

Litigation Support Specialist, Expert Witness and Forensic Consultant

Short Biography

David Collins
TEAM IX

Experience: Aerospace, Commercial, Amusement Ride and Device Mekatronic Engineering and Management Consulting

Principal of firm established to provide design, development, commissioning, operational and maintenance training and operational consulting on a wide range of amusement rides and devices. The firm also provides independent investigation and expert testimony using 51 years of professional experience in mekatronic engineering, safety engineering, inspection and testing of aircraft, space and amusement ride systems. Primarily involved in specifying and verifying system performance, determining defects, analyzing failures, discovering hazards, confirming intended use, misuse, abuse and/or safety violations in amusement rides or devices, industrial equipment and their components and accessories.

Recognized for successfully completing litigation support, expert witness and forensic consulting projects for a balanced base of defense attorneys, plaintiff's attorneys and criminal investigators. The primary areas of expertise and the specific subjects of relevant cases are described in the accompanying list of examples. These include, but are not limited to:

AMUSEMENT RIDES: Based on experience with Disney Imagineering, Universal Studios Hollywood (USH), amusement park and carnival rides, I have been able to provide litigation support and expert witness services covering all technical and operational aspects of all levels of amusement rides. I have developed inspection checklists for over 200 amusement rides. I have established functional baselines for major, one-of-a-kind park rides, coasters, thrill rides, family rides and kiddie rides that can be used as references in litigation support.

MOTION SIMULATORS: I am listed inventor on three US and three European patents on the use of Motion Simulators in the amusement industry. I designed and built the first, successful, large cabin, entertainment, motion simulator system. The system was replicated by Disney for their Star Tours simulators. Based on this expertise I was qualified as a litigation support specialist in a patent infringement suit related to entertainment motion simulators. I was also qualified as an expert witness in a related patent malpractice case.

SPECIAL SIMULATION: I am currently involved in the development of codes and standards compliance and safety assessment of "Live-Fire" training simulation props and systems for a state of the art Fire Department Training Evolution facility. This work is based on my extensive experience I the operation and maintenance of "Live-Fire" effects used in the Amusement park industry.

PASSENGER SAFETY EQUIPMENT: As a litigation support specialist I have successfully tested, evaluated and conducted fault-tolerance analysis of safety restraints and systems on amusement rides and devices for a number of attorneys. I recently filed a U.S. patent application on a specialized safety restraint system based on my extensive experience in the field of passenger restraint systems.

PERFORMANCE TESTING: My performance testing of amusement rides and devices has been accomplished through the use of tri-axial accelerometers and related sensor systems. Most recently I have expanded the scope of performance testing through the use of fully instrumented Hybrid III Crash Test Dummies that have been tailored to provide information in the dynamic performance of amusement rides and devices. I have been engaged as a forensic investigator, litigation support specialist and expert witness providing performance testing and analysis for several cases and a current case.

SAFETY TESTING: Modern amusement rides and devices have complex, real-time ride control systems. I have applied my aircraft and space related experience to fault-tolerance testing of amusement ride and device ride control systems. I have applied fault-tolerance testing to verify the safety of the control systems for major amusement rides. I pioneered this type of fault-tolerance testing methodology to the verification of the control systems for the original Bally's MGM section of the Las Vegas Monorail system.

ACCIDENT INVESTIGATION: I have been called on to conduct amusement ride and device accident investigations related to injuries and fatalities involving passengers on amusement rides and devices. I was called in by the Augusta, Georgia District Attorney to investigate a ride injury where there was alleged tampering with an amusement ride. I have been called in to conduct a forensic investigation of several amusement rides that were involved in fatal accidents. In those cases I provided litigation support, expert witness services and forensic investigation services.

CODES & STANDARDS COMPLIANCE: The U.S., European and Asian amusement industries have developed a wide range of codes and standards for amusement rides and devices. There are ancillary codes and standards that applied by Authorities Having Jurisdiction (AHJ). I have incorporated codes and standards compliance assessments as part of my litigation support assignments.

RISK ASSESSMENT: Risk assessment and risk mitigation is a critical element of designing an amusement ride or device. I have conducted risk assessment reviews as part of my support of litigation and expert witness services.

More details regarding these Experience Categories available upon request.

Recognized for successfully completing projects for clients in, but not limited to, the United States, Canada, Great Britain, Switzerland, Greece, Turkey, Egypt, Israel, Tunisia, Korea and, Japan. The primary areas of expertise and the specific subjects of relevant cases are described in the accompanying list of examples. These include, but are not limited to:

AERONAUTICS: Long Range Secure Communications Systems, Electronic Countermeasures Systems, Decoy & Deception Systems, Color HUD Camera Systems, Autonomous Aerial Refueling for Unmanned Air Vehicles, Technology Maturation Planning for UAV-AAR, Infra Red Camera Application Assessment

SPACE: Flight Sequencer Controller for Ranger Spacecraft, Identification and Correction of Conductive Crystal Growth in Space Electronics, Controller for Gas Chromatograph

SOLAR ENERGY: Development and Manufacture of High Efficiency Solar-Thermal Collectors, Development and Manufacture of Pre-Packaged Commercial Solar-Thermal Systems, Energy Conservation Studies, Application of Passive and Active Solar Technology at the Community Level

LASERS: Development and Manufacture of ND YAG Laser Marking Systems, Development and Manufacture of Ruby Welder / Driller Systems, Development of very High Power Precision Drilling System

AMUSEMENT INDUSTRY:

PARKS & ATTRACTIONS: Design & Commissioning of Experience Music Project Artist's Journey, Design, Commissioning and Operational Start-Up of the Largest Indoor Theme Park in Europe, Development Planning and Feasibility Study for Major Resort / Water Park Complex, Design & Commissioning of the 48 Scene, 80 Animated Figure, 155 Car Dark Ride Show for the Telecom Pavilion at EXPO'93 (Korea), Development Design Consulting for a Theme Park (Tunisia)

THEATERS: EXPO 85, Japan, 500 seat, 70mm, 6 channel audio, auto show control, EXPO 86, Vancouver, 500 seat, 70mm, 6 channel. C.D. audio, auto show control, EXPO 86, Vancouver, 300 seat, 70mm, 6 channel. C.D. audio, auto show control, Managed development of Showscan electronic film projectors, Developed and operated the TurboVenture Simulator Theater and Corporate Events Venue (Scotland)

SIMULATORS: CINEMA RIDE, 3D Simulators, Project Management, Owner's Representative and Installation Coordination, Operational Training and Inspection, EXPO 86, Vancouver, 40 passenger submersible simulator, auto show control, sensory stimulation systems, CN TOWER, Toronto, dual 40 passenger flight simulators, auto show control, compact 70mm electronic projector, ancillary video displays (2 years prior to Disney Star Tours), Managed development of Showscan moving seat theater systems, EPCOT, Living Seas Pavilion, Development of the "HYDROLATORS"

RIDES & ATTRACTIONS: Disney EPCOT, Horizons Pavilion, Ride Vehicle systems integration and start-up, Disney EPCOT, Living Seas Pavilion, Ride and Control System development, USH, E.T.'s Adventure, Ride System evaluation and show start-up

coordination, USH, Manage maintenance and upgrade of all shows and attractions, USH, Developed budget tracking system for ride/show upgrades and operation.

CODES & STANDARDS COMPLIANCE: The U.S., European and Asian amusement industries have developed a wide range of codes and standards for amusement rides and devices. There are ancillary codes and standards that applied by Authorities Having Jurisdiction (AHJ). I have provided codes and standards compliance assessments and mitigation strategies for a world-wide list of amusement ride manufacturers. These assessments have also been provided as part of “owner’s-representative” services.

RISK ASSESSMENT: Risk assessment and risk mitigation is a critical element of designing an amusement ride or device. I have produced risk assessment and mitigation studies and reports for amusement ride manufacturers and operators. The risk assessment studies related to rider containment, rider reach envelope, identification and elimination of single-point failure modes and control system risks.

BUSINESS DEVELOPMENT / MANAGEMENT: Managed a Commercial Laser Company & took the company from a loss to break-even, Owned and Managed SOLARGENICS a Designer and Manufacturer of Solar-Thermal Systems, Owner and Manager of TEAM IX an Amusement Industry Consulting and Management Company, Management Consulting for the Largest Theme Park in Europe, Provided Management Performance Assessment related to a Legal Matter, Developed Business Plans for New Ventures

More details regarding these Experience Categories available upon request.

PROFESSIONAL SOCIETIES-ORGANIZATIONS

Long-term member of relevant professional societies involved in promulgation of product safety standards and codes. I contributed to development of relevant safety standards and codes through participation in Task-Groups, Working-Groups and Committees of these professional societies. I have maintained proficiency by review of literature and journals as well as participating in related seminars and conferences.

IEEE Institute of Electrical and Electronic Engineers, Senior Member

ASTM American Society for Testing and Materials International, Member
Committee, Amusement Rides and Devices + Task and Working Groups
Committee, Forensic Sciences + Task Groups

NFPA National Fire Protection Association, Member

ASHRAE American Society for Heating, Refrigeration and Air Conditioning Engineers

NAARSO National Association of Amusement Ride Safety Officials
Committee, Education

Committee, Certification

IAAPA International Association of Amusement Parks and Attractions, Member

EAA Experimental Aircraft Association

CREDENTIALS & CERTIFICATIONS:

NAARSO National Association of Amusement Ride Safety Inspectors
Certified Amusement Ride Safety Inspector Level III (Senior) with Instructor and
Supervisor endorsements (CN 139)

Clark County, Nevada (Las Vegas)
Listed Quality Assurance & Testing Agency under ICC Section 1702 Special Inspections

AWS American Welding Society
Certified Level II Visual Weld Inspector

State of California
Qualified Safety Inspector (C-6266)

ADIPS Independent Inspection Body (041512-0) U.K. (inactive)

PATENTS:

4,209,007 Solar Heating System & Control Devices Therefore

4,752,065 Motion Picture Amusement Ride

4,789,376 Amusement Ride w/ plurality of moving seat rows

4,874,162 Motion Picture Amusement Ride

6,042,382 Sustained G Force Centripetal Acceleration Apparatus and Method
(Developed the prior art for this technology)

Filing Date 4/3/2007 Patent Application –
Specialized Restraint Systems for Amusement Rides

PAPERS & PRESENTATIONS:

International Association of Amusement Parks and Attractions, Fun EXPO 2006
Presentation - Due Diligence in Hiring Practices

Invited Paper –American Institute of Aeronautics & Astronautics, Space 2004

High Reliability Flight Sequencer–Controller for Precision Insertion of Ranger Class
Spacecraft for Lunar Orbit and Landing

Department of Energy, Division of Solar Energy
Paper - Solar Heating of Commercial Greenhouses

British Kinematograph Sound and Television Society (U.K.)
Society of Motion Picture and Television Engineers (U.S.)
Paper/Presentation – Electronic Intermediate Production Suite

More details regarding Papers and Presentations available upon request.

TRAINING CLASS DEVELOPMENT

I have been developing and presenting amusement ride and device training classes for over 15 years. These classes have been taught at schools put on by National Association of Amusement Ride Safety Officials, Northwestern Showmen’s Association, International Codes Council EDUCODE and Technical Standards and Safety Authority (Province of Ontario, Canada). Many of the classes are approved by the State of California and NAARSO for “self-directed” continuing education hours. The classes are approved for CEU’s issued by Darden College of Old Dominion University. These classes include but are not limited to:

HYDRAULICS: Basic Hydraulics, Hydraulic Components, Advanced Hydraulics, Hydraulics for Ride Inspectors, Hydraulics Troubleshooting

PNEUMATICS: Basic Pneumatics, Advanced Pneumatics

ELECTRICAL: Basic Electrical, Advanced Electrical, Arc Flash Safety

ELECTRONIC CONTROLS: Electronic Control Systems, Block Controls, Electronic Motor Controls

CODES & STANDARDS: International Codes Harmonization, Codes and Standards Changes, ASTM World Standards

SAFETY & EMERGENCIES: Identifying and Correcting At-Risk Behavior, Behavior Identification Issues, Emergency Response, Evacuation Training, Incident Investigation Tools

TRAINING: Train the Trainer, Developing a Training Program, Maintenance Training, Operations Training

More details regarding Training Class Development available upon request.

EDUCATION:

UNDERGRADUATE: Electrical Engineering, University of Delaware
Business Administration, UCLA Extension

GRADUATE: Business Administration, UCLA Extension
Contemporary Business Management, UCLA
Faster Cycle Time Management, Cal.Tech.
Taguchi Method (QA) Cal Poly Pomona

ANCILLARY EDUCATION:

NAARSO Safety Seminars (400+CEU's), Old Dominion U.

Northwestern Showmen's Safety Seminars (34+CEU's)

Technical Standards Safety Authority, Province of Ontario, Canada

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