Consulting Engineering, LLC

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JOSEPH M. TREMBLAY, P.E., D.F.E.

EDUCATION:
B.Sc. in Mechanical Engineering, University of Colorado at Boulder

REGISTRATION:
Registered Professional Engineer (P.E.) in the State of Colorado (49413)
Board Certified Diplomate of Forensic Engineering by the National Academy of Forensic Engineers (NAFE #1194)
Accreditation Commission for Traffic Accident Reconstruction (ACTAR) Certification (4442)
Federal Aviation Administration Licensed Drone (UAV) Pilot

EXPERIENCE:
Principal Engineer, Veritech Consulting Engineering, LLC, Castle Rock, Colorado, 2016 - present.
Systems Integration and Test Engineer, L3Harris Corporation, Colorado, 2015 - 2016.
Project Manager, Peak Robotics, Colorado Springs, Colorado, 2011 - 2015.
Forensic Engineer, Knott Laboratory LLC; Centennial, Colorado, 2008 - 2011.

ENGINEERING AND PRODUCT DEVELOPMENT:
As a Product Development Engineer, Mr. Tremblay specialized in developing hardware, mechatronics, programming, and electrical systems for robotics used in the healthcare field, biological high-throughput screening, and pharmaceutical development and diagnostics. The robotic systems developed by Mr. Tremblay are currently in use around the world by laboratory, medical, and manufacturing personnel. Mr. Tremblay has experience in product design involving implementation of finite element methods for solving complex systems of static and dynamic models using Von Mises material yielding criterion. Computer-based models developed by Mr. Tremblay were used to predict potential failures in designs prior to product launch.

Mr. Tremblay is well-versed in the requirements of safety system technology utilized in automation and robotics and has developed several state of the art active guarding and collision detection systems for use by personnel in close proximity to robotic and industrial machinery. Mr. Tremblay is knowledgeable in the criteria involved in safety certification of automation equipment for use in American and European markets as well as the design requirements necessary to meet these standards.

Mr. Tremblay has employment experience with a major Department of Defense (DoD) and Aerospace contractor as a systems expert and test engineer for the United States Government and has handled top-secret level sensitive information used by the military. While working with the Department of Defense, Mr. Tremblay designed and executed performance testing and evaluation for ground-based antennas capable of transmission and reception by satellites orbiting the earth. Mr. Tremblay was responsible for several re-designs of existing components as well as implementation of new technologies into existing military systems. This sensitive information was handled while Mr. Tremblay held a license as a professional engineer with the state of Colorado.

FORENSIC ENGINEERING:
Mr. Tremblay has experience reconstructing motor vehicle accidents including those involving passenger vehicles, commercial vehicles, trains, motorcycles, off-road vehicles, ski and snow sports, and pedestrians. Mr. Tremblay has investigated accidents involving single and multiple vehicles to determine the cause and sequence of events during collisions and has evaluated physical evidence, tire skid marks, photographs, scratch patterns, paint transfer markings, roadway debris, vehicle rest positions, and witness testimony to aid in determining collision sequences. In addition, Mr. Tremblay has analyzed vehicle roll-over dynamics associated with changing trajectories, as well as the change in roll-over dynamics as the vehicle surfaces contact the pathway surface and has analyzed vehicular scratch patterns related to roll-over accidents for collision evidence such as vehicle trajectory, number of rolls, trip point, and vehicle-surface decelerations.

Mr. Tremblay constantly utilizes state-of-the-art technology to aid in developing accident scene information and vehicle dynamics. Mr. Tremblay has utilized tools such unmanned aerial vehicles (drones), laser scanners, photogrammetry, and image rectification to aid in determining vehicle crush damage as well as accident scene measurements. Computer simulation programs capable of three dimensional dynamic modeling are used by Mr. Tremblay to create accurate models of vehicular collision damage and accident site terrain. Information gathered from computerized data associated with the accident is used in developing animations, depictions, court exhibits, and other visual aids to assist in conveying details of the accident in an accurate and easy-to-understand manner.

Mr. Tremblay utilizes his product development and design engineering background as an expert in product liability, design analysis, and product patent infringement. Mr. Tremblay has analyzed failures in design, manufacture, and assembly of products that have resulted in personal injury and monetary loss. Mr. Tremblay has identified design issues that have resulted in accidents, pinpointing cause of the accident to improper or inadequate design engineering. Mr. Tremblay possesses strong design expertise that has proven valuable in determining patent novelty and originality. Mr. Tremblay utilizes the most current technologies available in determining infringement on utility and design patents to help protect current patent holders, or refute inaccurate claims of patent infringement.

PROFESSIONAL AFFILIATIONS:
NAFE - National Academy of Forensic Engineers, Diplomate
ASME - American Society of Mechanical Engineers, Member
SAE - Society of Automotive Engineers, Member
NAPARS – National Association of Professional Accident Reconstruction Specialists, Member
NSPE - National Society of Professional Engineers, Member

*Note: Mr. Tremblay's expert testimony history, publications, continuing education, and fee schedule are available upon request.