

2003 & 2013 US Patents



Michael ‘Troy’ Richardson

3688 South 890 East, Washington, Utah 84780

troy@ziplinedoctors.com

(435) 272-2389

**Leading Aerial Adventure Course Expert
Zipline Expert with Engineering Degree
& Zipline Patents 6,666,773 & 8,424,460**

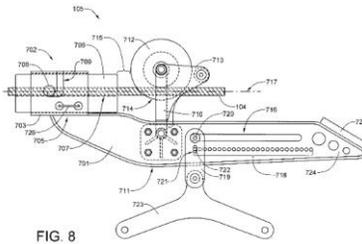
Bachelor Degree in Design, Engineering & Technology

Expert in PRCA/ANSI, ACCT & ASTM Standards

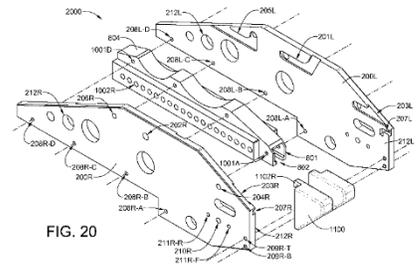
Research & Product Development in the Zipline Industry since 2000

Professional in all aspects of Zipline Safety and Standards

<http://www.google.com/patents/US6666773>



<http://www.google.com/patents/US8424460>



Michael ‘Troy’ Richardson is presently:

- Member of the Board of Directors with American National Standards Institute and Professional Ropes Course Association (ANSI/PRCA). The ANSI/PRCA has produced amusement park and Zipline industry standards since 2005. ANSI/PRCA standards are for Challenge/Ropes Courses, Canopy/Zipline Tours and Aerial Adventure Parks,
- He is a committee and voting member of the American Society of Testing and Materials (ASTM International). He is a ASTM International committee voting member with F24 (Amusement Rides and Devices). He has purchased over forty ASTM F24 standards and reviews them on a regular basis. When he sees areas of improvement in F24 standards he provides ASTM with letters for review to improve industry standards in Section F24. ASTM International is involved in worldwide

standards. ASTM International has been producing industry standards for over 100 years and has mandates in many standards,

- He is currently involved in balloting, writing and suggesting standard improvements for ANSI/PRCA and ASTM International,
- He is a current member of American National Standards Institute and Association for Challenge Course Technology (ANSI/ACCT),
- He is a member of the International Association of Amusement Parks and Attractions (IAAPA). His investigation and consultation practice keeps him up to date in industry and multi-state standards, regulations and inspections. He has practiced as an expert witness in Utah, California, Texas and Florida.

Mr. Richardson has 16 (sixteen years) experience building, reviewing and the design of Aerial Adventure and Amusement type devices. In 1993 he was building Roller Coasters in Springville, Utah. In 1995 started his own business AA Machining and Welding, Inc. He has written safety standards and manuals for his company and other companies who were recognized with the National Board of Boilers and Pressure Vessels as a repair company until 2014. He held joint reviews with both Utah and Arizona State Boiler inspectors and a National Board representative every three years from March of 1998 till he sold his company in 2014. He co-owned a fitness facility “The Gym” with 3000 square feet of fitness equipment and rooms for cycling, kick boxing and other exercise related activities. He owned and operated a commercial zip line in 2009 and completed engineering and writing policy and procedures manuals. For the past three years, he has been retained as the Leading Expert Witness in Aerial Adventure accidents and deaths. As an authority in this field, he has been retained and provided professional, accurate and qualified evidence and testimony in multiple cases. As an expert witness in multiple Zipline accidents and deaths, he has been deposed and testified in multiple accident cases for both the plaintiffs and defendants. He has assisted in investigation and testified in Workers’ Compensation fraud cases for the Utah Attorney General’s Office.

Mr. Richardson, consistently makes recommendations for improvements in safety guidelines, specifications and standards. His present work in the Zipline industry is as a consulting professional. He is also a product developer helping inventors with their projects. He has implemented fall protection and safety instruction with companies following current OSHA and ASTM Standards.

1-31-17

Mr. Richardson was published in 2016 with Attorney Rex Bush. This article found on HG.org [//www.hg.org/article.asp?id=40812](http://www.hg.org/article.asp?id=40812) is still a team effort publish the article in a mass periodical in as many media locations as possible. He has been is contracted with Scott D. Thorpe, Patent Attorney, in preparing client's patents and design work for initial submissions and resubmissions (office actions) to the United States Patent and Trademark Office (USPTO). Now, he is also preparing to take the USPTO Patent Bar Exam in 2017. He is currently enrolled in courses of advanced physics at Brigham Young University. Mr. Richardson has designed and wrote structural and safety manuals for the automatic and manual braking systems for trolleys. Since 1998 he has been writing and editing the National Board manuals with clients for their upcoming joint and site reviews.

Because of a considerable interest in engineering and mechanical design, Mr. Richardson, in 2000, enrolled in the Integrated Engineering Program (Structural, Mechanical and Electrical engineering), at Southern Utah University. He is and advanced physics perpetual student at Brigham Young University taking yearlong courses then advancing to the next course.

In 2000 Mr. Richardson designed the first automatic braking Zipline trolleys. He was contracted by Park City Mountain Resort (PCMR), in 2000, to develop a safe Zipline trolley with automatic braking system capable of speeds in excess of 60 miles per hour. During the course of contract, he designed, tested, and developed their 2002 Zipline Trolleys. He is the exclusive inventor and patent holder of both front and rear brake trolley technology. In 2002, Mr. Richardson's company built the towers and platforms for the first Zipline in the world with a 600-foot rise and over 4000-foot in length at PCMR in Park City, Utah.

EXPERIENCE SPECIFIC to THIS INQUIRY
--

Mr. Richardson has and is currently involved in the ASTM Standard review process. He is working with Jared Krupa and Katerina Koperna on voting for new wording and clarification of F2959. He has been writing business and employee safety manuals since 1998; presiding over structural safety design and design changes; directing the construction and installation of Zipline rides; providing final review of operation safety manuals and implementing safety standard operations for Zipline courses, aerial adventure parks, canopy tours; and high angle emergency evacuation from zip lines. He, at this time, is consulting in the design for a Zipline course in Southern Utah, including field evaluations and calculations, plus determining course layouts and

1-31-17

tower locations. Mr. Richardson has developed spreadsheets which are used to estimate speeds over the catenary curve of a Zipline ride assuring proper emergency braking and spring length. Mr. Richardson's own trolley patent design and braking systems are on the largest Zipline(s) in the world.

PERTINENT EXPERIENCE, but not limited to the following:

- Zip Line comprehensive and extensive experience spanning from 2000 to Present day
- In-depth, systematic knowledge in 'Building and Trouble Shooting' Zip Line installations
- Engineering Design degree with an ongoing on-line advanced physics at Brigham Young University
- 2000, testing and builder of the first built Zip Line Trolley to ride on 5000 feet of cable with 600 feet of fall
- 2000-2002, tested, built and installed the Park City Mountain Resort Zipline towers and trolleys
- 2008, designed a personal back-yard Zipline for a Leading Amusement Park Ride builder in Logan, Utah
- 2009, designed, constructed and operated a portable Zipline ride system for Five Mayors of Utah Cities
- 2009, engineered, erected and managed his own Zipline amusement ride in Spanish Fork, Utah
- 2010, consulted in construction, with calculation and analysis of Canada Zipline trolley and course
- 2014, became the Leading Zipline Expert witness with his Design Engineering Degree and US Patents
- 2016, became a voting member of American Society of Testing and Materials (ASTM)
- 2016, nominated for a position by the board of directors of Professional Ropers Course Association (PRCA)

LEGAL CONSULTATION and LITIGATION EXPERIENCE

Business Court Experience (1995 to present): report preparation, deposition and testimony in small claims cases. OSHA investigation and review in Utah and California. Recognized in court depositions as expert witness for Zip-line accident investigations.

Zipline Risk Management: investigation, report preparation, deposition and testimony on a variety of cases and regulatory actions in General Liability, OSHA fatality citations, Workers Compensation Review and Environmental Protection.

Conducted and prepared reports for cases in 'Fall' protection violations for ASTM and OSHA violations.

In prior Zipline expert witness cases, Mr. Richardson's conclusions and analyses were unarguable by parties under investigation.

During prior court cases, Mr. Richardson has worked with leading medical expert witnesses in the calculation of physical movements and impulses of an injury or death.

ORGANIZATIONAL EXPERIENCE

President/Owner of AA Machining & Welding, Inc., Encompass Engineering, LLC and now

Momentum Engineering, LLC of Utah

1-31-17

AA Machine ...1995-2014 to Encompass ... Feb. 2014 – 2016 / Momentum Engineering, LLC
Encompass Engineering, LLC was a full service Manufacturing, Mechanical and Design Engineering firm. We were a proto-typing mill. Producing products for self and clients. The main scope of practice includes patent design work. His involvement was developing and designing products for inventors to obtain a patent. A full service Manufacturing Machine and Welding shop for almost 20 years. This recent corporation implemented and achieved highly technical development standards, and industry standards to reduced product liability issues. This company has also written safety manuals to insure product and customer safety, and has developed Quality Control Manual's for clients wanting to become National Board Certified repair organizations and Harford Steam Boiler insurance compliant.

Changed the name of his Engineering company to **Momentum Engineering, LLC of Utah** due to name duplications with Encompass Engineering.

Expert Witness Associated Experience:

Fabian Law Group-Plaintiff

Contact: Doug Cannon

Salt Lake City, UT
June 2014-Sept 2014

Specialties: Developing Models in Solidworks for Expert Testimony and Depositions

- ✓ Expert Witness, Systems analysis for Utah accident
- ✓ Mechanical Engineering review
- ✓ Model Generation and study of Zipline speeds
- ✓ Providing Attorneys with my knowledge
- ✓ Zipline speed calculations and analysis
- ✓ Mr. Cannon stated Mr. Richardson is the Leading Expert in the Zipline Industry

Lowe Law Group-Plaintiff

Contact: Pete Lowe

Ogden, Utah
Sept 2014-Sept 2015

Specialties: Course review, velocity models and calculation

Deposition taken June 2015

- ✓ Design and Development review, Solid Works FEA and Flow analysis
- ✓ 3D Models and Excel Speed Calculations
- ✓ Reviews Exhibit's and Drafting Memorandums
- ✓ ASTM and ANSI Standards review
- ✓ Worked with Medical Expert Witness
- ✓ Deposed and settled out of court
- ✓ Worked with Attorneys to establish Deposition Questions for defendants
- ✓ Developed an Expert Report with run on Calculations

1-31-17

Nye, Peabody, Sterling, Hale & Miller-Plaintiff

Contact: Clark Sterling

Santa Barbra, CA

Jan-Oct 2015

Specialties: Zipline analysis, Reviews Exhibit's

- ✓ Course evaluation and Calculations for Utah accident
- ✓ Design and Exhibit review

Driggs, Bills & Day-Plaintiff

Contact: David Tullis

Salt Lake City, Utah

Oct 2015-July 2016

Specialties: OSHA Review of fall protection standards

- ✓ Design and Exhibit review for Utah accident
- ✓ Excel and Zipline analysis
- ✓ Providing Attorneys with my knowledge
- ✓ Zipline analysis
- ✓ OSHA and Employee Training

The Law Offices of Todd S. Stewart-Defendant

Contact: Todd Stewart

Jupiter, Florida

Jan-March 2016

Specialties: Review of fall protection and standards under investigation

Deposition taken March 5, 2016

- ✓ Exhibit review for Florida accident
- ✓ Preparing for Deposition
- ✓ Providing Attorneys with my knowledge
- ✓ Zipline analysis
- ✓ Trolley studies
- ✓ Device standards and meanings
- ✓ Settled after my deposition on Zipline terminology

Abraham, Watkins, Nichols, Sorrels, Agosto & Friend-Plaintiff

Contact: Scott Armstrong (713) 222-7211

Houston, Texas

July 2016-on Hold

Specialties: Review of Safety Manual and Regulatory Standards

- ✓ Exhibit review for Texas accident
- ✓ Preparing for Deposition questions for Attorney
- ✓ Educating Attorneys with Engineering practices and related Standards

1-31-17

- ✓ Zipline Adventure Course analysis
- ✓ Trolley and Braking studies
- ✓ Device standards and meanings
- ✓ Prusik knot and Rope Failures
- ✓ Expert Report development
- ✓ Standards of Designer
- ✓ State Adopted standards to be followed

Kramer Law Group-Plaintiff

West Jordan, Utah

Contact: Blake Johnson (801) 601-1229

Aug 2016-On hold

Specialties: Review of Policy and Procedures and ACCT Standards

- ✓ Exhibit review for Provo canyon accident
- ✓ Preparing for Deposition questions for Attorney
- ✓ Educating Attorneys with Engineering practices and related Standards
- ✓ Zipline Adventure Course analysis site visit
- ✓ ACCT and PRCA Platforms, Harness and Trolley Standards
- ✓ ASTM Standards F24 F2959, F1193, and F2291
- ✓ Site visit Oct 2016
- ✓ Preparing Expert Report Nov. 25th 2016

Aitken, Aitken & Cohn-Plaintiff

Santa Ana, California

Contact: Michael Penn and Rich Cohn (866) 434-1424

Aug 2016-Jan 2017

Specialties: Review of Equipment EAD Failures ANSI, ACCT and ASTM Standards

- ✓ Exhibit review for Big Bear accident at Snow Summit
- ✓ Review and evaluation of 10 depositions and 130 Exhibits
- ✓ Preparing Summary Report for questions at mediation
- ✓ Educating Attorneys with Engineering practices and related Standards
- ✓ ACCT and PRCA Braking and Emergency Arrest Systems
- ✓ ASTM Standards F24 F2959, F1193, and F2291
- ✓ Site visit 11.4.16
- ✓ Monthly case review to remain current
- ✓ Settled 2017

Fillmore Spencer-Plaintiff

Provo, Utah

Contact: Scott Card (801) 426-8200

Oct 2016-on hold

Specialties: Review of Equipment Failures PRCA and ACCT Standards

- ✓ Exhibit review for Provo Canyon accident
- ✓ Review and evaluation of Nine depositions and 40 Exhibits
- ✓ Preparing Expert Report for questions at mediation
- ✓ Educating Attorneys with Engineering practices and related Standards
- ✓ ACCT and PRCA platform and guide review
- ✓ Prepared Expert Report Nov. 11th 2016

Robbins & Curtin, PLLC-Plaintiff

Phoenix, Arizona

Contact: Joel Robbins (602) 400-4400

Dec 2016-Present

Specialties: Review of Equipment Failures ACCT Standards

- ✓ Exhibit review for Flagstaff accident
- ✓ Review and evaluation of 20 Exhibits
- ✓ Preparing Attorney with Deposition questions
- ✓ Educating Attorneys with Engineering practices and related Standards
- ✓ ACCT and PRCA platform and guide review

Abbott Law Firm-Plaintiff

Provo, Utah

Contact: Nelson Abbott **800.460.5760**

Dec 2016-Present

Specialties: Review of Equipment Failures PRCA and ACCT Standards

- ✓ Exhibit review for Amusement attraction accident
- ✓ Review and evaluation of three depositions and 20 Exhibits
- ✓ Educating Nelson with Engineering practices and related Standards
- ✓ IAAPA and ASTM F24 Standard review and deposition guidance

1-31-17

Parsons, Behle & Latimer-Plaintiff

Salt Lake City, Utah

Contact: Charles H. Thronson

Dec 2016-on hold

Specialties: Retained

- ✓ Exhibit review for Deer Creek Zipline accident

Adams and Davis-Plaintiff

Salt Lake City, Utah

Contact: Sam Adams

Jan 2017- Present

Specialties: Retained

- ✓ Exhibit review for Sundance Ski Resort Zipline death