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Donald F. Tandy, Jr., P.E.

Specialized Professional Competence

- Failure analysis and accident reconstruction.
- Risk analysis of mechanical designs including identification of failure modes, assessment of consequences of failure and quantification of actual risk for use of existing systems.
- Design, computer aided engineering, computer modeling of design, manufacturing, design verification, reliability and quality control techniques for mass produced products.
- Vehicle dynamics, vehicle dynamics testing and instrumentation.
- Design, development, testing and evaluation of automotive chassis systems including electronic stability control systems and advanced chassis systems.

Professional Qualifications

- Bachelor of Science (Mechanical Engineering), The Ohio State University, 1985
- Master of Science (Mechanical Engineering), The Ohio State University, 1986
- Principal Engineer,
Tandy Engineering & Associates, Inc. – 2002 to Present
- Graduate Engineer,
Carr Engineering, Inc. – 1995 to 2001
- Supervisor, Advanced Vehicle Technology,
Ford Motor Company – 1994-1995
(Core and Advanced Vehicle Dynamics CAE and Test)
- Supervisor, Light Truck Engineering,
Ford Motor Company – 1993-1995
(Light and Truck Vehicle Dynamics and Suspension Design and Test)
- Technical Specialist, Light Truck Engineering,
Ford Motor Company – 1989-1993
(Vehicle Dynamic Modeling and Test)
- Research Engineer, Product Manufacturing and Engineering Staff,
Ford Motor Company – 1986-1989
(Design and Testing of Advanced Suspension Concepts)
- Recipient of Ford Motor Company Henry Ford Technical Award,
six Ford Customer Driven Quality Awards, and two Ford Light Truck Achievement Awards
- Recipient of Arch T. Colwell Merit Award for outstanding contribution to the literature of SAE
- Author of United States Government Patents on Suspension Designs and ESC Systems
- Member of Society of Automotive Engineers and American Society of Mechanical Engineers
- Member of Texas Society of Professional Engineers / National Society of Professional Engineers
- Registered Texas Professional Engineer
- National Science Foundation Fellow
- Member of National Association of Professional Accident Reconstruction Specialists, Inc.

DONALD F. TANDY, JR.

Publications and Lectures

Master's Thesis: Solution of Inverse Heat Conduction Problems Using an Eigenvalue Reduction Technique

Tandy, D.; Trujillo, K.; Busby, H.; "Solution of Inverse Heat Conduction Problems Using an Eigenvalue Reduction Technique," Numerical Heat Transfer, Volume 10, Pages 597-617, 1986

Tandy, D.; Los, B.; "Point Mobility Study on a 1987 Taurus LX and 1985 Tempo GL," Ford Technical Report No. EM-87-18, Vehicle Methods & Components Department, 1987

Tandy, D.; Los, B.; "Point Mobility Study on a 1986 Mazda 626 GT," Ford Technical Report No. EM-87-21, Vehicle Methods & Components Department, 1987

Tandy, D.; Los, B.; "Point and Transfer Mobility Comparison of a 1987 Taurus LX, a 1985 Tempo GL, and a 1986 Mazda 626 GT," Ford Technical Report No. EM-88-04, Vehicle Methods & Components Department, 1988

Tandy, D.; Goran, M.; Starr, D.; "Objective Straight Ahead Stability Study," Ford Technical Report No. EM-88-08, Vehicle Methods & Components Department, 1988

Tandy, D.; Knapp, R.; "Objective Fingerprinting of the Linear Handling Performance of Several D-FC55 Image Vehicles," Ford Technical Report No. EM-89-13, Vehicle Methods of Components Department, 1989

Tandy, D.; Knapp, R.; "Objective Measurement and Comparison of the Transient Handling Characteristics of the AVET High Speed Mule and Several D-FC55 Image Vehicles," Ford Technical Report No. EM-89-15, Vehicle Methods & Components Department, 1989

Tandy, D.; "ADAMS Model Correlation in Limit Handling Maneuvers," Ford Light Truck Report, 1990

Tandy, D.; "RIDE6: Nonlinear Computer Ride Model," Ford Light Truck Report, 1991

Tandy, D.; Avouris, J.; "Computer Simulation Using an ADAMS Light Truck Vehicle Model and Flat Trac II Experimental Tire Data," Presented at SAE Fatigue Design and Evaluation Committee, April 24, 1991

Tandy, D.; "Comparison of Vehicle Handling Characteristics Between a UPN105 Pre-System Workhorse and 1991 Explorer," Ford Light Truck Division, 1991

Tandy, D.; "Ford Light Truck's ADAMS Tire Model," Ford Light Truck Division, 1992

Tandy, D.; "Ford Light Truck ADAMS User's Guide," Ford Light Truck Division, 1992

Tandy, D.; Thrasher, D.; Boyd, K.; Markham, K.; "Light Truck Objective Snow Traction and Handling Procedure," Ford Light Truck Division, 1994

Tandy, D.; "Ford Light Truck ADAMS User's Guide," Ford Light Truck Division, 1994
Tandy, D.; "Ford Worldwide ADAMS User's Guide," Advanced Vehicle Technology, Ford Motor Company, 1995

Carr, Lee C.; Tandy, Donald F., Jr.; "Technical Report: Performance Capacities of the 1996 Isuzu Trooper and Evaluation of Consumers Union Criticisms", Carr Engineering, Inc., 1996

Carr, Lee C.; Tandy, Donald F., Jr.; "Evaluation by Carr Engineering, Inc. of the Rulemaking and Defect Petitions filed on August 20, 1996 by Consumers Union of United States, Inc. PRM-MP-004-18 and DP96-011," Carr Engineering, Inc., 1997

SAE TOPTec – Dynamic Tests of Rollover Resistance, Carr Engineering, Inc., December 11, 1997

Tandy, Donald F., Jr., Granat, Kevan J., Durisek, Nicholas J., Tandy, Kenneth T., Baldwin, John M., Pascarella, Robert J. – "The Chemistry & Physics of a Natural Tread Separation" – SAE Meeting – September 12, 2006

Tandy, Donald F., Jr., Granat, Kevan J., Durisek, Nicholas J., Tandy, Kenneth T., Baldwin, John M., Pascarella, Robert J. – "Vehicle Response Comparison to Tire Tread Separations Induced by Circumferentially Cut and Distressed Tires" SAE 2007-01-0733

Tandy, Donald F., Jr., Granat, Kevan J., Durisek, Nicholas J., Tandy, Kenneth T., Pascarella, Robert J., Carr, Lee, Liebbe, Robert III – "An Analysis of Yaw Inducing Drag Forces Imparted During Tire Tread Belt Detachments" SAE 2007-01-0836

Tandy, Donald F., Jr., Granat, Kevan J., Durisek, Nicholas J., Tandy, Kenneth T., Pascarella, Robert J., Carr, Lee – "Comparative Dynamic Analysis of Tire Tread Belt Detachments and Stepped Diameter ("Lumpy") Tires" SAE #2007-01-0846

Tandy, D. F., Jr., Pascarella, R. J., Neal, J. W., Baldwin, J. M., Rehkopf, J. D. – "Effect of Tire Wear on Tire Force and Moment Characteristics – Tire and Science and Technology, TSTCA, Vol. 38, No. 1, January – March 2010, pp. 47-79

Tandy, Donald F., Jr., Dinges, Jeffrey T., Bae, J.C., Hanba, Scott K. – "Effect of Water Depth and Translational Velocity on Tire Force and Moment Characteristics" SAE 2010-01-0770

Tandy, Donald F. Jr., Neal, Joseph W., Pascarella, Robert J., Tandy, Kenneth T., Bae, J.C. – "Effect of Aging on Tire Force and Moment Characteristics" SAE 2010-01-0772

Tandy, Donald F., Jr., Ault, B. Nicholas, Tandy, Kenneth T., Pascarella, Robert – "The Response Characteristics of Several Vehicles Equipped with Electronic Stability Control to Violent Steering Demands on Different Surfaces" – SAE 2010-01-0095

Tandy, Donald F., Jr., Tandy, Kenneth T., Colborn, Jason, Pascarella, Robert – "The Effect of Electronic Stability Control Following a Rear Tire Tread Belt Separation" – SAE 2010-01-0113

Tandy, Donald F., Neal, Joseph, Pascarella, Robert – "A Technical Analysis of a Proposed Theory on Tire Tread Belt Separation-Induced Axle Tramp" – SAE 2011-01-0967

Tandy, Donald F., Pascarella, Robert, Ault, B. Nicholas, Coleman, Clay, Tandy, Kenneth – “Steering and Handling Performance During a Full Tire Tread Belt Separation” – SAE 2011-01-0973

Tandy, Donald F., Jr., P.E., Pascarella, Robert J., Colborn Jason, Hoover, Todd D. – “An Accident Reconstructionist's Primer On - Tire and Wheel Rim Marks at Crash Scenes” – Collision – The International Compendium for Crash Research - Spring 2011

Tandy, Donald F., Coleman, Clay, Colborn, Jason, Hoover, Todd, Bae, Jung – “Benefits and Methodology for Dimensioning a Vehicle Using a 3D Scanner for Accident Reconstruction Purposes” – SAE 2012-01-0617 – April 2012

Tandy, Donald F., Ault, B. Nicholas, Pascarella, Robert, “Steering and Handling Performance Following a Full Tire Tread Belt Separation” – SAE 2012-01-0257 – April 2012

Tandy, Donald F., Coleman, Clay – Ray, Rose, Exponent, Inc. “An Objective Analysis of the Effect of Tire Tread Depth on Crash Causation and Wet Road Vehicle Dynamics” – SAE 2013-01-0701 – April 2013

Tandy, Donald F., Ault, B. Nicholas, Colborn, Jason, Pascarella, Robert “Objective Measurement of Vehicle Steering and Handling Performance When a Tire Loses Its Air” – SAE 2013-01-0748 – April 2013

Tandy, Donald F., Beane, Steven, Pascarella, Robert “A Mainstream Test Methodology for Developing a Vehicle Equipped with an Electronic Stability Control System” – SAE 2014-01-0130 – April 2014

Tandy, Donald, Coleman, Clay, Colborn, Jason, Ault, Nicholas “Applying Camera Matching Methods to Laser Scanned Three Dimensional Scene and Data with Comparisons to Other Methods” – SAE 2015-01-1416

Tandy, Donald, Colborn, Jason, Bae, Jung, Coleman, Clay, et al “The True Definition and Measurement of Oversteer and Understeer” – SAE 2015-01-1592

Tandy, Donald F., Hanba, Scott, Pascarella, Robert “Technical Analysis of a Proposed Shock Absorber Design Standard” – SAE 2016-01-1543

Tandy, Donald F., Bae, Jung, Colborn, Jason, Coleman, Clay “An Analysis of Recreational Off Road Vehicle Tire Performance Characteristics” – SAE 2016-01-1635

Tandy, Donald F., Pascarella, Robert, Coleman, Clay, Colborn, Jason “The Casual Relationship between Wheel Rim Gouging Forces on Roadway Surfaces and Rollover Crashes” – SAE 2018-01-0556

Tandy, Donald F., Coleman, Clay, Pascarella, Robert “Technical Analysis of Severe Cornering Induced Tire Wear on Vehicle Limit Handling through Repeatable On-Track Vehicle Testing – SAE 2018-01-0558

Tandy, Donald F., Jr., Jason W. Colborn, “Driver Steering Demands Following a Steer Tire Deflation on a Commercial Vehicle” – Collision Magazine – Vol.14, Issue 2 – November 2020

