



WARREN

THE WARREN GROUP, INC. FORENSIC ENGINEERS & CONSULTANTS
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Roger E. Davis, P.E., CFEI, CVFI

Engineer: Mechanical

Cranes and Aerial Lifts

Failure Analysis

Water and Sewer Systems

Industrial Accident Reconstruction

Machine Safeguarding

Products Liability

Vehicle Mechanical Failure

EDUCATION

- 1975** **Masters of Business Administration**
University of South Carolina
- 1968** **Bachelor of Science in Mechanical Engineering**
University of South Carolina
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EXPERIENCE

- 1998 TO PRESENT** The Warren Group, Inc., Irmo, South Carolina. Senior Consulting Engineer performing specialized consulting and training related to property loss analysis, reconstruction of accidents and the analysis of designs with regard to safety.
- Safety Design Analysis (both personal injury and property damage)**
Industrial accident reconstruction, machine safeguarding, machine controls, OSHA compliance, standards and codes compliance, fire and explosion analysis, maintenance, products liability, product failures, failure analysis, consumer products, vehicle mechanical failures.
- Fire & Explosion Analysis**
Determine origin and cause, cause of fire spread, cause of the injury or property damage and establish responsibility for fires involving agricultural, heavy equipment and industrial machinery.
- Training**
Fire and life safety, standards and codes, hazard identification, risk assessment, engineering design for safety and products liability.
- 1995 to 1998** Founding Partner, WDS Development, Lexington, South Carolina.
Development of residential properties.
- 1987 TO 1995** Laidlaw Environmental Services, Inc., Columbia, South Carolina. Vice President, Engineering and Regulatory Affairs. Largest hazardous/industrial waste management firm in North America. Responsible for a professional staff of 150 employees involved in Engineering, Health and Safety and Regulatory compliance for all North American operations (over 100 sites).

EXPERIENCE, Continued

1987 TO 1995

(Continued)

- Played major role in due diligence investigations of targeted acquisitions, including a multi-site company purchased for more than \$230 million.
- Developed and marketed OSHA/DOT/RCRA internal training programs to outside clients, including such firms as Dow-Jones, Lockheed, City of Los Angeles and others.
- Served on steering committee for business process improvement (re-engineering).
- Responsible for major capital construction, including successful major modifications to the largest hazardous waste incinerator in North America, under very tight regulatory controls, schedule and budget.
- Dramatic improvements realized in safety performance over a four-year period. Auto liability costs reduced by 83% (despite increased mileage), Worker's Compensation claims per million hours worked reduced by 50%.
- Oversight of medical surveillance program.
- Instituted internal and external compliance audit programs improving performance and reducing liability. Company cited by EI Digest, a major trade publication, for environmental excellence at 11 major facilities in 1995.
- Developed and promoted positions on legislation and regulations, initiated legal challenges, as necessary.

1983 TO 1987

Laidlaw Environmental Services, Inc., Pinewood, South Carolina. Facility Manager. Overall manager of site with Profit and Loss responsibility, involving transportation, treatment and disposal of wastes, production and marketing of absorbent clays (cat litter), and major civil construction activities.

- Developed the conceptual design for major components of the most advanced landfill in the United States.
- Internalized construction costs of landfill cells to realize savings over 30%.
- Instituted significant improvements in worker protection, site security, site appearance and regulatory compliance.
- Personally handled majority of community and media relations for a site inherently objectionable to much of the public.

EXPERIENCE, Continued

- 1981 TO 1983** South Carolina Department of Health and Environmental Control (DHEC), Columbia, South Carolina. Assistant Deputy Commissioner for Environmental Quality Control. Responsible for all environmental programs and special assignments.
- 1971 TO 1981** South Carolina Department of Health and Environmental Control (DHEC), Columbia, South Carolina. Engineer/Manager of Water Supply Division; District Director, Central Midlands Health District; Director, Domestic Wastewater Division. Responsibilities included roles in both management and field inspections for certification of utilities construction (water/sewer/landfills). As a staff engineer, reviewed and approved plans and specifications for public water systems, swimming pools, and bathing beaches." Later, as a District Engineer, was responsible for operation of water systems, sewer systems, swimming pools, and bathing beaches in the 4- county midlands area.
- 1969 TO 1971** The Torrington Company, Clinton, South Carolina. Manufacturing Engineer.
- 1968 TO 1969** Charleston Naval Shipyard, Charleston, South Carolina. Fluid Power Engineer
- 1968 TO 1974** South Carolina Air National Guard. Non-destructive Inspection Technician
- 1966 TO 1968** Cummins Carolina Diesel, Columbia, South Carolina. Diesel Mechanic

PROFESSIONAL ORGANIZATIONS

National Association of Fire Investigators (NAFI)

American Society of Mechanical Engineers (ASME)

Past Affiliations

Chairman of Building Committee, Lexington Medical Center Board, Lexington, South Carolina

ASM International

Vice President, Board Member of Environmental Technology Council, Washington D.C.

Advisory Committee, Environmental Training Center, Central Carolina Community College, Sumter, South Carolina

Young Engineer of the Year, Columbia Chapter, South Carolina Society of Professional Engineers

Advisory Committee, State Water Plan (Water Resources Commission)

Participant on Governor's Task Force on National Resources and Environment

Water and Pollution Control Association of South Carolina

South Carolina Industrial Waste Management Association

South Carolina Chamber of Commerce Technical Committee

REGISTRATION

Professional Engineer in South Carolina #04958
Professional Engineer in North Carolina #031145
Professional Engineer in Alabama #28018
Professional Engineer in Georgia # 032335
Professional Engineer in Mississippi # 19646
National Council of Examiners for Engineering and Surveying #20291
Certified Fire and Explosion Investigator #7055-2637
Certified Vehicle Fire Investigator #7055-2637V

CONTINUING EDUCATION

March 29 - 31 1999

1999 Property Loss Research Bureau Claims Conference, New Orleans, Louisiana.

- Advanced Property Subrogation
- Preparing for a Deposition
- Managing Major Commercial Building Losses
- Boiler versus Open Peril Coverage and Loss Adjusting
- Legal Issues in Arson Defense

March 22-25, 2000

2000 National Advanced Fire, Arson and Explosion Investigation Science and Technology Program, Eastern Kentucky University, Richmond, Kentucky.

- Electrical Fire Causes
- Explosion Investigation
- Fire Scene Analysis
- Computer Fire Modeling

June 26, 2003

“Machine Guarding Technician Course,” The National Association of Safety Professionals, On-Line Curriculum.

October 7, 2003

“Root Cause Failure Analysis,” ASME Seminar, Columbia, South Carolina.

October 9, 2003

“Law School for Experts,” SEAK, Inc. Seminar, Columbia, South Carolina.

June 29 – July 2, 2004

“Crane Safety,” Georgia Institute of Technology, Distance Learning and Professional Education Center, Atlanta, Georgia.

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CONTINUING EDUCATION, (Continued)

September 16, 2004

“Report Writing,” SEAK, Inc., Columbia, South Carolina.

September 27-30, 2004

Vehicle Fire, Arson & Explosion Investigation Science & Technology Seminar, Eastern Kentucky University, Richmond, Kentucky.

November 28, 2006

“Building Pathology: Roofs,” RedVector.com, Online Course.

December 22, 2006

“Building Pathology: An Introduction,” RedVector.com, Online Course.

December 26, 2006

“Requirements for Electrical Installations,” RedVector.com, Online Course.

December 27, 2006

RedVector.com, Online Course

- Lighting and Appliances
- Over Current Protection & Grounding

December 7, 2007

“Introduction to Auto Cad,” presented by Central Carolina Technical College, Division of Continuing Education & Work Force Development, Sumter, North Carolina.

April 28, 2008

“Corporate Forensic Engineering Training”, SEAK, Inc. Seminar, Irmo, South Carolina.

December 24, 2008

Discountpdh.com, Online Course

- Safeguarding Equipment and Protecting Workers from Amputations.

November 16, 2009

“Moisture Problems in Buildings,” American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., The South Carolina Chapter.

November 24, 2009

“Introduction to Control and Instrumentation,” SunCam, Online Course.

December 15, 2009

“An Analysis of the Station Nightclub Fire,” CFITrainer.net, Online Course.

March 24, 2010

“Arc Mapping Basics,” CFITrainer.net, Online Course.

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CONTINUING EDUCATION, (Continued)

June 29, 2010

“Process Piping Part 3- Non-Metallic Piping Systems,” PDHengineer.com, Online Course.

June 30, 2010

“Fluid Power Part 1 Hydraulic Principles,” PDHengineer.com, Online Course.

December 28, 2010

“Forensic Engineering Part B,” SunCam, Inc., Online Course.

December 29, 2010

“Control of Hazardous Energy (Lockout/Tagout),” Eduwhere, Online Course.

December 27, 2011

“Fire and Explosion Investigations: Utilizing NFPA 1033 and 921,” CFITrainer.net, Online Course.

December 27, 2011

“Preparation for the Marine Fire Scene,” CFITrainer.net, Online Course.

December 27, 2011

“Finite Element Analysis,” RedVector.com, Online Course.

March 8, 2012

“Manufactured Fireplace Fires: Recognition, Causes & Potential Litigation,” online webinar presented by NASP.

June 28, 2012

“Liquid Piping System Process,” PDHcentral.com, Online Course.

September 28, 2012

“Abusive Behavior – Professionalism In and Out of the Courtroom,” NC Association of Defense Attorneys 2012 Fall Seminar, Greensboro, NC.

July 3, 2013

“HVAC Design - Fundamentals,” SunCam.com, Online Course.

December 18, 2013

“NFPA 70 - 2014 National Electrical Code Essentials,” presented by National Fire Protection Association (NFPA), Online Seminar.

December 27, 2013

“Compressed Air Systems,” PDHonline.org, Inc., Online Course.

December 30, 2013

“Automotive Suspension Systems,” PDHengineer.com, Online Course.

CONTINUING EDUCATION, (Continued)

June 30, 2014

“Compressed Air Systems in Industrial Plants,” RedVector.com, Online Course.

June 30, 2014

“International Building Code & More: Plumbing and Mechanical Requirements (RV-10406),” RedVector.com, Online Course.

June 29, 2014

“Design & Construction Claims,” RedVector.com, Online Course.

June 27, 2014

“Safety: Machine Operation,” RedVector.com, Online Course.

August 18, 2014

CAL-EMA Safety Assessment Program, 5-Year Damage Assessment Certification, presented by the CAL-EMA National Database in Irmo, South Carolina.

July 13, 2015

“Fall Protection 101 Training” presented by Kent Earle of Capital Safety, Irmo, South Carolina.

August 6, 2015

Training in “Warren’s Written Fall Protection Program & Policies,” by Steve Hunt, CPCU, ARM, Fall Protection Manager, Irmo, South Carolina.

“Fall Protection - 29 CFR 1926, Subpart M (1926.500- 1926.503) Training,” Course designed by: Prosafe Solutions, Inc., conducted by Steve Hunt, CPCU, ARM, Fall Protection Manager, Irmo, South Carolina.

- Part I – Guardrails & Personal Fall Arrest Systems
- Part II – Horizontal Lifelines, Safety Nets, Roofing Procedures & Training

November 8-11, 2015

National Association of Subrogation Professionals, 2015 Annual Conference, Reno, Nevada.

- Manufactured Fireplaces & Chimney Fires: Expectations for Fire Investigations and Guidance for Subrogation Success
- Expert Challenges and the Revised NFPA 1033
- The Investigation of Electrical Overloads
- Marine Fire Investigations
- Beware Thor’s Hammer: Hidden Hazards in Non-Metallic Cable Installations
- Grain Storage Tank Failures: Design, Erection, Collapse and Damage Issues
- State-Specific Subrogation Coast to Coast
- Workers’ Compensation Subrogation Arising Out of Accidents in the Restaurant and Food Industries

CONTINUING EDUCATION, (Continued)

January 22, 2016

“FARO Focus Training,” 3D Scanner Training by Dustin Forensics, Irmo, South Carolina.

December 7, 2017

“What Every Engineer Should Know About Structures – Part B – Statics Applications,” SunCam, Continuing Education Course, an Online Course.

December 14, 2017

“What Every Engineer Should Know About Structures – Part A – Statics Fundamentals,” SunCam, Continuing Education Course, an Online Course.

December 21, 2017

“What Every Engineer Should Know About Structures – Part C – Axial Strength of Materials,” SunCam, Continuing Education Course, an Online Course.

December 28, 2017

“What Every Engineer Should Know About Structures – Part D – Bending Strength of Materials,” SunCam, Continuing Education Course, an Online Course.

COURSES, SEMINARS AND LECTURES PRESENTED

March 1984

Speech to Conference on Textile Wastewater Treatment and Air Pollution Control, Office of Professional Development of the College of Commerce and Industry, Clemson University.

October 1 & 2, 1984

Speech on “Environmental Management” to South Carolina Society of Professional Engineers.

September 20, 1986

Speech to Board, South Carolina Medical Association, Hilton Head Island, South Carolina.

March 31, 1988

Speech on “Current Environmental Issues” presented to Environmental Law Society, University of South Carolina School of Law.

1988

Speech on “Treatment Methods for Waste Management” presented to the School of Public Health, University of South Carolina.

October 4, 1989

Speech presented to South Atlantic Section of Air and Waste Management Association, Virginia Beach, Virginia.

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COURSES, SEMINARS AND LECTURES PRESENTED, (Cont.)

October 19, 1989

Speech on “Government Involvement in Industry” presented to the Carolinas Chapter of National Solid Waste Management Association, Charlotte, North Carolina.

January 16, 1990

Seminar presenter at the “Solid Waste and Sludge Workshop,” Davis and Floyd Engineers, Greenwood South Carolina.

April 25, 1990

Speech on “Regulation of Hazardous Waste Management” presented to Fiber Producer Conference, Greenville, South Carolina, through Clemson College of Engineering Continuing Education.

June 6, 1990

Technical presentation, “Secure Landfills” presented at Haz Mat International 1990 Conference, Atlantic City, New Jersey.

April 24, 1991

Speech on “Current Environmental Issues in the Legal/Political Arena” presented to the Paralegal Association, Columbia, South Carolina.

September 27, 1991

Case Study Presentation, “Environmental Risk Assessment and Risk Communication Seminar,” presented to the South Carolina Chamber of Commerce Technical Committee.

June 25, 1991

Presentation to The Ninth Carolina Regional Conference on Issues in Environmental Law and Technology sponsored by the Greenville, South Carolina Chamber of Commerce.

June 1994

Presentation to the Safety Council of Nebraska, Inc., at the Ninth Annual Environmental Management Conference.

October 8, 2004

Presentation to the South Carolina Association of Legal Investigators, “Who Else Owns this Loss and other Investigative Techniques,” Spartanburg, South Carolina.

September 28, 2005

Course presented to insurance adjusters and industry, “Engineering Aspects of Residential & Commercial Losses,” at the Investigate, Mitigate and Subrogate Seminar, Charlotte, North Carolina.

November 29, 2006

Presentation to insurance adjusters and industry, “Homeowner’s Insurance Losses,” at Kemper Insurance, Charlotte, North Carolina.

COURSES, SEMINARS AND LECTURES PRESENTED, (Cont.)

November 3, 2008

Presentation to Claims Management Association of SC, “Water, Water Everywhere – Evaluating Water Damage Losses,” Charleston, South Carolina.

“Water Damage” presented at the Large Loss and Complex Claims Investigations Seminar, The Warren Group, Irmo, South Carolina.

- August 27, 2009
- October 22, 2009
- March 18, 2010
- May 20, 2010

March 31, 2011

“Site Work Defect – Utility Piping Case Studies” presented at the Accident/Occurrence, Faulty Workmanship or “fuzzy” ... has Crossman clarified anything? Course, Columbia Conference Center, Columbia, SC.

March 31, 2011

“Plumbing” presented at the Accident/Occurrence, Faulty Workmanship or “fuzzy”...has Crossman clarified anything? Course, Columbia Conference Center, Columbia, SC.

Three-hour seminar, approved by the North Carolina Department of Insurance, Continuing Education Agency Services Division, entitled, “Investigating Property and Liability Claims: Determining Who Else Owns This Loss?”

March 28, 2011	Travelers Insurance, Charlotte, North Carolina
October 4, 2011	Montgomery Mutual Insurance, Charlotte, North Carolina
June 13, 2012	EMC Insurance, Charlotte, North Carolina

November 10, 2015

“Who Else Owns This Workers’ Compensation Loss? Looking Deeper When the Facts First Appear to be Bad” presented at the National Association of Subrogation Professionals, Eureka! Subro Education - 2015 Annual Conference.

PUBLICATIONS

“A Simple Property Damage Claim?” The Analyst Newsletter, October, 1998.

“Don’t Blow Your Pipes: Failures Associated with Pressurized CPVC Water Piping,” The Analyst Newsletter, April 2001.

“The Year of the Crane,” The Warren Group 2003 Year in Review, March 2004.