

US Air Force T&E Days Conference 2009

**Albuquerque, New Mexico, USA
10 – 12 February 2009**

ISBN: 978-1-61567-102-1

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers.
Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at
1801 Alexander Bell Drive, Reston, VA 20191, USA.

TABLE OF CONTENTS

Developing, Optimizing, and Executing Improved Test Matrices	1
<i>D.L. Vaughn, D. Garrard, C. Smith</i>	
Hypersonic Test Capabilities Overview	12
<i>J.D. Leslie, D.E. Marren</i>	
Concepts of Integrated Diagnostics and Operational Test Methods	23
<i>M.A. Whelan, K.W. Sanders, R.L. Griffith, J.D. Wilson, S.H. Bragg</i>	
Survey of Design of Experiments (DOE) Projects In Developmental Test CY07-08.....	33
<i>G.T. Hutto, J.M. Higdon</i>	
Exploration of Dynamic Rocket Sled Modeling Parameters at Holloman High Speed Test Track	55
<i>G.H. Ayers, M.D. Hooser, D.E. Black, A.M. Leader</i>	
A Framework for Improving Experimental Design and Statistical Methods for Test and Evaluation	66
<i>R.R. Hill, S.P. Chambal</i>	
Standard Operational Test Planning and Analysis Via Nonstandard Designed Experiments.....	71
<i>A. Sewell, M. Kowalski, J. Simpson</i>	
Link 16 Integration on the AC-130: The ITT Process	82
<i>J.D. Conley, M.J. Dooley</i>	
Solving The Operational Problem: Sailplane Aerotow Takeoff Performance Evaluation Through Model Validation.....	90
<i>R.E. Erb, G.L. Aldrich, D.L. Vanhoy</i>	
Getting Dirty: Testing C-17 Airfield Performance in Dirt and Mud Landing Zones	100
<i>A.A. Tucker, C.E. Childress, R.J. Poremski</i>	
Challenges of Operational Testing: the A-10C Initial Operational Test and Evaluation	108
<i>K.M. Martin</i>	
JAMFEST: A Cost-Effective Solution to GPS Vulnerability Testing	115
<i>P.H. Benshoof, N. Uptain, A. Trunzo</i>	
A Multi-Component Force Transducer Design From an Existing Rocket Payload Attachment Fitting.....	120
<i>T. Johnson, D. Landman, R. Rhew, P. Parker</i>	
Ground Testing of Space-Based Hyperspectral and Multispectral Imagers	127
<i>B. Hall, C. Stone, M. Goodson</i>	
Recommendations From the Workshop On Communications Through Plasma During Hypersonic Flight.....	134
<i>C.H. Jones</i>	
The Test and Training Enabling Architecture, TENA, Enabling Technology For The Joint Mission Environment Test Capability (JMETC) and Other Emerging Range Systems	142
<i>G. Hudgins, K. Poch, J. Secondine</i>	
Evaluation of the Drag Reduction Potential and Static Stability Changes of C-130 Aft Body Strakes	150
<i>H.G. Pinsky, M.C. Gray, M.D. Welch, T.R. Yechout</i>	

Upside Down Air Force Antenna Measurements	161
<i>S. Grudzinski</i>	
50 Years of the Central Inertial and GPS Test Facility	168
<i>J.A. Shockley, S. Zetterstrom</i>	
Advanced Inertial Test Laboratory: Improving Low-Noise Testing of High-Accuracy Instruments	200
<i>C.H. Barker, W.G. Rock</i>	
Applying Test and Evaluation Technologies, Techniques, and Methodologies to Enhance the Space Sensor Test Infrastructure at AEDC.....	212
<i>H. Lowry, R. Nicholson, S. Steely, D. Crider, M. Breeden</i>	
Combined Aerospace Testing: Bridging the Gap Between Airborne and Space Systems.....	232
<i>J. Colebank, H. Smith, J. Burns, H. Lowry, J. Prebola, D. Woods</i>	
GPS End-To-End System Test & Evaluation Methodology	238
<i>D. Ruff, R. Lawrence, A. Trunzo, V. Avila, G. Schroeder, G. Fairbanks</i>	
JMETC: Enabling Capability for Distributed Test	245
<i>C. Ferguson</i>	
Index Approach Law Based Sliding Control for a Hypersonic Aircraft.....	251
<i>H. Li, W. Sun, Z. Li, S. Xue</i>	
United States Air Force System Engineering Assessment Model (AF SEAM)	261
<i>G.R. Freeman</i>	
SAASM Integrated System Evaluator and Reporter	266
<i>C. Laning</i>	
The Advanced Subminiature Telemetry System (ASMT): A Wireless, Non-Intrusive Sensor System.....	269
<i>S.A. Musteric, S. Pellarin</i>	
Link 16 J-Series Message Testing	288
<i>R.A. Budd Jr.</i>	
Use of Sensor Pods with Commercial Derivative Aircraft.....	294
<i>N. Alksnis, S. Fisher</i>	
Measuring Oxygen Concentration in a Fuel Tank Ullage	301
<i>W.M. Cavage</i>	
Accelerated Development of Flight Tested Sensors and Systems.....	306
<i>D. Kern, A. MacDonald, E. Schutte, O. Borde, E. Schultz, J. LaFleur</i>	
412th Test Wing Small Business Innovation Research (SBIR) Program: Improving Local Test and Evaluation Infrastructure and Enhancing the AF Enterprise.....	333
<i>S. McNamee</i>	
Creating an Aircraft Handling Qualities Simulator for the USAF Test Pilot School	339
<i>W.R. Gray III, J.C. Kemper</i>	
Operationally Testing the Human System Interface of Space and Missile Defense Systems	349
<i>K.S. White, M.G. Payton</i>	
Verification and Validation for Satellite Ground Systems	357
<i>A. Fershtut, W. Palm, M. Goodson</i>	
Test Like You Fly- Implications for R&D Systems.....	366
<i>W. Palm, C. Stone</i>	

RF Compatibility Testing at Non-Air Force Launch Sites: Risk Areas and Potential Mitigation Techniques	373
<i>J. Wisecup, J. Pena</i>	
Redefining Space System Verification & Validation	379
<i>J.J. Sellers, W.J. Larson, D. Kirkpatrick, J. White</i>	
Improving Remote Control Applications for Wind Tunnel Tests	391
<i>C.L. Smith, R.A. Roberts</i>	
Optical Detection of Augmentor Rumble and Screech Using RASSMAT	402
<i>B.C. Winkleman, K.C. Wilcher, J. Markham</i>	
Develop and Sustain Warfighting Systems (D&SWS) Test & Evaluation (T&E) Pre-Milestone B Support Initiative	408
<i>M.R. Deis</i>	
Planning for the KC-X Integrated Test	413
<i>D.F. Kaupa, M.A. Whelan</i>	
HHSTT Rainfield and Wind Barrier	426
<i>T. Truong, R. Weiss, Y. Wang, M. Porter</i>	
Growing Technical Excellence in the AEDC T&E Workforce	433
<i>A.F. Huber II, E.M. Kraft, J.T. Best, P.S. Stich, A.D. Eldridge, W.B. Baker, P.A. Montgomery</i>	
Reinvigorating the Technical Excellence of the Engineering Workforce at the Air Force Flight Test Center	444
<i>D.A. Roth</i>	
Test and Evaluation - A Life-cycle Organization	460
<i>S.J. Scukanec</i>	

Author Index