Michael K. Bauer

Senior Consultant, Chief Remote Pilot

Michael Bauer is a professional Aerospace Engineer and a highly respected member of the investigative safety field offering over 25 years of industry experience helping teams succeed in both the public and private sectors.

Prior to joining ESi Mr. Bauer worked as an aircraft systems engineer and a vehicle recorders specialist for the NTSB's Office of Aviation Safety and Office of Research and Engineering and was one of the Safety Board's sUAV operators. He worked on multiple major domestic and international investigations and numerous field investigations analyzing systems component operations and failures, recovering flight data from various recording devices including FDRs, GPSs and avionics components. Prior to joining the NTSB, he worked in a variety of engineering roles, flight test engineer, systems and structures design, and certification for various aircraft and avionics manufacturers. He is an analytical investigator who methodically processes all data and ensures the correct answer is derived.

Mr. Bauer holds a Bachelor of Science in Aerospace Engineering from Embry-Riddle Aeronautical University and is a private pilot holding a remote pilot airman certificate. An original pilot, trainer and innovator with the NTSB drone investigative program, he has been a frequent presenter at the Experimental Aircraft Association (EAA), General Aviation Manufacturers Association General Aviation Air Safety Investigators (GA-ASI), and the International Society of Air Safety Investigators (ISASI) and is often requested to present at conferences, symposiums, and safety committees worldwide.

Education

Pursued graduate-level coursework in aeronautical science and aerospace safety at Embry-Riddle Aeronautical University, Worldwide Campus

BS, Aerospace Engineering, Embry-Riddle Aeronautical University, Prescott, AZ 1994

Certifications/Awards

- NTSB Dr. John K. Lauber Science and Engineering Award

Contact Information

mkbauer@engsys.com

(763) 447-2761

ESi Minneapolis

2355 Polaris Lane North
Suite 120, Minneapolis, MN 55447

Areas of Specialization

- Accident Investigation
- Aviation and System Safety
- Component Teardown
- Component Testing
- CVR/DFDR/Electronic Device Analysis
- Domestic and International Investigations
- Drone Mapping
- Technical Reporting

- Awarded patent for “Enhanced graphical flight planning for a flight management system”
- Private Pilot License
- Remote Pilot Certificate
- Honeywell/Bendix Trophy for Aviation Safety

Positions Held

Engineering Systems Inc., Minneapolis, Minnesota

- Senior Consultant, 2021 – Present

National Transportation Safety Board (NTSB), Washington, District of Columbia

- Aerospace Engineer, 2008 – 2021

Gulfstream Aerospace, Savannah, Georgia

- Flight Test Engineer, 2006 – 2008

Rockwell Collins, Cedar Rapids, Iowa

- Senior Systems Engineer, 2004 – 2006

Honeywell, Inc., Glendale, Arizona

- Utilities Systems Engineer, 2002 - 2004

Bombardier-Canadair, Montreal, Quebec

- Air Systems Integrator, 2001 - 2002

Bombardier Flight Test Center, Wichita, Kansas

- Flight Test Engineer/Systems Engineer, 1996 – 2001

Cessna Aircraft Company, Wichita, Kansas

- Engineer, 1994 - 1996

Continuing Education

- Instrument Rating Ground School, 2003
- Total Quality Management Training, 1996
- FAA Physiological Training 2000,
- Aircraft Familiarization with Bombardier Global Express, Canadair CRJ-700/900, Gulfstream G450/G550, Boeing 767, Airbus 318/319/320/321

Professional Affiliations/Honors

American Society for Testing and Materials (ASTM) International

- Member of F38 and F44 Committees 2022 - Present

Lawyer-Pilots Bar Association

- Member 2021 - Present

American Institute of Aeronautics & Astronautics (AIAA)

- Member 2021 - Present

International Society of Air Safety Investigators (ISASI)

- Member 2021 - Present

Association for Unmanned Vehicle Systems International (AUVSI)

- Member 2021 – Present

Project Experience

Investigations

Air France Flight 447, 2011

- Served as technical advisor to the accredited representative with respect to data recovery from the flight data and cockpit voice recorders from the accident aircraft.
- Developed methods to perform chip level data recovery from flight data and cockpit voice recorders that have been through a water recovery.

Gulfstream Aerospace G650 Flight Test Accident, 2009

- Recovered aircraft flight data from aircraft telemetry equipment both onboard and in ground equipment.
- Combined multiple data sets from various telemetry systems and aircraft flight data recorders to determine aircraft performance during accident sequence.

North American P-51D, Galloping Ghost, Reno Air Race Accident, 2011

- Recovered aircraft flight data from damaged aircraft telemetry equipment.
- Developed code and methodologies to extract data from integrated-circuits recovered from aircraft wreckage.

Boeing 787 Lithium-ion Battery Fires, 2013

- Served as systems group co-chairman and technical advisor to the accredited representative on three lithium-ion battery fires in Boeing 787 aircraft.
- Performed documentation of fire damaged areas and systems.

- Drafted and conducted testing on lithium batteries and electrical systems to determine root cause of battery fires.

Scaled Composites SpaceShip Two In-flight Breakup During Test Flight, 2014

- NTSB Systems Group chairman for the accident focusing on spacecraft systems and identifying potential failures and drafting safety recommendations.
- Performed avionics systems testing to recreate display operation during the event.
- Analyzed telemetry data for systems investigation.

Cal-Ore Life Flight PA-31T In-flight Breakup, 2016

- NTSB Systems Group chairman for the accident focusing on electrical, hydraulic and landing gear systems to help determine cause/origination of an inflight fire and subsequent loss of aircraft.
- Co-wrote an NTSB Urgent Recommendation for inspection of PA-31T aircraft.

Turkish Airlines Flight 6491 Controlled Flight Into Terrain, 2017

- Served as a US technical advisor concentrated on aircraft systems and flight recorder data analysis for Foreign led accident investigation.
- Performed scene documentation at the accident site and included locating aircraft parts critical to the investigation.

Ameristar Charters Flight 9363 Runway Overrun, 2017

- NTSB Systems Group chairman for the accident focusing on flight controls and aircraft system performance.
- Conducted site documentation using drones.
- Assisted with Computational Fluid Dynamics (CFD) analysis on area where an aircraft was parked.

Boeing B-17 Landing Accident, 2019

- Conducted drone-based site documentation and analysis of accident site.

Publications

“Use of sUAS in Developing Photogrammetric Model for Wind Simulation”, **M.K. Bauer**, W. English, M. Richards, and M. Grzych, International Society of Air Safety Investigators (ISASI) 2018 Seminar Dubai.

“Accuracy of Flight Parameters Calculated from Radar and Automated Dependent Surveillance-Broadcast (ADS-B) Data,” Timothy P. Jung, Kara M. Greene, Keith R. Thobe, **Michael K. Bauer**, Alicia Moen, American Institute of Aeronautics and Astronautics, SciTech Forum, AIAA-2025-1623, 2025.

Presentations

"What Can Drones Do for Your Claims and Litigation?", **M.K. Bauer**, Twin Cities Claim Association (TCCA) 2024 Fall Seminar, Bloomington, MN.

"Techniques in Aircraft Accident Reconstruction: Past, Present, and Future", **M.K. Bauer**, presented at the ESi Smart Sessions, Engineering Systems Inc., Plymouth, MN, 2021.