems, Tucson, Arizona, 21 April 2003.
26. ATN-03-007, "Missile Component Airloads"; Raytheon Missile Systems, Tucson, Arizona, 21 April 2003.
27. ATN-03-001, "Transformation Equations Relating Maneuver Plane and Body-Fixed Steering Control Deflections"; Raytheon Missile Systems, Tucson, Arizona, 31 March 2003.
28. ATN-03-002, "3-Axis Aerodynamic Moment Transfer Equations"; Raytheon Missile Systems, Tucson, Arizona, 31 March 2003.
29. Paper No. 5, "Jet-Interaction Controls For Hit-to-Kill Tactical Missiles"; Raytheon Aeronautical Engineering Council 2002 Technical Symposium, 23 October 2002.

30. IDC 5G-54-02/044, "High-G Airframe IR&D 2001 Annual Report"; Raytheon Missile Systems, Tucson, Arizona, 30 April 2002.
31. HX-DFRC-0234, "HYPER-X Flight Force and Moment Extraction Methodology"; NASA Dryden Flight Research Center, Edwards, California, 20 July 2002.
32. HX-DFRC-0099, "HYPER-X6-DOF Aerodynamics Model (Version 7.80)"; NASA Dryden Flight Research Center, Edwards, California, 31 March 2002.
33. HX-DFRC-0207, "HYPER-X Launch Vehicle Flight-Extracted 6-DOF Aerodynamics (First-Flight: Flown 02 June 2001)"; NASA Dryden Flight Research Center, Edwards, California, 07 November 2001.
34. IDC 5G54-01/077, "Missile Magnus Effects Technical Briefing"; Raytheon Missile Systems, Tucson, Arizona, 24 August 2001.
35. HX-DFRC-0159, "HYPER-X Research Vehicle (HXRV) Longitudinal Trim Aerodynamics"; NASA Dryden Flight Research Center, Edwards, California, 31 March 2001.
36. HX-DFRC-0098, "HYPER-X Research Vehicle First-Flight Excrescence Drag Model"; NASA Dryden Flight Research Center, Edwards, California, 31 January 2001.
37. HX-DFRC-0176, "HYPER-X First-Flight Dispersion Model (Revision B) Applicable To Emergency Jettison of the HXLV From The B-52B Carrier Aircraft"; NASA Dryden Flight Research Center, Edwards, California, 05 May 2001.
38. IDC 5G54-01/027, "Recommendation For Development of a SM-2 Block IVA IR Seeker Dome Cover 12-DOF Jettison Simulation"; Raytheon Missile Systems, Tucson, Arizona, 12 April 2001.
39. HX-DFRC-0159, "HYPER-X Research Vehicle (HXRV) Longitudinal Trim Aerodynamics"; NASA Dryden Flight Research Center, Edwards, California, 31 March 2001.
40. HX-DFRC-0098, "HYPER-X Research Vehicle First-Flight Excrescence Drag Model"; NASA Dryden Flight Research Center, Edwards, California, 31 January 2001.
41. HX-DFRC-0129, "HYPER-X Launch Vehicle 6-DOF Aerodynamics Database Evaluation"; NASA Dryden Flight Research Center, Edwards, California, 06 December 2000.
42. NASA/TM-2000-209017, "Development of a Flush Air Data Sensing System on a Sharp-Nosed Vehicle For Flight at Mach 3 to 8"; NASA Dryden Flight Research Center, Edwards, California, May 2000.
43. AIAA Paper 2000-0504, "Development of a Flush Air Data Sensing System on a Sharp-Nosed Vehicle For Flight at Mach 3 to 8"; 38th Aerospace Sciences Conference, 10-13 January 2000.
44. HX-DFRC-0082, "HXRV 6-DOF Aerodynamic Uncertainty Model Applicable to HYPER-X First-Flight"; NASA Dryden Flight Research Center, Edwards, California, 07 November 1999.

45. IDC 5G6A.A-99/117, "SM-2 Block IVA ER IR Seeker Dome EMD Cover Jettison Monte Carlo Study"; Raytheon Missile Systems, Tucson, Arizona, 10 Jun 1999.
46. IDC 5G6A.A-99/118, "SM-3 LEAP 3rd Stage 6-DOF Aero Model: Database Generation and Modeling Schemes"; Raytheon Missile Systems, Tucson, Arizona, 31 May 1999.
47. HX-DFRC-0024A, "Pre-Test Report For the HX-FADS Pressure Model validation Wind Tunnel Test"; NASA Dryden Flight Research Center, Edwards, California, 26 October 1998.
48. IDC 5G6A.A-98/343, "SM-2 Block IVA ER IR Seeker Dome EMD Cover Jettison Simulation Study"; Raytheon Missile Systems, Tucson, Arizona, 29 September 1998.
49. HX-DFRC-0002, "HYPER-X Aerodynamics Objectives and Requirements Document"; NASA Dryden Flight Research Center, Edwards, California, 31 August 1998.
50. AIAA-1998-2866, "Wind tunnel Testing, Flight Scaling and Flight Validation With Hyper-X"; Advanced Measurement and Ground Testing Technology Conference, 20th, Albuquerque, New Mexico, June 15-18, 1998.
51. IDC 5G6A.A-97/191, "Program CVRSIM (Version 3.00) User Instructions"; Hughes Missile Systems Company, Tucson, Arizona, 04 July 1997.
52. IDC 5G6A.A-97/190, "Program EJSIM (Version 3.00) User Instructions"; Hughes Missile Systems Company, Tucson, Arizona, 04 July 1997.
53. IDC 5G6A.A-97/024, "Program TRAJ3D (Version 3.00) User Instructions"; Hughes Missile Systems Company, Tucson, Arizona, 14 March 1997.
54. IDC 5G62A.A-97/023, "Program BODYARO (Version 1.05) User Manual"; Hughes Missile Systems Company, Tucson, Arizona, 31 January 1997.
55. IDC 5G6A.A-97/022, "Program TRGT2D SSST/TBMT Trajectory Synthesis Code User Instructions"; Hughes Missile Systems Company, Tucson, Arizona, 01 January 1997.
56. IDC 5G6A.A-96/245, "User Manual for the SM-X LEAP 6-DOF Aerodynamics Model (Version 5.00)"; Hughes Missile Systems Company, Tucson, Arizona, 14 October 1996.
57. IDC 5G6A.A-96/051, "Preliminary Assessment of ESSM Debris Dispersion Analysis"; Hughes Missile Systems Company, Tucson, Arizona, 08 March 1996.
58. IDC 5G62/95/128, "NSFS STANDARD Missile Candidate (SM-2 Blk IIIA MR w/32" Body Stretch) Estimated Incremental Aerodynamics "; Hughes Missile Systems Company, Tucson, Arizona, 23 October 1995.
59. IDC 5G63/95/129, "NSFS Hammerhead Candidate Airframe Configuration Estimated Zero-Lift Drag Coefficient Characteristics"; Hughes Missile Systems Company, Tucson, Arizona, 23 October 1995.

60. IDC 5G62/95/116, "SM-2 Block IVA ER ETR-1 IR Seeker Dome Jettison Trajectory Characterization"; Hughes Missile Systems Company, Tucson, Arizona, 29 September 1995.
61. IDC 5G62/95/117, "SM-2 Block IV/IVA ER 6-DOF Aerodynamics Model Configuration Management System Compliance"; Hughes Missile Systems Company, Tucson, Arizona, 27 September 1995.
62. IDC 5G62/95/100, "Aegis Hybrid LEAP 6-DOF Aerodynamics Model, CMS Version 1.0 User Manual"; Hughes Missile Systems Company, Tucson, Arizona, 31 August 1995.
63. IDC 5G62/95/099, "STANDARD Multi-Mission Missile (SM³) Candidate Airframe Aerodynamics Model (Version 2.00/ 11 May 1995)"; Hughes Missile Systems Company, Tucson, Arizona, 18 August 1995.
64. IDC 5G62/95/098, "SM-2 Blk IVB ER Candidate Canard-Configured Airframe 6-DOF Aerodynamics Model (Version 5.00/14 Apr 1995)"; Hughes Missile Systems Company, Tucson, Arizona, 18 August 1995.
65. IDC 5G62/95/093, "SM-2 Blk IVA ER ETR-1 at WSMR: Debris Dispersion Analysis"; Hughes Missile Systems Company, Tucson, Arizona, 11 August 1995.
66. IDC 5G62/95/094, "White Sands Missile Range October Meteorological Model"; Hughes Missile Systems Company, Tucson, Arizona, 11 August 1995.
67. IDC 5G62/95/095, "Aegis LEAP (Tactical Version) Zero-Lift Drag Coefficient Data Package 1.00"; Hughes Missile Systems Company, Tucson, Arizona, 11 August 1995.
68. IDC 5G62/95/096, "THAAD Launch Configuration Estimated Zero-Lift Drag Characteristics"; Hughes Missile Systems Company, Tucson, Arizona, 11 August 1995.
69. IDC 5G62/95/097, "SM-2 Blk IIIA MR Untrimmed Airloads For Missile S/N's 68324, 69376, and 81028"; Hughes Missile Systems Company, Tucson, Arizona, 11 August 1995.
70. AIAA-95-1789-CP, "A Navier-Stokes CFD Analysis of the Flowfield About a Circular-Cylinder Protuberance Mounted Perpendicular to a Flat Plate in Supersonic Flow"; pp. 229-243, 13th AIAA Applied Aerodynamics Conference, San Diego, California, 19-22 June 1995.
71. AIAA-95-1893-CP, "An Assessment of Missile DATCOM Prediction Accuracy Relative to Generic Body+Wing+Tail Missile Pitch Aerodynamics"; pp. 1058-1068, 13th AIAA Applied Aerodynamics Conference, San Diego, California, 19-22 June 1995.
72. IDC 5G62/95/59, "Wallops Island Meteorological Models Used in LEAP FTV-3/4 Dynamic Flight Simulations (January, February, and March)"; Hughes Missile Systems Company, 31 May 1995.
73. IDC 5G62/95/60, "TERRIER LEAP FTV-16-DOF Aerodynamics Model Summary Report"; Hughes Missile Systems Company, Tucson, Arizona, 31 May 1995.

74. IDC 5G62/95/61, "TERRIER LEAP FTV-26-DOF Aerodynamics Model Summary Report"; Hughes Missile Systems Company, Tucson, Arizona, 31 May 1995.
75. IDC 5G62/95/62, "TERRIER LEAP FTV-3/FTV-46-DOF Aerodynamics Model Summary Report"; Hughes Missile Systems Company, 31 May 1995.
76. IDC 5G62/95/63, "TERRIER LEAP Tech Demo Debris Dispersion Analysis: A Lesson Learned"; Hughes Missile Systems Company, Tucson, Arizona, 31 May 1995.
77. IDC 5G-62.12-94/112, "SM-2 Blk IVA ER Upper Stage Forebody Boundary Layer Average Total Pressure Estimates"; Hughes Missile Systems Company, Tucson, Arizona, 12 December 1994.
78. IDC 5G-63.12-94/104, "SM-2 Blk III MR Dorsal Panel Normal Force Estimation Method"; Hughes Missile Systems Company, Tucson, Arizona, 06 December 1994.
79. IDC 5G-62.09-94/61, "STANDARD Missile Zero-Lift Drag Compendium"; Hughes Missile Systems Company, Tucson, Arizona, 06 December 1994.
80. IDC 5G-62.12-94/103, "SM-2 Blk III MR Dorsal Panel Load-Time Histories Generated in Support of the USS Shiloh Flight Anomaly Investigation"; Hughes Missile Systems Company, Tucson, Arizona, 06 December 1994.
81. IDC 5G-62.11-94/87, "LEAP FTV-2 Flight Test Results: Missile Forebody Flight-Measured Surface Pressures"; Hughes Missile Systems Company, Tucson, Arizona, 30 November 1994.
82. IDC 5G-62.11-94/88, "LEAP FTV-2 Flight Test Results: Missile Forebody Compartmental Pressure Venting Performance"; Hughes Missile Systems Company, Tucson, Arizona, 30 November 1994.
83. IDC 5G-62.11-94/86, "LEAP FTV-2 Flight Results: High Altitude Roll Transient Aerodynamics Evaluation"; Hughes Missile Systems Company, Tucson, Arizona, 20 November 1994.
84. IDC 5G-62.09-94/63, "SM-2 Block IIIC MR High Throughput Simulation (HTS) Aerodynamics Modeling Methodology"; Hughes Missile Systems Company, Tucson, Arizona 30 September 1994.
85. IDC 5G-62.09-94/70, "STANDARD Missile Configuration Key"; Hughes Missile Systems Company, Tucson, Arizona, 30 September 1994.
86. IDC 5G-62.09-94/61, "STANDARD Missile Zero-Lift Drag Compendium"; Hughes Missile Systems Company, Tucson, Arizona, 30 September 1994.
87. IDC 5G-62.09-94/62, "SM-2 Block IVA ER High Throughput Simulation (HTS) Aerodynamics Modeling Methodology"; Hughes Missile Systems Company, Tucson, Arizona, 30 September 1994.
88. AIAA-1994-3463, "Flight-Dynamic and Aerothermodynamic Conceptual Design of a Bent-Nose Biconic RV Bus for Atmospheric Entry From Low-Earth Orbit"; AIAA Atmospheric Flight Mechanics Conference, Scottsdale, AZ, August 1-3, 1994.

89. AIAA-1994-3466, "A Method For Predicting Combined Dorsal Normal Force and Center-of-Pressure Location at Supersonic Mach Numbers"; AIAA Atmospheric Flight Mechanics Conference, Scottsdale, AZ, August 1-3, 1994.
90. AIAA-1994-3463, "Flight-Dynamic and Aerothermodynamic Conceptual Design of a Bent-Nose Biconic RV Bus for Atmospheric Entry From Low-Earth Orbit"; AIAA Atmospheric Flight Mechanics Conference, Scottsdale, AZ, August 1-3, 1994.
91. AIAA-1993-971, "Supersonic/Hypersonic Flight Vehicle Forebody Wave Drag Determination Using an Euler-Based CFD Approach"; AHS, and ASEE, Aerospace Design Conference, Irvine, California, 16-19 February 1993
92. AIAA-1993-968, "Application of Navier-Stokes Flowfield Analysis to the Aerothermodynamic Design of an Aerospike-Configured Missile"; AHS, and ASEE, Aerospace Design Conference, Irvine, California, 16-19 February 1993.
93. TM 41-3-205.17-1, "User's Guide For the LEAP Flight Test Vehicle 3D Aerodynamics Model – Version 2.00"; Hughes Missile Systems Company, Tucson, Arizona, 23 December 1992.
94. TM 41-1-184.77-6, "A Method for Estimating the Pressure Augmentation on a Flat Plate-Mounted Circular Cylinder in Supersonic Flow"; General Dynamics Air Defense Systems Division, 05 March 1992.
95. TM 41-1-184.77-3, "A Navier-Stokes CFD Analysis of the Flowfield About a Circular Cylinder/Flat Plate Combination in Supersonic Flow"; General Dynamics Air Defense Systems Division, 20 February 1992.
96. TM 41-1-184.77-5, "Analysis of Calibration Dome Surface Pressures Obtained During the MHIP Full-Scale Sled Test at Holloman AFB"; General Dynamics Air Defense Systems Division, 24 January 1992.
97. TM 41-1-184.77-4, "Analysis of Calibration Dome Surface Pressures Obtained During the MHIP Full-Scale Aerothermal Wind Tunnel Test at JHU/APL"; General Dynamics Air Defense Systems Division, 14 January 1992.
98. TM 41-1-147.77-24, "AAAM Inner Dome Flowfield Properties, Surface Pressures, and Heating Rates at Supersonic Mach Numbers"; General Dynamics Air Defense Systems Division, 17 December 1991.
99. Report No. "IR/RF Common Aperture Dome Design"; Presented at the 4th DOD Electromagnetic Windows Symposium, Naval Postgraduate School, Monterey, California, November 1991.
100. TM 41-1-184.77-1, "Overview of the GD/ADSD Navier-Stokes Computational Fluid Dynamics Capability developed in Support of MHIP Aerothermodynamics Analysis"; General Dynamics Air Defense Systems Division, 24 September 1991.
101. TDI 41-1-184.77-15, "MHIP IR Seeker Dome Navier-Stokes CFD Study Case"; General Dynamics Pomona Division, 12 September 1991.

102. TDI 41-1-184.77-7, "MHIP Sled test Missile Aerodynamics Data Package"; General Dynamics Air Defense Systems Division, 12 September 1991.
103. TDI 41-1-184.77-11, "MHIP IR Seeker Dome Cover Aerodynamic Forces for the Maximum Dynamic Pressure Flight Condition"; General Dynamics Air Defense Systems Division, 12 September 1991.
104. TDI 41-1-184.77-14, "MHIP IR Seeker Dome Window+Collar Assembly Inviscid Flow Pressures for the Maximum Thermal Shock and Maximum Temperature Trajectories"; General Dynamics Air Defense Systems Division, 12 September 1991.
105. WL/MN-TR-91-46, "IR/RF Dome Technology, Final Report -General Dynamics, Volume I -Concept Definition and Preliminary Design"; General Dynamics Air Defense Systems, August 1991.
106. WL/MN-TR-91-46, "IR/RF Dome Technology, Final Report -General Dynamics, Volume II -Final Design"; General Dynamics Air Defense Systems, August 1991.
107. WL/MN-TR-91-46, "IR/RF Dome Technology, Final Report -General Dynamics, Volume III – Appendices, References, and Bibliography"; General Dynamics Air Defense Systems, August 1991.
108. TDI 41-1-75.77-1, "Kinematics Performance Improvement for an Aerospike-Configured Stinger"; General Dynamics Air Defense Systems Division, 24 May 1991.
109. TDI 41-1-184.77-8, "MHIP IR Seeker Dome Airloads"; General Dynamics Air Defense Systems Division, 20 May 1991.
110. TDI 41-1-184.77-9, "MHIP IR Seeker Dome Window+Collar Assembly Axial and Radial Forces for the Maximum Dynamic Pressure Flight Condition"; General Dynamics Air Defense Systems Division, 20 May 1991.
111. TDI 41-1-184.77-6, "MHIP IR Seeker Dome Cover Design Airloads"; General Dynamics Air Defense Systems Division, 20 May 1991.
112. TDI 41-1-184.77-10, "MHIP IR Seeker Dome Cover Hold-Down and Aero-Aiding Forces And Moments"; General Dynamics Air Defense Systems Division, 20 May 1991.
113. TM 6-332-183.77-5, "Missile DATCOM Prediction Evaluation Study: Generation of Adjustment Factor Equations For STANDARD Missile Body+Dorsal+Tail Configurations"; General Dynamics Air Defense System Division; 30 April 1991.
114. TM 6-331-183.77-2, "Missile DATCOM Prediction Evaluation Study: STANDARD Missile Body+Dorsal+Tail Configurations"; General Dynamics Air Defense Systems Division, 30 April 1991.
115. TM 6-332-183.77-1, "Missile DATCOM Prediction Evaluation Study: Generic Body+Wing+Tail Configurations"; General Dynamics Air Defense Systems Division, 30 April 1991.
116. TM 6-332-183.77-4, "Missile DATCOM Prediction Evaluation Study: Generation of Adjustment Factor Equations For Generic Body+Wing+Tail Configurations"; General Dynamics Air Defense Systems Division, 30 April 1991.

117. TDI 6-332-147.77-11, "Axisymmetric Shock Layer Flowfield Properties For a Representative Missile Forebody at Supersonic Mach Numbers"; General Dynamics Pomona Division, 14 September 1990.
118. TDI 6-332-173.77-2, "Wave Drag Effects Associated With Blunting of the NAAWS 2.0-Caliber Von-Karman Ogive"; General Dynamics Pomona Division, 21 August 1990.
119. TDI 6-332-147.77-12, "Wave Drag Effects Associated With Blunting of the AAAM 2.6-Caliber Von-Karman Ogive"; General Dynamics Pomona Division, 21 August 1990.
120. M 6-332-183.77-1, "Viewgraph Package For AIAA Paper 90-1318 Presented at the AIAA 5th Biannual Flight Test Conference"; General Dynamics Pomona Division, 19 July 1990.
121. M 6-332-183.77-2, "Viewgraph Package For AIAA Paper 90-1319 Presented at the AIAA 5th Biannual Flight Test Conference"; General Dynamics Pomona Division, 19 July 1990.
122. AIAA-1990-1318, "An Approach to Estimating the Debris Dispersion Footprint For Surface-Launched Tactical Missiles"; AIAA/SFTE/DGLR/SETP, Biannual Flight Test Conference, 5th, Ontario, California, May 22-24, 1990.
123. AIAA-1990-1319, "Launch Test Vehicle Flight Dispersion and Impact Footprint Analysis -A Case Study"; AIAA/SFTE/DGLR/SETP, Biannual Flight Test Conference, 5th, Ontario, CA, May 22-24, 1990.
124. GDPD-ERR-89/041, "Computational Fluid Dynamics – Missile Protuberance Aerothermodynamics"; General Dynamics Pomona Division, December 1989.
125. TDI 6-332-184.77-2, "MHIP Side-Mounted EO Dome and Cover Wave Drag Increments"; General Dynamics Pomona Division, 11 August 1989.
126. TDI 6-332-184.77-3, "Preliminary MHIP Side-Mounted EO Dome Flowfield Refractive Indices"; General Dynamics Pomona Division, 11 August 1989.
127. TDI 6-332-184.77-1, "Missile Bow Wave Shock Shapes and Stand-Off Distances"; General Dynamics Pomona Division, 10 August 1989.
128. TM 6-332-119.77-2, "Extraction of Missile Drag From Flight Test Data Using the Body Axis Force Method (BAFM)"; General Dynamics Pomona Division, 07 July 1989.
129. TM 6-332-119.77-1, "Extraction of Missile Drag From Flight Test Data Using the Tangential Acceleration Method (TAM)"; General Dynamics Pomona Division, 31 January 1989.
130. GDPD-ERR-88/035, "Computational Fluid Dynamics – Missile Aerothermodynamics"; General Dynamics Pomona Division, January 1989.
131. TM 6-332-164.77-1, "STANDARD Missile, SM-2 Block IV Dorsal and Tail Panel Anomaly Aero Model: Methods Description"; General Dynamics Pomona Division, 31 October 1988.
132. TM 6-332-177.77-1, "Missile Flowfield Refractive Index Profiles For Several HPIRS IR Window Candidates"; General Dynamics Pomona Division, 29 August 1988.

133. TDI 6-332-177.77-1, "Wave Drag Increments For a Series of 42 HPIRS IR Window Candidates"; General Dynamics Pomona Division, 29 August 1988.
134. TDI 6-332-134.92-1, "NAAWS Critical Experiment LTV Requirements and Flyout Prediction"; General Dynamics Pomona Division, 12 May 1988.
135. GDPD-ERR-87/036, "Computational Fluid Dynamics – Geometry and Aerodynamics Packages"; General Dynamics Pomona Division, January 1988.
136. TM 6-332-135.53-1, "Preliminary Design and Aerothermodynamics Analysis of a Re-entry Vehicle For Upper Atmosphere Defense"; General Dynamics Pomona Division, 23 December 1987.
137. M 6-332-131.53-10, "Body Alone Experimental Normal Force Distributions For Supersonic Mach Numbers and Angles-of-Attack to 60 Degrees"; General Dynamics Pomona Division, 18 November 1987.
138. TM 6-332-129.53-3, "STANDARD Missile MR, High-G Airloads For Representative Low Altitude, Close-In Intercept Trajectories"; General Dynamics Pomona Division, 03 November 1987.
139. M 6-332-131.53-9, "Body Alone Experimental Pressure Distributions For Supersonic Mach Numbers and Angles-of-Attack to 60 Degrees"; General Dynamics Pomona Division, 20 October 1987.
140. M 6-332-131.53-8, "Body Alone Experimental Force and Moment Data Base Used in the GDPD/CSPUP Cooperative Research Effort"; General Dynamics Pomona Division, 20 October 1987.
141. TDI 6-332-51.53-9, "Submarine-Launched STD ARM Boosted Missile Estimated Low-Speed Aerodynamics"; General Dynamics Pomona Division, 13 October 1987.
142. TDI 6-332-118.1-6, "STANDARD Missile, SM-2 Block II MR AEGIS VL: Missile Debris Flight Duration and Impact Range For CG-52 LTV Flight"; General Dynamics Pomona Division, 16 June 1987.
143. TM 6-332-118.53-16, "STANDARD Missile, SM-2 Block II MR Dorsal Panel Manufacturing Anomaly Aerodynamics Effects"; General Dynamics Pomona Division, 08 June 1987.
144. M 6-332-131.53-2, "Program BAKER (Version 1.00) Users Guide"; General Dynamics Pomona Division, 30 January 1987.
145. M 6-332-131.53-3, "Program DRSLARO (Version 1.00) Users Guide"; General Dynamics Pomona Division, 30 January 1987.
146. M 6-332-131.53-4, "Program ESDU (Version 1.00) Users Guide"; General Dynamics Pomona Division, 30 January 1987.
147. M 6-332-131.53-5, "Program JORGSN Version 1.00 User's Guide"; General Dynamics Pomona Division, 30 January 1987.

148. M 6-332-131.53-6, "Program BRAZZEL Version 1.00 User's Guide"; General Dynamics Pomona Division, 30 January 1987.
149. M 6-332-131.53-7, "Program DRSLARO Version 1.00 User's Guide"; General Dynamics Pomona Division, 15 May 1987.
150. TDI 6-332-130.53-4, "STANDARD Missile, SM-2 Block IV Aegis Estimated Aerodynamics For Use in Two-Body Missile-Booster Separation Flight Simulations"; General Dynamics Pomona Division, 19 August 1986.
151. TDI 6-332-130.53-2, "Estimated Drag Coefficient Data For a Randomly Tumbling SM-2 Block IV EXCES Sabot Segment"; General Dynamics Pomona Division, 08 August 1986.
152. TM 6-332-65.1-1, "Debris Dispersion Analysis For STANDARD Missile, SM-2, Block I (MR) Flight Test Vehicles Flown at WSMR"; General Dynamics Pomona Division, 25 February 1986.
153. TDI 6-332-126.53-8, "Aerodynamics For a Family of ASAM 20" Diameter Outer Air Battle Air-Breathing Missiles"; General Dynamics Pomona Division, 29 January 1986.
154. TDI 6-332-126.53-5, "Aerodynamics For the 191.5" x 19.0" ASAM Boosted Rocket"; General Dynamics Pomona Division, 29 January 1986.
155. TDI 6-332-126.53-11, "LDASAM-1A and LDASAM-3A Estimated Tail Control Effectiveness Data For Combined-Plane Maneuvers"; General Dynamics Pomona Division, 29 January 1986.
156. TM 6-332-101.53-100, "RAM FSED GTV Series 1B Configuration Zero-Lift Drag (MARK 36 MOD 9 Reduced Smoke Rocket Motor)"; General Dynamics Pomona Division, 14 February 1985.
157. TM 6-332-101.53-21, "RAM FSED GTV Series 1B Configuration Zero-Lift Drag (MARK 36 MOD 2 Rocket Motor)"; General Dynamics Pomona Division, 10 December 1984.
158. TDI 6-332-101.53-102, "RAM Antenna Collar Estimated Zero-Lift Drag Increments"; General Dynamics Pomona Division, 20 July 1984.
159. TM 6-332-39.53-23, "A Comparison of Flight Test-Derived Aerodynamics With Data From Wind Tunnel For STANDARD Missile MR Upgrade CTV-3"; General Dynamics Pomona Division, 29 February 1984.
160. TM 6-332-118.1-5, "An Assessment of Debris Dispersion For STANDARD Missile MR Upgrade FTR's Flown at WSMR"; General Dynamics Pomona Division, 28 October 1983.
161. TM 6-332-39.53-2, "Estimated Debris Dispersion Boundary For STANDARD Missile MR Upgrade FTR-27 to be Rail-Launched at WSMR"; General Dynamics Pomona Division, 15 July 1983.
162. TM 6-332-101.53-19, "PROGRAM FLTDAG: A Computer Method For Obtaining Power-Off, Zero-Lift Drag From Missile Flight Data"; General Dynamics Pomona Division, 14 April 1983.

163. TDI 6-332-118.53-83, "Aerodynamic Characteristics For a Variety of STANDARD Missile Configurations"; General Dynamics Pomona Division, 12 January 1983.
164. GDPD-ERR-82/003, "Air-Breathing Propulsion Utilization"; Part 2, 31 December 1982.
165. TDI 6-332-118.53-72, "STANDARD Missile, SM-2, Block II (ER) T1B Tail Panel Loads"; General Dynamics Pomona Division, 19 May 1982.
166. TDI 6-332-127.53-1, "MMG Air-Suspended Radome Static Wind Loads"; General Dynamics Pomona Division, 07 May 1982.
167. TM 6-332-118.1-4, "Debris Impact Range Study For STANDARD Missile, SM-2, Block II (MR) Test Rounds To Be Vertically-Launched at WSMR"; General Dynamics Pomona Division, 28 April 1982.
168. TDI 6-332-1.53-19, "Estimated of Ballistic Coefficients For Several Missile Debris Fragments"; General Dynamics Pomona Division, 26 February 1982.
169. GDPD-ERR-81/017, "Air-Breathing Propulsion Utilization"; Part 1, 31 December 1981.
170. CR-6-332-768-001, "STANDARD Missile, SM-2 Block II (ER) Missile-Booster Aerodynamics Report"; General Dynamics Pomona Division, October 1981.
171. TDI 6-332-118.53-60, "STANDARD Missile, SM-2 Block II (ER) Supersonic Hinge Moment Derivatives"; General Dynamics Pomona Division, 22 September 1981.
172. TDI 6-332-39.53-81, "Aerodynamic Effects of an Increase in the Cylindrical Bow of the Center Section of an EX-104 DTRM"; General Dynamics Pomona Division, 03 March 1981.
173. CR-6-332-768-005, "STANDARD Missile, SM-2 Block II (ER) Component Aerodynamics and Airloads"; General Dynamics Pomona Division, February 1981.
174. TDI 6-332-73.1-10, "Estimated Stinger Guidance Section Impact Boundaries"; General Dynamics Pomona Division, 28 January 1981.
175. TM 6-332-167.4-1, "Debris Dispersion Footprint Estimation Methods for Surface-Launched Tactical Missiles"; General Dynamics Pomona Division, 28 May 1980.
176. TDI 6-332-87.53-6, "6-Inch Guided Projectile Estimated Power-Off Drag"; General Dynamics Pomona Division, 28 May 1980.
177. TDI 6-332-39.53-63, "STANDARD Missile, SM-1 Block VII (MR) Supersonic Longitudinal Aerodynamic Characteristics at $\phi = 0^\circ$ and -45° (Tunnel Axis System)"; General Dynamics Pomona Division, 27 May 1980.
178. TDI 6-332-39.1-5, "Debris Dispersion For Vertical Launch Test Firing Sequence (WSMR DT III F)"; General Dynamics Pomona Division, 16 May 1980.

179. TM 6-332-39.53-13, "Longitudinal and Lateral Aerodynamic Characteristics of STANDARD Missile, SM-1, Block VII (MR) at Supersonic Mach Numbers (Wind Tunnel Test Report)"; General Dynamics Pomona Division, 30 October 1979.
180. TM 6-332-118.53-6, "Results of the Pressure-Load Distribution Wind Tunnel Test on the 2/9th-Scale STANDARD Missile-2 Block II (ER) at Transonic Mach Numbers"; General Dynamics Pomona Division, 19 June 1979.
181. TM 6-332-118.53-3, "SM-2 Block II (ER) Boost Phase Report"; General Dynamics Pomona Division, April 1979.
182. TDI 6-332-39.25-6, "Pre-Test Report: Low-Speed Test of the Vertical Launch Characteristics of the STANDARD Missile-1 Block VII (MR)"; General Dynamics Pomona Division, 26 March 1979.