
Brian D. King, P.E.

Brian D. King is the president of Recreation Engineering, Inc. He holds a degree in Mechanical Engineering from Illinois Institute of Technology and Professional Engineer's Licenses in Illinois, Nevada and Florida. His consulting and research interests include instrumentation, electronics, mechanical design, amusement rides, recreation equipment and general machine safety. He founded REI with experience in operation and maintenance of amusement rides and devices. Mr. King has testified to various states' amusement ride safety boards and is an active member in the ASTM International Committee which is responsible for writing and maintaining internationally recognized amusement ride standards. In fact, Mr. King is the Chairman of the ASTM International F-24 committee for Amusement Rides and Devices. He is a board member of Amusement Industry Manufacturers and Suppliers International. He is the Chairman of the AIMS Certification Committee. Mr. King has written standard operating and maintenance procedures for the amusement ride industry. He has participated in on-site amusement ride safety and maintenance inspections for both private organizations and governmental agencies.

Mr. King is listed by Clark County, Nevada and the City of Las Vegas as an Amusement Ride Quality Assurance Inspector. His Professional Mechanical Engineering license allows Recreation Engineering, Inc. to be the only approved amusement ride quality assurance inspection agency for both Clark County and the City of Las Vegas. He is a Level III (Senior) Certified Amusement Ride Safety Inspector by the National Association of Amusement Ride Safety Officials. Mr. King is a Missouri State Authorized Amusement Ride Inspector and is a Florida State Authorized Amusement Devices and Amusement Attractions Inspector. He is an AIMS Certified Maintenance Technician (Level II) and an AIMS Certified Operations Technician (Level II). He is a former Certified Welding Inspector by the American Welding Society. He has prepared and presented curriculum at annual AIMS amusement ride safety seminars and was presented the 2000 AIMS Safety Seminar Harold Chance Award for best presentation and the John Allen Award for Most Outstanding Contribution to Amusement Ride Safety in The Park Industry, AIMS International 2007. He was also honored by receiving the Dr. Richard H. Brown Memorial Exceptional Service Award from ASTM International, F-24 Committee for Amusement Rides and Devices, 2007

Mr. King has been consulted to render opinions in amusement ride and recreational equipment litigation as well as on general mechanical engineering issues. Mr. King has been a member of the American Society of Mechanical Engineers, American Society of Safety Engineers, International Association of Amusement Parks and Attractions, the American Society for Testing and Materials International and Amusement Industry Manufacturers and Suppliers International.

Mr. King is a proud member of the Boy Scouts of America and has served his local BSA troop as Cub Master and Assistant Scoutmaster.



Brian D. King, P.E.

Professional Mechanical Engineer
Certified Amusement Ride Safety Inspector, Level III (Senior)
Certified Maintenance Technician, Level II
Certified Operations Technician, Level II

Recreation Engineering, Inc
300 N. Lynx Creek Rd.
Prescott, AZ 86303
(928) 778-6211
(928) 778-6212 Fax
King@RecreationEngineering.com

Education: Illinois Institute of Technology, Chicago, Illinois
Bachelor of Science, Mechanical Engineering, 1987

Continuing Education:
Discrete Devices and Semiconductors
Digital Electronics
Microprocessors and Microcomputers
AIMS International Safety Seminar - 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009
NAARSO Safety Seminar – 1995
American Welding Society – Welding Inspection Technology, 2001
American Welding Society – D1.1 Code Clinic, 2001
American Welding Society – Visual Weld Inspection Workshop, 2001

Professional Organizations, Certifications and Registration:

- American Society of Mechanical Engineers (1985-1994)
- American Society of Safety Engineers (1985-1994)
- American Welding Society, Certified Welding Inspector (2001-2007)
- International Association of Amusement Parks and Attractions
- Amusement Industry Manufacturers & Suppliers International, LTD. President (2008-2009)
Charter Member; Board of Directors.
Safety Seminar Planning Committee
Chairman of Certification Committee
Certified Maintenance Technician, Level II
Certified Operations Technician, Level II
- American Society for Testing and Materials, F-24 Committee for Standards on Amusement Rides and Devices, Voting Member
Vice Chairman of Maintenance & Inspections Subcommittee, (2000-2001)
Task Group Chairman on Biodynamic Testing, (1998-2001)
F-24 Committee Chairman, (2002-2008)
F-24 Committee Past Chairman (2008-)
- National Association of Amusement Ride Safety Officials, Certified Amusement Ride Safety Inspector, Level III (Senior) (1999-)
- Licensed Professional Engineer, Illinois (1991-), Florida (1994-) and Nevada (1994-)
- Annual Inspector #167-0301, State of Florida
- Authorized Amusement Ride Inspector, State of Missouri
- Qualified Safety Inspector, DOSH Amusement Rides Unit, State of California
- Listed in Clark County, Nevada for the following services:
 - Amusement Code Special Cases
- PADI Open Water Diver Certification No. 9410092072

Experience:

1994 to Present

Recreation Engineering, Inc.

(formerly Triodyne Recreation Engineering, Inc.)

President / Mechanical Engineer

- Provide inspection services to the amusement industry.
- Provide engineering and safety services to the amusement and recreation industries.
- Assist in code and standard compliance and certification in various jurisdictions.
- Safety audits of amusement rides and amusement centers.
- Litigation support.
- Rider position acceleration measurement on amusement rides.
- Dynamic testing of Amusement and Recreational Equipment
- Accident and incident investigation and documentation.

For detailed information, visit www.RecreationEngineering.com

1983 to 1994

Triodyne, Inc.

Consulting Engineers and Scientists

Director of Laboratory Sciences/Mechanical Engineer

- Provide technical support during on-site and laboratory examinations of equipment, artifacts, etc., for litigation.
- Safety analyses of mechanical and electrical devices and systems.
- Provide expert engineering testimony.
- Historical code and standard research and analysis.
- Prepare technical reports.
- Design courtroom exhibits.
- Write computer programs in BASIC and FORTRAN languages for data analysis and presentation.
- Design and fabricate radio remote controlled and automated systems for static and dynamic testing and accident reconstruction.
- Design numerous hydraulic, pneumatic, mechanical and electrical systems for various motion and/or force controlled test situations.
- Design and fabricate transducers.
- Responsible for forensic video-taping; set-up, and editing.
- Set-up for forensic displays.
- Conduct test programs on products and proposed safety devices.
- Adaptation of digital data acquisition and control systems for test programs.
- Author training programs for OSHA compliance officers.
- Professor's assistant for Safety for Design of Machines at Illinois Institute of Technology.
- Conducted research and test projects including:
 - Head impact attenuation of playground surfaces.
 - Accelerometry for measurement of forces acting on amusement ride passengers.
 - Industrial lift truck stability and roll over.
 - Alternative roll over protection systems.
 - Pneumatic hand tool vibration.
 - Stability of commercial literature display.
 - Static and dynamic characteristics of television carts.
 - Low temperature effects on snow thrower controls.
 - Dynamics of variable height office chairs.
 - Operator response to head-on impact in lift truck.
 - Cooling of commercial deep fat fryer.
 - Hindrance of seat belts on evacuation.
 - Comparison of structural integrity of industrial shelving.
 - Fender/pedestrian interaction on mobile gantry cranes.
 - Failure modes of roller bearings subjected to compression.
 - Comparison of ropes on industrial cable pullers.
 - Bridging of grain on grating.
 - Guard opening vs. distance to hazard.
 - Fatigue fractures in conveyor systems.

Ocular motions of pedestrians.
Release torques for ski bindings.
Explosiveness of propellants in aerosol cans.
Flow through hypodermic needles.

1988 to 1990

Precisioneering, Inc.

Technical Maintenance and Safety Consulting
President

- Conduct inspections and safety analyses of amusement rides.
- Perform integral maintenance activities on Aerial Tramways during annual inspections and certification to ANSI B77.1 consensus standard.
- Write and review operation manuals and standard operating procedures for amusement rides.
- Provide engineering services for initial erection of amusement rides.
- Furnish technical documentation of services performed.
- Provide amusement ride safety inspection services.

1977 to 1983

North Pole Corporation

Santa's Village Amusement Park
Grounds Maintenance Manager

- Supervised, trained and scheduled 15 to 19 employees.
- Assisted engineer in construction and annual inspection of cable chair lift.
- Designed and redesigned mechanical and electrical systems for increased efficiency and safety.
- Assisted mechanics staff in daily inspection, annual erection and emergency repairs of 35 amusement rides.

Professional Activities:

- Testify to Illinois State Amusement Park Safety Board and California State Assembly on proposed amusement statutes.
- Attend various society meetings concerning amusement ride safety.
- Assist ASTM Committee in formulation of standards.
- Instructor AIMS International Safety Seminar; "Manufacturers' Written Documents" - January 1995.
- Instructor AIMS International Safety Seminar; "Attending to Riders Under Special Circumstances" - January 1996.
- Instructor AIMS International Safety Seminar; "Math and the Amusement Ride" - January 1997.
- Instructor AIMS International Safety Seminar; "Plan for Safety" - January 1998.
- Instructor AIMS International Safety Seminar; "Safety by Design" - January 1998.
- Instructor AIMS International Safety Seminar; "Biodynamic Accelerometry" - January 1999.
- Instructor AIMS International Safety Seminar; "River Rapids Rides Round Table" - January 2000
- Instructor AIMS International Safety Seminar; "Attending to Riders with Special Needs" - January 2000.
- Instructor AIMS International Safety Seminar; "Dynamic Ride Forces" - January 2000.
- Instructor AIMS International Safety Seminar, "Calamity's Points of View" - January 2001
- Instructor AIMS International Safety Seminar, "Math and the Amusement Ride" - January 2002
- Instructor AIMS International Safety Seminar, "Incident Investigation" - January 2002
- Instructor AIMS International Safety Seminar, "Systems Troubleshooting" - January 2002

- Instructor AIMS International Safety Seminar, "Dynamic Ride Forces - Introduction"
– January 2003
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2003
- Instructor AIMS International Safety Seminar, "Dynamic Ride Forces - Advanced"
– January 2003
- Instructor AIMS International Safety Seminar, "Dynamic Ride Forces - Introduction"
– January 2004
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2004
- Instructor AIMS International Safety Seminar, "Dynamic Ride Forces - Advanced"
– January 2004
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2005
- Instructor AIMS International Safety Seminar, "Introduction to ASTM Standards"
– January 2005
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2006
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2007
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2008
- Instructor AIMS International Safety Seminar, "Incident Investigation"
– January 2009
- Instructor AIMS International Safety Seminar, "Water Slide Inspection"
– January 2009
- Invited Lecturer; University of Notre Dame Department of
Aerospace and Mechanical Engineering; ASME Student Section;
"The Role of Mechanical Engineers in the Amusement Industry" -
February 1995
- AIMS International 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2008, 2009
Seminar Planning Committee.
- AIMS Certification Committee, Chairman: Design Certification Program and Prepare
Maintenance and Operations Certification Exams
- IAAPA 1995 Maintenance Committee.

Publications:

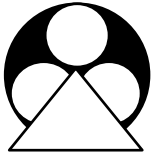
- Ferrone, Christopher W., and King, Brian D., "An Experimental
Method for Determining Occupant Loading in Heavy Trucks and
Equipment," SAE Technical Paper Series 933049. Presented at the
International Truck and Bus Meeting and Exposition of the SAE,
Detroit, MI, Nov. 1-4, 1993.

Honors:

- Who's Who in the Safety Profession, 1990
- Acknowledged in preparation of Manufacturing Engineering and
Technology text; Prof. Serope Kalpakjian
- Harold Chance Award for best presentation at 2000 AIMS Safety Seminar
- Dr. Richard H. Brown Memorial Exceptional Service Award from ASTM International
F-24 Committee for Amusement Rides and Devices, 2007
- John Allen Award for Most Outstanding Contribution to Amusement Ride Safety in
The Park Industry, AIMS International 2007

Personal:

- Date of Birth: December 4, 1960
- Married, 1 Daughter, 1 Son
- Boy Scouts of America - Wood Badge Adult Leader Training, 2008
- Boy Scouts of America – Assistant Scoutmaster, Troop 7007, 2007 to present



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RECREATION SAFETY AND ENGINEERING CONSULTANTS

BRIAN D. KING, P.E. / Professional Mechanical Engineer, IL, FL, NV; CMT II, COT II, NAARSO III, OSI

JEFFERY W. ABENDSHIEN / CWI, CPO, CMT II, COT II, NAARSO III, OSI, ASNT NDT Level III

JEFFREY A. BORBA / NAARSO III, CWI, CWE, CMT, COT, OSI

JAN A. KING / Director of Administrative Services

Mechanical Analysis and Design
Maintenance and Safety Audits
Mechanical Testing and Dynamic Analysis
Maintenance and Safety Program
Development
Manual Development
Incident Investigation

Writer's e-mail:
Info@RecreationEngineering.com

SERVICE FEE SCHEDULE

Effective 1/1/09

Principal Licensed Professional Engineers.....	\$250/Hour
Senior Licensed Professional Engineers	\$225/Hour
Level III Certified Amusement Ride Specialists	\$200/Hour
Level II Certified Amusement Ride Specialists	\$175/Hour
Licensed Engineering Interns	\$175/Hour
Project Engineers	\$150/Hour
Level I Certified Amusement Ride Specialists	\$150/Hour
Technicians	\$125/Hour

- Total fees include the sum of the hourly charges plus expenses.
- Large projects are quoted on a per-case basis.
- Expenses are billed at no more than 110% of actual.
- Projects are normally billed on a monthly basis.
- Past due accounts are assessed a 1.5% charge per month.