



**MATTHEW T. KENNER, P.E.**  
**SENIOR MANAGING CONSULTANT**  
**DIRECTOR OF AVIATION**

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Mr. Kenner is a Senior Managing Consultant and Director of the Aviation practice for Engineering Systems Inc. (ESi). Mr. Kenner specializes in the documentation, investigation and analysis of complex failures. His experience spans many industries, including marine, rail, automotive, aerospace, construction equipment, and consumer products.

A mechanical and aeronautical engineer, his technical interests include applied mechanics, finite element analysis, fatigue, and fracture mechanics. In addition, Mr. Kenner is a commercial pilot and flight instructor, and has extensive experience in the investigation and reconstruction of aircraft accidents.

**Areas of Specialization**

Engineering Failure Analysis  
Aircraft Accident Reconstruction  
Applied Mechanics  
Finite Element Analysis  
Fatigue and Fracture Analysis

**Education**

M.S., Aeronautical Engineering, The Ohio State University, 1995  
B.S., Mechanical Engineering, Case Western Reserve University, 1994, Summa Cum Laude

**Licensed Professional Engineer (P.E.)**

State of Georgia.....License No. PE041650  
State of Illinois .....License No. 062-053702

*April 2020*

## **Professional Affiliations/Honors**

### **ASTM International**

Member, Technical Committee F37, Light Sport Aircraft, 2007 – Present  
Member, Technical Committee F44, General Aviation, 2012 – Present  
Recording Secretary, Technical Committee F44, General Aviation, 2020 – Present  
Sub Vice Chairman, F44.30, Structures, 2012 – Present

### **International Society of Air Safety Investigators**

President, Great Lakes Regional Chapter, 2007 – 2012

### **Tau Beta Pi (National Engineering Honor Society)**

Member

### **American Society of Mechanical Engineers**

Member

### **American Institute of Aeronautics and Astronautics**

Senior Member  
Member, Structures Technical Committee, 1998 – 2000; Committee Secretary, 2000

### **The Robert and Leona Garwin Award**

For demonstrated theoretical scientific ability with experimental competence (Case Western Reserve University).

### **The Gustav Kuerti Award**

For the senior in Mechanical and Aerospace Engineering who has demonstrated the highest level of scholarship (Case Western Reserve University).

### **National Collegiate Engineering Award**

### **University Fellow, The Ohio State University**

### **Presidential Scholar, Case Western Reserve University**

## **Positions Held**

### **Engineering Systems Inc., Norcross, Georgia**

Director of Aviation, 2018 – Present  
Senior Managing Consultant, 2015 – Present  
Senior Consultant, 2001 – 2015  
Senior Staff Engineer, 1999 – 2001  
Staff Engineer, 1995 – 1999

### **The Ohio State University, Columbus, Ohio**

Graduate Fellow, September 1994 – August 1995

### **Altair Engineering, Troy, Michigan**

Student Intern, 1992, 1993, 1994

## **Continuing Education**

Lycoming Engines Service School, Pennsylvania College of Technology (2019).

Modeling Fracture and Failure with ABAQUS presented by the Simulia Central Region.

Basic Aircraft Accident Investigation at the Transportation Safety Institute (U.S. DOT).

Flexible Multibody Systems with ABAQUS at ABAQUS Midwest.

Structural Integrity of New and Aging Metallic Aircraft at UCLA.

ABAQUS Contact Problems Made Easy at AC Engineering.

Strain Gage Technology Workshop at Measurements Group, Inc.

Fracture and Fatigue Control in Structures at The University of Kansas.

A First Course in Using ABAQUS Version 5.5 at AC Engineering.

## Publications/Presentations

Fox, C. A., **Kenner, M. T.**, Powell, B., "Data at a Distance: The Art of Remote Inspections," presented to DRI via Webinar, April 9, 2020.

Fox, C. A., Lueck, J. K., Morris, S. L., Winn, R. C., **Kenner, M. T.**, "The Use of Virtual Reality Technology in Aviation Accident Analysis and Reconstruction," presented at the SMU Air Law Symposium, Irvine, TX, March 28, 2019.

Fox, C. A., Lueck, J. K., Morris, S. L., Winn, R. C., **Kenner, M. T.**, "Aviation Accident Reconstruction Using Virtual Reality and Other New Technologies," presented at DRI Products Liability Conference, Austin, TX, February 6, 2019.

**Kenner, M.T.**, "Failure Analysis in Accident Investigation," presented at The Ohio State University, Columbus, OH, October 17, 2018.

Alexander, D.E., Franzese, R.R., **Kenner, M.T.**, Maratea, A.V., Novak, G.J., Stevenson, M.E., Wagner, J.A., "Investigative Use of Reverse Engineering Techniques: Application to Metallurgical Laboratory Analysis of an Aircraft Accident," presented at Materials Science & Technology Meeting, Columbus, OH, October 15, 2018.

**Kenner, M.T.**, "Opportunities in Standards Development," presented at the Georgia Crashworthiness Workshop for ASTM F44 – General Aviation Aircraft, New Orleans, LA, October 10, 2017.

Stevenson, M.E., Iwand, H. C., McDougall, J. L., Umberger, P. D., Wilkinson, J.A., **Kenner, M. T.**, Stone, D. H., "Failure Analysis of an Aluminum Chiller Pipe by Experimental Simulation and Stress Analysis," Journal of Failure Analysis and Prevention, ASM International, published online August 23, 2017.

**Kenner, M. T.**, "Consensus Standards: Opportunities in Crashworthiness and Cabin Safety," presented at the 8<sup>th</sup> Triennial International Fire and Cabin Safety Research Conference, Atlantic City, NJ, October 26, 2016.

McDougall, J. L., Klepacki, D. G., Stevenson, M. E., **Kenner, M. T.** "Post-Fire Structural Integrity Evaluation of an Aircraft Utilizing ASTM E 1004-02," ASM Journal of Failure Analysis and Prevention, Vol. 15, Issue 1, February 2015.

Wilkinson, J. A., **Kenner, M. T.**, "Applications of Finite Element Analysis in Forensic Engineering," presented at American Society of Mechanical Engineers (ASME) Fox Valley Section Chapter Meeting, Aurora, IL, November 16, 2011.

**Kenner, M. T.**, Stevenson, M. E., Knox, E. H., Van Bree, M. P., Wilkinson, J. A., "Step Ladder Failure Analysis, a Comparison of Analytical Methods," Proceedings of the ASME

2011 International Mechanical Engineering Congress & Exposition, Denver, CO. November 11-17, 2011.

Norfleet, D. M., Stevenson, M. E., Wilkinson, J. A., **Kenner, M. T.**, Brickman, D., "Failure Analysis of a Commercial Brush Chipper Hood" (Case History – Peer Reviewed), Journal of Failure Analysis and Prevention, ASM International, published online August 13, 2011.

Stevenson, M. A., **Kenner, M. T.**, Wilkinson, J. A., "Tools and Techniques for Analyzing Structural Damage in Ladders," ASM International Annual Meeting, Houston, TX, October 2010.

Pape, R., Mniszewski, K. R., Longinow, A., **Kenner, M. T.**, "Explosion Phenomena and Effects of Explosions on Structures III: Methods of Analysis (Explosion Damage to Structures) and Example Cases," Practice Periodical on Structural Design and Construction, Vol. 15, No. 2, May 2010.

Knox E. H., Van Bree M. P., **Kenner M. T.**, Wilkinson J. A., "Structural Stepladder Failure: Analysis of Root Cause," Proceedings of the ASME 2009 International Mechanical Engineering Conference and Exposition, Lake Buena Vista, Florida, November 2009.

Wilkinson, J. A., **Kenner, M. T.**, "Fundamentals of Failure Analysis: Two Examples from the Career of Charles R. Morin," presented at Charles R. Morin Memorial Symposium on Failure Analysis & Prevention, Materials Science & Technology (MS&T), 2009 Conference and Exhibition, Pittsburgh, PA, October 26, 2009.

**Kenner, M. T.**, Wilkinson, J. A., Stevenson, M. E., Hayes, M. D., "Uses of Abaqus/Standard in Failure Analysis," presented at the SIMULIA Customer Conference, London, England, May 2009.

**Kenner, M. T.**, Wilkinson, J. A., Morin, C. R., "The Miller Park Crane Collapse – Analysis of the King Pin Failure," presented at the ABAQUS Users' Conference, Boston, Massachusetts, May 2006.

Wilkinson, J. A., **Kenner, M. T.**, Morin, C. R., "The Miller Park Crane Collapse – Analysis of the Crane," presented at ABAQUS Users' Conference, Boston, Massachusetts, May 2006.

**Kenner, M. T.**, Wilkinson, J. A., Fischer, C. R., "Effect of Boundary Conditions on the Modal Analysis of a Staircase", ABAQUS Users' Conference, Boston, MA, May 2004.

Wilkinson, J. A., **Kenner, M. T.**, Holmes, E. W., "Stress Intensities for a Thumbnail-Shaped Surface Crack in a Solid Cylinder Using ABAQUS/Standard," ABAQUS Users' Conference, Boston, MA, May 2004.

**Kenner, M. T.**, "Failure Analysis in Accident Investigation," presented at the Experimental Aircraft Association Mid-East Regional Fly-In, Marion, OH, August 23, 2003.

**Kenner, M. T.**, "Failure Analysis in Accident Investigation," Guest Lecturer, Aviation 532, Aviation Safety Investigation, Department of Aviation, The Ohio State University, Columbus, OH, May 19, 2003.

Morin, C. R., Wilkinson, J. A., **Kenner, M. T.**, "The Miller Park Crane Accident – How to Avoid Making the Same Mistakes," presented at the 2002 ASCE Civil Engineering Conference & Exposition, Washington, D.C., November 6, 2002.

**Kenner, M. T.**, Wilkinson, J. A., Morin, C. R. and Kramer, M. A., "Analysis of a 100 ft. Aerial Ladder Collapse," Presented at the 2002 ABAQUS Users' Conference, Newport, Rhode Island, May 2002.

Wojnowski, D. A., Domel, A. W., Wilkinson, J. A., and **Kenner, M. T.**, "Analysis of a Hybrid Plate Girder Bridge During Erection: Collapse of Tennessee Highway 69 Bridge," Progress in Structural Engineering and Materials, Vol. 4, No. 1, January-March 2002.

Morin, C R., Wojnowski, D. A., Winn, R. C., Wilkinson, J. A., **Kenner, M. T.**, Smith, S. J., Kenner, A. V., "Miller Park Crane Collapse - Root Cause Investigation," presented at the Department of Civil and Environmental Engineering, University of Illinois, Urbana-Champaign, March 2001.

**Kenner, M. T.** "Aircraft Design Forum," Presented at the Experimental Aircraft Association Mid-East Regional Fly-In, Marion, Ohio, September 2000.

**Kenner, M. T.**, "Aircraft Design Forum," Presented at the Experimental Aircraft Association Mid-East Regional Fly-In, Marion, Ohio, September 1999.

Winn, R. C., Kohlman, D. L. and **Kenner, M. T.**, "Optimal Wing Design for Top-Fuel Dragsters," 1999 AIAA Aerospace Sciences Conference, Reno, Nevada, January 1999.

**Kenner, M. T.** "Aircraft Design: Why Does it Look Like That?" Presented at the Experimental Aircraft Association Mid-East Regional Fly-In, Marion, Ohio, September 1998.

Winn, R. C., Kohlman, D. L. and **Kenner, M. T.**, "Improving the Aerodynamics of Top Fuel Dragsters," 33<sup>rd</sup> Intersociety Energy Conversion Engineering Conference, Colorado Springs, Colorado, August 1998.

Kenner, V. H., and **Kenner, M. T.**, "Aerodynamic Loading and Structural Response For Aircraft," Presented at the Experimental Aircraft Association Mid-East Regional Fly-In, Marion, Ohio, September 1997.

**Kenner, M. T.**, "Propeller and Jet Aircraft Design," Presented at the Experimental Aircraft Association Mid-East Regional Fly-In, Marion, Ohio, September 1995.



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*April 2020*

Gregorek, G. M., **Kenner, M. T.**, and D. Coburn, "Turbojet Powered Sport Airplanes," Presented at the Experimental Aircraft Association Annual Meeting, Oshkosh, Wisconsin, August 1995.