

Roger Horn, PE | Forensic Mechanical Engineer

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Professional Summary:

Mr. Horn is a licensed professional engineer in the State of California, with over 27 years of experience in mechanical engineering. His engineering experience ranges from amusement park ride systems, automotive engine components and systems, consumer products, and military mobility projects. Expertise in design, strength analysis, GD&T, risk/hazard assessments, design for manufacturing, reliability testing, and equipment commissioning. Design experience also includes safety devices such as machine guarding, fall protection anchors, guardrails, and catwalks.

Licenses and Certifications:

Professional Mechanical Engineer, CA, M 37815
Fall Protection Competent/Qualified Person, 2014
Certified Bosch CDR Tool Technician

Professional Experience:

EFI Global, Forensic Mechanical Engineer, 2024 – Present
Vance & Hines, R&D Supervisor, 2021 – 2023
Walt Disney Parks and Resorts, Sr. Mechanical Engineer, 2013 – 2020
Toyota Racing Development, Design Engineer, 2009 – 2012
MillenWorks, Design Engineer, 2008 – 2009
Pelican Products, Design Engineer, 2006 – 2008
Advanced Engine Management, Design Engineer, 2005 – 2006
Edelbrock Corp, Design Engineer, 2001 – 2005
Honda Performance Development, QC Inspector, 1997 – 2000

Project Experience:

Confidential Company, CA Vacuum Furnaces Overheat/Fire

Performed a forensic engineering investigation at a manufacturing facility where two vacuum furnaces overheated and one caught fire. Identified the source of the event to the central cooling system which suffered a failure overnight, both furnaces lost cooling and overheated. Collaborated with an electrical engineer to evaluate the cooling control system for probability of event occurrence. Reviewed repair work for reasonable cost for the client.

Property of LA Convention Center, Los Angeles, CA Taylor Dunn Electric Cart Brake Failure

Performed a joint forensic engineering investigation into the cause and origin of a hydraulic brake failure of an electric cart that resulted in an employee injury. The brake system did function but fluid reservoir was empty.

Property of Vijay Idnani, Yucca Valley, CA
Water Intrusion

Performed a forensic engineering investigation at a residential property to determine cause and origin of a water leak that was pooling in a planter. The pool was the original subject of an investigation by a water leak detection company. A full property investigation was performed and determined that one of three water feed lines from the water meter was the source of the leak.

Property of Lien Nguyen, Rancho Cucamonga, CA
Vehicle Crash: Event Data Recorder Analysis

Performed a forensic engineering investigation on a 2022 Tesla Model 3 to determine cause of a three-vehicle crash. The data showed excessive speed as well as the vehicles cameras captured the accident and showed a vehicle merging in front prior to crash.

Confidential Company, CA
Vehicle Axle Failure Analysis

Inspect new vehicle running gear assembly to determine why the assembly arrived with a broken axle shaft. Axle removed and inspected, determined to fail as a fast fracture. Sent to lab for analysis which resulted in determining failure due to hydrogen embrittlement. Trace root cause to lack of hydrogen bake out during electro plating.

Education:

Bachelor of Science, Mechanical Engineering, University of California Santa Barbara, CA, 1997

Affiliations:

Society of Automotive Engineers, Student Activities Committee Member