



# **Professional Analysis and Consulting, Inc.**

**Timothy M. Hicks, P.E.**

**Principal Engineer**

[tmhicks@proaaci.com](mailto:tmhicks@proaaci.com)

331-229-3317

2012-Present **Professional Analysis and Consulting, Inc.** – Lisle, Illinois

Performs engineering investigations and failure analysis from a mechanical engineering perspective. Manages and directs large, complex projects involving multiple parties and disciplines. Projects have involved design analysis, product liability, intellectual property, manufacturing systems, accident investigation and reconstruction, fire cause and origin, and product testing. Vehicle experience includes automobiles, motorcycles, heavy trucks, motorhomes, buses, railroad, and commercial vehicles. Equipment experience includes machinery, industrial, lawn, medical, medical accessibility, sporting goods and athletic, agricultural, and construction. Other expertise includes bicycles, forklifts, automated entry doors, elevators, wind energy systems, plumbing, consumer products, firearms, and firearm safety devices. Additionally, he has investigated product packaging failures, aerosol dispenser failures involving impact, projectile and temperature/pressure studies, mechanical design, and systems modeling. He is also certified to perform California DOJ and Commonwealth of Massachusetts Department of Public Safety firearm certification testing.

2010-2012 **Packer Engineering, Inc.** – Naperville, Illinois

Senior Director of Engineering responsible for consultation in the areas of failure analysis, accident investigation and reconstruction, product testing, and design review. Managed projects in a broad range of vehicles including automobiles, SUV's, commercial trucks, RV's, buses and coaches.

2007-2010 **Motor Coach Industries International**, Schaumburg, Illinois

Director of Program Management responsible for establishing a new corporate based group of engineers to develop and introduce new product initiatives for all product and processing areas for luxury coaches. Implemented plans to identify cost reduction projects, developed industry leading proposals for new coach development projects, provided recommendations for improving product and program development processes, and identified and pursued alternate suppliers for major systems and modules for coach production.

2004-2007    **Hendrickson International**, Woodridge, Illinois

2005-2007    Senior Engineering Manager responsible for directing three engineering groups that included front suspension, concept development, and elastomers for the commercial truck, school bus, and RV markets. Developed and launched industry-leading high capacity independent front suspension for motor home and fire truck markets, established process and initiatives for generating constant flow of projects in the concept development group to sustain advanced engineering activities.

2004-2005    Senior Engineering Manager responsible for Current Products and Specialty Vehicles product development and process improvement, utilizing CAD, FEA, and ADAMS simulation. Projects included cost reduction, continuous improvement, and warranty analysis for commercial and vocational trucks, school buses, and military vehicles.

1998-2004    **Oxford Automotive Inc.**, Troy, Michigan

2003-2004    Director, Product Engineering that managed product development engineers and CAD/FEA departments for automotive OEMs. Products included metal fabricated, welded, machined and stamped components and systems.

2003          Director, Continuous Improvement that developed corporate strategy for cost reduction initiatives utilizing lean principles and Value Analysis/Engineering techniques

1999-2003    Program Manager who successfully managed suspension module program for a major OEM, taking the project from concept through launch. This included design development, tooling, capital equipment development, quality planning, and manufacturing set-up.

1998-1999    Engineering Manager recruited to develop strategy for suspension module business growth, design development, analysis, prototyping, and validation of suspension module program for a major OEM.

1986-1998    **General Motors Corp.**, Lansing and Warren, Michigan, and Lordstown, Ohio

Progressed through various product engineering roles with increasing responsibilities. Areas of responsibility included product planning, validation and testing, design development, ride and handling, and new product leadership. Products included front and rear suspensions, steering, brakes, engine mounts, drive axles, bearings, ABS/ETS, fuel systems, wheels and tires, jacks and exhaust.

1983-1986     **Progressive Blasting Systems**, Grand Rapids, Michigan

Machine design experience developing CAD skills, and hands on understanding of many manufacturing processes, including welding, machining, assembly, paint, and product quality.

## ACADEMIC

M.S.           Rensselaer Polytechnic Institute - Engineering Sciences  
Management of Technology (1997)

B.S.           Michigan Technological University - Mechanical Engineering  
Solid Mechanics – Design (1983)

## CONTINUING EDUCATION AND CERTIFICATIONS

- 🕒 Reliability Forecasting, GM (1988)
- 🕒 Vehicle Dynamics, Kettering (1990)
- 🕒 Limit Handling, GM (1994)
- 🕒 Commercial Tire Dynamics, Michelin (2009)
- 🕒 Traffic Accident Reconstruction Methods, SAE (2010)
- 🕒 Vehicle Crash Data Retrieval Technician Level 1 & 2, Northwestern University Center for Public Safety (2013)
- 🕒 Vehicle Crash Data Retrieval Data Analyst, Northwestern University Center for Public Safety (2013)
- 🕒 Vehicle Dynamics Basics for Off-Highway Trucks, SAE (2014)
- 🕒 Reconstruction and Analysis of Motorcycle Crashes, SAE (2015)
- 🕒 Operator Safety Training Program – Forklift Class IV and V, OSHA (2020)
- 🕒 Crash Investigation and Reconstruction Aerial Photogrammetrist, Northwestern University Center for Public Safety (2017)
- 🕒 California DOJ Bureau of Firearms, Certificate of Eligibility #47336 (2019)
- 🕒 Massachusetts Executive Office of Public Safety and Security, Approved Testing Laboratory (2020)
- 🕒 Operator Safety Training Program – Forklift Class IV and V, OSHA (2020)
- 🕒 Applying Automotive EDR Data to Traffic Crash Reconstruction, SAE International, (2021)
- 🕒 SIG SAUER P320 Armorer Certification (2022)

## PROFESSIONAL REGISTRATION AND AFFILIATIONS

- ⌚ Professional Engineer, State of Illinois (License No.: 062-064524)
- ⌚ Professional Engineer, State of Michigan (License No.: 6201059697)
- ⌚ Professional Engineer, State of South Carolina (License No.: 30197)
- ⌚ Professional Engineer, State of Texas (License No.: 131428)
- ⌚ Professional Engineer, State of Wisconsin (License No.: 47825-6)
- ⌚ American Society of Mechanical Engineers (ASME)
- ⌚ Society of Automotive Engineers (SAE)
  - Chairman, Chicago Section (Current)
  - Crash Data Collection and Archiving Standards Committee (Current)
- ⌚ National Society of Professional Engineers (NSPE)
- ⌚ National Safety Council (NSC) Transportation Division (2016)

## PATENTS

1. Hicks, Timothy M. and Jennings, Daniel E., “Rear Suspension Mounting Feature and Method,” 6,401,319 (2000)
2. Hicks, Timothy M. and Jennings, Daniel E., “Trailing Twist Axle and Method of Manufacture,” 6,533,300 (2000)

## PRESENTATIONS

1. Hicks, Timothy and Shipley, Roch, “Testing – Techniques and Examples – Structural Integrity”, American Society for Quality Presentation, Reliability Division, October 2019
2. Hicks, Timothy, Shipley, Roch, Koehler, Michael, “Testing: Techniques and Examples, Making Evidence-Based Decisions”, American Society for Quality Presentation, Reliability Division, February 2019