



Bart Kemper, P.E. Principal Engineer, Kemper Engineering Services LLC

Clarence Barton "Bart" Kemper III, P.E. began his professional career by enlisting in the United States Army in July 1983. He served over six years on active duty, his last duty station being the 82nd Airborne Division as a Sergeant. He enrolled in ROTC at Louisiana State University in 1990. He was the Army Distinguished Military Graduate and commissioned as a Second Lieutenant in the Army Reserves in the Corps of Engineers on 21 May 1992 while earning his BS in Mechanical Engineering.

Since graduation, Bart has worked for KnightHawk Engineering and CDI Engineering as well as starting his first firm, Kemper Imageering, Inc. in 1997. Kemper Imageering was reorganized in the wake of Hurricane Katrina as Kemper Engineering Services, LLC in late 2006. Areas of expertise include mechanical design, structural, heat transfer, fluid flow, hydraulics, failure analysis, and 3D modeling. His work has included petrochemical, manufacturing, fabrication, plastics, offshore, marine, subsea, aerospace, defense, security, biomedical, safety, and forensic applications. His military career as an Army Reserves engineer officer has mirrored his civilian one. In addition to work as a combat engineer and military construction engineer, he has served as a technical engineer and project engineer in North America, Europe, Asia, the Middle East, Central America, and South America, including combat operations. He is currently a Lieutenant Colonel in the Army Reserves and holds a SECRET clearance.

Bart's professional expertise includes vehicle accident reconstruction, incident reconstruction, product design, failure analysis, image analysis, safety, hazard analysis (blast, ballistics, fire, chemical), and engineering ethics. He has numerous professional articles and patents. He regularly gives classes regarding computer simulations & modeling, ethics, and engineering codes.

His professional recognitions include LSU's Chrome Shaft Award (1992), Baton Rouge Chapter of the Louisiana Engineering Society's Young Engineer Award (2000), and the only Army engineer in the NSPE Top Ten Federal Engineers of 2007. His military awards include the Bronze Star, Meritorious Service Medal, and the Humanitarian Service Medal. Bart is a member of the ASME Codes and Standards Committee for Pressure Vessels for Human Occupancy, in which he co-authors the engineering safety code for diving systems, pressurized medical treatment chambers, and submersibles.

Bart is a licensed as a Professional Engineer in the states of Louisiana and Texas. He lives with his wife Krista, President of Kemper Engineering Services, along with his two children, Mack and Zack. They split their time between Baton Rouge, La. and Franklin, La.



# C. Barton Kemper, III P.E. 306 Bedford Drive Baton Rouge, La. 70806 USA

## **Education:**

High School, 1983, Xaverian, Brooklyn, NY BSME, May 1992, Louisiana State Univ., Baton Rouge, LA Commissioned Army Reserves, Corps of Engineers (Distinguished Military Graduate) Military (Professional/Non-Technical) Basic Journalist Course, Defense Information School, Ft. Harrison, IN., 1988 Primary Leadership Development Course, Fort Bragg, NC., 1989 Engineer Officer Basic Course, US Army Engineer Center, Ft. Wood, MO. 1993 Engineer Officer Advance Course, US Army Engineer Center, Ft. Wood, MO. 1999 US Army Combined Arms Service and Staff School, Ft. Leavenworth, KS 2002 Combat Life Saver (US Army) Camp Shelby, MS 2005 and Ft. McCoy, 2013 US Army Observer/Trainer Academy (75th Division) Houston, TX 2008. Command and General Staff College (ILE-CC), Ft. Leavenworth, KS 2011 Supervisors Development Course, Dept. of Defense, 2013 Individual Terrorism Awareness Course (INTAC), US Army Corps of Engineers, 2013 Technical Finite Element Analysis, ANSYS OEM Course, Houston, TX. 1995 Accident Reconstruction, SAE Professional Educ. Cntr, Detroit, MI 1999 Contractor Quality Assurance (US Army Corps of Engineers) Vicksburg, MS 2004 IED Awareness (US Explosive Hazards Center) Ft. Leonard Wood, MO 2005 Physical Security: Adv. Applications and Tech. (ASIS) Baltimore, MD 2005 Base Camp Master Planning (US Army Corps of Engineers) Camp Shelby, MS 2005 Security Engineering & Blast Modeling (Protective Design Center, USACE) Baghdad, Iraq 2006 Anti-Terrorism Officer, Level 2 (US Central Command) Baghdad, Iraq 2006 USACE Area Office University/Project Management, USACE, Winchester VA, 2013

# **Professional:**

Registered Professional Engineer (La. 27736, Texas. 85022)

Security Clearance: SECRET (DoD)

- Member, National Society of Professional Engineers (NSPE)
  - 2007 Top 10 Federal Engineer (only Army engineer in top 10)
- Member, Society of Explosives Engineers (SEE)
- Member, American Society of Mechanical Engineers (ASME)
  - Member of the <u>Pressure Vessel for Human Occupancy</u> (PVHO1) Codes and Standards Committee <u>Subcommittees</u>: Medical Systems, Diving Systems, Design & Piping, Viewports, General Requirements, Post Construction (PVHO2) Alternate member: Submersibles
    - Working Group: Performance Based Standards Development, Tunneling PVHOs
  - Charter member of the Risk Assessment and Mitigation of Critical Asset Protection (RAMCAP) Codes
- and Standards Committee
  - Active in the <u>Safety Engineering & Risk Assessment Division</u> (SERAD)
  - Industry Panel Review member for LSU's Mechanical Engineering Sr. Capstone Design course
- Member, Louisiana Engineering Society (LES) (State chapter of the NSPE)
  - President, Baton Rouge Area Chapter (2001-2002), plus other offices
  - 2000 Young Engineer Award for Baton Rouge section.
- Member, Society of American Military Engineers (SAME)
- Member, Society of Naval Architects and Marine Engineers (SNAME)
- Member, Marine Technical Society (MTS)
- Member, American Society of Industrial Security (ASIS)
- Member, American Society for Metals, International (ASM)

# **Professional Work History:**

2006-current Kemper Engineering Services, LLC. Baton Rouge, La.

•Position: VP of Engineering, Principal Engineer

•Principal Responsibilities: Lead engineer, responsible for all work by staff and contract employees.

•Principal Technical Areas: Mechanical design, Machine design, Structural design, Vessel and Piping Design & Analysis, Marine Engineering, Failure Analysis, Explosive Blast Modeling, Security Engineering, Product design and development, Finite Element Analysis, Solid Modeling, Kinematic Modeling, Hydraulics, Computational Fluid Dynamics modeling, Reliability and Fit For Service studies, Accident Reconstruction, Project Management

#### **1992-Current** US Army Reserves (Corps of Engineers Officer)

- Current Position: Battalion Commander
- Current Unit: 2<sup>nd</sup> Battalion, 411<sup>th</sup> Infantry Brigade (Logistical Support Battalion), USAR, Ft. McCoy WI
- Current Rank: Lieutenant Colonel
- Past assignments:

Officer In Charge for USACE Resident Office, Gardez AFG. Responsible for construction in 5 provinces, \$350M. Team Leader for the US SOUTHCOM response team for the USACE Contingency Response Unit Observer/Controller-Trainer, then O/C-T Team Chief. 1<sup>st</sup> Group, 1<sup>st</sup> Brigade, 75<sup>th</sup> Div., Houston TX Plans Officer, 420<sup>th</sup> Engineer Brigade, Bryan Texas

Lead Engineer (FCMME), Det. 8, 412<sup>th</sup> Engineer Command supporting 130<sup>th</sup> Engineer Brigade, Balad, Iraq Mechanical Eng. (FCCME) Det. 1, 412<sup>th</sup> Engineer Command supporting SETAF, US Army Europe

Mechanical Eng. (FCCME), Pacific Command, 412th Engineer Command (FWD), Mission to Vietnam, Thailand Mechanical Eng. (FCCME), 412th Engineer Command, Vicksburg, MS. AOR: Republic of Korea

Commander, A/489<sup>th</sup> Engineer Battalion (Corps)(Mech), Hot Springs, Ark;

Platoon Leader, XO, Acting Commander, 285th Engineer Company (Combat Spt. Equipment) Baton Rouge, La

1996-2005 Kemper Imageering, Inc. Baton Rouge, La.

•Position: Vice President and Principal Engineer

•Principal Responsibilities: Lead engineer, responsible for all work by staff and contract employees.

•Principal Technical Areas: Mechanical design, Machine design, Structural design, Vessel and Piping Design & Analysis (API and ASME), Failure Analysis, Explosive Blast Modeling and Analysis, Product design and development, Finite Element Analysis, Solid Modeling, Kinematic Modeling, Hydraulics, Computational Fluid Dynamics modeling, Reliability and Fit For Service studies, Accident Reconstruction, Project Management

#### 1992-1996 KnightHawk Engineering, Inc., Baton Rouge, LA

• Position: Mechanical Engineer (EIT), later Marketing Director

• Principal Technical Areas: Pipe Stress, Piping & Vessel Design and Modifications (ASME & API), Hydraulics, Finite Element Analysis, Structural Design and Analysis, Machine Design, Kinematics, Field Work, Project Mgt., Other Responsibilities: Technical Editing, Marketing, Presentations, Photography.

1990-1992 Self-Employed/College Student, Baton Rouge, LA

• Freelance photographer for Baton Rouge Morning Advocate and State Times,

Associated Press, various magazines. Freelance writer and graphic designer.

• Self-financed 100% of tuition, books, fees, plus most living expenses. Sr. Cadet, USAR.

#### 1988-1990 U.S. Army, Fort Bragg, NC

• 82nd Airborne Division Public Affairs Office. Assistant NCO in charge, Darkroom Supervisor, Primary Trainer for new personnel. Co-ordinated and executed print and video coverage. Participated in training as a "player" in urban warfare, air field takedowns, combined arms operations, live fire exercises, airborne operations, and air assault operations as well as amphibious operations with the US Marine Corps. Worked with other Corps and post units, to include 24th Infantry Div., 10th Mountain Div, Special Forces, and PsyOps.

• The Paraglide. (Post newspaper, circ. 25,000.) Staff writer and photographer, Features Editor, Darkroom Supervisor. Part of XVIII Airborne Corps staff.

**1987-1988** Freelance Journalist, Writer, Photographer/College Student, Baton Rouge, La.

1983-1987 U.S. Army Cadet, combat engineer

# **Engineering and Technical Experience:**

## Machine Design and Kinematics

-Design of crane-mounted conveyor for sugarcane baggasse.

-Design of crane systems for fabrication yard.

-Design of lifting plans including modeling loads on hardware.

- -Design of compactor for oilfield material.
- -Design of power transmissions.
- -Design of downhole tool.
- -Design of injection pump.

-Design of K12-L0 vehicle barrier (impact and blast resistance).

- -Design of novel vehicle arresting fence system.
- -Design of novel subsurface oil recovery system.

-Redesign of biomedical device for inserting medical objects into a body cavity.

-Conceptual design of recycling process, leading to an award of a patent.

-Design, evaluation and redesign of locking mechanism of a rotating vehicle barrier.

-Design, evaluation and redesign of arresting cable and supports.

- -Evaluation and redesign of engines, pumps and compressors.
- -Evaluation and redesign of process agitators and associated equipment.
- -Evaluation and redesigns of bearings, linkages and power transmissions.
- -Vehicular impact studies; Equipment impact studies; Blast & ballistics

-Welding, fastener, shaft, cam, and spring design and analysis.

#### Failure Analysis

-Root cause analysis of a failed telescoping platform support in mineshaft.

-Root cause analysis of thermally-induced localized failure of water jacket on a reactor.

-Root cause analysis of a failed piping and pressure vessels.

-Root cause analysis of cracked tubing in heat exchanger, failed furnace tubing, failed process piping.

-Root cause analysis of failed power transmission (gears, linkages) with subsequent redesign.

-Root cause analysis of critical underperformance of water system

- -Root cause analysis of failure of protective structures in blast and fragment loading
- -Analysis of failed vehicle arresting system prototype with subsequent redesign.
- -Analysis of failed bolting on process equipments mounts and structural supports.
- -Analysis of failed welds on structural members subjected to upset loads.
- -Analysis of failed welds within equipment and with equipment mounts.

-Root cause analysis of failed structural members.

## Safety, Reliability, and Fitness-For-Service

-Piping, pressure vessels, and saturation diving systems (API 579/ASME FFS1 and ASME PVHO)

- -Life extension study of ball mill grinder.
- -Evaluation of a new offshore pipeline laying system.
- -Evaluation of control systems for ergonomics and safety on industrial equipment.
- -Lead investigator for safety reviews (through U.S. Army)

-Redesign of industrial equipment to address safety concerns

-Reliability study for increasing a compressor's service pressure.

-Evaluation of a non-standard crane support system.

- -Evaluation of a several vehicle arresting barriers, to include predicting response and correlating with test data.
- -Evaluation of composite material vessel head to be retrofitted with an agitator.
- -Reliability study of incorrectly-made modifications on API 650 vessel for compliance with API 653 repairs.
- -Evaluation of non-standard structural supports for agitators on vessel heads.

-Evaluation of structural steel moment connections for non-standard application.

- -Reliability study for a new 55 cubic yard clamshell crane bucket design for 3rd party review.
- -Evaluation of supports for process equipment.
- -Evaluation of rotating equipment components.
- -Evaluation of high pressure (10,000 psi) laboratory equipment.

-Evaluation and life prediction of pressure vessels subject to fatigue loads; redesign for enhanced life.

-Evaluation and life prediction of PVHO life support systems, including gas mixes and humidity.

-Evaluation and life prediction of pressure vessels over 20 years old made to non-ASME codes, including recommendations and modification designs for life extension.

-Evaluation and life predictions for equipment in tunnel-boring machines

-Evaluation of fuel blivet placement in response to possible ignition within an expeditionary fuel point.

## Finite Element Analysis (Structural and Thermal)

<u>-</u>2D Modeling for stress, strain, and deflection.

- -2D Modeling for buckling and frequency.
- -2D Modeling for heat transfer and thermally induced stress.
- -3D Modeling for stress and strain, and deflection (linear and nonlinear), including modeling metals, timber,

plastics, rubbers, glass, composites, and complex material interactions such as concrete/rebar and steel/rubber/glass.

- -3D Modeling for fatigue, buckling, and frequency as well as dynamic and post-dynamic modeling.
- -3D Modeling for heat transfer and thermally induced stress (linear and nonlinear)
- -3D Modeling for coupled FEA/CFD heat transfer and thermally induced stress (linear and nonlinear)
- -3D Modeling of modeling of assemblies and composite materials.
- -3D Modeling using optimization routines.
- -3D Modeling of multi-physics problems such as fluid flow (CFD) driven heat transfer and the structural effects

(FEA) or the forces developed within a linkage assembly (Kinematics) and resultant stress (FEA).

#### Pipe Stress and Piping Design, Modification, and Repair

-ASME B31.1, B31.3

-Pipe stress analysis and redesign of piping in tank farms and production units.

-Static and dynamic analyses with subsequent redesign of process piping.

-Static and dynamic analyses with subsequent redesign of blowdown lines.

-Site investigations for structural and flow issues

-On-site pipe stress analysis.

-Pipe stress models of process furnaces and cracking units. (Borsig, Selas, & Kellogg)

#### Vessel & Heat Exchanger Design, Repair, and Modification

-Crude oil storage, Water storage, Chemical storage, Process coils, and Process reactors.

-API 620, 650, 653; ASME Section VIII (Div. 1, 2, 3). ASME PVHO

-Vessel design, optimization, vessel repair (API 653), vessel life expectancy study (API 579/ASME FFS1)

-Vessel fatigue, failure, and reliability evaluations.

-Vessel design for marine topsides design and blast resistance.

-USCG certification for saturated diving equipment (PVHO)

-Life support design for PVHO's (diving, tunneling, submersibles, hyperbaric medical systems)

-Heat exchanger design; heat exchanger component design. (ASME, TEMA, API 660)

-API Plan 52/53 pot design

-Novel reinforced concrete pressure vessel

#### Hydraulics and Fluid Flow (Gas and Liquid)

-Design Audit of hydraulically-operated clam shucking plant.

-Design Audit of water lines for a nuclear facility, municipal water supply, industrial water supply

-Design Audit and subsequent redesign of hydraulic-powered vehicle barrier.

-Design Audit of incinerators for air flow, combustion, and feedstock issues.

-Design and evaluations of pumps, compressors, and mixers, to include CFD modeling.

-Water flow modeling (CFD) for wet wells, pumps, piping, knock out pots, heat exchangers, and screening systems.

-Aerodynamic analysis of commercial trucking equipment attachment, including CFD modeling.

-Aerodynamic analysis (CFD) for subsonic, transonic, and supersonic conditions on lifting bodies.

-Aerodynamic analysis (CFD) for subsonic, transonic, and supersonic conditions on projectiles.

-Power calculations, efficiency calculations, and sizing of pumps and hydraulic equipment.

-Sized and design piping systems for industrial and utility applications.

-Hydraulic loss calculations for piping, tubing, and open channel networks

-Process analysis for fluid and thermal characteristics.

-Dynamic analysis of process blowdown system.

-Water flow modeling (CFD) for marine hulls and marine structures.

-Gas flow within equipment enclosures with venting to outside, to include CFD modeling with heat transfer. -Cooling, heating, and gas mix/humidity modeling for HVAC and PVHO life support and equipment loads, including coupled FEA/CFD modeling.

-Fluid flow for sediment knockout system, to include CFD modeling.

-Study of high pressure air distribution header, including CFD modeling.

-Design of diesel-fired heater, including CFD modeling.

-Design review of incineration system, to include CFD of air intake system and combustion area.

-Design of fluid/fluid and gas/fluid heat exchangers.

-Computational Fluid Dynamic modeling liquids and gases for heat transfer, pressure distribution, thermal distribution, velocities, and vorticity. 2-D and 3-D modeling.

#### Structural

-Shell and head calculations for pressure vessels and components. (API, ASME Sect. VIII, Div. 1, 2, 3, PVHO) -Beam design, analysis, and selection., moment connections for steel structures (AISC ASD, 9<sup>th</sup> Ed.)

-Reinforced concrete design, Fiber-reinforced concrete design (ACI)

-Novel application of shotcrete for use in pressure vessel.

-Site investigations

-Design and analysis of plate, rod, piping, tube, and sheet metal applications.

-Beam bending calculations and optimization for crane applications. (AISC ASD, 9<sup>th</sup> ED.)

-Beam bending calculations and optimization for pressure vessel and vessel bed supports.

-Beam bending calculations for pipe support flexibility analysis.

-Design for transient conditions such as blast, high winds, and snow loads.

#### Forensic

-Technical investigations and research, to include incident site investigations.

-Failure analyses of equipment and equipment components.

-Accident reconstructions and illustrative recreations.

-Reliability studies and design audits.

-Product liability issues.

-Ergonomic reviews.

-Mathematical modeling and computer-based simulations/recreations.

-Technical analysis and interpretation of photographs, videos, and animations.

-Preparation and production of technical presentations and animations (2-D and 3-D).

-Engineering ethics evaluation

#### Force Protection, Explosives, and Security Engineering

-Carried out own operations and intelligence, planned and executed over 200 "outside the wire" missions in highly kinetic regions in Afghanistan, to include changing missions to avoid enemy engagements.

-Analyzed potential and actual effects of munitions on industrial infrastructure, vehicles, and personnel, developed engagement guidelines, including use of blast analysis and structural analysis.

-Post-blast analysis of Improvised Explosive Device (IED) and indirect fire attacks.

-Analyzed potential and actual terminal effects of enemy sabotage of critical infrastructure, including blast & fragment analysis and structural analysis.

- Analyzed potential and actual terminal effects of enemy attacks of fortifications, including blast & fragment analysis and structural analysis.

-Analyzed and designed perimeters, gates, and barriers up to and beyond K12 standards, to include lethal and nonlethal effects.

-"Red Cell" planning to war game potential hostile intent and test designs and plans by others, to include estimating potential damage and loss of life in multi-echelon, multi-phase scenarios.

-Analyzed and designed industrial sites, base camps, check points, entry control points, and other facilities for vulnerabilities from direct and indirect fire, sabotage, and infiltration, including line of sight analysis, blast analysis, stand off requirements, and terrain analysis with respect to terrain impact on enemy and friendly courses of action. -Analyzed vulnerabilities of fuel blivets to sabotage, blast, and combustion, developed revised site design, to include blast analysis from BLEVE, combustion calculations, and heat transfer modeling and calculations.

-Analyzed military and industrial site vulnerabilities to vehicle threat (impact and car bombs) for design of vehicle arresting systems, to include blast modeling and the nonlinear response of structures to vehicle impact and blast.

-Designed industrial and marine equipment to withstand specific blast parameters, including using blast modeling and modeling the nonlinear structural response to blasts.

-Designed shape charges, borehole shots, steel cutting shots, and cratering shots.

-Analysis of industrial perimeter security and redesigning key fencing and gate components.

-Military application of explosives, to include mine warfare planning and supervision, IED awareness, IED defeat, obstacle development and construction, explosive and mechanical breaching, boobytraps, and use of explosives for ambushes. Includes being primary instructor, safety officer, and training planner.

## Civil (through U.S. Army Corps of Engineers) (USACE)

-Concrete walls, slabs, towers, and foundations.

-Fortifications

-Trusses, walls, and structures.

-Timber buildings and towers

-Reinforced concrete structures

-Road and runway design, construction, and repair

-Earthmoving operations; pit operations.

-Drainage studies, design, and construction

-Bridge design, evaluation, and construction.

-Pipeline design, evaluation, and construction

-Flood and hurricane impact on structures and infrastructure as well as recovery plans

-Explosive and non-explosive demolition, explosive charge design

-Protective structure design, ballistic modeling and evaluation

-Project management, quality assurance, quality control

## Project Management

-Planned, managed, executed, and presented engineering projects involving 1-11 technical professionals.

-Planned and managed construction and construction support operations worth over \$350M over 5 Afghan provinces -Planned, managed, and executed construction projects involving 5-60 workers and supervisors split over several work sites, including projects in which the sites were located in different states.

-Planned, managed, and executed equipment manufacturing/fabrication projects involving multiple vendors and service providers.

-Planned, managed, and submitted multi-discipline proposals for federal and international projects, to include multimillion dollar USACE Military Construction projects approved by the US Congress for overseas construction

-Planned, rehearsed, and led infrastructure assessment mission in combat zones

-Planned and managed multi-tracked technical training programs.

-Planned and supervised military engineering projects to include: concrete retaining walls; drainage rehabilitation; road construction, road improvements; building rehabilitation; bridging; explosive and non-explosive demolitions; combat engineer operations.

-Planned and supervised military training for heavy equipment operator proficiency, time management, project management, weapons qualification, and deployment operations.

-Certified in Contractor Quality Assurance

## Patents:

U.S. and International Patents CA2814827A1, CN103209663A, EP2629721A2, US20130291872, WO2012054466A2, WO2012054466A3, EP269721A4, "Methods and Apparatus for Inserting A Device Or Pharmaceutical Into A Body Cavity" (Co-Inventor)

U.S. Patent Pending (March 2011) "Surface/Subsurface Oil Capture System" (Lead Inventor)

U.S. Patent Pending (Feb. 2011) "Hands Free Beverage Carrier That Attaches To A Person's Clothing Or A Wearable Accessory" (Co-Inventor)

U.S. Patent Pending (Dec. 2009) "Anti-Vehicle Security Fence" (Sole Inventor)

Patent, Republic of Ireland, "Total Municipal Solid Waste (MSW) recovery facility including power generation capability." Grant Number 84128, grant date 8 Feb. 2006.

# **Publications and Selected Presentations:**

"Jurisdictional Acceptance of Non-ASME PVHOs." Peer reviewed paper presented at the July 2013 Joint ASME/USCG Workshop in Washington, D.C.

"Criteria For Eliminating Cyclic Limit for PVHO Flat Disc Windows." Peer reviewed paper presented at the July 2013 Joint ASME/USCG Workshop in Washington, D.C.

"Novel Subsurface Oil Recovery System Concept." Presented at <u>Underwater Intervention 2013</u>, New Orleans La, Jan. 2013.

"Advances in Acrylics and Expansion of PVHO Window Cycle Life" <u>Proceedings of Underwater Intervention</u> 2012. Published by the Marine Technical Society, Jan. 2012.

"US Coast Guard Acceptance of Non-ASME Pressure Vessels for Human Occupancy." <u>Proceedings of Underwater</u> <u>Intervention 2012</u>. Published by the Marine Technical Society, Jan. 2012.

"Mitigating Potentially Weaponized Natural Phenomena." <u>Responder Rundown Newsletter</u>. CBRNE Resource Network. Dec. 2011.

"Introduction to FEA and Engineering Codes." Presented to the LSU Mechanical Engineering Senior Capstone Design course. Oct. 2011 and Oct. 2012.

"FEA and Pressure Vessels." Presented to Solidworks Users Group, Lafayette La. Feb. 2010

"Performance Based Standards: The New Approach" A 1-hour presentation at the 13<sup>th</sup> Joint Engineering Societies Conference, Jan. 2010 in Lafayette,, La.

"Introduction to Security Engineering." A 1-hour presentation at the 12<sup>th</sup> Joint Engineering Societies Conference, Jan. 2009 in Lafayette,, La.

"Risk Mitigation and Reliability Lessons Learned From Iraq." Peer-reviewed article accepted for publication at the Nov. 2007 International Mechanical Engineering Conference and Exposition, Seattle, Wa.. Presented to the Safety and Risk Assessment Division (SERAD) of ASME.

"Engineering Lessons Learned in Iraq." A 1-hour presentation at the 10<sup>th</sup> Joint Engineering Societies Conference, Jan. 2007 in Baton Rouge, La. as well as to the Baton Rouge Section of ASME December, 2008.

"More Than Management." Engineer Magazine, July-Sept. 2006 Silver Quill Award by the Army Engineer Assoc.

"Building a Construction Management Section for Iraq." <u>Army Engineer Magazine</u>, July-August 2006.

"Using Advanced Engineering Software in Forward Deployed Areas" A 1-hour presentation at the US Armed Forces Base Camp Design Workshop, May 2005 at the United States Military Academy, West Point NY.

"Evil Intent and Design Responsibility." A 1-hour ethics presentation at the 7th Joint Engineering Societies Conference, Feb. 2004 in Baton Rouge, La. Later presented at other sites, including West Point.

"Multi-Physics Simulations." Presented to the Baton Rouge Section of ASME Dec. 2003.

"Evil Intent and Design Responsibility." Peer reviewed article, presented at the Ethics in Engineering Conference, Oct. 15, 2003 in New Orleans, La. Published in the <u>Journal of Science and Engineering Ethics</u>, Vol. 10, Issue 2 2004.

"Application of Annealed Steel Cables for Vehicle Arresting Barriers." Peer reviewed article, presented to the Safety Engineering and Risk Assessment Division (SERAD), 2002 International Mechanical Engineering Congress and Exposition. November 2002.

"The New Professional Engineer Exam." Presented to the Baton Rouge Section of ASME Nov. 2002.

Selected and participated in reviewing and validating the U.S. national Principles and Practice Examination for Mechanical Engineering. (NCEES, Atlanta, Ga. May 2002.)

"Professional Licensure and Ethics." Regional speaker for the National Council of Examiners for Engineering and Surveying (NCEES), 2001-2003.

"Engineering Applications of Animation." Feb. 1999, 4<sup>th</sup> Louisiana Joint Engineering Societies Conference, New Orleans, La.

## **Honors and Recognitions:**

<u>2007 Army Engineer of the Year; Top Ten Federal Engineer of the Year</u> (NSPE's Federal Engineer of the Year recognition program, presented 22 Feb. 2007 at the National Press Club, Washington DC)

Silver Quill Award by the Army Engineer Association for the article, "More Than Management," <u>Engineer</u> <u>Magazine</u>, July-Sept. 2006.

Young Engineer of the Year, Baton Rouge Chapter of the LES, Feb. 200

Chrome Shaft Award. Presented by the LSU Mechanical Engineering Faculty. May 1992.

Military awards include: Bronze Star (w/Oak Leaf Cluster), Meritorious Service Medal (w/Oak Leaf Cluster), Army Commendation Medal (w/Oak Leaf Cluster)