Matthew E. Carlson P.E.
Door and Gate Experts
9616 Sweet Palm Ct.
(801) 560-5689
Las Vegas, NV 89178

Professional Experience

With two decades of industry expertise in 3D design, analysis, and compliance, I possess an integrated blend of technical, analytical, and engineering competencies. My track record showcases successful acquisition and execution of projects within the stipulated time frame and budget constraints. I pride myself on strong leadership and management capabilities, coupled with exemplary communication and problem-solving skills, all of which have been essential in meeting and exceeding project objectives.

Testifying Engineer

Door & Gate Experts –Las Vegas, NV: 2020-Present

In my role as both an expert witness and an engineering consultant, I carry out specialized research, analysis, compliance, and calculations for the door and gate industry. My responsibilities include:

- Serving as an Industry Consultant, Insurance Consultant, Litigation Consultant, and Expert Witness, providing key insights and professional guidance.
- Creating comprehensive technical construction files that detail conformance and analysis issues, tailored to client requirements.
- Crafting expert reports and finite elemental models to elucidate the impact mechanisms in cases such as head injuries.

Owner, Principal Engineer

L & M Engineering, LLC –Las Vegas, NV: 2020-Present

In my role as both an expert witness and an engineering consultant, I carry out specialized research, analysis, compliance, and calculations. My responsibilities include:

- Designing and building Finite Elemental Models (FEM) to support various customer needs and applications.
- Conducting detailed calculations and numerical analysis for both large and small structures currently under development, ensuring alignment with engineering principles and standards.
- Providing precise calculations for the investigation and explanation of complex scenarios, such as scissor lift tip-overs, enhancing understanding and safety compliance.

Compliance and Analysis Engineer

Snorkel/Xtreme – Henderson, NV: 2015-2018::2021-Current

In my current role as Compliance and Analysis Engineer at Snorkel/Xtreme, I am actively involved in performing stress analyses for over 20 different machines, as well

as handling the production and delivery of conformance for these machines across various international markets, including the U.S., the Middle East, Europe, and Asia. My responsibilities and accomplishments encompass:

- Certifying over 8 machines in the Middle East, Europe, and Asia in less than 4 months during my initial tenure, reflecting a commitment to quality and efficiency.
- Designing, analyzing, and testing 9 parts currently in use, which has contributed to significant cost savings, including over $10 million annually during the 2015-2018 period.
- Conducting rigorous testing of Aerial Work Platforms (AWPs), ensuring compliance with relevant safety and performance standards.
- Performing comprehensive evaluations of Scissors and Telehandlers, leveraging engineering expertise to assess functionality and reliability.
- Engaging in extensive research and development on casting concepts, skillfully implementing them into production. Utilizing FEA through SolidWorks simulation, I developed innovative solutions and subsequently tested these products to failure, comparing the results with existing weldments that were and are currently in use. This process ensured optimal performance and integrity.
- Producing and thoroughly documenting a total of 18 Technical Construction Files, with 16 completed in less than 9 months during the first phase of my service, emphasizing precision and expedited delivery.

Mechanical Engineer/Analyst

Bigelow Aerospace – North Las Vegas, NV: 2018-2020

In this role, I executed structural and dynamic analyses for Ground Support Equipment (GSE), focusing on various specialized tools. I also managed a range of design initiatives related to crane hoist and rigging systems for below-the-hook applications. My contributions include:

- Achieving certification for 3 Ground Support Equipment (GSE) structures within Bigelow Aerospace (BA) in an impressive 4-month timeframe.
- Developing an Application Programming Interface (API) that streamlined data acquisition processes for innovative hatch design projects.
- Building 12 precise NASTRAN models, utilized in a Long Duration Leak (LDL) study, each tailored to specifications based on the B330 model.
- Designing key structural components for spacecraft and GSE using SolidWorks and translating these designs into ASME Y14.5 drawings to guide manufacturing processes.
- Performing rigorous structural analyses on spacecraft structures, facilitating comprehensive comparisons to empirical testing results, thereby ensuring alignment with performance expectations and industry standards.

CE Analysis Engineer

Belcan Engineering – West Chester, OH: 2010-2012

Pin my capacity as a CE Analysis Engineer, I specialized in performing stress analysis for over 60 diverse tools and adeptly managed 29 CE tools during their delivery process

to the United States. My role was instrumental in enhancing the production of completed certified tools. My key contributions include:

- Successfully completing over 29 distinct CE tools, utilizing software such as Unigraphics and Ansys, reflecting technical proficiency and attention to detail.
- Overseeing the intricate workflow of 60 different tools, employing Unigraphics to maintain organization and efficiency.
- Creatively developing and producing ASME Y14.5 drawings tailored for manufacturing, aligning with industry standards and ensuring seamless production.

Additional Classes and Courses Taken

- ME495: Applications of Machine Design
- Ethics
- Guide to Electric Vehicles
- Mechanical Properties of Materials
- The Engineer in the Courts
- Thermal Stress & Shock of Materials

Professional Licenses

- Licensed Mechanical Engineer State of Nevada – No. 027105

PROFESSIONAL CONSULTANT AFFILIATIONS AND MEMBERSHIPS

Professional Listings – Door & Gate Experts www.doorandgateexperts.com

- Member, International Door Association
- Accredited, Institute of Door Education & Accreditation
- Voting Member, UL 325 Standards Technical Committee
- DRI “The Voice of the Defense Bar” Published Expert Witness
- A. M. Best Client Recommended Expert Service Provider
- TASA Group Technical Advisory Service for Attorneys, Expert and Consultant
- ECS Expert Consulting Services, Expert and Consultant
- Consolidated Consultants, Consultant and Expert Services Provider
- ERI “Expert Resources Inc. Experts on Experts” Expert Services Provider
- HG Experts Legal Expert provider
- FORENSIS Expert Services Provider
- SEAK Expert Witness Services Provider
- EXPERTS.COM Experts Registry Member and Expert Services Provider
- JURISPRO Expert Services Provider
- SUTTONPIERCE Expert Services Provider
- EXPERTINSTITUTE Expert Services Provider