



2328 E. Lincoln Highway, #309
New Lenox, Illinois 60451
T: 708.870.3100

CURRICULUM VITAE OF TIMOTHY R. McGREAL, P.E.

I. General Information

A. Position Principal Fire Protection & Mechanical Engineer
McGreal Forensic Engineers
2328 E. Lincoln Highway, #309
New Lenox, Illinois 60451
Telephone: 708.870.3100

II. Professional Summary

A. Education: Master of Science
Fire Protection Engineering
Worcester Polytechnic Institute
Worcester, Massachusetts
2003

Bachelor of Science
Mechanical Engineering
Illinois Institute of Technology
Chicago, Illinois
1992

Diploma
Automotive Mechanics
Washburne Trade School
Chicago, Illinois
1984



Timothy R. McGreal

Experience:

July 2011 to Present

Position: President / Principal Fire Protection & Mechanical Engineer
McGreal Forensic Engineers
2328 E. Lincoln Highway, #309
New Lenox, Illinois 60451

Provide failure analysis and engineering services for legal, insurance, and corporate clients for losses involving fire protection systems, consumer products, power tools, industrial equipment, vehicles, and plumbing systems. Utilize scientific methodology and advanced technology to determine the cause of injury and property damage. Present technical presentations to clients, and perform marketing functions.

February 2013- Present

Position: President
Pro Performance LLC / HarpArm
Mokena, Illinois

Conceived, designed, developed, and presently manufacture the award-winning patent-pending HarpArm[®] Magnetic Harmonica Holder. The HarpArm[®] is currently sold nationwide in stores and online including retailers Guitar Center, Musician's Friend, and Amazon.com.

December 2009 to July 2011

Position: Senior Fire Protection & Mechanical Engineer
Semke Forensic
Orland Park, Illinois

Provided engineering and failure analysis services for legal, insurance, and corporate clients for losses involving consumer products, power tools, industrial equipment, vehicles, plumbing systems, and fire protection systems. Presented technical presentations to clients, and performed marketing functions.



Timothy R. McGreal

June 2004 to December 2009

Position: Senior Consultant
Rimkus Consulting Group, Inc.
Westmont, Illinois

Provided engineering services and failure analysis for insurance, legal, and corporate clients regarding consumer products, vehicular accidents, vehicle components, and fire protection systems. Determined cause of injury and property damage using scientific methodology and advanced technology.

May 2003- January 2015

Position: President
SafetyWise LLC/ Alarm Arm
Mokena, Illinois

Conceived, designed, developed, and produced the award-winning Alarm Arm Universal Smoke Alarm Mounting System. The Alarm Arm Universal Smoke Alarm Mounting System allows all battery-powered smoke alarms to be installed, maintained, and replaced without the use of a ladder. (U.S. Patent Number 6,859,146). Product was sold on QVC, HSN, and Amazon.

December 2002 to May 2004

Position: Fire Protection Engineer
Gage-Babcock and Associates
Oak Brook, Illinois

Performed computer fire modeling analyses utilizing computational fluid dynamics, designed automatic sprinkler and fire alarm systems, conducted fire risk/hazard assessments and life safety analyses, and provided litigation support, code consulting, and plan review services.



Timothy R. McGreal

August 2001 to December 2002

Position: Mechanical Project Engineer
Ricardo Automotive
Burr Ridge, Illinois

Position consisted of project management and the design, testing, and analysis of a modular diesel catalytic converter system to be used across an entire line of heavy and medium duty trucks. Engine performance, catalytic media performance, geometrical, and sales data were statistically analyzed to determine the optimum configurations.

September 2000 to June 2001

Position: Mechanical Project Engineer
Panduit Corporation
Tinley Park, Illinois

Conceived, designed, benchmarked, and tested telecommunication equipment including digital cross-connects (DSX) and cable management systems. Researched and assessed patent infringement issues.

August 1999 to September 2000

Position: Mechanical Project Engineer
Raytheon Missile Systems
Tucson, Arizona

Managed a project involving the design, testing, and analysis of electro-mechanical optical sensor components and assemblies used within the Exoatmospheric Kill Vehicle (EKV) National Missile Defense System. Utilized unconventional materials, including beryllium and honeycomb composites, and developed proprietary manufacturing processes to meet performance requirements within ultra-tight design tolerances.



Timothy R. McGreal

September 1998 to August 1999

Position: Mechanical Project Engineer
Motorola Automotive
Schaumburg, Illinois

Designed and produced multiple concepts (die-cast, extruded, injection-molded plastics, and sheet metal) for a high-volume Ford Engine Controller. Created detailed production drawings and interfaced with the on-site model shop to create prototype models.

November 1997 to September 1998

Position: Mechanical Project Engineer
Case Corporation
Burr Ridge, Illinois

Designed a patented 120-speed chain-drive transmission for a planter. Components included sheet metal (weldments and fasteners), elastomeric, broached, and brazed materials. Performed failure analysis on previous Case transmission designs utilizing high-speed video to determine failure modes. Created a prototype transmission in two days by employing mig welding, sheet metal forming, drilling, and cutting processes. Performed lab test to validate the initial prototype transmission. Provided patent infringement analysis and product concept design leading to a U.S. Patent. Served as a liaison between Engineering, the corporate legal department, and outside counsel. (U.S. Patent Number 6,165,089)

August 1997 to November 1997

Position: Mechanical Design Engineer
Motorola Automotive
Northbrook, Illinois

Designed modifications to existing Motorola Automotive vehicle mounted transceivers to meet automotive manufacturer specifications. Interfaced with component manufacturers to solve quality issues. Created detailed production drawings and interfaced with the on-site model shop to create prototype models.



Timothy R. McGreal

June 1996 to May 1997

Position: Mechanical Project Engineer
Belton Electronics
Chicago, Illinois

Provided patent infringement analysis and product concept design for digital hearing aid systems. Designed a remote control for a digital hearing aid system utilizing SDRC Master Series software. Components included injection-molded plastics, membrane switches, BeCu battery contacts, and switches. Teamed with an ergonomics specialist to design the optimum configuration for the keypad layout. Interfaced with Electrical Engineers and vendors to finalize the design.

January 1995 to June 1996

Position: Mechanical Design Engineer
Motorola Cellular
Libertyville, Illinois

Worked with Electrical Engineers, Industrial Designers, and Marketing Managers to design cellular phones. Components included injection-molded plastic housings, elastomeric keypads, BeCu battery contacts, switches, connectors, and acrylic lenses. Interfaced with the Motorola quality control department and external vendors to analyze and develop countermeasures for quality issues. Performed failure analysis of electro-magnetic interference failures to determine root causes and countermeasures. Optimized battery contact designs and performed shock, vibration, and thermal testing.

July 1993 to January 1995

Position: Mechanical Engineer
Illinois Tool Works / Paslode
Vernon Hills, Illinois

Provided product concept design and patent infringement analysis leading to a U.S. Patent application. Acted as a liaison between Engineering, corporate legal, and outside counsel. Involved in the design process from initial concept through the prototype phase. Integrated focus group studies, market surveys, and competitive analysis data to determine the design direction. Conceived and designed a fail-proof main valve assembly now implemented throughout the entire Paslode pneumatic product line. Performed durability and failure testing.



Timothy R. McGreal

May 1992 to July 1993

Position: Mechanical Designer
Abbott Laboratories
Abbott Park, Illinois

Participated in the design of the Prism, a computer-controlled medical diagnostic instrument created for analyzing blood at high-volume blood banks. Components included machined stainless-steel, sheet metal, and injection-molded materials. Utilized liquid nitrogen based infrared thermography equipment to analyze the thermal response of a nucleic acid amplifier.

August 1986 to August 1988

Position: Automotive Mechanic
Car-X Muffler and Brake Shops
Oak Forest, Illinois

Performed diagnostics and repair of automobile brake, chassis, and suspension systems, including the following components: pads, shoes, calipers, drums, brake lines, brake hoses, master cylinders, proportioning valves, universal joints, CV joints, coil springs, leaf springs, torsion springs, shocks, struts, tie-rods, ball joints, stabilizer rods, mufflers, exhaust pipes, and catalytic converters.

July 1985 to August 1986

Position: Automotive Mechanic
Arts Muffler and Brake
Chicago, Illinois

Performed repair of automobile brake, chassis, and suspension systems, including the following components: brake pads, shoes, calipers, drums, brake lines, brake hoses, master cylinders, proportioning valves, universal joints, CV joints, coil springs, leaf springs, torsion springs, shocks, struts, tie-rods, ball joints, stabilizer rods, mufflers, exhaust pipes, and catalytic converters.



Timothy R. McGreal

June 1984 to July 1985

Position: Automotive Mechanic
Montgomery Ward Automotive
Chicago, Illinois

Mounted, balanced, and installed automobile tires. Performed electrical tests on automobile electrical systems including the following components: batteries, alternators, voltage regulators, starters, and cables.

III. Professional Technical Committee Appointment

Appointed as a Member of the National Fire Protection Association (NFPA) Technical Committee on Dry and Wet Chemical Extinguishing Systems (NFPA 17 & 17A) in 2012.

IV. Professional Affiliations

National Association of Fire Investigators (NAFI)
National Fire Protection Association (NFPA)
National Roofing Contractors Association (NRCA)
Society of Fire Protection Engineers (SFPE)
Society of Automotive Engineers (SAE)

V. Professional Registration

Registered Professional Engineer in the State of Illinois.

VI. Patents

U.S. 6,165,089, issued 12/26/2000, "Transmission apparatus and method"
U.S. 6,859,146, issued 2/22/2005, "Smoke alarm and mounting kit"

Additional products that are currently in development integrate technologies related to life safety, music, housewares, and physical fitness.

VII. Personal Interests

Aerial Video/Photography ("Drones"), Performing (guitar, vocals, harmonica), product research, design, development, manufacturing, and distribution.