

CURRICULUM VITAE
THE KILPATRICK GROUP, PA

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**DIVISION I SERVICES: MOTOR VEHICLE CRASH RECONSTRUCTION AND
PRODUCT DEFECT AND FAILURE ANALYSES**

Since 2003, have more than 16 years of experience providing forensic engineering services in Motor Vehicle Crash Reconstruction to law firms, public defenders and insurance companies; Automotive engineer; worked in the automotive industry for approximately nine years; Board certified Forensic Engineer through the National Academy of Forensic Engineers (NAFE); Diplomat Forensic Engineer (DFE); Have a Class A Commercial Driver's License (CDL) with Tanker, Haz-Mat, Triples, Passenger Bus and School Bus endoresments; Have approximately 100 hours of drive time experience in commercial tractor trailer trucks; Very knowledgeable of the Federal Motor Carrier Safety Regulations namely 49 CFR 40, 303, 325, 350 - 399 for commercial tractor trailer trucks as well as other commercial vehicles; Hazardous Materials training and certification DOT Hazardous Materials namely 49CFR 100-185; Have extensive knowledge of commercial vehicles with air brake systems, semi-trailer landing gear, commercial tractor-trailer trucks, commercial cement trucks, commercial dump trucks, commercial flatbed and box trucks, school buses, fire trucks, ambulances; Have extensive knowledge of standards of care and maintenance requirements of commercial vehicles; Part-Time school bus driver and school bus safety expert; Have extensive knowledge of the air brake systems, pre-trip, during-trip, post-trip inspections and both paper and electronic driver logs. Member of the North Carolina Truckers Association; Very knowledgeable of motor vehicle airbags and seat belts; Avid motorcycle rider and motorcycle expert in the function, handling of motorcycles, product defect and failure analyses and motorcycle crash reconstruction; General knowledge of highway guard rail systems; Extensive knowledge and investigation experience in All-Terrain Vehicles (ATVs) and Recreational Off-Highway Vehicles (ROVs) crash and rollovers reconstruction and ramps used in loading and unloading these machines; Have extensive training and knowledge of ATVs and ROVs. Have owned and ridden a 2007 Honda TRX 420 Rancher ATV; Pedestrian collisions; Have extensive engineering education, knowledge, training and experience in analyzing complex vehicle and pedestrian crashes, incorporate state-of-the-art computer video simulation software technology to demonstrate and animate how a car, light truck, commercial tractor trailer truck, motorcycle, ATV or pedestrian crash takes place; Have extensive training, knowledge, experience and equipment in lamp filament analyses, imaging and analyzing the crash data reports (CDR) stored in a car or light truck's event data recorder (EDR); Extensive training, knowledge, experience and equipment in imaging and analyzing commercial tractor trailer truck's Electronic Control Module (ECM) run data concerning truck speed, engine rpm, brake application, clutch application, engine load, throttle application, cruise control, DTC codes, transmission gearing, hard stop braking and last stop data and other data; Involved in product defect and failure analysis of cars, light trucks, heavy commercial vehicles, air brake systems, motorcycles, ATV's, ROV's and their components; Create CAD drawings for trial exhibits. Can build models for trial exhibits; Have written and submitted expert reports for state and federal courts for trial; Have given expert deposition and courtroom trial testimony multiple times; Attend and participate in various seminars regarding research in imaging and analyzing a vehicle's crash data reports and heavy commercial trucks ECM data; Attend and participate in staged motor vehicle collisions and associated analyses for research involving cars, light trucks, commercial heavy trucks, motorcycles and pedestrians.

DIVISION II SERVICES: MOTORCYCLE AND ALL-TERRAIN VEHICLE (ATV) CRASH RECONSTRUCTION AND PRODUCT DEFECT AND FAILURE ANALYSES

Have more than 30 years of experience riding motorcycles; Am an Avid motorcycle rider; Owner and rider of a 2012 Harley-Davidson CVO Road Glide Custom; Have owned and operated a 2007 Honda TRX 420 Rancher ATV; Provide forensic engineering services to law firms, public defenders and insurance companies:

Motorcycle Crash Reconstruction and Product Defect and Failure Analyses:

Human Factors, Investigation and Evidence At-Scene Mapping. Slow and High Velocity Collisions, Crush and Damage Analyses, Drag Factor, Skid Analyses, PDOF, ΔV , Closing Velocity, Conservation Linear and Angular Momentum, Conservation of Mechanical Energy, Crush Damage Analyses, Crush Energy, Critical Velocity and Circular Motion, Dynamic Weight, Crashes involving cars and pickup trucks, Pedestrian Crash Reconstruction, Shift, Falls, Flips, Vaults, Rollovers, Lamp Filament Analyses, Honda Airbag Operation and Failure Analyses, Motorcycle Inspections, Motorcycle Standards of Care, Motorcycle Crash Testing, Motorcycle Braking and Skid Testing, Motorcycle Suspension and Handling Testing.

Motorcycle Product Defect and Failure Analyses; Handling Issues, Frame design, Handlebar Design and Mounting, Frontend Design Rake and Trail, Wobbling, Brakes, Engines and Drivetrains, Tires and Rims, Seating, Foot Peg/Running Board Placement, Rider/Passenger Ergonomics.

All-Terrain Vehicle (ATV) Crash Reconstruction and ATV Product Defect and Failure Analyses.

ATV crash reconstruction.

Investigation and Evidence At-Scene Mapping.

Human Factors.

Product Defect and Failure Analyses.

State by state ATV Laws and Requirements.

Specialty Vehicle Institute of America SVIA/ANSI Standards.

Recreational Off-Highway Vehicle Association (ROHVA) Standards.

Consumer Product Safety Commission (CPSC) Annual Reports of ATV-Related Deaths and Injuries.

CPSC Consent Decree Involving the Manufactures of ATVs.

Major Steps for ATV Certification and Compliance.

16 CFR Part 1420 Regulations for ATVs.

EDUCATION

North Carolina State University 1990: Bachelor of Science Degree in Mechanical Design Engineering with a minor in Speech Communications.

Mitchell Community College 1985: Associate in Science Degree - College Transfer Curriculum.

HONORS

North Carolina State University MAE Hall of Fame: Inducted 2013.

PROFESSIONAL TRAINING AND DEVELOPMENT

Seak, Incorporated: Received training on direct and cross-examination to testify during despoition and trial. Have also read other books on the subject: (1) Law School For Experts; (2) Cross Examination Science and Techniques Published by LexisNexis Authored by Roger J. Dodd and Larry S. Pozner.

Public Speaking and Communications:

Dale Carnegie Course: Public Speaking and Public Relations. Certificate (1980).

Mitchell Community College and North Carolina State University Public Speaking Courses. Degrees (1985-1990).

Midlands Technical Community College: Train The Trainer. Certificate (1996).

Traffic Accident Reconstruction:

North Carolina Commercial Drivers Licence (Class-A CDL) for Driving and Operating Commercial Tractor-Trailer Trucks License Number 3744851. Endorsements: Tanker, HazMat and Triples.

DOT Hazardous Material Transportation 49CFR 100-185 Training and Certification (2018).

North Carolina School Bus Training; have Passenger and School Bus Endorsements (2018); currently drive a school bus for the Guilford County Schools Department of Transportation as a substitute part-time driver.

North Carolina State University: Machine Design, Dynamics and Mechanics of Machines and Vehicules, Motor Vehicle Traffic Accident Reconstruction Sciences. BSME (1990).

University of North Carolina: Introduction To Forensic Engineering. Certificate (2002).

Northwestern University Research in Traffic Accident Reconstruction (2003).

Institute For Police Techology and Management Research in Traffic Accident Reconstruction (2010).

National Academy of Forensic Engineers: Forensic Engineering Seminars (2005, 2006, 2012, 2014).

Collision Safety Institute: Automotive Crash Research Testing & Training. Certification (2006).

Collision Safety Institute: Bosch Diagnostics Crash Data Retrieval System Download and Analyses Training and Certification (2006).

iWitness Close Range Photogrammetry. Certificate (2008).

Insurance Institute for Highway Safety and Highway Loss Data Institute: Vehicle Crashing Test Comparisons and Ratings. Seminar (2011).

Chief Automotive Technologies: Vehicle Construction Technology and Trends. Seminar (2011).

SAE Tractor-Trailer Event data Recorder Symposium (2011).

ARC-CSI Vehicle Crash Conference Crash Data Retrieval Systems Summit Houston Texas. Certificate. Vehicle were crash tested at these summits. (2011, 2013).

Aras 360 HD/Reality 4 day Crash Simulation training Course. Certificate (2014).

Engineering Dynamics Corporation: Advanced Vehicle Dynamics and Crash Simulation 5 Day Course. Certification (2015).

ARC-CSI Boot Camp and Crash Conference; Crash Testing of Motor Vehicules. Certificate (2015).

ACTAR Examination Preparation Course (2015).

Northwestern University – Traffic Crash Investigation/At-Scene Investigation/Evidence Mapping (15)

Northwestern University – Commerical Truck Crash Reconstructiion and Air Brake Systems (2016).

Northwestern University – Pedestrian Vehicle Crash Reconstruction (2016)

Truck Pro: Commercial Tractor Trailer Truck Air Brake Seminar (2017).

Northwestern University – Commerical Truck ECM Data Imaging and Analyses (2017).

DOT Hazardous Material Commercial Transportation Regulations 49CFR 100-185 Training and Certification.

Technology & Maintance Counsel Technicians Meeting on Air Brake Systems Presented By MERITOR and WABCO (2018)

Motorcycle Riding and Training:

Avid motorcyclist for over 30 years riding both trail, motocross and street motorcycles.

Dirt Bike Motocross Racing/Trail Riding: 1969 – 1974.

Motorcycle Safety Foundation: Advanced Rider’s Training. Certification (2002).

Harley Owners Group: Chapter 3446 Group Riding Class. Certificate (2004).

Big Bear Choppers: How To Build a Custom Motorcycle (2009).

Bike Safe North Carolina – Instructed by the Cary Poilce Department in cooperation with the North Carolina Highway Patrol. Certificate (2013).

Currently own and ride one street motorcycle: 2012 Harley-Davidson CVO Road Glide.

All-Terrain Vehicle (ATV) Riders Training:

ATV Safety Institute - ATV Rider Course: ATV Rider Certification (2007).

Recreational Off-Highway Vehicle Association (ROHVA) Riders Certification (2018).

Owned and Operated a 2007Honda FourTrax TRX 420 TE/FE Rancher.

Tractor Trailer Driver’s School Training:

Future Truckers of America; Asheboro, North Carolina (2018).

Full-Time Student; Four Week Class.

Road Tractor Training Vehicle: Volvo with sleeper Berth; 53 foot van and 53 foot flatbed trailers.

Tranmission: Eaton 8 speed with high/low range switch.

Graduation Datte: April 19, 2018.

Endorsements: Tanker, Hazardous Materials and Triples.

Truck Pro: Commercial Tractor Trailer Truck Air Brake Seminar (2017).

The Smith Driving System (2018).

Member of the North Carolina Truckers Association:

North Carolina Passenger and Public School Bus Training:

North Carolina School Bus and Passenger Bus Classes (2018).
School Bus Driver's Training (2018).
Emergency Drug Administration Training.
School Bus: Type C 2001 Thomas Built Bus Full-Size Bus 57 Student Capacity.
Brake System: Air Brakes.
Automatic Transmission.
Engine: 3126 Caterpillar Medium-size In-Line Six Cylinder Diesel Engine.
OSHA Regulations For School Bus Drivers.
Endorsements: Passenger and School Bus.
Substitute/Part-Time School Bus Driver for the Guilford County Schools Department of Transportation.

General Industry and OSHA Safety:

Modern Machine Shop Technology (1979).
Chesapeake Consulting: Constraint Management Applications. Certificate (1998).
Mesa Consulting Group Incorporated: Six Sigma. Certificate (2000).
North Carolina State University: ISO 9001: 2000 Internal Quality Auditing. Certificate (2005).
Forsyth Technical Community College: Pro-Engineer 2001 CAD Software Training. Certificate (2003).
Guilford Technical Community College: General Contractor's Licensing Preparation Course including OSHA 29 CFR 1910 General Industry Regulations and OSHA 29 CFR1926. Certificate (2006).
Measuring and Improving Boiler Efficiency – Advanced. Certificate (2007).
OSHA 29 CFR 1926 Construction Industry Regulations and Major Hazard and Prevention Strategies. Certificate (2010).
OSHA Industrial Accident Investigation. Certificate (2010).
Forklift Operation Safety, Certification and Licensing Course. Certificate (2014).
Combined Heat and Power – Utilities Power Generation. Certificate (2017).
Chiller Plant Optimization. Certificate (2017).
Forklift Operation Safety, Certification and Licensing Course. Certificate (2018).
DOT Hazardous Material Transportation Regulations 49CFR 100-185 Training and Certification

Amusement Park Ride Safety

Member of International Association of Amusement Parks and Attractions (IAAPA).
Attended the Operators Forum for the American With Disabilities Act.

PROFESSIONAL ENGINEERING LICENSURE

- North Carolina Board of Examiners for Engineers and Surveyors
Professional Engineer License Number (027030).
Professional Corporation License Number (C-2279).
Original Issue Date: 06/25/2001
- Florida Board of Professional Engineers
Professional Engineer License Number (66186).
Original Issue Date: 05/21/2007
- South Carolina Board of Registration for Professional Engineers and Land Surveyors
Professional Engineer License Number (25937).
Original Issue Date: 08/29/2007
- Georgia State Board of Registration for Engineers and Surveyors
Professional Engineer License Number (PE032652).
Original Issue Date: 12/14/2007
- Louisiana Professional Engineering and Land Surveying Board
Professional Engineer License Number (33528).
Original Issue Date: 11/27/2007
- Tennessee Architect and Engineering Board
Professional Engineer License Number (00111899).
Original Issue Date: 12/26/2007
- Virginia Board For Architects, Professional Engineers and Land Surveyors
Professional Engineer License Number (0402046851).
Original Issue Date: 09/28/2009
- New Jersey Board of Examiners for Engineers and Surveyors

- Professional Engineer License Number (24GE04845900).
Original Issue Date: 02/02/2010
- Washington, DC Board of Professional Engineers
Professional Engineer License Number (PE905690).
Original Issue Date: 05/27/2010
 - West Virginia State Board of Professional Engineers
Professional Engineer License Number (18874).
Original Issue Date: 10/25/2010
 - Mississippi Board of Licensure for Professional Engineers and Surveyors
Professional Engineer License Number (20194LTD).
Original Issue Date: 04/30/2011
 - Maryland State Board of Professional Engineers.
Professional Engineer License Number (43433)
Original Issue Date: 03/27/2013

PROFESSIONAL ASSOCIATIONS MEMBERSHIPS

- National Society of Professional Engineers (1999).
- American Society of Mechanical Engineers (2002).
- National Academy of Forensic Engineers (2002).
- National Association of Professional Accident Reconstruction Specialists (2003).
- Society of Automotive Engineers (2008).
- American Motorcyclist Association (2006).
- Harley Owners Group (HOG) (2001).
- American All-Terrain Vehicle Association (2006).
- International Association of Amusement Parks and Attractions (2016).
- North Carolina Truckers Association (2018).

OFFICES HELD

- PENC Chapter President – North Piedmont Chapter (2002-2003).
- PENC Chapter Treasurer and Secretary (2003-2004).
- PENC Chapter Vice President, President Elect and Chapter Governor (2007-2008).
- PENC Chapter President, Chapter Governor, Programs Chairman (2008-2009).
- PENC National Engineer’s Week Chairman (2009-2011).
- PENC Programs Chairman (2009-2010).
- PENC Chapter Governor (2011-2012).
- PENC Director (2012 – 2015).

PUBLIC SPEAKING EXPERIENCE

- Dale Carnegie Course Public Speaking.
- College Public Speaking Classes.
- Industrial Classroom Teaching.
- Deposition and Court Trial Testimony.
- National Engineer’s Week – Various Local Middle Schools.
- National Society of Professional Engineers Presentations.
- Society of Manufacturing Engineers Presentations.
- National Academy of Forensic Engineers Presentations.

PRESENTATIONS/TEACHING

- Mathematics Teacher For Koyo Corporation (1996-1997)
Taught basic math to potential hourly employees for the purposes of screening for future employment as machinist. Created math text and testing materials for classroom use.
- Society of Manufacturing Engineers – Subject Forensic Engineering (2004).
- Professional Engineers of North Carolina – Subject Forensic Engineering (2007, 2008, 2014, 2017).
- Raleigh-Wake County Paralegal Association – Subject Forensic Engineering (2007).
- Guilford County Paralegal Association – Subject Forensic Engineering (2007).
- Casualty Insurance Adjusters Various Chapters – Subject Forensic Engineering (2007).

- North Carolina Paralegal Association – Subject Forensic Engineering (2008).
- Local Middle Schools – National Engineer’s Week – Subject Engineering Profession (05-09).
- North Carolina State University ASME Student Section. Subject Forensic Engineering (2009).
- Piedmont Community College – Subject Forensic Engineering (2009).
- National Engineer’s Week – Subject Careers in Engineering and What Engineers Do (04-09).
- Professional Engineers of North Carolina – Subject NASA’s Saturn V Moon Rocket (2010).
- IADA Conference – Vehicle Crash Data Retrieval and Traffic Accident Reconstruction (2011).
- National Academy of Forensic Engineers – ATV Accidents (2012, 2014).
- Professional Engineers of North Carolina – Motor Vehicle Crash Reconstruction (2017).

WRITING EXPERIENCE

- Industrial operation, training and maintenance manuals for various companies.
- ISO 9001: 1994; ISO 9001: 2000 documentation for various companies.
- Presentations.
- Forensic Engineering Expert Reports.

TECHNICAL PAPERS AND PUBLICATIONS

- The Physics of a Collision (2006).
- Product Design, Product Manufacturing and Product Quality Control (2012)
- Forensic Engineering Analysis of Hazards Associated with Operating an ATV by a Paralegal (NAFE 2012).
- Forensic Engineering Analysis of an ATV Accident Involving Two Riders on a Type 1 ATV Designed for One Driver and No Passengers (NAFE 2013).

FORENSIC ENGINEERING CASE WORK LITIGATION EXPERIENCE TO DATE

Motor Vehicle Crash Reconstruction

Traffic Crash Reconstruction involving cars, light trucks, school buses, bicycles, heavy commercial trucks, motorcycles, bicycles and pedestrians.

- At-Scene Investigation and Evidence Mapping.
- Slow and High Velocity Collisions, Drag Factor, Skid Analyses, PDOF, ΔV , Closing Velocity, Conservation Linear and Angular Momentum, Conservation of Mechanical Energy, Crush Damage Analyses, Crush Energy, Critical Velocity and Circular Motion, Dynamic Weight.
- Cars and Pickup Truck Crash Reconstruction.
- Car/Light Truck Event Data Recorder (EDR) Report Imaging, Analysis and Interpretation.
- Commercial Tractor Trailer Truck Crash Reconstruction.
- Commercial Tractor-Trailer Truck Electronic Control Module (ECM) Operational Data Imaging , Analysis and Interpretation.
- 49 CFR 40, 303, 325, 350-399 Federal Motor Carrier Safety Regulations.
- 49CFR 100-185 DOT Hazardous Materials Regulations.
- Public School Bus Crash Reconstruction.
- Pedestrian Crash Reconstruction.
- School Bus Accidents.
- Shift, Falls, Flips ,Vaults, Rollovers.
- Lamp Filament Analyses.
- Airbag Operation and Failure Analyses.
- Seat Belt Operation and Failure Analyses.
- All Terrain Vehicles (ATVs) and Recreational Off-Highway Vehicle (ROV) Crash Reconstruction.
- Recreational Off-Highway Vehicles (ROVs) Crash Reconstruction.
- Motor Vehicle Product Defect and Failure Analyses.
- Motor Vehicle Inspections.
- Vehicle Standards of Care.
- Product Defect and Failure Analyses.
- Vehicle Crash Testing.
- Vehicle Braking and Skid Testing.

- Vehicle Suspension and Handling Testing.
- Cars and Pickup Truck Crash Reconstruction.
- Car/Light Truck Event Data Recorder (EDR) Report Imaging, Analysis and Interpretation.
- Motorcycle and Bicycle Crash Reconstruction.
- Commercial Tractor Trailer Truck Crash Reconstruction.
- Commercial Tractor-Trailer Truck Electronic Control Module (ECM) Operational Data Imaging , Analysis and Interpretation.
- Commerical Vehicle Maintenance and Standards of Care.
- Commercial Heavy Truck Air Brake Systems.
- 49 CFR 40, 303, 325, 350-399 Federal Motor Carrier Safety Regulations.
- 49CFR 100-185 DOT Hazardous Materials Regulations.
- Public School Bus Crash Reconstruction.
- Airbag Operation and Failure Analyses.
- (ATV) All Terrain Vehicles Crashes and Rollover Reconstruction.
- (ROV) Recreational Off-Highway Vehicles Crash and Rollover Reconstruction.
- Motor Vehicle Product Defect and Failure Analyses.
- Motor Vehicle Inspections.
- Vehicle Standards of Care.
- Product Defect and Failure Analyses.
- Vehicle Crash Testing.
- Vehilce Braking and Skid Testing.
- Vehicle Suspension and Handling Testing.

Motorcycle and ATV Crash Reconstruction and Product Defect and Failure Analyses

Traffic Crash Reconstruction involving motorcycles, bicycles and pedestrians.

- At-Scene Investigation and Evidence Mapping.
- Slow and High Velocity Collisions, Drag Factor, Skid Analyses, PDOF, ΔV , Closing Velocity, Conservation Linear and Angular Momentum, Conservation of Mechanical Energy, Crush Damage Analyses, Crush Energy, Critical Velocity and Circular Motion, Dynamic Weight.
- Product Defect and Failure Analyses.
- Pedestrian Crash Reconstruction.
- Shift, Falls, Flips ,Vaults, Rollovers.
- Lamp Filament Analyses.
- Brakes Failure.
- Engine Failure.
- Electrical Charging System Failure.
- All Terrain Vehicles (ATVs) and Recreational Off-Highway Vehicle (ROV) Crash Reconstruction.
- Motorcycle and ATV Inspections.
- Motorcycle and ATV Standards of Care.
- Motorcycle Crash Testing.
- Motorcycle Braking and Skid Testing.
- Motorcycle and ATV Suspension and Handling.
- Bicycle Crash Reconstruction.
- (ATV) All Terrain Vehicles Crashes and Rollover Reconstruction.
- (ROV) Recreational Off-Highway Vehicles Crash and Rollover Reconstruction.

WORK EXPERIENCE

06/02 to
Present

THE KILPATRICK GROUP, PA, JAMESTOWN, NC
DIVISION I: Motor Vehicle Crash Reconstruction.
DIVISION II: Motorcycle and ATV Crash Reconstruction.

2/05 to
7/06

K&S TOOL AND MANUFACTURING COMPANY HIGH POINT, NC
Quality Control, Process Engineering, Maintenance and Safety Manager

ISO 9001:2000 registered contract manufacturer of machined, formed, punched, fabricated, welded and assembled parts and subassemblies. CNC machined, formed and fabricated, welded and assembled component parts and subassemblies for client companies.

Managed the quality control department and had supervisory responsibilities. Responsible for the ISO quality system, quality manual and other similar documentation and files. Involved in APQP and PPAP for special customers. Made changes and updates to the quality system as needed. Acted as ISO management representative for the company. Organized and scheduled training sessions for company employees on matters of ISO 9001:2000 standards, OSHA safety, human factors and newly hired employees. Managed and performed monthly internal quality audits on quality system elements. Lead and motivated employees to quality check their product. Performed first article inspections with report documentation for both customers and employees utilizing company measuring equipment. Created, followed up, closed and filed quality action plans, corrective action reports, preventive action reports, continuous improvement reports and other similar documentation. Also managed the maintenance program.

Assisted in the design of a bearing press machine for functionality, safety and human factors. Managed and documented all maintenance activities and schedules. Hands-on from time to time.

Managed the installation of all purchased and incoming machinery.

Managed all facility related matters concerning building maintenance, HVAC and electric utilities.

Acted as resident company engineer in all engineering matters including plant engineering, machine and tool design and OSHA 29CFR1910 safety audits and OSHA regulations.

Was company Safety Manager. Created and distributed plant facility evacuation charts.

Performed safety audits on all plant facilities and equipment including kinetic energy punch presses, hydraulic presses, automatic laser cutting machines, vibratory media deburring and cleaning equipment; press brakes, automatic robotic welding machines, CNC machining centers and hazardous chemicals including water based metal cutting coolants and petroleum based oils. Managed the distribution of MSDS and audited all MSDS books. When a safety issue was discovered, the safety issue was corrected.

Worked with the shipping/receiving department regarding the inspection and management of damaged containers and product that were received from domestic and over seas companies. (Worked for K&S Tool temporarily to earn capital funds for The Kilpatrick Group, PA.)

7/01 to
6/02

SPHERION GREENSBORO, NORTH CAROLINA

Process Verification-Validation Engineer (Contract Engineering)

Provided engineering services to Bristol Myers Squibb, a manufacturer of ostomy, wound care products and pharmaceuticals.

Assisted in the modification and retrofit of production machinery for ostomy pouch manufacturing. Created and implemented process validation protocols IQP, PQP, OQP and DOE and statistical methods with reports per FDA GHTF and cGMP guide lines for approval to launch MK4 ostomy pouch process into production.

Provided engineering support to a new prototype Digital Label Printing Line. Benchmarked the process, gathered downtime data, trouble-shooting of equipment designs, and made recommendations to engineering manager on how to improve uptime. Decreased downtime by 40%. Created written PM schedules and trouble-shooting guides.

Designed and installed a protective cover for a 15 watt class 4 marking laser to meet OSHA, ANSI and ISO safety requirements of a class 1 laser. (Contract assignment was completed)

10/99 to
04/01

ERICO INCORPORATED ABERDEEN, NORTH CAROLINA

Mechanical Design/Manufacturing/Process Engineer

ISO-9002 and UL Listed manufacturer of grounding, electrical and structural support systems for the residential and commercial construction industry. Utilized Microsoft computer software and AutoCad 14 extensively.

Expedited and managed capital and expense projects, cost reduction, continuous improvements integration of OSHA 29CFR1910 safety requirements for ergonomic and lean manufacturing which included spot welding, wire drawing, copper plating, rod straightening, kinetic energy punch presses and cut-to-length operations. Used Six Sigma, SPC, problem solving, root cause analysis techniques, lean manufacturing, PFMEA, DFMEA, APQP, QIP, CIW and Kaizen extensively.

Established and led cross-functional teams for Centers of Excellence throughout the corporation. Established and led Six Sigma, QIP, CIW and Kaisen teams to reduce downtime, increase productivity, train personnel in lean manufacturing techniques, equipment operation theory and preventive maintenance. Developed and implemented a Six Sigma based statistical process and quality control system (SPC) for all departmental processes. Documented and tracked all project time lines, cost, cost savings, downtime reduction and process improvements. Monitored production schedules, inventories, production issues, product scheduling, and scrap levels. Communicated with production scheduler and production manager concerning production runs and production concerns. Created and controlled line documentation such as process flow mapping, work instructions, quality standards instructions, tooling specifications, tooling layouts and control plans.

Coordinated and relocated a complete automated roll forming line from Ohio to the North Carolina facility.

Redesigned blanking press die tooling for 75 ton Minster OBI strut pre-notch punch presses. Implemented SMED. Installed safety blocks required by OSHA 29CFR1910. Installed a coolant spray system to add lubricity to a formally dry punching operation. Human factors studies were performed during the design process. These changes increased tool life three times and reduced replacement tooling cost achieving a total yearly cost savings of \$100,000. As a result of these continuous improvement projects, reversed a negative \$110,000 per month variance to a positive \$40,000 per month variance and reduced setup time by 75%.

Designed and installed an enclosed in-process automated spraying system to apply a rust preventative to strut products to eliminate oxidation problems creating a superior product compared to the competition and met all OSHA 29CFR1910 safety requirements.

Redesigned Flexibar assembly tooling to eliminate scrap and customer claims and achieved a yearly cost savings of \$20,000.

Designed and supervised the installation of a hazardous chemical containment area for the storage of acids, bases and oxidizers per OSHA 29CFR1910 hazardous material regulations.

Designed a 30 foot belt conveyor for strut operations with an ergonomic and easy-to-use automatic ejection mechanism to replace an existing manual conveyor and saved \$8000 by designing and building it in-house. The conveyor was guarded to meet OSHA 29CFR1910 regulations. Human factors studies were performed during the design process.

Performed a complete design load and stress analysis on an existing in-house fabricated below-the-hook lifting device per ASME B30.20 standard. This lifting device was used for transferring 6500 pound sheet metal rolls from pallet to process equipment. It was determined that the lifting device design had not been tested by a second party testing lab and did not have the ASME B30.20 required data plate. The lifting device was permanently removed from service and replaced with a commercially available below-the-hook lifting device.

Trained operators on how to setup and use a spot welder to increase quality and production.

Managed projects and key hourly personnel to expedite and facilitate project work phases to closure. Involved in hands-on maintenance of process and material handling equipment.

Managed spare parts and tooling inventories for two separate facilities.

Member of the Safety Committee. Performed safety audits to enforce OSHA 29CFR1910 regulations of the facility, process, warehouse and material handling machinery and to assure ergonomic working conditions and the use of personal protective equipment. Reported findings to committee members with recommendations. Worked with the safety committee, created and implemented an OSHA 29CFR1910.147 compliant Lock-Out/Tag-Out system for the facility.

Redesigned floor layout for Flexibar process relocation. Redesigned floor layout of maintenance and tool room areas. Redesigned warehouse layout for relocation and steel coil storage and FIFO.

Investigated an accident involving a 75 ton Minster punch press and rollformer.

(Due to a 90 mile commute to work one way and rising fuel prices, resigned position to accept a contract engineering position with Spherion)

2/98 to
7/99

GKN AUTOMOTIVE ROXBORO, NORTH CAROLINA

Automotive Engineer Mechanical Design/Manufacturing/Process

Manufacturer of automotive constant velocity half shaft assemblies. Responsibilities included expediting and managing capital projects, cost reduction, continuous improvement, ergonomic integration of OSHA 29CFR1910 safety requirements for the assembly of automotive constant velocity half shafts in a Tier 1, ISO9001 and QS9000 facility.

Utilized Japanese philosophies of Kaizen, Poka Yokes, Zero Defects, Brainstorming, Waste Elimination, 5-S, FMEA, lean manufacturing and Kan Ban material control systems. Used Six Sigma, problem solving and root cause analysis techniques extensively.

Extensively utilized a Six Sigma based statistical process and quality control system (SPC) for all assembly cells. Documented and tracked all project time lines, cost, cost savings, downtime reduction and process improvements.

Created and controlled line documentation such as process flow mapping, work instructions, quality standards instructions, tooling specifications, tooling layouts, control plans and SPC documents.

Designed and built special ergonomic assembly tooling and fixturing that met OSHA 29CFR1910 regulations for continuous improvement and new program launches. Human factors studies were performed in the design process. Monitored production schedules, inventories, production issues, product scheduling, scrap levels and communicated with production coordinators concerning production runs and production concerns. Processed ECN's in department.

Was directly responsible for the hands-on repair and maintenance of assembly equipment, machine downtime tracking and improvement flashes across three shifts 24 hours per day. Coordinated maintenance activities with maintenance manager. Was directly responsible for ordering and inventories of all machine component maintenance items, new program, improvement design and replacement tooling. Facilitated and managed quality improvement processes and continuous improvement workshops with respect to each cell, it's operators and equipment.

Managed the installation of new assembly cells for new program launches. Inspected and assessed equipment to meet safety requirements of OSHA 29CFR1910 regulations. Performed machine capability studies, PSW, product master samples, tooling plans, control plans and documented changes for PPAP submission to customers. Created all line documentation for process production launches.

Heavily involved in hands-on maintenance of process and material handling equipment.
(Resigned position to seek other employment)

5/97 to
1/98

COPELAND CORPORATION HARTSELLE, ALABAMA

Mechanical Design/Manufacturing/Process Engineer

Manufacturer of residential HVAC refrigeration compressors. Responsibilities included expediting and managing capital projects; cost reduction; continuous improvement; ergonomic integration of OSHA 29CFR1910 safety requirements for machining aluminum pistons and rods, cast iron cylinders blocks and heads.

Utilized Japanese philosophies of Kaizen, Poka Yokes, Zero Defects, Brainstorming, Waste Elimination, 5-S, FMEA, ergonomic lean manufacturing. Used Microsoft computer software extensively and AutoCAD for design purposes.

Redesigned a two machine 4-axis CNC work cell eliminating 3 operators saving \$94,000 in direct labor cost. Human factors studies were performed in the design process. Assisted in the redesign of all compressor bodies for more efficient work holding. Redesigned CNC machining center work holding clamps to match the body redesign for scrap reduction. Processed ECN's in department for product design changes.

Heavily involved in hands-on maintenance of process equipment.

Created work instructions, machinery setup instructions and machinery operation parameters. Created bid packages for capital equipment quotation, cost justifications, appropriations requests. Coordinated maintenance activities with maintenance manager.

(Due to future marriage and relocation, resigned position to accept new position with GKN Automotive)

2/95 to
5/97

KOYO BEARINGS ORANGEBURG, SOUTH CAROLINA

Automotive Engineer Mechanical Design/Manufacturing/Process

Manufacturer of high performance automotive wheel bearings. Responsibilities included expediting and managing cost reduction, and continuous improvement projects, integration of OSHA 29CFR1910 safety requirements for CNC turning, grinding and automatic assembly of SAE1055 and SAE 52100 steel bearing inner and outer rings.

Utilized Japanese philosophies of Kaizen, Poka Yoke, Zero Defects, Brainstorming, Waste Elimination, 5-S, FMEA, ergonomic lean manufacturing and Kan Ban material control systems.

ISO9002 certification was awarded to Koyo during May of 1996. Was heavily involved with documentation development for certification.

Extensively utilized automated statistical process and quality control system (SPC) which was built into all manufacturing processes.

Traveled to Osaka, Japan to prove off \$6,500,000 of capital equipment including completely automatic CNC Murata MW series and LE type Miyano two axis turning centers, Koyo and Toyo shoe type centerless grinders and plunge type forming grinders and automated assembly machines. Personally performed floor lay out and supervised equipment installation upon arrival. Assisted in the creation of work instructions, quality standards instructions, tooling specifications and tooling layouts for processes.

Performed continuous improvements of bearing manufacturing process through extensive carbide insert and grinding wheel testing. Saved Koyo \$157,000 per year in tooling cost by changing metal cutting fluids and through carbide insert testing.

Heavily involved in hands-on maintenance of all automated process and material handling equipment.

Received classroom training on how to successfully write CNC coded programs utilizing the G,M,T,S,D,P,N codes to setup a multi-axis machining center for component part production.

Modified Machining CNC programs to reduce cycle time and increase tool life.

Redesigned the loading mechanism of an automatic ABS pulser ring assembly press for changing from an INA to FAG pulser ring meeting safety requirements of OSHA 29CFR1910 regulations.

Authored company math textbook and taught mathematics in classroom setting for testing and screening potential full-time hourly employees.

(Resigned position to accept new position with Copeland Corporation)

8/94 to
1/95

DML INDUSTRIAL PRODUCTS HICKORY, NORTH CAROLINA Mechanical/Manufacturing/Process Engineer

Manufacturer of high speed steel tooling for the wood and metal working industry.

Responsibilities included expediting and managing cost reduction, and continuous improvement projects, integration of OSHA 29CFR1910 safety requirements for CNC and NC turning and grinding operations. Responsibilities included expediting and managing capital projects, cost reduction, continuous improvements and ergonomic integration of OSHA 29CFR1910 safety requirements for manufacturing high speed steel tooling.

Designed, built and installed an ergonomic manufacturing process to support a Lindberg homo steam tempering furnace for applying a high temperature dark blue ferric oxide surface treatment for high speed steel drill bits. Designed, built and installed a 60 foot structural steel overhead monorail crane for lifting furnace payloads in excess of 2,000 pounds per ASME B30.11 standard. Crane and equipment met the requirements of OSHA 29CFR1910 crane regulations. Human factors studies were performed in the design process. Created written operation and setup manuals for this operation.

Assisted in the design of an ergonomic manufacturing cell to produce high speed steel S&D drill bits. Equipment included a Hertlein spiral flute grinder, two centerless grinders, a relief grinder, a Winslow drill pointer, tables and gravity conveyors. Human factors studies were performed during the design process. Created written operation and setup manuals for this cell. This cell eliminated three operators and saved DML \$112,320 per year in direct labor cost. Also processed ECN's in department.

Performed grinding wheel tests on Hertlein spiral flute grinders to improve grinding wheel performance and life. Grinding wheels used and tested were made by Norton and Carborundum.

Installed a coolant recycling system to recycle used coolant. Created written operation and setup manuals for this system. This system saved DML \$6,000 per year.

Created bid packages for capital equipment quotation, cost justifications, and appropriations requests.

Coordinated maintenance activities for process and material handling equipment with maintenance manager.

(Accepted new position with Koyo Corporation due to imminent layoff and plant closure)

1/94 to
5/94

CONTROLS SOUTHEAST INCORPORATED CHARLOTTE, NC Mechanical Design Engineer (Temporary Contract Position)

Was under temporary assignment to assist the design engineering department in the planning, design, manufacture and assembly of a testing apparatus to run experiments and gather transient heat transfer data in the form of Temperature vs. Time in order to generate temperature tables and graphs for the analysis of data to determine the overall heat transfer coefficients and time transients of various heat transfer cements during startup heat flow. Was responsible for all testing and data collection.

After testing and data collection was completed, created a detailed scientific report and submitted it to the company management for their future use. (Contract assignment completed)

10/93 to
12/93

FISHBURNE INTERNATIONAL HENDERSONVILLE, NC

Draftsman (Temporary Contract Position)

Modified engineering drawings for existing products.
(Contract assignment was completed)

12/92 to
4/93

FOXCROFT TEMPORARIES STATESVILLE, NORTH CAROLINA

Draftsman (Temporary Contract Position)

Created detailed instrument drawings for existing products for a client company.
(Contract assignment was completed)

4/92 to
10/92

B&W NUCLEAR TECHNOLOGIES LYNCHBURG, VIRGINIA

Tool Design Engineer

Manufacturer of nuclear fueled electric power generation facilities. Responsibilities included the design of manufacturing tooling for Uranium 235 commercial nuclear reactor fuel assemblies. Managed cost reduction and continuous improvement projects and integration of OSHA 29CFR1910 and NRC safety regulations for manufacturing Uranium 235 commercial nuclear reactor fuel assemblies.

Developed tig spot welding jig and a spring compression leaf jig for assembling rod cluster control assemblies (RCCA). Reduced assembly time 30 minutes per unit, a 99% reduction in assembly time. Human factors studies were performed during the design process.

Performed detailed design load analysis for all fuel assembly lifting fixtures. It was determined through the analysis that fixtures met OSHA 29CFR1910 and NRC regulations.

Performed safety audits. Tested personal protective equipment human body harness and lanyard equipment used on personnel lifts. Determined that the lanyard design was dangerous and had it removed from service permanently. All tooling design was performed using Personal Designer 3-D modeling CAD software. (Layoff. Further layoffs and downsizing continued)

4/91 to
6/91

MORRIS AND ASSOCIATES GARNER, NORTH CAROLINA

Assistant Engineer

Responsibilities included modifying engineering hand drawings for existing products.
(Resigned to seek other employment)

06/84 to
08/84

VICKERS FLUID PUMPS

Factory Technician

Was employed by Vickers during a summer job while in college to machine component parts, assemble and test gear pumps. Operated OD grinders to precision grind the OD's of the gear shank and gear teeth. Operated an automated brush machine that polished the gear teeth sides. Worked in assembly to assemble gear pumps. Also operated a test stand to test the pumps for output pressure, function and break-in. Left Vickers to go back to attending college classes at the end of the summer. (Summer Position. Returned to university after summer break)

9/81 to
12/90

Enrolled in college classes for bachelor of science degree program in Mechanical Engineering curriculum. Worked part-time and full-time to pay for all college expenses.

11/78 to
4/83

CLARK EQUIPMENT STATESVILLE NORTH CAROLINA

Forklift and Crane Machinist/Assembly Technician (Per-College Automotive Work Experience)

Manufactured forklifts, earthmoving machines and mobile cranes. Clark Equipment invented the forklift and the Bobcat and was the main competitor to Caterpillar.

Assembled drive steer axles, differential gearing units and transmissions for rough terrain telescoping forklifts and rough terrain telescoping cranes. Also assembled and bench tested large transmissions and differential units. Ergonomically modified assembly bench cell layout and increased assembly production from 5 Gallion road grader axles per shift to 10 Gallion axles per shift. Was commended by plant manager for production increase. Human factors were taken into consideration during the assembly design process.

Setup and operated high production high precision automatic CNC operated and NC tape operated metal cutting multi-axis machining centers including vertical and horizontal multi-axis turret lathes, broaches, multispindle drill presses and tapping machines, milling machines, transfer lines, shaft spline rollers, gear shapers and shavers, OD and ID grinders and boring machines.

Set up and operated OD, ID and surface grinders using resinoid and vitrified bonded grinding wheels. Grinding wheels were dressed using diamond dressers.

Assisted heat treatment department in heat treating rough terrain telescoping forklifts and rough terrain telescoping cranes spur and spiral bevel ring and pinon gears, shaft splines and spindles using methods of oil quenching and induction hardening.

Was a licensed forklift operator; Operated forklifts each day for the duration of employment. When required, performed plant wide material handling responsibilities by driving forklifts to load machine cells with pallets of component parts and also distributed materials throughout the facility. Have over 1000+ of hands-on day-to-day experience operating forklifts both the electric standup type and propane powered sit-down forklifts.

Enrolled at Mitchell Community College evenings part-time for college transfer courses.

(Resigned position to pursue college studies in Mechanical Design Engineering at NC State)

7/78 to
11/78

BERNHARDT FURNITURE COMPANY STATESVILLE, NC

Machine Operator (Pre-College Work Experience)

Manufacturer of home wood furniture.

Set up and operated various wood working machines and machined wood furniture components to print specifications. Machine types included turning and knife lathes, routers, shapers, sanders, boring machines and dove tail machines.

(Resign position to accept new position with Clark Equipment Company)

1/78 to
6/78

BEAUTYMAID MILLS, STATESVILLE NORTH CAROLINA

Machine Operator (Pre-College Work Experience)

Manufacturer of feminine textile products.

Setup and operated cloth handling machines to unfold and transfer cloth from one spool to another.

Unfolded rolls of cloth to be used for product manufacturing.

Operated electric knives to shear and cut several layers of cloth to the shapes of a paper patterns. (Resigned position to accept new position with Bernhardt Furniture Company)

6/75 to
1/78

KEWAUNEE SCIENTIFIC FURNITURE CORPORATION

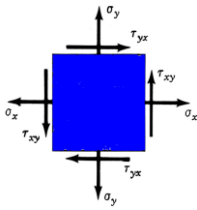
STATESVILLE, NORTH CAROLINA

Shipping Clerk (Pre-College Work Experience)

Manufacturer of scientific laboratory furniture.

Loaded and unloaded commercial tractor trailer trucks using hand trucks and pallet jacks.

Operated dock levelers to allow tractor trailer trucks access to shipping and receiving department. Also operated various wood working machines to machine wood furniture components to print specifications. (Resigned position to accept new position)



The Kilpatrick Group, PA



Motor Vehicle Crash Reconstruction Division

Since 2003, Gary E. Kilpatrick, PE, DFE at The Kilpatrick Group, PA has been a service provider of motor vehicle crash reconstruction to our legal and insurance clients. Gary is a board certified Forensic Engineer through the National Academy of Forensic Engineers (NAFE) and is a Diplomat Forensic Engineer (DFE). He has extensive engineering education, training and experience in motor vehicle crash reconstruction and product defect and failure analyses. Gary has a Class-A Commercial Driver's License (CDL). He has driven commercial tractor trailer trucks and has tanker, hazardous materials and triples endorsements and is a commercial tractor trailer expert. He is also a member of the North Carolina Truckers Association. Gary holds certifications through Northwestern University's Center For Public Safety in commercial tractor trailer crash reconstruction. Gary is also a part-time NC School Bus driver and School Bus Expert. He has also been an avid motorcycle rider for 30 years and is a motorcycle and ATV/ROV expert. Gary travels throughout the United States to investigate motor vehicle crashes, product defect and failure claims resulting in personal injury or wrongful death.



What services does The Kilpatrick Group provide?

- Car and Light Truck Crash Reconstruction
- School Bus Crash Reconstruction (Part-Time NC School Bus Driver and School Bus Expert)
- Tractor Trailer Truck Crash Reconstruction (Have Class-A CDL with Endorsements)
- Motorcycle Crash Reconstruction (avid rider and owner of two Harley Davidson Motorcycles)
- ATV and ROHV Crash Reconstruction (avid rider of ATVs)
- At-Scene Investigation and Evidence Mapping
- Photogrammetry Studies of Police Photographs for Evidence Determination
- Pre-Impact and Post-Impact Velocity Calculations
- Approach and Departure Angle Determination
- Delta-V Calculations
- Tire Mark Analyses
- Pedestrian Collisions
- Falls, Flips, Vaults, Rollovers
- Vehicle Crash Testing
- Vehicle Skid Testing
- Drag Factor Determination
- Class-A CDL: Federal Motor Vehicle Carrier Safety Regulations 49 CFR 40, 303, 325, 350-399, Paper and Electronic Driver Logs, Driver Inspections, Safe Operation Practices of a Commercial Vehicle, Airbrakes, Power Train, Mechanical Structure
- Image, Store and Analyze a Commercial Tractor Trailer or other Heavy Truck's Operating and Control Data from the Engine's Electronic Control Module (ECM)
- Image, Store and Analyze a Car or Light Truck Crash Data Report (CDR) stored in the Car or Light Truck's Airbag Control Module
- Airbag and Seat Belt Inspections and Analyses
- Computer Based Dynamic Motor Vehicle Crash Simulations Videos
- Standards of Care for Motor Vehicles and Heavy Commercial Tractor Trailer Trucks and Buses
- National Highway Traffic and Safety Administration (NHTSA) Regulations
- SAE Standards
- Product and Component Defect and Failure Analyses
- Machine Design and Analyses
- Computer Aided Design (CAD)

How can you contact The Kilpatrick Group?

Our corporate office is located in Jamestown North Carolina. Please feel free to contact us at any time at our office 336-841-6354 or cell phone 336-803-1639.