



CHRISTOPHER W. FERRONE, B.S.E.M. PROFESSIONAL BIOGRAPHICAL OUTLINE

EDUCATION

- Bachelor of Science, Engineering Mechanics (Theoretical and Applied Mechanics) [see page 28]
- Field of Study: Automotive Engineering
- University of Wisconsin - Madison, 1986

Special Courses

- Vehicle Research and Simulations Laboratory (Graduate Level) 2/82 through 5/85
- Electrical and Computer Engineering Department University of Wisconsin - Madison
- Flywheel powered vehicle development. Hydrostatic, hydrodynamic and continuously variable transmission development. Electric powered vehicle development.
- Fatigue Analysis Laboratory (Graduate Level) 2/86 through 8/86
- Engineering Mechanics Department University of Wisconsin - Madison
- Thermal emission stress pattern analysis (SPATE) development for mechanical fasteners, joints, gas turbine blades and composite materials used for aircraft structures

Seminars

- Troubleshooting and Failure Analysis, Sutrak Transportkälte GmbH, Air Conditioning Division BOCK FK5 Compressor w/SUTRA-MATIC and Tropic-31 system (Renningen, West Germany-FRG), 1985
- Troubleshooting and Failure Analysis, Voith Getriebe KG, Transmission Division Series U+S 506 Automatic Transmissions (Heidenheim, West Germany-FRG), 1985
- Troubleshooting and Failure Analysis, Mercedes-Benz AG, Diesel Engine Division Series OM-400 Engines (Stuttgart, West Germany-FRG), 1985
- Advanced Fire Protection Sprinkler Design, NATLSCO, 1987
- Introduction to Computer Graphic Modeling, Skidmore Owings and Merrill, 1988
- Pipe Design-(MCAE) Interactive Graphic Modeling, Skidmore Owings and Merrill, 1989
- Duct Design-(MCAE) Interactive Graphic Modeling, Skidmore Owings and Merrill, 1989
- File Manager - Project Management for Computers, Skidmore Owings and Merrill, 1989
- Advanced Function Computer Graphic Modeling, Skidmore Owings and Merrill, 1989
- Intermediate Computer Graphic Modeling, Skidmore Owings and Merrill, 1989
- Command File Structure Programming, Skidmore Owings and Merrill, 1989
- S.A.E. Accident reconstruction Photogrammetry Workshop, 1990
- BMW/Skip Barber - Advanced Driving School, 1990
- Emergency Response Procedures at Petroleum Incidents, Amoco Oil Company, 1992
- Federal Motor Carrier Safety Regulations and Compliance, 2001
- Crash Data Retrieval (C.D.R. Tool) User Certification Course (24 hours training) Institute of Police Technology and Management, University of North Florida, 8/18-20/2004

PROFESSIONAL EXPERIENCE

2006 – Present | ARCCA, LLC | Mechanical Expert

- Consulting Mechanical Engineer – vehicle accident reconstruction
- Vehicle and mobile equipment failure analysis
- Vehicle design and component functionality analysis
- Vehicle safety and operator performance analysis
- Computer engineering analysis; industrial equipment accident analysis

January 1990 – February 2006 | Triodyne Inc. | Senior Mechanical Engineer, Director of Engineering Sciences

- Consulting Mechanical Engineer – vehicle accident reconstruction
- Vehicle and mobile equipment failure analysis
- Vehicle design and component functionality analysis
- Vehicle safety and operator performance analysis
- Computer engineering analysis
- Industrial equipment accident analysis

January 1990 – February 2006 | Skidmore Owings and Merrill | Mechanical Engineer, Associate - Partnership Group

- Design Engineer responsible for flow-charting logical operations and design procedures related to Mechanical Computer Aided Engineering Software (MCAE) development designated for the design of high-rise buildings and structures
- Design Engineer responsible for the design and interdisciplinary coordination of piping systems for high-rise buildings located throughout Europe, England and the U.S.

August 1986 – April 1987 | Oshkosh Truck Corporation | Project Engineer, Chassis Design and Development (USAF-P23 CFR)

- Design Engineer responsible for chassis development, computerized gradeability studies generated for power plant selection and overall vehicle performance as well as coordination of all chassis related components and their installation for the U.S. Air Force P-23 CRASH-FIRERESCUE vehicle
- Research and Development Engineer responsible for troubleshooting and verification of form, fit and function for components and sub-systems on Crash Fire Rescue vehicles, Heavy Equipment and Military vehicles

Summers 1976 – 1986 | American Sightseeing/O'Hare Express, Inc. | Master-Senior Mechanic

- Diesel Engine and Transmission failure analysis, rebuilding, troubleshooting, air-conditioning failure analysis and component rebuilding. Vehicle rehabilitation management.
- Design criteria and specification development for vehicle procurement
- Management responsibilities included warranty claim verification and processing, factory service safety bulletin repairs, development of maintenance plans, schedules, repair procedures and the development of engine and transmission rebuilding standards and specifications

PROFESSIONAL AFFILIATIONS

- Society of Automotive Engineers (member) 1989
- National Society of Professional Engineers (member) 1990
- Illinois Society of Professional Engineers, Chicago Chapter (member) 1990
- American Society of Mechanical Engineers (member) 1990
- American Welding Society (member) 1993
- Association of Diesel Specialists (associate member) 1993
- American Society of Safety Engineers (member) 1997
- Great Lakes Regional Safety Forum, Illinois Chapter
- U.S.D.O.T. Office of Motor Carriers FHWA: Region-5 (member) 1997

PROFESSIONAL ACTIVITIES

20 Year Membership Award | Society of Automotive Engineers Truck and Bus Council

- Vehicle Powertrain Committee (member) 1990
- S.A.E. J688/J2188 Truck Ability Prediction Procedure (Task Force member) 1990
- Electrical Systems and Electronic Controls Committee (member) 1990
- Truck and Bus Wiring Connectors Subcommittee (member) 1990
- Diesel Electronic Controls Subcommittee (member) 1990
- Chairman, S.A.E. Bus Engineering and Operations Committee, 1993 - 1996

American Bus Association

- American Bus Association: Safety Committee (member) 1993 - Dissolved 2000
- American Bus Association: Senior Judge, Golden Wrench Competition, Nashville, TN, September, 1994
- American Bus Association: Senior Judge, Golden Wrench Competition, Nashville, TN, June, 1994
- American Bus Association: Chairman - Maintenance Committee, 1996

Safety Inspector

Olympic Transit Bus Fleet, Atlanta Committee for the Olympic Games 1996 in the following cities: Columbus, Ohio, Toledo, Ohio, Madison, Wisconsin, Kenosha, Wisconsin, Milwaukee, Wisconsin, St. Louis, Missouri)

- Trailways National Bus System: Safety Committee (member), 1996
- Bus Business Journal: Advisory Board Member, 1998 – 1999 (No longer in publication)
- Metro Magazine: Editorial Advisory Board Member, 2000 - present
- Bus Tech (Bus Ride Magazine): Editorial Advisory Board, 2000 – present
- Bus Industry Safety Council, 2000 – present
- BusRide Magazine: Contributing writer 2006 - present

PROFESSIONAL CERTIFICATIONS

Registered E.I.T. | (Illinois No. 061-021374)1987

Detroit Diesel Allison – Division of General Motors Corporation (Detroit Diesel Corporation since 1988): Consulting Mechanical

- Certified, Detroit Diesel Allison: Overhaul – Series 71 Engines, 1985
- Certified, Detroit Diesel Allison: Overhaul – Series 92 Engines, 1985
- Certified, Detroit Diesel Allison: Troubleshooting and Failure Analysis – Series 71 Engines, 1985
- Certified, Detroit Diesel Allison: Troubleshooting and Failure Analysis – Series 92 Engines, 1985
- Certified, Detroit Diesel Allison: Troubleshooting and Failure Analysis – Series 8.2L Engines, 1985

Allison Transmissions – Division of General Motors Corporation

- Certified, Detroit Diesel Allison: Overhaul - Series HT-700 Automatic Transmission, 1985
- Certified, Allison Transmissions: Troubleshooting and Failure Analysis – ATEC System, 1992 (including: Series MT, MTB 600, HT, HTB 700, CLT, CLBT 700, V-731) Sealed Standard/Plus II

National Institute for Automotive Service Excellence (NIASE): Certified Master – Heavy Duty Truck – Technician

- Diesel Engines, 1990/Recertification 1994, 2001, 2002, 2005, 2010
- Drive Train, 1990 (including: clutches, transmissions, drive shafts, drive axles), Recertification 1995, 2000, 2004, 2009
- Brake Systems, 1990 (including: air and hydraulic systems) Recertification 1995, 1999, 2000, 2004, 2008, 2011
- Suspension Systems, 1990 (including: air-ride, spring, equalizer beam systems), Recertification 1995, 2002, 2005, 2010
- Steering Systems, 1990/Recertification 1995, 2002, 2010
- Electrical Systems, 1990/Recertification 1994, 1999, 2000, 2004, 2009
- H.V.A.C. Systems, 1999, 2000, 2004, 2009
- Preventive Maintenance Inspection, 2002, 2008, 2011

National Institute for Automotive Service Excellence (NIASE): Certified Automotive – Technician

- Engine Repair, 1991/Recertification 1997, 2009
- Manual Drive Train & Axles (including: clutches, transmissions, drive shafts, drive axles, trans-axles) 1991/Recertification 1995, 2000, 2004, 2010
- Automatic Transmission & Trans-Axles, 1992/Recertification 1995, 2000, 2004, 2009
- Suspension Systems, 1990/Recertification 1995, 2000, 2004, 2009
- Steering Systems, 1990/Recertification 1995, 2000, 2004, 2009
- Brake Systems, 1990/Recertification 1995, 2000, 2004, 2010
- Heating Systems, 1991/Recertification 1995
- Air-Conditioning Systems, 1991/Recertification 1995, 2000, 2009
- Refrigerant Recover & Recycling Systems, 1991

- Electrical Systems, Light Vehicle, 1993/Recertification 1997, 2009
- Compressed Natural Gas, 1994

National Institute for Automotive Service Excellence (NIASE): Certified School Bus – Technician

- Brake Systems, 1996/Recertification 2002, 2008
- Drive Train, 1997/Recertification 2002, 2005,2010
- Suspension/Steering, 1997/Recertification 2002, 2008
- Diesel Engines, 1998/Recertification 2004, 2008
- Air-Conditioning Systems, 1998/Recertification 2006, 2008

National Institute for Automotive Service Excellence (NIASE): General Transit Bus – Technician

- Brake Systems, 2006, 2011
- Diesel Engines 2007, 2011
- Drive Train 2008
- Suspension and Steering 2008
- Heating, Ventilation and A/C 2009
- Preventive Maintenance and Inspection 2011

Mobile Air-Conditioning Society (MACS): Certified Technician

- CFC-12 Recycling and Service in accordance with Section 609 of the 1990 Clean Air Act, 1995
 Certified Brake Inspector: Qualified under Federal Motor Carrier Safety Standard 396.25(d)
- Qualified Inspector for Annual Vehicle Inspections for FMCSR 396.17: Qualified under Federal Motor Carrier Safety Standard 396.19

Illinois Drivers License Class C, 1980 – 1986

Illinois Commercial Drivers License C.D.L., Class A, 1994 (permit only)

Illinois Commercial Drivers License C.D.L., Class B, 1994

Endorsements (by examination)

- Core Knowledge
- Combination Vehicles
- Vehicles with Air Brakes
- Double/Triple Trailers
- Passenger Vehicles
- Tanker Trailers
- Hazardous Materials, 1994 – 2002

Driving Tests (by examination)

- Pre-Trip Inspection: Class B
- Basic Control Skills: Class B
- Road Test: Class B

Certified

- Forklift Operator Training, Crown Forklifts; (required by OSHA 29 C.F.R. 1910.178), 7/12/2004
- Crash Data Retrieval (C.D.R.) System Training, Vetronix Corporation, 8/20/2004
- Crash Data Retrieval (C.D.R.) System Training, Bosch Corporation, 1/14/2008

AWARDS

Professional

- Trailways Transportation System: 2007 Outstanding Operational Achievement
- Loyola University, School of Business: 2007 Illinois Family Business of the Year Award Small Business Category (A), October 2007
- United States Chamber of Commerce: Blue Ribbon, Small Business Award, February 2008

Personal

- Energy Pioneer Award: Presented by the Secretary of Energy, U.S. Department of Energy, March 6,
- 1996 for continuing work in the field of Bio-mass fuels (Biodiesel) for the transportation industry
- Rising Star Award: Presented by Bus Ride Magazine, February, 1998
- Metro Magazine: Innovative Motorcoach Operator for 2006

PATENTS

- Driver Fatigue / Inattention Monitoring Device (small amplitude): 7,138,923 (11/21/06)
- Driver Fatigue / Inattention Monitoring Device (large amplitude): 7,427,924 (9/23/08)
- Backup Alarm System Using Smart Technology: 7,164,350 (1/16/07)

PUBLICATIONS

Ferrone, C.W., *Vehicle Diagnostics, The Other Approach*, S.A.E. Paper #902219, October, 1990.

S.A.E. SP-844 Commercial Vehicle Electronics, Diagnostics and Service Systems, October, 1990.

Ferrone, C.W., Technical Specification 166168170HCTV *Computerized Vehicle Diagnostics and Failure Analysis, Motorcoach and Transit Applications*, 1990.

Ferrone, C.W., Technical Specification 553OHORHE *Computerized Vehicle Diagnostics and Failure Analysis, Heavy Truck Applications*, 1990.

Ferrone, C.W., *The Feeding Habits of Diesel Engines, A Review of Alternate Fuels for the Fleet Operator*, The Bus Operator Magazine, August, 1991.

S.A.E. Paper #912666, November, 1991.

S.A.E. SP-891 Heavy Duty Truck Engine Design and Emissions, November, 1991.

Ferrone, C.W., *Air-Conditioners: An Overview of Their Operation; How to Extend Their Service Life*, The Bus Operator Magazine, November/December, 1991.

Ferrone, C.W., *Hand-Held Diagnostic Reader Tools: Their History, Uses and Future*, The Bus Operator Magazine, November/December, 1991.

Ferrone, C.W., *Air-Conditioning Refrigerant Recycling, A Review for the Fleet Operator*, The Bus Operator Magazine, January/February, 1992.

Ferrone, C.W., *Computer Based Diagnostic Systems*, The Bus Operator Magazine, January/February, 1992.

Ferrone, C.W., *Brakes - How They Work and How to Re-Manufacture Them*, The Bus Operator Magazine, May/June, 1992.

Ferrone, C.W., *Vehicle Diagnostics: The Mental Evaluation*, The Bus Operator Magazine, May/June, 1992.

Ferrone, C.W., *Brakes, The Legal Issues, A Review for the Fleet Operator*, The Bus Operator Magazine, July/August, 1992.

Ferrone, C.W., *Heavy-Duty Vehicle Powertrain Failure Analysis, the Total Approach*, A.S.M.E. Paper #92-WA/DE-3, November, 1992.

Ferrone, C.W., *The Sensitivity of Motor Fuel Transportation and Delivery to Truck Selection and Specifications*, S.A.E. Paper #922479, November, 1992.

Ferrone, C.W., *Complete Vehicle Remanufacture (CVR) - A Cost Effective Solution for the Fleet Operator*, S.A.E. Paper #922494, November, 1992.

Ferrone, C.W., *Global Vehicle Tracking and Computerized Vehicle Diagnostics: A Conceptual Discussion of a Future Integration*, S.A.E. Paper #922498, November, 1992.

The Bus Operator Magazine, September/October/November, 1992.

Ferrone, C.W., *Engine Oil Lubrication Technology*, The Bus Operator Magazine, January/February, 1993.

Ferrone, C.W., *Radius Rods; Their Function and Proper Maintenance*, The Bus Operator Magazine, March/April, 1993.

Ferrone, C.W., *Exhaust Emissions Analysis*, The Bus Operator Magazine, May/June, 1993.

Ferrone, C.W., *Diagnosing Remote Power Generation Sets Through Satellite Tracking*, S.A.E. Paper #932403, September, 1993.

Ferrone, C.W., King, B.D., *An Experimental Method for Determining Occupant Loading in Heavy Trucks and Equipment*, S.A.E. Paper #933049, November, 1993.

Ferrone, C.W., Vermet, D.A., *A Review of Powertrain Advancements in Bus and Coach Development for the Fleet Operator*, S.A.E. Paper #932961, November, 1993.

1994 S.A.E. Transactions - Journal of Commercial Vehicles.

NYPTA News, A Publication of the New York Public Transit Association, September, 1994.

Ferrone, C.W., *Maintenance Concerns of Extreme Mileage Buses*, The Bus Operator Magazine, July/August, 1993.

Ferrone, C.W., *Here It Comes: Low Sulphur Diesel Fuel*, The Bus Operator Magazine, September/October, 1993.

Ferrone, C.W., *Engine Brake, Jake Brake; Call it What You Want - Here's How it Works*, The Bus Operator Magazine, November/December, 1993.

Ferrone, C.W., Vermet, D.A., *A Review of Powertrain Advancements in Bus and Coach Development for the Fleet Operator*, The Bus Operator Magazine, January/February, 1994.

Ferrone, C.W., *Conspicuity: What it is, How to Improve it and What it Means to You*, The Bus Operator Magazine, March/April, 1994.

Ferrone, C.W., *The Trouble With Sway Bar Links*, The Bus Operator Magazine, March/April, 1994.

Ferrone, C.W., *Cooling System Maintenance and Heat Transfer Theory*, The Bus Operator Magazine, May/June, 1994.

Ferrone, C.W., *CFC Phaseout Critical, Immediate Problem*, The Bus Operator Magazine, July/August, 1994.

Ferrone, C.W., *R-134a, It Really Works*, The Bus Operator Magazine, September/October, 1994.

Ferrone, C.W., *A Proposal for Voluntary Usage of Reflective Tape on Motorcoaches*, prepared for the American Bus Association Safety Committee, October 3, 1994.

Ferrone, C.W., Vermet, D.A., *A Review of Natural Gas Engine Development for the Fleet Operator*, S.A.E. Paper #942312, November, 1994.

Alternative Fuel Developments and Overseas Design Influences on North American Bus Operations (SP-1058).

Heavy Duty Vehicles and Alternative Fuels: Choices in Future Transportation (SP-1060).

New York Public Transit Association News, December, 1994.

The Bus Operator Magazine, January/February/March, 1995.

Ferrone, C.W., Wallis, J., *A Review of Remanufactured Engine Technology for the Fleet Operator*, S.A.E. Paper #942315, November, 1994.

Alternative Fuels Developments and Overseas Design Influences on North American Bus Operations (SP-1058).

New York Public Transit Association News, December, 1994.

Ferrone, C.W., *A Review of the Automatic Transmission*, The Bus Operator Magazine, November/December, 1994.

Greyhound Lines, Inc. - Allison Automatic Transmission Instruction and Training Manual, 1998.

Ferrone, C.W., Vernet, D.A., *Detroit Diesel Corporation Series 92 In-Frame Maintenance Procedure*, February, 1995.

TrailGram, No. 1/95, The Trailways National Bus System, February, 1995.

Ferrone, C.W., *Transportation by Bus, A Radical Departure*, (NON-TECHNICAL), The Bus Operator Magazine, July/August/September, 1995.

Ferrone, C.W., *A Practical Guide to the Use of R-134a Refrigerant for In-Service Motorcoaches*, S.A.E. Paper #952609, November, 1995.

Ferrone, C.W., *The Practical Implementation of Reflective Tape on Motorcoaches for Improved Conspicuity*, S.A.E. Paper #952609, November, 1995.

Ferrone, C.W., *An Exploratory Study of the Use of BIODIESEL as an Alternate Fuel for Motorcoaches*, Submitted to the City of Chicago, Department of Environment, November, 1995.

Ferrone, C.W., Kopernik, D.K., *Air Brake System - Field Testing*, Triodyne Safety Bulletin, Vol.2, No. 3., November, 1995.

Standardized Motorcoach Mechanic Training Curriculum, Modules 7, 10, 11, Submitted to the U.S. Department of Transportation, Federal Highway Administration, September, 1995.

Module 7: Powertrain: Diesel Engines, Transmissions and Ancillaries.

Module 10: Air Brakes: Service and Parking Brakes, S-Cam and Wedge.

Module 11: Air Suspension: Components and Chassis Equipment Technical Editor for all modules 1 - 12.

Speeding Gets You Nowhere Fast, Contract Haulers Quarterly, Vol. 7, No. 41, p. 3, Insurance Management Services Corporation (IMC)/Landstar Risk Management Claim Services, Winter, 1996.

Ferrone, C.W., King, B.D., *Ride Evaluation - Heavy Trucks and Equipment*, Triodyne Safety Bulletin, Vol. 3, No. 2, April, 1996.

Ferrone, C.W., Sinkovits C., *The Runaway Diesel - External Fuel Ingestion*, Triodyne Safety Bulletin, Vol. 4, No. 3, September, 1996.

Ferrone, C.W., *Secrets of Shuttle Bus Maintenance Revealed*, Supplement to: Metro Magazine, July/August, 1996, (Bus Fleet Management Guide).

Ferrone, C.W., Littler, C.N., *Wheel Detachment - Causation Factors and Countermeasures*, American Bus Association: A.B.A. Safety Committee Bulletin, No. 1, October, 1996.

Ferrone, C.W., Case Study: Project Engineer, *Hazardous Materials Incident Prevention Manual*, Instructional Video: Triodyne Inc., U.S. Department of Transportation, Federal Highway Administration, Office of Motor Carriers, June, 1996.

Ferrone, C.W., *Weighing the Alternatives for a Fuel of the Future*, School Bus Fleet Magazine, October/November, 1996.

Ferrone, C.W., Contributing Author, Insurance Management Services Corporation (IMC)/Landstar Risk Management Claim Services, October, 1996.

Ferrone, C.W., Littler, C.N., *Heavy Vehicle Braking: The Nation's No. 1 Out of Service Item*, American Bus Association, A.B.A. Safety Committee Bulletin, No. 2, April, 1997.

Ferrone, C.W., *The Practical Implementation of Biodiesel Used as an Alternate Fuel for In-Service Motorcoaches*, S.A.E. Paper 973201, November, 1997.

Ferrone, C.W., Kopernik, D.K., *Heavy Truck Wheel Separation: Failure Modes and Classifications*, Triodyne Safety Bulletin, Vol. 13, No. 3, December, 1997.

Ferrone, C.W., *Designing the Perfect Garage*, (Part 1), Metro Magazine, May, 1998.

Ferrone, C.W., *Designing the Perfect Garage*, (Part 2), Metro Magazine, June, 1998.

Ferrone, C.W., *A Field Evaluation of the S-1 Pedestrian Guard: Transit and Shuttle Bus Applications*, S.A.E. Paper 982775, November, 1998.

Ferrone, C.W., *Parking....It's Not for Everyone*, Landstar Risk Management Service, Inc., Landstar Trucking, December, 1998.

Ferrone, C.W., Goebelbecker, J.M., *Electronic Control Module - The Flight Recorder of the Heavy Truck*, Triodyne Safety Bulletin, Vol. 8, No. 2, November, 1998.

Public Works, February, 1999.

Ferrone, C.W., *Article on Speeding*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, November, 1998.

Ferrone, C.W., *Collision Avoidance Devices*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, January, 1999.

Ferrone, C.W., Web Page, *Keeping Focused*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, January, 1999.

Ferrone, C.W., Web Page, *Cargo Theft/Low Clearance*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, February, 1999.

Ferrone, C.W., Speech, *Cargo Theft/Low Clearance*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, February, 1999.

Ferrone, C.W., Article, *Cargo Theft/Low Clearance*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, February, 1999.

Ferrone, C.W., Web Page, *Managing Construction Zones*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 1999.

Ferrone, C.W., Speech, *Managing Construction Zones*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 1999.

Ferrone, C.W., Article, *Managing Construction Zones*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 1999.

Ferrone, C.W., Web Page, *How To Be Passed/Passing Safely*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, April, 1999.

Ferrone, C.W., Speech, *How To Be Passed/Passing Safely*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, April, 1999.

Ferrone, C.W., Article, *How To Be Passed/Passing Safely*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, April, 1999.

Ferrone, C.W., Web Page, *Maintaining Speed*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, May, 1999.

Ferrone, C.W., Speech, *Maintaining Speed*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, May, 1999.

Ferrone, C.W., Article, *Maintaining Speed*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, May, 1999.

Ferrone, C.W., Web Page, *Safe Backing*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, June, 1999.

Ferrone, C.W., Speech, *Safe Backing*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, June, 1999.

Ferrone, C.W., Article, *Safe Backing*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, June, 1999.

Ferrone, C.W., Web Page, *Seat Belt Usage*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, July, 1999.

Ferrone, C.W., Speech, *Seat Belt Usage*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, July, 1999.

Ferrone, C.W., Article, *Seat Belt Usage*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, July, 1999.

Ferrone, C.W., Web Page, *School Bus Safety*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, August, 1999.

Ferrone, C.W., Speech, *School Bus Safety*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, August, 1999.

Ferrone, C.W., Article, *School Bus Safety*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, August, 1999.

Ferrone, C.W., Web Page, *Managing Road Rage*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, September, 1999.

Ferrone, C.W., Speech, *Managing Road Rage*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, September, 1999.

Ferrone, C.W., Article, *Managing Road Rage*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, September, 1999.

Ferrone, C.W., Web Page, *Skid Control/Hydroplaning*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, October, 1999.

Ferrone, C.W., Speech, *Skid Control/Hydroplaning*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, October, 1999.

Ferrone, C.W., Article, *Skid Control/Hydroplaning*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, October, 1999.

Ferrone, C.W., Web Page, *Follow at a Safe Distance*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, November, 1999.

Ferrone, C.W., Speech, *Follow at a Safe Distance*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, November, 1999.

Ferrone, C.W., Article, *Follow at a Safe Distance*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, November, 1999.

Ferrone, C.W., Web Page, *Remote Communications*,
Landstar Risk Management Claim Services, Inc., Landstar Trucking, December, 1999.

Ferrone, C.W., Speech, *Remote Communications*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, December, 1999.

Ferrone, C.W., Article, *Remote Communications*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, December, 1999.

Ferrone, C.W., *Mirror Recommendations*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 1999.

Ferrone, C.W., *Riders Judge Your Vehicle by its Cover...Paint it Well*, (Part 1),
 Metro Magazine, September/October, 1999.

Ferrone, C.W., *Panel Corrosion, Prevention and Repairs*, (Part 2),
 Metro Magazine, November/December, 1999.

Goebelbecker, J.M., **Ferrone, C.W.**, *Utilizing Electronic Control Module Data in Accident Reconstruction*,
 Triodyne Safety Brief, Vol. 16, No. 2, February, 2000.

Reprinted: A.T.L.A. Education's Litigating Trucking Cases Seminar Compilation, October 22-23, 2004.

Goebelbecker, J.M., **Ferrone, C.W.**, *Utilizing Electronic Control Module Data in Accident Reconstruction*,
 S.A.E. Paper 2000-01-0466, March, 2000.

Accident Reconstruction: Analysis, Simulation and Visualization (SP-1491).

Ferrone, C.W., Web Page, *Leading Vehicle Accident Types*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, January, 2000.

Ferrone, C.W., Article, *Leading Vehicle Accident Types*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, January, 2000.

Ferrone, C.W., Web Page, *Decision Driving Concepts*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, February, 2000.

Ferrone, C.W., Speech, *Decision Driving Concepts*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, February, 2000.

Ferrone, C.W., Article, *Decision Driving Concepts*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, February, 2000.

Ferrone, C.W., Web Page, *Stopping Distances/Rear End Collisions*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 2000.

Ferrone, C.W., Speech, *Stopping Distances/Rear End Collisions*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 2000.

Ferrone, C.W., Article, *Stopping Distances/Rear End Collisions*,
 Landstar Risk Management Claim Services, Inc., Landstar Trucking, March, 2000.

Ferrone, C.W., Web Page, *Preventing Sideswipe Accidents and Lane Change Accidents*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, April, 2000.

Ferrone, C.W., Speech, *Preventing Sideswipe Accidents and Lane Change Accidents*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, April, 2000.

Ferrone, C.W., Article, *Preventing Sideswipe Accidents and Lane Change Accidents*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, April, 2000.

Ferrone, C.W., Web Page, *Construction Zone Safety*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, May, 2000.

Ferrone, C.W., Speech, *Construction Zone Safety*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, May, 2000.

Ferrone, C.W., Article, *Construction Zone Safety*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, May, 2000.

Ferrone, C.W., Web Page, *Mirror Systems/Adjusting Mirrors for Maximum Visibility*, Landstar Risk Management Claim Services, Inc., Landstar Trucking, June, 2000.

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- October 24, 2005** Preventing Motorcoach Fires, Operator Session, Ontario Motorcoach Association 2005 Annual Marketplace & Conference, Toronto, Ontario.
- November 10, 2005** Black Box Technology, Georgia Trial Lawyers Association, Southeastern Motor Carrier Liability Institute, Atlanta, Georgia.
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- March 17, 2008** Fire Investigations, Why Motorcoaches May Burn, A Mechanical Analysis, Presented to The Federal Motor Carrier Safety Administration (FMCSA) Webinar Internet Broadcast.
- March 18, 2008** Fire Investigations, Why Motorcoaches May Burn, A Mechanical Analysis, Presented to Prevost Car; Ste-Claire, Quebec, Canada.
- March 18, 2008** Driver Fatigue / Inattention Monitoring Device, Presented to Prevost Car; Ste-Claire, Quebec, Canada.
- April 8, 2008** Operator Session, Moderator, Ontario Transportation Exposition, Toronto, Ontario, Canada.
- June 2, 2008** Heavy Truck Accident Reconstruction, Johnson & Bell Ltd, Chicago, Il.
- September 17, 2008** Maintenance Drives Safety, BusCon 2008, Navy Pier, Chicago, Il.
- November 4, 2008** Heavy Truck and Bus Brake Testing: The development and use of a Forensic Tool, ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts.
- November 4, 2008** Visibility Analysis of Vehicles and Mobile Equipment, A Design and Forensic Method, ASME International Mechanical Engineering Congress and Exposition, Boston, Massachusetts.
- March 5 & 6, 2009** Fire Investigations, Why Motorcoaches May Burn, A Mechanical Analysis, Presented to The Commercial Vehicle Safety Alliance C.V.S.A. Bus Safety Summit, Washington, D.C.
- November 18, 2009** Fire Cause and Origin of Heavy Vehicles, Mechanical and Forensic Methods, ASME International Mechanical Engineering Congress and Exposition, Lake Buena Vista Florida.
- November 18, 2009** Riding Mower Injury Prevention, An Alternative Design for No-Mow-In-Reverse, ASME International Mechanical Engineering Congress and Exposition, Lake Buena Vista Florida.
- December 14, 2009** Safety Seminar, PACE; Suburban Bus System, Regional Transportation System Illinois.
- March 31, 2010** Tire Safety Seminar, Automobile Physical Damage Group, Insurance Services Organization, West Palm Beach, Florida.
- July, 20 – 21, 2010** Accident Reconstruction and ECM download usage. Full scale testing, skid to stop study and analysis. VEOLIA Transportation, 2010 Safety Managers' Academy, Las Vegas, NV.
- November 16, 2010** Heavy Equipment Controls Guarding to Prevent Unintended Contact and Inadvertent Machine Motion (A Mechanical and Human Factors Analysis), ASME International Mechanical Engineering Congress and Exposition, Vancouver British Columbia Canada.
- May 17, 2010** Electronic engine data and photographic evidence collection, the prevention of spoliation. VEOLIA Transportation, 2011 Safety Managers' Academy, Las Vegas, Nevada.

- October 21, 2011** Commercial Transportation Losses, Accident Reconstruction. Product Liability and Environmental Law Seminar, McGivney and Kluger, P.C., New York, N.Y.
- November 8, 2011** Fire Investigations, Why Motorcoaches May Burn, A Mechanical Analysis, Presented to Motor Coach Canada, Ontario Motor Coach Association, Annual Conference, Windsor, Ontario, Canada.

TECHNICAL ACHIEVEMENTS

- Developed test procedure for Crash Fire Rescue vehicles dry chemical flow testing for NFPA acceptance. Oshkosh Truck, 1986.
- Developed positive latching arm and hold down mechanism for articulated engine hood assembly prototype. Oshkosh Truck, 1986.
- Developed and conducted cooling tests for manufacturers acceptance, Cummins LTA-10 Low Flow engine. First installation in an off-highway vehicle with an automatic transmission. Oshkosh Truck, 1986.
- Developed cooling test procedures for use with automatic transmissions for manufacturers acceptance. Oshkosh Truck, 1986.
- Developed guidelines for vehicle design based on computerized studies of vehicle parameters related to the sensitivity of Vehicle Cone Index. Oshkosh Truck, 1987.
- Developed test procedure for initial central tire inflation on P-19 Crash Fire Rescue vehicle. Oshkosh Truck, 1987.
- Developed enhancement process for computerized vehicle gradeability studies related to the “pump and roll” performance of the P-23 Crash Fire Rescue vehicle for NFPA acceptance. Oshkosh Truck, 1987.
- Developed the theory of “dual power” rated engines for electronically controlled diesels related to the P-23 Crash Fire Rescue vehicle to be incorporated with Rockford power dividers. Oshkosh Truck, 1987.
- Developed test procedure for water flow test for NFPA acceptance of T-2500 Crash Fire Rescue vehicle. Oshkosh Truck, 1987.
- Developed computerized design procedures for Mechanical Computer Aided Engineering (MCAE) Software related to the design of piping systems in high-rise buildings and structures in conjunction with Skidmore Owings and Merrill for public sales and distribution through IBM worldwide, 1987, 1988, 1989.
- Awarded ten U.S. Copyrights for computer programs related to computerized vehicle diagnostics and failure analysis using artificial intelligence along with associated documentation, 1989, 1990.
- Program Coordinator/Design Engineer, Aircraft Child Restraint System Development. Designed and provided logistical support for the development of a child restraint seat system for commercial aircraft under SBIR PHS-91-2, Environmental Health and Injury Control Department, National Institute of Health, Triodyne Inc., 1991.
- Developed National Mechanics Examination for the American Bus Association Golden Wrench Competition, 1994.

- Developed Field Retrofit Design and Installation of Refrigerant Conversion for In-Service Motorcoaches, Converting from R-500 to R-12 to R-134a (Commercial Vehicle Applications), July, 1994.
- Developed field installation program for in-service motorcoaches, Life Extension for Detroit Diesel 6V-92, 8V-92 heavy duty diesel engines, July, 1996. Adopted by Detroit Diesel Corporation. (Part #23514770).
- Project Engineer, City of Chicago, Department of Environment. "Field Testing of Biodiesel used in Private Commercial Vehicle Applications," September/November, 1995, August, 1996.
- Project Engineer, Public Transportation Safety (P.T.S.). "Field Testing of the S-1 Gard for Heavy Transit Buses," February 1998 - February 2000.
- Construction Manager, Above Ground Swimming Pool - Safety Concepts; Anti-Dive Barrier, June, 2002, (Proposed in Triodyne Safety Brief, Vol. 23, No. 1, March, 2003).
- Designed/developed hydraulic disconnect - driver barrier for hydraulic tract-mounted excavator, July, 2003.
- Designed/developed (electronic) driver fatigue / inattention monitoring device for heavy truck applications, December, 2003. (2 Patents Granted)
- Project Engineer, Zonar Systems. "Field Testing of Electronic Vehicle Inspection Reports (EVIR) System (pre/post trip inspections) for Commercial Vehicles," April-June, 2004.
- Designed/developed backup alarm system using smart technology with reverse motion detection and alarm status change for heavy truck applications, May, 2004. (Patent Granted)
- Designed/developed neutral start system for gas powered/hydraulic manlift, July, 2005.
- Designed/developed "No Mow in Reverse" system for gas powered riding lawn tractor, (mechanical (hand shift) transmission) August, 2005.
- Designed/developed retractable pull/push handle with integrated safety system for manlift, January 2006.
- Designed/developed Youth (U-10) Soccer Goal, August 2006. (Patent Application Submitted # 11/938530)
- Assist CalOSHA with modifying current regulations regarding diesel engine runaway prevention: Protecting California Refineries and Oil and Gas Facilities from Explosions by expanding current Regulation, Chapter 15. Petroleum Safety Orders-Refining, Transportation and Handling Article 21. Gas Compressors and Engines.
- Designed / Developed Proto-type battery installation in Mack Truck Model CX-613, batteries within frame rails for heavy truck applications 2008.
- Designed / Developed Seat Switch System to reduce / eliminate by-passing and disconnection for gas powered hydrostatic zero turn radius lawn mower 2009.
- Designed / Developed Pressure Relief System for Truck/Tractor product off-load systems 2010.
- Designed/developed "No Mow in Reverse" system for diesel powered riding lawn tractor, (hydrostatic (pedal control) transmission, mechanical blade engagement) January 2011.
- Designed/developed "No Mow in Reverse" system for gas powered riding lawn tractor, (hydrostatic (pedal control) transmission, electro-mechanical blade engagement) March 2011.

- Designed/developed “parking brake cable securement and routing device for Ford pickup truck July/August 2011.

PRODUCT ENDORSEMENTS: (TECHNICAL) BY INVITATION

- “Whatever it Takes” Advertising Campaign, 1993, CITGO Petroleum Corporation. [Product: Citguard 500; XHD 40 Motor Oil]
- “3M Scotchlite Reflective Sheeting Increases Company’s Visibility - Literally,” 3M Image Graphics, 1994. [Product: 3M Reflective Scotchlite Sheeting]
- Haldex, Automatic Brake Adjusters, Advertising Campaign, 2008 [Product: Automatic Brake Adjusters]

ENGINEERING MECHANICS

This definition is provided to clarify the objective of an engineering mechanics degree which unfortunately is often confused with the practice of mechanics in maintenance-type occupations.

Engineering mechanics concentrates on mechanical engineering principles and methods along with an in-depth study of the basic principles of physics, mathematics and chemistry, in conjunction with fundamental theoretical, applied and experimental engineering methods.