



McSWAIN ENGINEERING

An  Company

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ERIC L. VAN IDERSTINE, P.E.

Curriculum Vitae

PRIMARY INTERESTS:

Failure analysis, mechanical testing, and design of mechanical components and mechanical systems.

EDUCATION:

1996: Mississippi State University - Bachelor of Science Engineering (Mechanical)

ENGINEERING REGISTRATION:

Registered Professional Engineer in the State of Florida - 2006. P.E. #64063

Registered Professional Engineer in the State of Alabama - 2012. P.E. #32867-E

Registered Engineer Intern - 1996

EXPERIENCE:

2005 to Present Consulting Mechanical Engineer
McSwain Engineering, Inc.
Pensacola, Florida

Mechanical testing, component and system modeling in CAD, finite element analysis, and failure analysis and engineering investigation of failed and accident-related components.

1998 to 2005 Mechanical Engineering Manager
HMC Technologies
New Albany, Mississippi

Head of Mechanical Engineering group consisting of Machine Design Engineers, Machine Development Engineers and Draftsmen. Responsible for design of mechanical systems and interface between the Mechanical Engineering and

Controls Engineering group. Led design efforts for metal cutting, metal forming, component assembly and product testing equipment for automotive, medical, and defense industries. Served as project manager, coordinating and conducting machine design reviews and acceptance testing with customers. Led change from 2D CAD to 3D solid modeling for use in complex tooling and die design.

1997 to 1998 Machine Design Engineer
HMC Technologies
New Albany, Mississippi

Design of custom automated equipment for in-plant use. Performed conceptual and detail design of fixtures and work-holding tooling. Performed mechanical systems design including selection of hydraulic and pneumatic actuators, motion control devices, sensors and transducers for process automation of automotive and various industrial components and systems. Automated processes including machining, die casting, component assembly and product testing.

1996 to 1997 Machine Development Engineer
HMC Technologies
New Albany, Mississippi

Responsible for mechanical debug and development of automated equipment. Perform statistical process control studies during machine development. Automated processes including machining, component assembly and product testing.

1992 to 1994 Co-op Engineer (Four Semesters)
South Mississippi Electric Power Association
R.D. Morrow Generating Plant
Purvis, Mississippi

Tasks included performance and efficiency studies on turbine and other plant equipment, steam trap testing, design of conveying and pumping systems, vibration testing and balancing, borescope inspection of equipment, and supervision of contract labor.

LICENSURE AND CERTIFICATIONS

“Remote Pilot Certification,” U.S. Department of Transportation-Federal Aviation Administration, December 20, 2022

MEMBERSHIPS IN TECHNICAL SOCIETIES:

SAE International

American Society of Mechanical Engineers

The Society of Manufacturing Engineers

PRESENTATIONS AND CONFERENCE PARTICIPATION:

"Causation and Consequences of Spring Failure in RCF 67 Buckles", American Academy of Forensic Sciences, Annual Meeting, February 2007, San Antonio, TX.

"Application of Reverse Engineering Created Models to Failure Analysis Investigations (Invited)," R. H. McSwain, M. B. Hood, E. L. Van Iderstine, W. D. Carden, C. C. Coburn, McSwain Engineering Inc., Materials Science & Technology 2007 Conference and Exhibition, Detroit, MI, September, 2007.

"Contact and Non-Contact Dimensional Analysis in Forensic Investigations (Invited)," E. L. Van Iderstine, R. H. McSwain, W. D. Carden, C. C. Coburn, McSwain Engineering, Inc., Materials Science & Technology 2007 Conference and Exhibition, Detroit, MI, September, 2007.

"Causation and Consequences of Spring Failure in RCF 67 Buckles," R. H. McSwain, M. B. Hood, W. D. Carden, E. L. Van Iderstine, McSwain Engineering, Inc., Materials Science & Technology 2007 Conference and Exhibition, Detroit, MI, September, 2007.

"Reverse Engineering as Part of Failure Analysis", Eric L. Van Iderstine and Bart J. Clark, Rapidform Success, 2010.

"Engineering Investigation of Failed Propeller Blade (Invited)", Eric L. Van Iderstine, Rapidform Success, 2011.

"Ford Probe Seat Collapse," R. H. McSwain, M. B. Hood, W. D. Carden, E. L. Van Iderstine, McSwain Engineering, Inc., Materials Science & Technology Conference and Exhibition, Columbus, OH, October 2011

"Trailer Hitch Receiver Failure on a Class A Motorhome," W. D. Carden, E. L. Van Iderstine, McSwain Engineering, Inc., Materials Science & Technology Conference and Exhibition, Columbus, OH, October 2011.

"Data Acquisition in Failure Analysis," Dewesoft North American Users', Eric Van Iderstine and Michael Miller, McSwain Engineering, Inc., Conference June 2014

"Knife Blade Delamination Failure," William Carden, Eric Van Iderstine, McSwain Engineering, Inc., Materials Science & Technology Conference and Exhibition, Pittsburgh, PA, October 2014.

"Failure of a Motorhome and Trailer Mounted Awning," E. L. Van Iderstine and M. B. Hood, McSwain Engineering, Inc., Materials Science & Technology Conference and Exhibition, Pittsburgh, PA, October 2014.

"Failure Analysis Case Study AS350-B2 Flight Control Disconnect," Eric Van Iderstine and Michael Miller, McSwain Engineering, Inc., Dewesoft User Groups Conference, Toledo, OH, August 2015.

"Computerized Metrology, Small and Large Scale Laser Scanning, Real Time Radiography, Computed Tomography Radiography, and 3D Printing and Rapid Prototyping in Engineering Investigation and Materials Failure Analysis," Eric Van Iderstine, Richard McSwain and William Carden, McSwain Engineering, Inc., Materials Science & Technology Conference, Columbus OH, October 2015.

“History of Aircraft Carburetors and Carburetor Failures,” Richard McSwain, William Carden, and Eric Van Iderstine, McSwain Engineering, Inc., Materials Science & Technology Conference, Columbus, OH, October 2015.

“Failure Analysis Case Study – Trunk Pneumatic Spring (Strut) Failure”, Eric Van Iderstine, 2016 DEWESoft User’s Meeting, August 2016.

“Failure Analysis and Engineering Investigation of a Failed Tower Crane Turntable Weld That Led to a Crane Collapse,” Richard McSwain, William Carden, Eric Van Iderstine, L. Scott Marshall, and Leah Godwin, McSwain Engineering, Inc., Materials Science & Technology Conference, Salt Lake City, UT, October 2016.

“Investigation and Analysis of a High Performance Wake Boarding Boat Accident Using Instrumentation and Data Acquisition,” Richard McSwain, William Carden and Eric Van Iderstine, McSwain Engineering, Inc., Materials Science & Technology Conference, Salt Lake City, UT, October 2016.

“Failure Analysis Case Study - Robinson R22 Carburetor Heat Control System,” Eric Van Iderstine and Michael Miller, McSwain Engineering, Inc., Dewesoft User Groups Conference, Toledo, OH, July 2017.

“Commercial Truck Cab Retention Failure and Crashworthiness in a Jack-knifing Event,” William Carden and Eric Van Iderstine, Materials Science & Technology Conference, Columbus, OH, October 2018.

“CT and Volume Graphics in the Failure Analysis Process,” Volume Graphics UGM North America 2019, April 2019.

Failure Analysis Case Studies Presentation involving Aircraft Accidents, Tower Crane Accident, and Bicycle Accident, as Guest Lecturer of Mechanical Engineering Undergraduate Seminar Series, Mississippi State University, November 2019.

“Dimensional Analysis Techniques in Forensic Investigations,” William Carden, MS, PE and Eric Van Iderstine, International Materials, Applications & Technologies, St. Louis, MO, September 2021.

“Dual Pipeline Explosions: Two Pipelines Meet in the Desert with Explosive Results,” William Carden, Amy M. Wells, and Eric Van Iderstine, McSwain Engineering, Inc., ASM International Materials, Applications & Technologies Conference, New Orleans, LA, September 2022.

“How to Conduct a Laboratory Inspection in a Multiparty Failure Investigation,” William Carden, Amy M. Wells, and Eric Van Iderstine, McSwain Engineering, Inc., ASM International Materials, Applications & Technologies Conference, New Orleans, LA, September 2022.

“Chain of Custody Procedures and Practices for Failure Investigations,” William Carden, Amy M. Wells, and Eric Van Iderstine, McSwain Engineering, Inc., ASM International Materials, Applications & Technologies Conference, New Orleans, LA, September 2022.

HONOR SOCIETIES AND AWARDS:

Tau Beta Pi, National Engineering Honor Society

Pi Tau Sigma, Honorary Mechanical Engineering Society

The Coleman Design Award for Demonstrated Excellence in Undergraduate Engineering Design,
Mississippi State University Department of Engineering

CONTINUING ENGINEERING EDUCATION:

<u>Course Title</u>	<u>Source</u>	<u>Date</u>
SolidWorks Essentials	Concepts In Production	June 2002
SolidWorks Advanced	Concepts In Production	October 2002
EDAQ Setup and Operation	SoMat Corporation	June 2005
InField Basic Training	SoMat Corporation	June 2005
Introduction to ANSYS	ANSYS, Inc.	July 2005
EDC Simulations	Engineering Dynamics Corporation	November 2005
Strain Measuring Systems	Vishay Micro-Measurements	December 2005
Fracture Mechanics Approach to Life Prediction	ASME	March 2006
Advanced Materials and Fracture	ANSYS, Inc.	April 2006
Composite Structural Analysis with ANSYS	ANSYS, Inc.	April 2006
ANSYS Structural Dynamics	ANSYS, Inc.	May 2006
Porsche Driving Experience	Porsche	July 2006
The Role of the Seat in Rear Crash Safety	SAE International	October 2006
Practical Fracture Analysis	ASM International	February 2007
PC-DMIS Training for ROMER CimCore Portable CMM	ROMER CimCore	August 2007
CAMIO Basic	Metris	March 2008

<u>Course Title</u>	<u>Source</u>	<u>Date</u>
Successful Measurement of Dynamic Force, Pressure & Acceleration	PCB Piezotronics	May 2008
The Basics of Internal Combustion Engines	SAE International	December 2008
Impulse Operators Course	Instron	January 2009
Threaded Fasteners and the Bolted Joint	SAE International	March 2009
Rapidform XO Training Course	INUS Technology, Inc.	April 2009
Max Design	Autodesk, IMAGINiT Technologies, Inc	May 2009
Advanced Factory Training Course	Teledyne Continental Motors	July 2009
Dewetron Training Levels I & II	Dewetron Inc.	August 2009
Rapidform XOR Training Course	INUS Technology, Inc.	April 2010
Structures Under Thermal Stress – Linear and Non-Linear FEA Applications	ASME , The Santa Clara Valley Section & District D Awards	November 2010
Wind Load Calculations: Structural Applications	University of Florida	February 2011
Wind Load Calculations and Other Wind Issues	University of Florida	February 2011
Introduction to Welded Joints	Dr. Jess Comer	February 2011
511-Occupational Safety & Health Standards for the General Industry	University of Alabama OSHA Training Institute Education Center	July 2011
Rapidform XOR Training Course	INUS Technology, Inc.	April 2012
Nikon Focus Inspection Training Course	Nikon Metrology, Inc.	May 2012
Nikon Focus Scan Training Course	Nikon Metrology, Inc.	May 2012
Nikon Focus Handheld Training Course	Nikon Metrology, Inc.	May 2012
Introduction to ANSYS Mechanical	ANSYS, Inc.	November 2012
Acquiring and Analyzing Data from Sensors and In-Vehicle Networks	SAE International	May 2013

<u>Course Title</u>	<u>Source</u>	<u>Date</u>
NTSB Helicopter Accident Investigation	National Transportation Safety Board	August 2014
Introduction to VGSTUDIO MAX: Analysis and Visualization of Industrial Computer Tomography Data	Volume Graphics	September 2015
X-ray/CT Training using Inspect-X, CTPro3D, and VGStudio Max	Nikon Metrology, Inc.	June 2016
Understanding the FAA Aircraft Certification Process	SAE International	September 2016
Aircraft Cabin Safety and Interior Crashworthiness	SAE International	September 2016
Torsional Vibration of Rotary and Reciprocating Machines	No Bull Engineering	December 2017
Shoring and Reshoring Fundamentals	SunCam, Inc.	December 2017
Intro to Handheld XRF – Theory and Safety	Olympus	February 2018
Structural Dynamic Measurements Seminar	PCB Piezotronics Inc. MTS Systems Corporation	April 2018
Railway Electrification-An Introduction and Overview Webinar	ConferTel (AREMA Webinar)	May 2018
Competent Person Training	Guardian Fall Protection	August 2018
Design of Commercial – Industrial Guardrail Systems for Fall Protection	Decatur Professional Development, LLC	September 2018
Pipe Support Failures	SunCam, Inc.	October 2018
Valve Fundamentals	Decatur Professional Development, LLC	December 2019
Crosby Users Guide for Lifting Online Course	Crosby Communication System	May 2020
Pressure Vessels Thin and Thick-Walled Stress Analysis	SunCam, Inc.	January 2021
FARO Focus 3D Scanner Certification Program	FARO Technologies	June 2021

<u>Course Title</u>	<u>Source</u>	<u>Date</u>
Fall Protection Wind Turbine Climber & Rescue Authorized Person	Gravitec Systems Inc.	September 2021
Centrifugal Pump Selection	SunCam, Inc.	December 2021
National Electric Code	SunCam, Inc.	December 2021
Welding Technology	SunCam, Inc.	January 2023
ASME Welding Qualifications Part I Welding Procedures	SunCam, Inc.	January 2023
Orifice and Venturi Pipe Flow Meters For Liquid and Gas Flow	SunCam, Inc.	February 2023