

# **STEVEN W. RICKARD**

## **Resume**

July 1, 2011

**Steven W. Rickard and Associates, Inc.**

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## **Training Manuals**

Course outlines, training materials, and examinations authored for the following courses:

### **Enforcement of Vehicle Inspection Regulations**

Traffic Institute for Police Services (TIPS)  
Pennsylvania Department of Education  
Harrisburg, Pennsylvania

### **Inspection of Commercial Motor Vehicles in Accidents**

Institute of Police Technology and Management (IPTM)  
University of North Florida, Jacksonville, Florida

Course outlines, training materials, and examinations co-authored for the following courses:

### **Investigation of Commercial Motor Vehicle Accidents**

Institute of Police Technology and Management (IPTM)  
University of North Florida, Jacksonville, Florida

### **Advanced Commercial Motor Vehicle Accident Investigation**

Institute of Police Technology and Management (IPTM)  
University of North Florida, Jacksonville, Florida

### **Bus Accident Investigation**

Institute of Police Technology and Management (IPTM)  
University of North Florida, Jacksonville, Florida

## **Technical Articles Authored** (42)

- Importance of Warning Signs (Painted) to the Accident Investigator
- Perception - Reaction Time
- Pedestrian Visibility During Night time Hours
- Drag Factor & Coefficient of Friction
- Heavy Vehicle Brake Efficiency
- Heavy Truck Braking
- Night Vision & Driving
- Who Was Driving?
- Tractor Trailer Rollovers
- Tractor Trailer Side Under-ride Accidents
- Curve Speed Determination
- Lamp Examination for On - Off in Vehicle Accidents (Part 1)
- Lamp Examination for On - Off in Vehicle Accidents (Part 2)
- Conservation of Linear Momentum
- Drag Sled Construction
- The Yellow Signal Light - Can We Safely Stop?
- Speed Estimates: Vehicles That Fall
- Speed Estimates: Vehicles That Flip
- Speed Estimates: Vehicles That Vault
- Estimating Distances: Inaccessible Vehicles
- Collision Debris as Evidence
- Skid marks - A Review of Procedure & Terminology

## **Technical Articles Authored**

(continued)

- The Clear Zone (Utility poles within the highway right-of-way)
- Vehicle - Pedestrian Accidents
- Back to Basics - PA Vehicle Code
- Modified Vehicles & Propensity to Roll
- Tire Inflation Pressure - Commercial Motor Vehicles
- 1996 Update - Heavy Vehicle Brake Efficiency Test Results
- Motorcycle Lean Angle
- Vehicle Fires
- Commercial Motor Vehicle Safety Regulations
- Railroad Grade Crossing Signals
- The Operation of a School Bus
- The Accident Reconstructionist's Resources
- The Commercial Vehicle Electronic Control Module (ECM)
- Automobile Event Data Recorder (EDR) Technology
- Commercial Vehicle Conspicuity and Retro-Reflectivity
- Night-Time Rear Impacts as it Relates to Motor Vehicle Laws
- Application of Too Fast for Conditions and Careless Driving sections (Vehicle Code)
- Electronic Data Recorders
- Electronic Control Modules and Inside the Electronic Control Module
- Articulated Vehicle Dynamics - The Right-Hand Turn

## **DUTIES & RESPONSIBILITIES**

### **Steven W. Rickard and Associates, Inc. - President**

A multi-level association of nationally recognized experts in the field of accident reconstruction and accident investigation training. The training classes are primarily intended for police training officers, federal investigators and engineers. Associates provide expert reports and testimony for a multitude of accident reconstruction topics that include, but are not limited to; motor vehicle inspections, application of federal/state safety regulations, work zone safety regulations and (air) brake force calculations based on system design. The Association *specializes* in Commercial Motor Vehicle, Bus and Emergency Vehicle accident reconstruction. The Association also offers motor carrier safety audits and regulatory reviews of both Federal and State operating rules.

### **Pennsylvania Traffic Accident Investigator's Association - (Past) Executive Director**

The Association was established for the benefit of those involved in traffic accident investigation. The association conducted training seminars for members and non-members throughout the Commonwealth. A monthly newsletter was published for the benefit of members.

### **Accident Investigator's Quarterly Newsletter - Publisher**

Newsletter offered to those involved in the litigation of traffic and industrial accidents. The association conducted training seminars for members and non-members throughout the Commonwealth.

### **Institute of Police Technology & Management (IPTM), University of North Florida - Adjunct Faculty -**

Instructed the following classes:

- On Scene, Advanced, Traffic Accident Reconstruction
- Commercial Motor Vehicle Accident Reconstruction
- Advanced Commercial Motor Vehicle Accident Reconstruction & Dynamics
- Bus Accident Investigation

**ACCIDENT RECONSTRUCTION CLASSES CONDUCTED**  
**DEPARTMENTS/OFFICERS TRAINED**

**Foreign, Federal & State:**

1. Republic of Taiwan
2. Republic of China
3. Nova Scotia
4. Royal Canadian Mounted Police
5. Province of South Australia
6. National Transportation Safety Board
7. Office of Motor Carrier Safety  
Federal Highway Administration
8. Pennsylvania State Police
9. Ohio Highway Patrol
10. New Jersey State Police
11. New York State Police
12. Kentucky State Police
13. California Highway Patrol
14. Missouri Highway Patrol
15. Oklahoma Highway Patrol
16. Arizona Highway Patrol
17. Michigan State Police
18. Connecticut State Police
19. Nebraska State Patrol
20. Maine State Police
21. Alabama State Police
22. West Virginia State Police
23. Massachusetts State Police
24. Delaware State Police
25. Wisconsin State Police
26. Alaska State Police
27. Virginia State Police
28. Maryland State Police
29. New Hampshire State Police
30. Georgia Highway Patrol
31. Kansas Highway Patrol
32. Louisiana State Police
33. Minnesota State Police
34. Iowa State Police
35. Tennessee Highway Patrol

**County & City:**

1. Los Angeles Police Department
2. Los Angeles County Sheriff's Office
3. New York City Fire Department
4. New York City Police Department
5. New York City Highway Patrol
6. Ventura County, CA Sheriff' Office
7. Richmond, VA
8. Phoenix, AZ
9. Oklahoma City, OK
10. Birmingham, AL
11. Philadelphia, PA
12. Pittsburgh, PA
13. Ft. Lauderdale, FL
14. Tallahassee, FL
15. Jacksonville, FL
16. Denver, CO
17. Minneapolis, MN
18. Santa Barbara, CA
19. Wheeling, WV
20. Miami, FL
21. Oakland, CA
22. St. Louis County, MO
23. Waterville, ME
24. Dade County, FL
25. Anchorage, AK
26. Homer, AK
27. Jackson Hole, WY
28. Biloxi, MS
29. Lincoln, NE
30. Salem, OR
31. Salt Lake City, UT
32. Garland, TX
33. Green Bay, WI
34. Helena, MT
35. Nashville, TN
36. Numerous smaller departments  
and investigators from the private sector

**ACCIDENT INVESTIGATION/ RECONSTRUCTION EXPERIENCE**

I have reconstructed, investigated, consulted, and/or participated/assisted in the investigation of more than 6,000 motor vehicle accidents.

## SWORN/EXPERT TESTIMONY

Testimony regarding accident reconstruction/dynamics has been accepted in the following jurisdictions:

### Federal/Appellate Courts (24)

California:	Superior Court	Pennsylvania:	U.S.D.C. - Eastern, Western, Middle Districts
Connecticut:	Second Circuit	Pennsylvania:	Court Common Pleas - Philadelphia
Florida:	U.S.D.C. - Middle District	Rhode Island:	U.S.D.C.
Illinois:	U.S.D.C. - Northern District	South Dakota:	U.S.D.C. - Southern District
Indiana:	U.S.D.C. - Northern, Southern Districts	Tennessee:	U.S.D.C. - Middle District
Kentucky:	U.S.D.C. - Eastern District	Texas:	U.S.D.C. - Eastern District
Maryland:	U.S.D.C.	Virginia:	U.S.D.C. - Eastern, Southern Districts
New Jersey:	U.S.D.C.; Third Circuit	West Virginia:	U.S.D.C. - Southern District
New Mexico:	U.S.D.C.		
New York:	U.S.D.C. - Western, Northern, Southern Districts		

### State Courts (32)

Alabama	Georgia	Minnesota	Oregon	Vermont
Arizona	Illinois	Mississippi	Pennsylvania	Virginia
California	Indiana	Missouri	Rhode Island	West Virginia
Colorado	Kentucky	New Jersey	South Carolina	Wisconsin
Connecticut	Louisiana	Nevada	Tennessee	
Delaware	Maryland	New York	Texas	
Florida	Massachusetts	Ohio	Utah	

## PROFESSIONAL AFFILIATIONS

**PTAIA**      **Pennsylvania Traffic Accident Investigator's Association**  
Served as the Executive Director and Publisher of the monthly newsletter

**NAPARS**      **National Association of Professional Accident Reconstruction Specialists**

**ACFE**      **American College of Forensic Examiners**

**SAE**      **Society of Automotive Engineers**  
Served as a member of the heavy truck tire characterization research committee. The goal of this international study project was to define the testing methods necessary to gather data on new, used and re-manufactured truck tires. The committee also studied tire characteristics including peak/slide friction during straight-ahead and cornering measures, cornering stiffness, combined lateral/longitudinal friction, and braking stiffness.

**VDA**      **Vehicle Design Associate, International Journal of Vehicle Designs (IJVD), Ottawa, Canada**  
Submitted research and technical papers concerning commercial motor vehicle accident investigation for publication in the Journal, which is distributed world-wide.

**FOP**      **Fraternal Order of Police**

**AAST**      **American Association of State Troopers**

**RSTA**      **Retired State Trooper's Association**

## **TYPES OF ACCIDENTS INVESTIGATED / RECONSTRUCTED:**

- Passenger Vehicle (Single - Multiple)
- Tractor Trailer (Single - Double Trailers)
- Truck
- Special Mobile Equipment
- Off Road Construction-type Equipment
- Bus (Passenger Van, School, Transit, Intercity & Suburban)
- Emergency Vehicle (Fire Truck, Ambulance & Police)
- Modified Vehicle
- ATV (All Terrain Vehicle - off road)
- Motorcycle, Bicycle
- Pedestrian
- Train/Automobile
- Train/Tractor Trailer
- DUI/Drug Related
- Occupant Kinematic (“*Studies*”)

## **OVERVIEW OF ASSIGNMENTS**

### **Pennsylvania State Police**

Duties included accident investigation and reconstruction. Expertise was reconstruction of commercial motor vehicle accidents and interpretation/enforcement of federal, state and local regulations that govern the motor carrier industry. Background permitted attendance at numerous specialized schools/seminars. Numerous instructor certifications, many courtroom appearances and responsibility for high-profile accidents required me to make a multitude of presentations on behalf of the Pennsylvania State Police, including presentations to the American Trucking Association's National Convention, the National Association of Traffic Accident Reconstructionists and Investigators (NATARI), and the Office of the Attorney General (Pennsylvania). Hazardous Materials background also allowed me to serve as a member of the Governor's S.A.R.A. (Superfund Amendments and Reauthorization Act) Committee in Clinton and Centre Counties.

### **Pennsylvania Department of Education, Traffic Institute for Police Services Police Training Curriculum Specialist**

Responsibilities included development of student training materials for entry and advanced levels of accident investigation, reconstruction, and enforcement training programs, and development of Student projects/examinations for various training programs; and development of Instructor projects/ examinations for various training programs. Programs included, but were not limited to:

- On Scene Accident Investigation - Homicide by Vehicle
- Advanced Accident Investigation
- Traffic Accident Reconstruction
- Inspection Of Commercial Vehicles Involved in Accidents
- Commercial Vehicle Accident Investigation
- Enforcement of Commercial Motor Vehicle Inspection Regulations
- Enforcement of Passenger Motor Vehicle Inspection Regulations
- Motorcycle Accident Investigation
- Pedestrian Accident Investigation
- Occupant Kinematics
- Modified Vehicle Accident Investigation

## **OVERVIEW OF ASSIGNMENTS**

(continued)

Duties also included the reconstruction of traffic accidents, which involved measuring of accident sites, inspection of involved vehicles, documenting of mechanical characteristics and crush patterns for speed determination, examination of vehicle interiors to determine occupant contact points, and documentation of causation factors. When the accident reconstruction program was developed into classroom projects that included visual aids, student handouts and student assignments, duties expanded to the development of Instructor course outlines and the monitoring of instructors and contractors with regards to their performance in the classroom.

As part of the job, it was necessary to maintain a working knowledge of the Pennsylvania Motor Vehicle Code, the Rules of Criminal Procedure, the Crimes Code, and the Pennsylvania Inspection Manual, in order to keep updated on all aspects of Traffic Accident Investigation and Reconstruction. In addition, duties also included lecturing both government and the private sector in the area of traffic safety.

### **University of North Florida, Adjunct Faculty** **Institute of Police Technology and Management (IPTM) - Instructor:**

On Scene, Advanced, Traffic Accident Reconstruction  
Commercial Motor Vehicle Accident Reconstruction  
Advanced Commercial Motor Vehicle Accident Reconstruction  
Bus Accident Investigation

I primarily instructed two technical courses designed to give the experienced investigator the skills necessary to investigate and reconstruct accidents involving commercial motor vehicle and bus accidents. The Commercial Motor Vehicle Accident Reconstruction training class included the following topics:

- Tractor Trailer Nomenclature and Classification
- System Configuration and Operation
- Truck Dynamics
- Driver Responsibilities
- Tachograph Charts - Log Books
- Steering and Suspension Systems
- Tires, Rims and Mounting
- Trailer Coupling Devices
- Brake Systems - Air and Hydraulic
- Detailed Vehicle Inspections
- Hazardous Material Transportation
- Weight Shift Problems and Formulas
- Speed Analysis - Classroom and Field Projects
  - Jack knifing
  - Off-Tracking
  - Hydroplaning
  - Rollover
  - Vehicle Dynamics during Emergency Braking
- Application of Formulas for Special Situations
- Brake Force Calculations
- Field Vehicle Inspections
- Field Skid Testing, Acceleration

## **OVERVIEW OF ASSIGNMENTS**

(continued)

The Bus Accident Investigation Class was one the most intensive offered in the United States. This technical class covered intercity, transit, suburban, and school buses, as well as passenger vans.

An overview of the topics included:

- Bus Nomenclature
- Bus Specifications
- Bus Driver Licensing Procedures
- Bus Safety Regulations (Federal)
- Bus Accident - Causation Factors
- Bus Braking Systems
- Bus Door Systems
- Steering Systems
- Wheels, Rims & Tires
- Frame Construction
- Axle Assemblies
- Lighting
- Wheelchair Lifts
- Interlocks
- Vehicle Fires
- Alternative Fuels
- Hazardous Materials Transportation
- Acceleration - Deceleration Testing
- Speed Analysis
- Propensity to Roll
- Brake Force Calculations
- Approved School Bus Stops
- Hazardous Walking Route Designations
- Responsibilities of the School Bus Driver
- Responsibilities of the School Administrator
- Out of Service Criteria

## **BACKGROUND**

### **Education**

1965            Graduated - Lock Haven High School, Lock Haven, PA  
1970            Graduated - Pennsylvania State Police Academy, Hershey  
1974            Associate Degree, Police Science and Administration,  
                  Harrisburg Area Community College, Harrisburg

### **Military Service - United States Marine Corps**

1965            Recruit Training, Parris Island, SC  
1965            Advanced Infantry Training, Camp Lejeune, NC  
1966-67        Infantry, South Vietnam  
1967-69        United States Naval War College, Newport, RI  
                  Marine Aide to the President  
1969            Honorable Discharge

### **Military Awards**

1965            National Defense Service Medal  
1967            Vietnamese Service Medal  
1967            Vietnamese Campaign Medal  
1967            Presidential Unit Citation  
1966-67        Purple Heart (2)  
1968            Good Conduct Medal

### **Experience**

#### **Pennsylvania State Police - Major Assignments:**

1970            Patrol Section - Gettysburg  
1970-71        Patrol Section - Harrisburg  
1971-73        Troop Community Relations Officer, Harrisburg  
1973-79        Troop Training Officer, Harrisburg  
1980-92        Interstate Patrol, Milesburg  
1992            Retired

#### **1975-79            Harrisburg Area Community College**

Instructor:

Vehicle Code  
Accident Investigation  
Drug Identification

#### **1989-93            Pennsylvania Department of Education, Traffic Institute for Police Services**

Municipal Police Consultant; Instructor:

Program Development, On Scene Accident Investigation, Advanced Accident Investigation, Accident Reconstruction, Commercial Motor Vehicle Accident Reconstruction, Occupant Kinetics, Pedestrian Accident, Motorcycle Accidents, Modified Vehicle Accidents, PA Commercial/Passenger Vehicle Inspection Regulations

## **BACKGROUND**

(continued)

- 1993-98 University of North Florida, Institute of Police Technology & Management (IPTM), Instructor:  
On Scene Accident Investigation, Advanced Accident Investigation, Accident Reconstruction, Commercial Motor Vehicle Accident Reconstruction, Advanced Commercial Motor Vehicle Accident Reconstruction, Bus Accident Reconstruction
- 1993-97 Pennsylvania Traffic Accident Investigator's Association (PTAIA)  
Executive Director and Publisher - Monthly Newsletter
- 1994-97 Accident Investigator's Quarterly  
Publisher - Quarterly Newsletter
- 1996-98 Kotowski & Rickard, Inc.  
Partner
- 1992-2002 Steven W. Rickard & Associates  
Sole Proprietor/Owner
- 2002-Present Steven W. Rickard and Associates, Inc.  
President

### **Other Experience - Miscellaneous**

- 1968-1969 Montgomery Ward  
Warehouse
- 1976 Pilot Trucking
- 1977 Carolina Freight
- 1978-1979 Federal Express

## INSTRUCTOR CERTIFICATIONS

- 1972 Instructor - Pennsylvania State Police Academy
- 1976 Pennsylvania Municipal Police Officer Training & Education Committee

### Introduction to the Criminal Justice System

- 1. Police History
- 2. Foundations and Functions of the Criminal Justice System
- 3. Role of the Police in the Criminal Justice System

### Law

- 1. Court Systems and Procedures
- 2. Applications of the United States Constitution to Local Police Procedures
- 3. Application of the Bill of Rights to Local Police Procedures
- 4. Law Re Search & Seizure
- 5. Law Re Arrest
- 6. Law Re Use of Force
- 7. Law Re Police Interrogation
- 8. Law Re Evidence
- 9. Rules of Criminal Procedures

### Human Values and Problems

- 1. Juvenile Programs & Investigation; Juvenile Delinquency Act
- 2. Police-Community Relations, Police-Public Relations, Police Ethics
- 3. Human Relations; Cultural Awareness
- 4. Crisis Intervention; Mental Health Act
- 5. Service Calls

### Patrol and Investigation Procedures

- 1. Pennsylvania Crimes Code, Controlled Substance Act
- 2. Pennsylvania Motor Vehicle Code, Accident and Investigation
- 3. Patrol Procedures, Crime Prevention
- 4. Preliminary Investigation
- 5. Criminal Investigation
- 6. Report Writing & Communication

### Police Proficiency

- 1. Physical Conditioning & Defensive Tactics
- 2. Techniques & Mechanics of Arrest
- 3. Driver Training
- 4. Public Safety

## **INSTRUCTOR CERTIFICATIONS (Accident Related)**

The following certifications are from the Pennsylvania Department of Education, Traffic Institute for Police Services (TIPS).

- 1989 On Scene Accident Investigation - Homicide by Vehicle
- 1989 Advanced Accident Investigation
- 1989 Commercial Vehicle Accident Investigation
- 1990 Traffic Accident Reconstruction
- 1990 Motorcycle Accident Investigation
- 1990 Pedestrian Accident Investigation
- 1990 Occupant Kinematics
- 1991 Modified Vehicle Accident Investigation

## **INSTRUCTOR CERTIFICATIONS (Miscellaneous)**

- 1970 Advanced Lifesaving - American Red Cross
- 1971 Radar - Pennsylvania State Police Academy
- 1972 Crimes Code - Pennsylvania State Police Academy
- 1972 Vehicle Code - Pennsylvania State Police Academy
- 1973 CPR - American Red Cross
- 1974 Video Camera - Pennsylvania State Police Academy
- 1974 Radiological Survey Equipment/Monitoring - Pennsylvania State Police Academy
- 1975 Handling of Urban Bomb Threats - Pennsylvania State Police Academy
- 1975 Defensive Driver Course - National Safety Council
- 1975 Accident Investigation - Pennsylvania State Police Academy
- 1983 DUI Driver Awareness Program, Pennsylvania State Police Academy
- 1990 CDL (Commercial Driver's License) Highway Users Federation, Washington, DC

## **SPECIAL SEMINARS ATTENDED**

- |      |          |  |
|------|----------|--|
| 1972 | 40 hours | Drug Identification - Pennsylvania State Police Academy                  |
| 1973 | 8 hours  | Civil Disturbance Training - Penn State University                       |
| 1974 | 40 hours | Psychotropic Drug Identification - Hershey Medical Center, Hershey       |
| 1974 | 8 hours  | Seat Belt Safety Seminar - American Automobile Association, Richmond, VA |
| 1976 | 8 hours  | Hostage Negotiations - New York City Police Department, New York, NY     |
| 1978 | 40 hours | Commercial Security - Harrisburg Area Community College, Harrisburg      |
| 1978 | 40 hours | Retail Security - Harrisburg Area Community College                      |
| 1978 | 40 hours | Arson Investigation - Harrisburg Area Community College                  |
| 1978 | 40 hours | Fire Science; Structural Design - Harrisburg Area Community College      |
| 1986 | 40 hours | Operation Whiteline, Drug Seizures - Pennsylvania State Police Academy   |

### **SPECIAL SEMINARS ATTENDED**

(continued)

1987	20 hours	Recognition of Hazardous Materials - Pennsylvania State Fire Academy
2003	16 hours	Automatic On-Board Recording Devices for Commercial Motor Vehicles - Federal Motor Carrier Safety

### **TECHNICAL SCHOOLS ATTENDED**

1979	8 hours	Weights and Measures Certification - Pennsylvania Department of Agriculture, Harrisburg
1986	40 hours	Heavy Air Brake Specialist Certification - Bendix Corporation, Elyria, OH
1986	40 hours	Hazardous Materials Compliance & Enforcement - United States Department of Transportation, Glenn Falls, NY
1986	40 hours	Cargo Tank Roadside Inspection - United States Department of Transportation, Dover, DE
1986	40 hours	National Uniform Driver - Vehicle Inspector Certification United States Department of Transportation, Federal Highway Administration, Greensburg, PA
1987	80 hours	Instructor Certification, Hazardous Materials Compliance, Enforcement and Transportation, United States Department of Transportation, Traffic Safety Institute, Oklahoma City, OK
1988	100 hours	Certified Inspection Mechanic; All vehicle classes, Pennsylvania Department of Transportation, Williamsport, PA
1988	80 hours	On-scene Accident Investigation - Pennsylvania Department of Education, Meadville, PA
1988	80 hours	Advanced Accident Investigation - Pennsylvania Department of Education, Traffic Institute for Police Services (TIPS), Fallsington, PA
1988	20 hours	Inspection of Commercial Vehicles in Accidents - IPTM, University of North Florida, Jacksonville
1988	20 hours	Commercial Vehicle Accident Investigation - IPTM, University of North Florida, Jacksonville
1989	15 hours	Bus Accident Investigation - United States Department of Transportation, Donora, PA
1989	80 hours	Accident Reconstruction - Pennsylvania Department of Education, Elizabethtown, PA
1990	24 hours	Computer-Assisted Accident Reconstruction, Pennsylvania Department of Education, Harrisburg

## TECHNICAL SCHOOLS ATTENDED

(continued)

1990	40 hours	Special Problems in Accident Reconstruction Seminar - Institute of Police Technology and Management, University of North Florida, Jacksonville
		<ul style="list-style-type: none"><li>• Legal Issues</li><li>• Vehicle Autopsies</li><li>• Weight Shift</li><li>• Photogrammetry/Templates</li><li>• Motorcycle Dynamics</li><li>• Hazardous Materials</li><li>• Motorcycle Stopping Characteristics</li><li>• Railroad Grade Crossing Accidents</li><li>• Tire and Pavement Frictions</li><li>• Trailer Stability in Articulated Vehicles</li><li>• Accident Reconstruction Photographics</li><li>• Video Animation in Accident Reconstruction</li><li>• IPTM Crash Studies</li></ul>
1991	8 hours	Hydraulic Brake School, Bendix Corporation, Elyria, OH
1991	8 hours	Bendix Air Brakes, TIPS, Harrisburg
1991	24 hours	Special Problems: Commercial Vehicle Accidents, TIPS
1991	40 hours	Special Problems Seminar - IPTM, University of North Florida, Jacksonville
		<ul style="list-style-type: none"><li>• Critical Speed Problems</li><li>• Tool and Technique for Motorcycle Accidents</li><li>• Interviewing Techniques</li><li>• Pedestrians in Accidents</li><li>• Trailer Conspicuity (Commercial Vehicle)</li><li>• Trailer Under-ride (Commercial Vehicle)</li><li>• Use of Crime Lab in Accident Reconstruction</li><li>• Vehicle Damage Analysis</li><li>• Sudden Vehicle Acceleration</li><li>• The Right Hand Coordinate System in Momentum Analysis</li><li>• Motorcycle Tires and Associated Problems</li><li>• Occupant Strike Zones and Kinematics</li><li>• Modified Vehicles in Accidents</li><li>• Expert Witness Guidelines</li><li>• Vehicle Stiffness Coefficients</li></ul>
1992	40 hours	Special Problems Seminar - IPTM, University of North Florida, Jacksonville
		<ul style="list-style-type: none"><li>• Graphic Solutions to Time/Distance Problems</li><li>• Effects of Sudden Wind Blast on Moving Vehicles</li><li>• Traffic Engineering for Reconstructionists</li><li>• The Reconstructionist's Library</li><li>• Crush Applications, Limitations &amp; Protocol</li><li>• Trigonometry/Geometry, Physics Review</li></ul>

## **TECHNICAL SCHOOLS ATTENDED**

(continued)

		<ul style="list-style-type: none"><li>• Diagraming for 360 degree Momentum</li><li>• Video Taping Accident Scenes</li><li>• Bicycle Accident Reconstruction</li><li>• Measuring Techniques for Crush Damage</li><li>• Insurance Fraud Cases for the Reconstructionist</li><li>• Forensic Animation</li><li>• Understanding Drag/Coefficient of Friction</li><li>• Accident Potential of Small Trailers</li><li>• Three Dimensional Computer Animation</li><li>• Major Accident Reconstruction</li><li>• Accident Reconstruction Associations &amp; General Information</li></ul>
1992	15 hours	Seminar - IATAI (Illinois Association of Traffic Accident Investigators), Illinois State University, Normal, IL <ul style="list-style-type: none"><li>• Low Speed Impact</li><li>• Video Techniques - Accident Reconstruction</li><li>• Articulated Vehicles in Accidents</li><li>• The Performance of Brakes on Heavy Trucks</li><li>• Points of Trials - Accident Site Reconstruction</li></ul>
1993	40 hours	Special Problems Seminar - IPTM, University of North Florida, Jacksonville <ul style="list-style-type: none"><li>• Analyzing Night-time Accidents</li><li>• Tractor Trailer Jackknife Problems</li><li>• Computer Programs</li><li>• Deceleration and Accelerometers</li><li>• Accident Fraud Part II</li><li>• Investigating Rollover Accidents</li><li>• Post-Collision Lamp Examination</li><li>• Math Toolbox</li><li>• Autosketch Computer Enhancing</li><li>• Mechanical Vehicle Inspection</li><li>• Airborne Accidents</li><li>• Friction and Energy</li><li>• Occupant/Pedestrian Injury Analysis</li><li>• Computerized Accident Drawing</li><li>• NTSB's Role in Major Accident Reconstruction</li><li>• New Automotive Technologies</li></ul>
1993	40 hours	Advanced Commercial Vehicle Accident Reconstruction - National Transportation Safety Board, Breezewood, PA <ul style="list-style-type: none"><li>• The Theory of Weight and Balance</li><li>• Rollover Threshold w/ Superelevation</li><li>• Rollover Speed</li><li>• Rollover Speed w/ Superelevation</li><li>• Center of Mass Displacement in Turns</li><li>• Air Brake Efficiency - Calculation Methodology</li></ul>

## TECHNICAL SCHOOLS ATTENDED

(continued)

- Heavy Vehicle Deceleration Testing
- Commercial Vehicle Instabilities
  - Braking Forces, Roll Stability, Cornering Stability
  - Rearward Amplification of Forces to Trailer(s)
- Commercial Vehicle Dynamics Analysis
- Heat Effect on S-Cam Brakes

1994            40 hours        Advanced Traffic Accident Investigation with the use of Microcomputers, IPTM, University of North Florida, Jacksonville

- Speed Change from Crush Damage
- Computer-Aided Linear Momentum Analysis
- Delta-V and the Relationship to Collision Dynamics
- Post-Impact Trajectory Calculation
- Vector Analysis

1994            40 hours        Special Problems Seminar - IPTM, University of North Florida, Jacksonville

- Radial Tire Belt Separations
- Restraint System Examination
- Overview of Computer (Accident-Related) Software
- Auto Stats and Quik Calc
- Truck Brake Failure Analysis
- Vehicle Damage Analysis
- Ground-Based Aerial Crush Photography
- Air Bag Technology and Development
- Virtual Phototyping (Accident Reconstruction)
- Understanding Medical Examinations (Body Works)
- Rollover Accidents
- Tartis System
- Underride Accidents
- Accident Reconstruction Reporting
- An Overview of the Total Station
- Commercial Motor Vehicle Accident Reconstruction:  
"Following the Paper Trail"

"**Following the Paper Trail**" provided information to assist the commercial motor vehicle accident investigator in determining whether the actions or inactions of the driver/carrier caused or contributed to the accident. The material for the presentation was based on the regulations imposed by 49 CFR, Parts 383 - 396. I researched, wrote and presented the material to over 200 students attending this seminar.

1995            40 hours        Special Problems Seminar - IPTM, University of North Florida, Jacksonville

- Accident Animation and Simulation - Legal Issues
- Physical Evidence vs. The Eyewitness
- Vector Analysis Using Coordinate Math
- Accident Reconstruction Math

## TECHNICAL SCHOOLS ATTENDED

(continued)

- Vehicle Fire Analysis
- Occupant Kinematics and Human Tissue Injury Analysis
- Developing Demonstrative Evidence
- Tire Forensics, Friction and Tire Forces
- Multi-Unit Commercial Vehicle Analysis
- Motorcycle Accident Reconstruction
- Headlight Pattern Analysis
- Night Visibility and Human Factors
- New Automotive Lamp Technology
- Bus Accident Investigation

“**Bus Accident Investigation**” was presented to over 200 accident investigators from around the world and provided information concerning the latest technical training in accident reconstruction. I co-authored the training class notebook and outline and presented the overview of the textbook and week-long training class.

1996	40 hours	Special Problems Seminar - IPTM, University of North Florida, Jacksonville
		<ul style="list-style-type: none"><li>• The Police Role in Product Liability Investigations</li><li>• Tire Retread Technology</li><li>• Computer-aided Collision Prediction</li><li>• Effects of Aerodynamics on Vehicles</li><li>• Low-Speed Impact Analysis</li><li>• Acceleration-Deceleration/Time &amp; Distance Review</li><li>• Major Underground Rail Accidents</li><li>• Pedestrian Hit and Run Investigations</li><li>• Accident Video in Night and Low Light Applications</li><li>• Human Factors/Perception and Response</li><li>• The Media and Fatal Accident Investigations</li><li>• School Bus Accident Analysis and Litigation</li></ul>
		I researched and wrote a paper concerning “ <b>School Bus Accident Analysis and Litigation.</b> ” I co-presented the material with Peter Kotowski to over 250 accident reconstructionists, engineers and law enforcement officers attending the Special Problems Seminar.
1996	24 hours	Occupant Kinematics, Maryland State Police Academy, Reisterstown, Maryland
1997	40 hours	Special Problems Seminar - IPTM, University of North Florida, Jacksonville
		<ul style="list-style-type: none"><li>• Accident Reconstruction Legal Issues</li><li>• Motorcycle Accident Investigation: Review and Refresher</li><li>• Bicycle vs. Vehicle Accident Investigation Techniques</li><li>• Effects of Tire Compounds on Friction Testing</li><li>• Commercial Vehicle Brake Systems - w/ABS</li><li>• Advanced Computer Collision Diagramming</li><li>• Side Impact Low Speed Collisions</li><li>• Predicting Delta-V from Damage Analysis</li><li>• Trial Strategy and Courtroom Testimony</li><li>• Acceleration/Deceleration Rates - Tracked Recreational Vehicles</li></ul>

## TECHNICAL SCHOOLS ATTENDED

(continued)

- Water Craft Accident Investigation and Reconstruction
- Motorist Processing of Traffic Control Devices in Road Construction Zones
- Fatigue and Sleep Related Issues in Accident Reconstruction
- Human Error
- National Transportation Safety Board Update

2000	16 hours	<p><b><u>Instructor</u></b> Commercial Motor Vehicle Accident Investigation/Reconstruction, Chester County Police Chief's Association, Brandywine Hospital, Brandywine, PA</p> <ul style="list-style-type: none"><li>• Tractor Trailer Nomenclature</li><li>• System Configuration and Operation</li><li>• Tractor Trailer Dynamics</li><li>• Driver Responsibilities</li><li>• RDS Overview - Log Books</li><li>• Steering and Suspension Systems</li><li>• Air Brake Systems</li><li>• Speed Analysis discussion -<ul style="list-style-type: none"><li>- Jack knifing</li><li>- Off-Tracking</li><li>- Rollover</li><li>- Vehicle Dynamics during Emergency Braking</li></ul></li><li>• AL Factors</li><li>• Brake Force Calculations</li><li>• Roadway Evidence</li></ul>
2002	8 hours	Electronic Control Module (ECM) Operator Certification Course, Caterpillar Training Facility, Harrisburg, Pennsylvania
2002	16 hours	Automobile Event Data Recorder (EDR) Operator's Certification Course, Baltimore, Maryland
2003	8 hours	Electronic Control Module (ECM) Operator Certification Course, Cummins Training Facility, Bristol, Pennsylvania
2003	16 hours	Electronic Control Module (ECM) Operator Certification Course, Detroit Diesel Facility, Detroit, Michigan
2004	4 hours	<b><u>Instructor</u></b> - Air Brake System Analysis, Commercial Motor Vehicle Accident Reconstruction Training Class, Maryland State Police, Baltimore, Maryland
2005	3.5 hours	<b><u>Instructor</u></b> - Introduction to Electronic Control Module Analysis, Commercial Motor Vehicle Accident Reconstruction Training Class, Institute for Law Enforcement Education, Pennsylvania Department of Education, Bethlehem, Pennsylvania
2005	16 hours	On-Board Computer Download and Analysis Certification Course, Tripmaster Corporation, Arlington, Texas

2007	6 hours	<b><u>Instructor</u></b> - Accident Reconstruction Workshop
2008-2010	4 hours	<b><u>Instructor</u></b> - Commercial Motor Vehicle Accident Reconstruction Presentation to Attorneys, Adjusters, and Commercial Motor Vehicle Carriers
2010	8 hours	<b><u>Instructor</u></b> - Electronic Control Module Analysis, New Jersey State Police Accident Reconstruction Detail
2011	8 hours	<b><u>Technician</u></b> - Temporary Traffic Control in Work Zones, Manual on Uniform Traffic Control Devices, Part 6, American Traffic Safety Services Association, Westminster, Maryland
2011	16 hours	<b><u>Supervisor</u></b> - Temporary Traffic Control in Work Zones, Manual on Uniform Traffic Control Devices, Parts 1, 5, and 6, American Traffic Safety Services Association, Westminster, Maryland
2011	4 hours	<b><u>Instructor</u></b> - Temporary Traffic Control in Work Zones, Manual on Uniform Traffic Control Devices, American Traffic Safety Services Association, Fredericksburg, VA