

**CURRICULUM VITAE** 

ALEKSANDER & ASSOCIATES, P.A.

2006 RESEARCH AND CONSULTING ENGINEERS

# ADAM K. ALEKSANDER, Ph.D., P.E., C.S.P.

Education			
1995 Ph.D., Texas A & M University, College Station, TX			
	Industrial Engineering, Major: Human Factors Engineering, Safety Engin	eering	
1980	Master of Engineering, <i>University of Colorado</i> , Boulder, CO. Major: Mechanical Engineering Design and Economic Evaluation		
1972	Bachelor of Science, Mechanical Engineering, <i>California State Univers</i> Major: Machine Design, (Society of Automotive Engineers Achievement	s <b>ity, San Jose</b> , CA. : Award )	
1995	Industrial Fire Fighting Certificate, Brayton Field Training Center, Texas	A&M University	
1985	Business Law Course, Boise State University, Boise, ID		
1904	Loyola High School, Mohireal, P.Q., Canada		
Experience			
Diversified Engineering background with specific experience in Manufacturing, Cost Analysis, Consulting Engineering, Engineering Sales, Project Management, Product Development, Research, Lecturing, and Technical / Litigation Investigations of accidents and equipment failures.			
Aleksar	nder & Associates, P. A. Boise, ID	March 1987 to present	
President, Principal Consulting Engineer Technical Studies and Investigations			
Texas A	& M University, College Station, TX	January to May 1995	
Lecturer	Lecturer, Department of Industrial Engineering Faculty		
System			
Convey Manage	or Engineering Inc. Boise, ID r of Business Development Project Engineer Project Manager	July 1980 to March 1987	
Engineered Heavy Material Handling Systems for the Mining and Forest Industries			
Enginee	ring Investigator, Investigations of Accidents and Failures		
AMF - H Senior M	<i>lead Division,</i> Boulder, CO Ianufacturing Engineer, Ski and Tennis Products	November 1972 to June 1980	
Container Corporation of America, Inc. Santa Clara, CA September 1971 to October 1977 Jr. Engineer, Maintenance Engineering Group, Recycled Paper Kraft Board Plant		September 1971 to October 1972	
Professional Affiliations			
Affiliate Associate Professor, Department of Mechanical Engineering, University of Idaho			
Licensed Professional Engineer, 1984, State of Idaho ME #4925,			
Licensed Professional Engineer, 1999, State of Utah, #381067			
Certified Safety Professional, 1994, CSP #12285, Board of Certified Safety Professionals			
American Society of Mechanical Engineers, Member since 1982			
Human Factors and Ergonomics Society, Member since 1991			
Institute of Industrial Engineers, Member since 1995			
Society of Automotive Engineers, Member since 2003			
National Society of Professional Engineers, Member since 1984			
American Academy of Forensic Sciences, Fellow; Secretary, Program Chair, Engineering Sciences Section			
Chairman 2000, Andrew Payne Special Acheivement Award 2004, Awards Chair 2004			
Secretary, Member, AAFS Good Forensic Practices Committee 1999-2002			
American Society of Safety Engineers, Professional Member, since 1996			
National Academy of Forensic Engineers, Senior Member, since 1996			
ASTM Subcommittee Member, E-30 Forensic Sciences, 1997-2005, Subcommitte Chairman 2006			

MECHANICAL, INDUSTRIAL, HUMAN FACTORS, ERGONOMIC AND SAFETY ENGINEERING INVESTIGATIONS AND ANALYSIS 5109 N. SAWYER AV. BOISE ID 83714 (P.O. BOX 140558) BUS:(208)-321-0200 FAX: 321-0300 AKA@ALEKSANDER.NET

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## Publications and Presentations

"Estimating of Manufacturing Joint Costs", Technical Paper MM80-912 Society of Manufacturing Engineers, 1980, reprinted in "Manufacturing Cost Estimating", P.F.Ostwald, SME ISBN 0872630536

"Explosion of a Hydro-Pneumatic Storage Tank", presented at American Academy of Forensic Sciences, February 1990

"Collapse of a Conveyor Structure, and a Conveyor Nip Point Fatality" paper presented at American Academy of Forensic Sciences, February 1991

"Human Factors and Forensic Engineering" paper presented at American Academy of Forensic Sciences, February 1994

"Visual Correctness via a PC; A Model for Visual Courtroom Presentations" paper presented at American Academy of Forensic Sciences, February 1995

"Glare Mitigation in Night Driving Using Partially-Tinted Lenses", 1995 Dissertation, Texas A&M University Paper Presented at Vision in Vehicles VII Conference, Marseilles, France, September 1997

"PRT, Perception Reaction Time, Fact or Fiction", paper presented at AAFS, February 1997

Invited Speaker at Iowa State University/Stark rxp seminar on "Perception, Reaction and Conspicuity in Driving", Iowa City IA, November 1997, published 2003.

Invited Speaker at Idaho Trial Lawyers Association seminar on "Technology and Persuasion", Moscow ID, Nov. 1997

"New Perspectives in Forensic Engineering; Convergence of Design, Ergonomics, and Safety Engineering" paper presented at American Academy of Forensic Sciences, February 1998

"A Human Factors Approach to Risk Management" Invited speaker, Risk Insurance Mgmt Society, Sun Valley Id, Aug. 1999

"Homicide by Water Injection", paper presented at American Academy of Forensic Sciences, February 1999 "Skin Penetration by Water Jet" presented at International Academy of Forensic Sciences, Aug. 1999, AAFS Feb 2000.

"Applied Industrial Ergonomics" Two day seminar presented for University of Idaho, Mar. '00, in Boise ID. "Forensic Engineering and Ethics, Us vs. Them" Invited speaker Idaho Society of Prof. Engineers meeting Apr. 2000

"Ergonomics Issues in Workers Comp" Invited speaker, Penland/Lorimer seminar, June '00, Boise ID. "Designing Safe Products for Consumers and Industry" Two day seminar presented for Univ. of Idaho, June 2000.

"Geothermal Plants and Forced Outage Analysis Methodologies" Geothermal Resources Council Annual Meeting, San Francisco CA September 2000

**"Forensic Engineering Issues in Glare Environments"** NAFE Seminar, San Diego CA Jan. 2005 **"Go Cart Fatality**" paper presented at American Academy of Forensic Sciences, New Orleans, February 2005 **"Forensic Engineering Analysis of TASER Product Liability Issues"** NAFE Seminar, Chicago IL Jul 2005

### Technical Investigations 1972-2005

- Investigations of mechanical systems and components, to determine proximate cause of failure, and contributing factors, equipment failures, manufacturing anomalies, accidents, event reconstruction, technical interpretation of documents, drawings, and testimony, documentation, photography, and exhibit preparation.
- Services include photogrammetry, microscopy, x-ray, and laboratory disassembly and testing, engineering tests, experimental design and statistical analysis. Tests provided include headlamp and tail lamp filament analysis, metallurgical fracture analysis, photo and video documentation and analysis.

Product Liability (design, manufacturing and marketing defects, involving injury or fatality)

Go cart nip point fatality, washing machine amputation, amputations in punch presses, hydro-pneumatic tank explosion, agricultural truck amputation, airport conveyors, biscuit cutter, amusement rides, water-jet fatality, slips & trips, lead rope snap, document burn injuries, folding chair collapse, concrete anchor system, nail gun injury, prosthesis bolt failure, steam iron electrocution, pool light burn, design of warnings and instructions, automotive failures and crash related phenomena.

#### Equipment Failures (proximal cause of failure with contributing factors)

Farm equipment, failed engines, mining conveyors, power plant systems, belt conveyors, potato processing system, sewer line, tire shredder processing analysis, failed brake die, failed conveyor bearing, RV axle repair failure, trailer suspension system failure, trailer separation, dump truck telescoping cylinder failure, headlight filament analysis, service station gasoline tank leak.

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Falling loads, construction crushing accident, tank cleanout confined space injury, ladder fall, construction claims, compactor fatality, roof collapse fatality, forklift fatality.

**Human Factors, Visibility, Ergonomics, and General Research Issues** (product usability, warnings, perception), highway visibility, night visibility, Plant OSHA Safety Analysis, Human Factors and Safety Analysis of Peroxide Facility, Five part plant wide Ergonomics Program.

# **Confidential Projects for Clients**

Significant projects have been undertaken for confidential clients, working with their attorneys on sensitive research issues. 1995-2006

#### Projects 1971-2005

2005	Conveyor material failure. Scale and Feeder calibration. Chlorine Transporation Risk Assessment, Quezon, Pl	
2005	Refinery Delayed Coker Unit Safety Analysis	
2005	Taser Related Research and Design of Warnings and Instructions	
2005	Power Plant ASTM coal sampling D&F, and data systems, Quezon, Pl	
2004	Power Plant Chlorination system analysis HAZOP and PSM RPM Program, Quezon, Pl	
2003	Completion of hazardous gas monitoring and site safety systems at shaft well development project. SS, UT	
2002	Research and design coordination of proposed geothermal plant Vapor Recovery Unit systems. Continued methane safety responsibility at Cogeneration well development project. SS_UT	
2001	Planning and execution of penetrating a sealed 1000ft vertical methane filled mineshaft, with instrumentation, video and data acquisition, sample recovery and site safety coordination. Site project coordination with client attorney, city,	
2000	Investigations of geothermal plant anomalies and recuperator performance studies,NV, and sorbent limestone production studies for CFB plants, UT. Performance evaluation of geothermal plant VRU system. Investigation of ESP precipitator performance issues at RB waste wood plant., CA	
1999-01	Investigation of water utilization at power plant in Utah, modeling, well issues, study of proposed opening of a sealed mineshaft.	
1996-98	Cogeneration power plant, research issues related to EPA, DOJ actions, and analysis of plant performance problems related to sorbent quality and material handling, \$1.5+ M project award for Pilot Plant and related plant modification projects. Coal barn storage analysis, CA.	
1986	Developed conceptual and proposal documents, administered design and furnish contracts for \$1 M Pegasus and Rochester gold ore heap leach crushing and conveying projects near Lovelock, NV.	
1985-86	Developed application software for CEMA belt conveyor calculations (still in use 2006). Project Manager, Dillingham-Cerrillos Dam Project, Puerto Rico, managed engineering design and furnishing of \$3.5 M dollars of material handling equipment, structural steel, conveyors, foundations and primary crusher concrete structure, MCCF, control pagels, programmable control system, including 14,000 hours of engineering design affort	
1985	Project Engineer, site installation of vortex shedding modifications to a 200 ft. bent structure at the Caballo mine, Gillette WY	
1984-85	Project Engineer, Chino Mines Conveyor System Study to resolve dynamic loading problems.	
1984	Project Engineer, Conceptual Design, Proposal, and Award of \$.9 M wood chip conveyor system at Longview Fibre	
1980	Capital Cost study and technical evaluation of proposed reaction injection ski molding (RIM) system and equipment selection for new products.	
1979-80	Responsible for the redesign of all ski tooling to critical molding parameters developed through quality control data.	
1972-80	On the hill ski, boot, and binding technical tester, AMF-Head R&D Engineering.	
1977-78	Designed an automated production system for polyurethane ski foam cores, with individual air actuated mold assemblies in a recirculating curing oven.	
1977	Redesign of plant water cooling and heating systems.	
1975-77	Complete redesign of forty hydraulic press cavities used to manufacture fiber reinforced plastic (FRP) skis. Development of measurement methods and statistical process controls which substantially changed traditional	
1971	Paper Mill expansion CCA-Santa Clara, CA Jr engineer, supervised mill pump piping and kraft board sheeter equipment installations.	

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