



## **HAYDEN FETTER, BSME, MSc, CFEI, CVFI** **STAFF CONSULTANT**

[hjfetter@engsys.com](mailto:hjfetter@engsys.com)

Hayden Fetter is a Forensic Mechanical Engineer and Fire Investigator for Engineering Systems Inc. (ESi), where he assists the automotive and fire & explosion groups. Mr. Fetter has over 5 years of technical experience and training in forensic investigations. He has performed origin and cause analysis for residential, vehicle, marine, and product fire investigations. He has performed data collection and analysis for automotive crash reconstruction. He has performed failure analysis of automotive equipment, industrial and residential machinery, and plumbing.

Mr. Fetter received a B.S. in Mechanical Engineering from University of Colorado Boulder and a MSc in Forensic Investigation from Cranfield University in the UK. At Cranfield University, he received technical training in a variety of forensic disciplines and activities including fire investigation, firearms and ballistics, materials engineering, analytical techniques, and expert witness testimony. Mr. Fetter is the only mechanical engineering consultant in the United States to have completed a Master of Science in Forensic Investigation.

### **Areas of Specialization**

Fire and Explosion Investigation  
Automobile & Heavy Truck Accident Investigation  
Event Data Recorders  
Vehicle Fires  
Residential Fires & Explosions  
Piping, Boilers, and Pressure Vessels

### **Education**

Cranfield University, England, 2022  
MSc Forensic Investigation

University of Colorado, Boulder, 2021  
B.S. Mechanical Engineering  
Engineering Management Certificate, Philosophy Minor

### **Professional Affiliations**

National Association of Fire Investigators International (NAFI) Member  
International Association of Arson Investigators (IAAI) Member - Colorado Chapter  
National Association of Professional Accident Reconstruction Specialists (NAPARS) Member  
American Society for Engineering Management (ASEM) Member  
Society of Fire Protection Engineers (SFPE) Member



## Positions Held

### **Engineering Systems Inc., Centennial, Colorado**

Staff Consultant

October 2022- Present

### **Jensen Hughes, Englewood, Colorado**

Associate Forensic Mechanical Engineer

Mechanical Engineering Intern/Technician-Forensics

May 2021- July 2022

May 2019- May 2021

## Certifications

Certified Fire and Explosion Investigator (CFEI) – NAFI, License No. 27501-15678v

Certified Vehicle Fire Investigator (CVFI) – NAFI, License No. 27501-15678v

Fire Investigation Technician (FIT) – IAAI

Fire Investigation for Fire Officers, Concentration in: Motor Vehicle Fires – IAAI

Principles of Fire Investigation Multi-Program – IAAI

Bosch Crash Data Retrieval (CDR) Technician – Collision Safety Institute

Bosch Crash Data Retrieval (CDR) Analyst – Collision Safety Institute

FARO Laser Scanner Operator – FARO Technologies

Aerial Lift/Scissor Lift Certification – Cert. #: AWP-1201-MB

Class 1, 4, & 5 Forklift Operator – Cert. #: 575516

## Continued Education

Traffic Crash Reconstruction for Engineers (40-hour), Northwestern University, 2024

Crash Data Retrieval (CDR) Tool Data Analyst (40-hour), Collision Safety Institute, 2024

Commercial Kitchen Fires 1: Fundamentals, CFITrainer.net (IAAI), 2024

Class 1, 4, & 5 Forklift Operator, CertifyMe.Net, 2024

Certified Vehicle Fire Investigator (CVFI) Training Program (Four-day), National Association of Fire Investigators (NAFI), 2023

World Reconstruction Exposition (Five-day), 2023

Event Data Recorder Update and Analysis, Ruth Consulting, 2023

Bosch CDR Technician, Collision Safety Institute, 2023

Science of Fire and Explosion Hazards from Lithium-Ion Batteries, UL Fire Safety Research Institute, 2023

Aerial Lift/Scissor Lift Certification, Colorado Safety Supply, 2023

Arc Mapping Basics, CFITrainer.net (IAAI), 2023

Basic Electricity, CFITrainer.net (IAAI), 2023

Fire Investigation for Fire Officers, CFITrainer.net (IAAI), 2023  
Fire Protection Systems, CFITrainer.net (IAAI), 2023  
How First Responders Impact the Fire Investigation, CFITrainer.net (IAAI), 2023  
Investigating Natural Gas Systems, CFITrainer.net (IAAI), 2023  
SPEARS FlameGuard CPVC Fire Sprinkler Products Installer Training, SPEARS Technical Services Department, 2023  
FARO Laser Scanner Operator (Two-day), FARO Technologies, 2022  
Master's Thesis, Title: Development of a Guide for the Investigation of Alternative Motor Vehicle Fires, Cranfield University, 2022  
Courtroom Skills, Cranfield University, United Kingdom, 2022  
Fires, Explosions and their Investigation, Cranfield University, 2022  
Forensic Investigation of Explosives and Explosive Devices, Cranfield University, 2022  
Firearms Investigations, Cranfield University, 2022  
Forensic Ballistics Investigations, Cranfield University, 2022  
Introduction to Firearms Investigations and Forensic Ballistics, Cranfield University, 2022  
Materials Engineering and Processing, Cranfield University, 2022  
Radiographic Investigations in Forensic Science, Cranfield University, 2022  
Analytical Techniques, Cranfield University, 2022  
Reasoning for Forensic Science, Cranfield University, 2022  
Lithium-Ion Battery Fires, CFITrainer.net (IAAI), 2022  
Alternative Fuel Vehicle, CFITrainer.net (IAAI), 2022  
Electric & Hybrid Vehicle Design Basics, CFITrainer.net (IAAI), 2022  
Electric & Hybrid Vehicle Fires, CFITrainer.net (IAAI), 2022  
Investigation and Evidence Collection, Cranfield University, 2021  
Introductory Studies (Forensic Investigation), Cranfield University, 2021  
Accreditation, Certification, and Certificates, CFITrainer.net (IAAI), 2020  
Charting Your Career Path in Fire Investigation, CFITrainer.net (IAAI), 2020  
Critical Evaluation and Testing of Commonly Reported Accidental Causes, CFITrainer.net (IAAI), 2020  
DNA, CFITrainer.net (IAAI), 2020  
Documenting the Event, CFITrainer.net (IAAI), 2020  
Effective Investigation and Testimony, CFITrainer.net (IAAI), 2020

Ethics and the Fire Investigator, CFITrainer.net (IAAI), 2020  
Explosion Dynamics, CFITrainer.net (IAAI), 2020  
Fire Chemistry, CFITrainer.net (IAAI), 2020  
Fire Flow Analysis, CFITrainer.net (IAAI), 2020  
Evidence Examination: What Happens at the Lab?, CFITrainer.net (IAAI), 2020  
Fundamentals of Interviewing, CFITrainer.net (IAAI), 2020  
Fire Investigator Scene Safety, CFITrainer.net (IAAI), 2020  
Insurance and the Fire Investigation, CFITrainer.net (IAAI), 2020  
Introduction to Appliances, CFITrainer.net (IAAI), 2020  
Introduction to Evidence, CFITrainer.net (IAAI), 2020  
Investigating Motor Vehicle Fires, CFITrainer.net (IAAI), 2020  
Motor Vehicles: The Engine and the Ignition, Electrical, and Fuel Systems, CFITrainer.net (IAAI), 2020  
Motor Vehicles: Transmission, Exhaust, Brake, and Accessory Systems, CFITrainer.net (IAAI), 2020  
NFPA 1033 and Your Career, CFITrainer.net (IAAI), 2020  
Physical Evidence at the Fire Scene, CFITrainer.net (IAAI), 2020  
Residential Electrical Systems, CFITrainer.net (IAAI), 2020  
Residential Natural Gas Systems, CFITrainer.net (IAAI), 2020  
The Practical Application of the Relationship Between NFPA 1033 and NFPA 921, CFITrainer.net (IAAI), 2020  
Understanding Undetermined, CFITrainer.net (IAAI), 2020  
Writing the Initial Origin and Cause Report, CFITrainer.net (IAAI), 2020  
The Scientific Method for Fire and Explosion Investigation, CFITrainer.net (IAAI), 2020

## **Presentations/Publications**

E-Mobility: Fire Investigations from Small (e-scooters) to Large (EVs), Combined Claims Conference, Orange County, CA, 2024