

Curriculum Vitae of Zipline Expert

MICHAEL "TROY" RICHARDSON

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SYNOPSIS

Michael "Troy" Richardson has over 30 years developing prototypes for Aerospace, Amusement Rides, Medical Implants, and Energy Saving Devices. In 1995 and after over a decade of developing various products, Mr. Richardson started AA Machine & Welding, Inc., and now he is the Owner of Momentum Engineering, LLC.

He has developed products for 2003; many of the products he created are the United States and International Patents. Mr. Richardson is an Engineer, Master Machinist, National Board-Certified Welder, studying to take the United States Patent Bar Exam. He has over seven patents, with the first issuing in 2003.

For over five years, Mr. Richardson has offered his engineering knowledge and understanding to vote and or suggestions in several of the amusement ride and device standards, including the American Society for Testing and Materials, including (ASTM) F2959. The F2959 Aerial Adventure Course and Zipline standard is for those designing, installing, operating, maintaining, and inspecting ziplines. Mr. Richardson owned, managed, and was a trainer at his Zipline Tour. He is a sub-group member of ASTM F24.61 Aerial Adventure Courses (AAC) Task Group F2959, a standard practice for Aerial Adventure Courses & Ziplines. Mr. Richardson is a Certified Headrush Technologies zipSTOP trainer and installer. He has three U.S. Patents for aerial adventure park safety devices. Qualified Instructor 3rd Party Trainer Aerial Adventure Parks, Challenge Courses, Canopy Tours, and Ziplines. He has over 100 industry standards from ACCT, ASME, ASTM, PRCA, and IATP to assist his client's needs and assure that standards are followed in his cases.

His expert services include audits, inspections, engineering design, modeling, simulations, animations, and prototypes to prepare declarations that convey his opinions concisely. Mr. Richardson opines on human factors, operations, inspection & training failures, trampoline parks, challenge courses, ziplines, & product liability. He has 100's of standards from; the American Society of Mechanical Engineers, the International Association of Trampoline Parks, the Association for Challenge Course Technology, ASTM F24 & F15, and the PRCA.

Mr. Richardson's Expert Witness practice has accelerated to nearly 50 cases in the last five years. His experience, patents, and education elevated Mr. Richardson's capabilities. He has provided additional evidence and testimony for accidents located in Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Iowa, Maine, Maryland, Massachusetts, Minnesota, Missouri, Montana, New Mexico, New Jersey, New York, Nevada, Oregon, Pennsylvania, Puerto Rico, Tennessee, Texas, Utah, Washington, Washington, D.C. area, and in Mazatlán, Mexico.

EDUCATION

** Acceptance to take the United States Patent Bar exam to become a Patent Agent (PA) in April 2021

** Graduate Studies Advanced Physics, Brigham Young University, 2015 thru 2019
Pertinent courses: *Newtonian and Statistical Mechanics; Work, Energy, and Momentum,*

BS Engineering Design & Technology, Southern Utah University, 2000 thru 2014
Relevant classes: *Civil, Electrical and Mechanical Engineering, AutoCAD, Civil Design, Mechanics Statics, Dynamics, Calculus, Engineering Design, CATIA, Physics, Architectural Design, Calculus-Based*

Physics, 3D Architectural Modeling, Descriptive Geometry, Advanced Mechanical CAD Civil Design, Strength of Materials and Physics I & II with labs

- AS Machine Tooling, Utah Valley State College, two-year Vocation Degree, 1994
Pertinent courses: *Machining I & II, Advanced Welding, Machine Tool & Die, CNC, Trigonometry*
- CEM Certified Energy Manager, Las Vegas, NV, with the Association Energy Engineers Course, 2011
Course Description: A CEM is a *Systems integrator for electrical, mechanical, process & building infrastructure, analyzing the optimum solutions to reduce energy consumption*

PROFESSIONAL AFFILIATIONS, CERTIFICATIONS, & AWARDS

- 2021 Headrush Technologies ZipSTOP Installer Training and Certification
(two-day 8-hours of training and certification to install all Headrush Technologies (HRT) zipStops)
Trainer Luke Winkler (a HRT engineer) provided excellent data, resources, and installation training
- 2019 Advisory and a voting member of Advisory Committee within ASTM F15 Consumer Products
(F15) Toys, Playground Equipment, Fall Standards, the jurisdiction of over 100 standards
- 2018 Advisory and a voting member of both ASTM F24 & sub-group AAC Task Group F2959
(AAC) Aerial Adventure Courses, Ziplines, Adventure Parks, and Canopy Tours
- 2018 Appointed member of Advisory Committee within ASTM F24 with 19 Amusement Ride standards
(F24) Membership of approximately 800 members
- 2017 Nominated to the Board of Directors of PRCA/ANSI
(PRCA) Professional Ropes Course Association (ANSI) American National Standards Institute
- 2016 3rd-Party Trainer for Challenge Courses & Ziplines with PRCA/ANSI for three years
- 2014 Appointed to be on the advisory board of ASTM F24
- 2014 Joined and became a member of PRCA/ANSI and ASTM F24
- 2013- 14 Attained 'Walter Maxwell Gibson Scholarship', College of Science & Engineering
- 2012 Earned 'Engineering Technology Design' 1st Place, Gold Medals in both Utah & National Skills USA
- 2012 Achieved top honors and won the gold medal in 'Resume and Interview' Skills Day USA
- 2010 Owned/Operated/Trained at a Public Gymnasium in Payson, Utah
- 2009- 10 Designed, Constructed, Trained, and was the Owner/Operator 'Zipline' Tour in Spanish Fork, Utah
- 2000- 02 Built Zipline at Park City Mountain Resort Testing, Design, Towers, and Trolleys
- 1998- 04 Attained Licensure for A.A. Machining & Welding, Inc as a Steel Erection Contractor
- 1998 Certified his company A.A. Machining & Welding with National Board of Boilers & Pressure Vessels
Obtained and retained 'R' Stamp through accreditation by tri-annual joint review of Hartford Steam Boiler and ASME [1998 thru 2014]

U.S. PATENT PUBLICATIONS

- Published 2018 [Granted Nov. 2019](#) 'Passive Braking Trolley'
- Published 2010 [Granted Apr. 2013](#) 'Trolley for Downhill Zip Line Thrill Ride'
- Published 2002 [Granted Oct. 2003](#) 'Downhill Zip Line Thrill Ride System'

PUBLICATIONS

Bush Law Firm, Rex Bush, Esq. & Michael Troy Richardson. ["Zipline Injuries on the Rise."](#) H.G. ORG, LLC.
Winter 2017 Utah Trial Journal