



RANDALL K. KING, Ph.D., P. E.

PROFESSIONAL SUMMARY:

Ph.D., Mechanical Engineering
Master of Engineering, Mechanical Engineering
Bachelor of Science, Mechanical Engineering
Licensed Professional Engineer

Primary Areas of Consultation-

Failure investigations of mechanical systems involved with oilfield equipment, industrial devices, automotive components, agricultural equipment, and consumer products, including pumps, compressors, high-pressure vessels, clutches, seals, bearings, forgings, castings, and gear trains.

Evaluations involving mechanical design issues, operation and maintenance questions, stress/deflection analysis, material failure, metal fatigue, lubrication, heat treat issues, and product liability concerns.

Products liability matters evaluating and testifying on issues such as design defects, manufacturing defects, unreasonably dangerous products, and safer alternative designs for plaintiff and defense clients, involving a variety of devices and equipment.

Patent cases, including infringement, validity, and inventorship analyses and testimony, for matters including court testimony, IPR's, and PGR's for a variety of devices and equipment.

Commercial vehicle accidents: Heavy truck collisions with issues related to the design or failure/operational condition of vehicle systems, such as brakes, steering, tires, suspensions, and safety equipment.

EDUCATION:

1985	Ph.D., Mechanical Engineering Oklahoma State University
1974	Master of Engineering, Mechanical Engineering Oklahoma State University
1972	Bachelor of Science, Mechanical Engineering Oklahoma State University
1992-1994	Master of Business Administration, 2 years of 3 year program Oklahoma State University

PROFESSIONAL EXPERIENCE:

2011 - present

King Professional Engineering, Inc., Dallas, Texas

Principal

Failure investigations of mechanical systems involved with oilfield equipment, industrial devices, automotive components, agricultural equipment, and consumer products, including pumps, compressors, high-pressure vessels, clutches, seals, bearings, forgings, castings, and gear trains.

Evaluations involving mechanical design issues, operation and maintenance questions, stress/deflection analysis, material failure, metal fatigue, lubrication, heat treat issues, and product liability concerns.

Products liability matters evaluating and testifying on issues such as design defects, manufacturing defects, unreasonably dangerous products, and safer alternative designs for plaintiff and defense clients, involving a variety of devices and equipment.

Patent cases, including infringement, validity, and inventorship analyses and testimony, for matters including court testimony, IPR's, and PGR's for a variety of devices and equipment.

Commercial vehicle accidents: Heavy truck collisions with issues related to the design or failure/operational condition of vehicle systems, such as brakes, steering, tires, suspensions, and safety equipment.

Testified at 11 trials and 58 depositions for state and federal courts, the US Patent Trial & Appeal Board, and the American Arbitration Association.

2002 - 2010

Bison Engineering, Inc., Kingwood, Texas

Consulting Engineer

Responsible for failure evaluations of mechanical systems, such as pumps, compressors, high-pressure vessels, clutches, seals, bearings, etc., involving mechanical design issues, stress/deflection analysis, material failure, metal fatigue, lubrication, molded plastic parts, heat treat issues, and product liability concerns. Analyses of oilfield, industrial, and agricultural equipment, automotive components, consumer products, and other mechanical devices.

Accident reconstruction of vehicle collisions: vehicle dynamics, heavy truck collisions, and failure/operational condition of vehicle systems, such as brakes, steering, tires, suspensions, and safety equipment.

1995 - 2002

NTN Technical Center, Ann Arbor, MI

Sr. Research Engineer

Developed innovative automotive components and oversaw validation testing for Big 3 automobile manufacturers:

- Alternator pulley with integral overrunning clutch

- Two-speed alternator drive with dual drive belts
- Tailored compliance outer race for tapered roller bearing
Conducted extensive failure analyses of mechanical components, such as clutches, sliding wear surfaces, and ball bearings. Designed and developed high-volume machined metal and injection-molded plastic parts, low-pressure seals, springs, and stampings. Awarded twelve US patents.

1984 - 1994

Halliburton Energy Services Duncan, OK

Research and Development Engineer

Developed large positive-displacement pumps for hydraulic fracturing of oil wells. Led design team for 1,500 HP, 15,000 psi triplex pump for sand slurry. Performed extensive failure analyses of pump components, such as high- pressure vessels and seals, journal (sleeve) and roller bearings, high-strength forgings, and castings. Conducted extensive linear and non-linear finite element stress and deflection analyses. Designed and developed pump fluid- ends and power ends, high-strength steel forgings, ductile iron castings, autofrettaged (prestressed) pressure vessels, and high-pressure seals. Awarded two US patents.

1989 - 1992

Private Consulting Services, Duncan, OK

Advised design and certification for high performance oilfield gate valves. Awarded one US patent.

1975 - 1984

Oklahoma State University, Stillwater, OK

Research Engineer

Led research projects at Fluid Power Research Center in fatigue, reliability, and noise control. Carried out noise and endurance testing of hydraulic gear and vane pumps and hydraulic accumulators. Conducted hydraulic filtration tests. Designed/built component test stands, acoustic impedance measurement device, and acoustic anechoic chamber.

Researched effect of temperature on liquid metal embrittlement of nickel alloys (dissertation topic).

1974 - 1975

The Boeing Company, Wichita, KS

Manufacturing R & D Engineer

Developed manufacturing processes for composites, plastics, and adhesive bonding. Designed reticulating machine for acoustic honeycomb sandwich material and investigated parameters for chemical milling of aluminum structural members.

1971-1978

U. S. Army

Oklahoma National Guard and California National Guard
Combat Engineer Company Commander – Captain

ADDITIONAL TRAINING:

MIT Summer Session - Tribology (40 hrs.)

SAE Professional Development - Lubrication, Friction, and Wear Elastohydrodynamic Lubrication
Product Liability and The Engineer

Detroit Diesel Corporation - DDEC Data Extraction and Analysis

U. S. Army Corps of Engineers- Engineer Officer Basic Course

Halliburton Energy Institute - Sour Gas Fundamentals

SAMPLE OF LITIGATION EXPERIENCE:

LSP Products Group, Inc. v. Oatley Co.

Case No. 3:19-cv-00642-M, USDC Northern District of Texas, Dallas Div.

Depositions: 12/29/2020 and 01/07/2021

Patent – Washing machine outlet box. Infringement and invalidity

Mayers v. RazorUSA, Inc.

Case No. 3:19-cv-812, USDC Middle District of Louisiana

Deposition: 11/11/2020

Electric scooter accident

Denis Cimaf, Inc. v. FECON, Inc.

Case No. 1:17-cv-00820-DRC, USDC Southern District of Ohio

Deposition 10/13/2020

Patent – Brush cutter infringement and invalidity

Omega Lex, Inc. v. Ward Manufacturing, Inc.

Case No. 1:18-01004-MN, USDC District of Delaware

Deposition 06/06/2019

Patent – Flexible tubing leak containment system. Infringement.

Blasters, Inc. v. Waterblasting, LLC

IPR2018-00504

Deposition 12/12/2018

Patent – High-pressure cleaning system. IPR

360Heroes, Inc. v. GoPro, Inc.

Case No: 17-1302-LPS CJB, USDC District of Delaware

Deposition 10/31/2018

Patent – 360° Camera mount. Claim construction

Tripp v. Richart Distributors, Inc.

Case No. 17-CV-0542, USDC Western District of Louisiana

Deposition 05/10/2018
Oilfield injection pump. Contract Dispute

Tennison v. Clark Equipment Co. d/b/a Bobcat Co.

Case No: 2015-05-0339, District court of Cherokee County, Texas
Deposition 04/26/2018
Skid-steer loader accident

Rice v. Lewis Energy Group

Case No: 01-16-0000-0683, American Tribunal of the American Arbitration Association
Deposition 08/15/2017
Pipe separation accident – Gas processing facility

Henneke v. Furmanite Corp.

(Retained by Southcross Energy)

Case No. DC-16-139, District Court of Duval County, Texas
Deposition 04/26/2017
Gas pipeline fatality accident – hot tap tool rupture

Sealant Systems Intl., Inc. v. TEK Global S.R.L.

Case No. 11-CV-774-PSG, USDC Northern District of California
Deposition 04/28/2016, Trial 03/09/2017
Patent – Tire repair system. Invalidity

A Better Tripp Moving & Storage Co. Inc. v. Navistar, Inc.

Case No. 2015-13319, District Court of Harris County, Texas
Deposition 02/25/2016
Truck engine failures

Carr v. Taylor Industries, LLC

Case No. 369-14-5162, District Court of Anderson County, Texas
Deposition 09/10/2015
Oilfield accident – Workover Rig

Guinn v. Ingersol-Rand Co.

Case No. CACE-13-019878-18, 17th Judicial Circuit Court, Broward County, Florida
Deposition 08/11/2015
Air pressure regulator rupture

Cavanaugh v. Premier Coil Solutions, Inc.

Case No. 2014-06589, District Court of Harris County, Texas
Deposition 04/22/2015
Oilfield Accident – Coiled tubing unit

Ritter v. Breaux

Case No. 2013-10704-A, 15th Judicial District Court, Acadia Parrish, Louisiana
Deposition 01/27/2015
Ag sprayer accident

Mud Buddy, LLC v. Gator Tail, LLC

Case No. 2:08-CV-0972-DN-PMW, USDC District of Utah
Deposition 09/12/2013
Patent – Mud motor for boat. Infringement & Invalidity

Schmitz v. Cowboys Dance Hall

Case No. 2010CI-05745, District Court of Bexar County, Texas
Trial 06/12/2013
CO2 piping failure

Mancil v. Integrated Equipment, Inc.

Case No. 11-0614, District Court of Harrison County, Texas
Deposition 05/01/2013
Oilfield suction dampener rupture

Sealant Systems Intl., Inc. v. TEK Global S.R. L.

Case No. 11-CV-774-PSG, USDC Northern District of California
Deposition 12/20/2012, Trial 04/15/2013
Patent – Tire repair system. Infringement & Invalidity

DeWolf v. Oceanic Ventures, Inc.

Case No. 201046416, District Court of Harris County
Deposition 03/21/2013
Dive equipment failure, fatality

Baggerly v. Cheers Pub, Inc.

Case No. 10-CV-2562, District Court of Galveston County, Texas
Deposition 07/31/2012
Bottle fracture

Omkar Group Seabrook LP v. Sun Coast Plumbing Co. Inc.

Case No. 2010-79436
Deposition 03/15/2012
Pipe joint failure

Hernandez v. Freeport Welding & Fabricating, Inc.

Case No. 52394, District of Brazoria County, Texas
Deposition 02/28/2012
Refinery vessel accident.

(other cases available upon request)

ENGINEERING REGISTRATION:

Licensed Professional Engineer (by examination) -
Oklahoma No. 15071
Texas No. 94387
Arkansas No. 13021

PUBLICATIONS:

“Alternator Pulley with Integral Overrunning Clutch for Reduction of Belt Noise”, SAE 1999-01-0643, 1999 SAE World Congress, Detroit, MI

9 papers for national journals and conferences

25+ papers in Basic Fluid Power Research Journal

PATENTS:

7,191,880	Over-Running Clutch Pulley with Increased Surface Microhardness (2007)
7,052,420	Over-Running Clutch Pulley with Coating Material (2006)
6,923,303	Over-Running Clutch Pulley with Clutch and Bearing Lubricant (2005)
6,761,656	Over-Running Clutch Pulley with Clutch Cartridge (2004)
6,691,846	Over-Running Clutch Pulley w/ Shortened Depth (2004)
6,637,570	ORP with Composite Sealing Member (2003)
6,394,248	Compression Spring Compliant One-Way Over-Running Pulley (2002)
6,394,247	Compliant One-Way Over-Running Clutch Pulley (2002)
6,183,368	One-Way Over-Running Flex Coupling (2001)
6,071,206	Two-Speed Traction Drive Pulley System (2000)
5,928,083	One-Way Over-Running Flex Coupling (2000)
5,827,143	Two-Belt Over-Running Clutch Pulley (1998)
5,362,215	Pump Cylinder Head with Integral Overpressure Protection and Non-Cyclicly Loaded Threads (1994)
5,143,348	Easy-Operating Gate Valve (1992)
5,073,096	Front Discharge Fluid End for Reciprocating Pump (1991)

Foreign patents awarded based on above U.S patents

PROFESSIONAL MEMBERSHIPS:

American Society of Mechanical Engineers

Society of Automotive Engineers

American Society for Metals