ALBERT J. FERRARI
Registered Mechanical Engineer
Certified Safety Professional
EDUCATION, LICENSING, CERTIFICATION

Bachelor of Science - Mechanical Engineering - University of Santa Clara, 1969
Professional Engineering Registration: Mechanical - California #18025, 1977
Certified Safety Professional - #10258, 1991
Board Certified: International Board of Forensic Engineering Sciences, 2016

PROFESSIONAL EXPERIENCE SUMMARY

Experienced both in the micro and in the macro focus. Particularly sensitive to reliability, safety, and function. Background includes practical hands-on machine shop and repair work as well as shop supervision, forklift operation, and truck, bus, and high performance driving. Engineering work includes: automotive engineering, pedestrian facilities, machine design, thermal and mechanical energy analysis, structural load and stress analysis, piping and tanks, system safety and human factors analysis associated with design of hazardous equipment. Forensic engineering includes 40 years experience in accident reconstruction, causal analysis, failure analysis, codes, standards and regulations, consulting and testimony.

CONTINUING EDUCATION

Pedestrian footwear and walkway traction and safety
Human factors, vision vs. perception, biomechanics, & ergonomics
Biomechanics of slip and fall events and injury mechanisms
Walkway slip resistance: testing and evaluation
Pedestrian accident reconstruction: human factors, common fall mechanisms, etc.
Building codes and standards: commercial, residential and industrial
Safety engineering and safety management
Human error as an accident causal factor and prevention thereof
Forensic photography: dim light photos; photogrammetry
Product liability and product safety
Design professionals' liability
Hydraulic and fluid power systems and components
Pressurized systems design and safety
Fracture mechanics
Materials failure analysis
Forklift & manlift operation and train the trainer courses
Automotive fire and arson investigation
Computer-aided vehicle collision simulation and reconstruction
Vehicular accident reconstruction: cars, pedestrians, motorcycles, bicycles, trucks
Staged crash and rollover conferences: cars, trucks and motorcycles
Driver practices: defensive driving, commercial driver’s training, high performance driving
Driver vision, perception, reaction as affected by lighting, line of sight, task analysis, etc.
Vehicular failures: airbags, seatbelts, brakes, unwanted acceleration, etc.
Trucking and bus operations: safety, training and regulations
Hydraulic and air brake design and safety

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society of Safety Professionals
Society of Forensic Engineers and Scientists
American Society of Testing and Materials
American Society of Mechanical Engineers
International Code Council
Calif. Assoc. of Accident Recon. Specialists

MECHANICAL ENGINEERING & SAFETY ANALYSIS

Pedestrian Safety:
-ASTM F13 voting committee member: dealing with walkway safety, traction, and footwear
-Engineering: catwalks, stairs, handrails and guardrails, ladders, railings, and deck plates
-Pedestrian falls: causal analysis and reconstruction regarding slips, trips, stumbles, missteps, etc.
-Building codes, standards, and regulations regarding pedestrian safety: analysis and interpretation
-Slip resistance testing (certified: VIT tribometer): walkways, decks, etc., footwear and bare feet
-Automatic doors: mass transit, buildings
-Participant in a study of methods for wilderness trail safety and accessibility

Safety Engineering:
-Served on Mechanical Engineering Safety Committee, Lawrence Berkeley Laboratory
-Consulted on safety and technical aspects of mobile window test trailer
-Detailed guards for conveyor power transmission equipment
-Developed operating and maintenance instructions for industrial facilities
-Fire protection engineering for senior, residential, and commercial projects
-Atrium smoke testing per 1982 Uniform Building Code, Section 1715.

Machinery and Equipment:
-Mechanisms for retrofit on standard spring coiling machines
-Conveyor systems and component engineering
-Trunnions for an 8,000 pound capacity aluminum crucible
-50 h.p. cooling fan/duct system for a very large furnace
-Feasibility study for a 100 mega-watt compressed air energy storage system
-Vacuum line pressure profile analysis; outgassing test of gasket material
-Heating, ventilating, and air conditioning engineering
-Plumbing design, including restaurant grease trap installations
-Restaurant exhaust hood, fan and duct design
-Stress analysis of a steam pipe line per ANSI B31.1 "Power Piping Code"
-Tanks, pumping and piping for diesel and aviation fuel
-Boiler feed water system failure and settlement cost analysis
-Steam heat system evaluation for residential hotel
-Explosion and fire hazard analysis: coal slurry piping erosion test facility
-Participated in computer-aided study of methane explosion hazards

Forensic Engineering:
-Products liability evaluations involving machinery and products
-Personal injury: mechanism of injury and cause(s)
-Fire cause and origin: heaters, propane, gasoline nozzle, fireplace
-Power tools: reconstruction, analysis of guards, training, instructions and warnings
-Hydraulic elevator piping failure

Vehicular Accident Investigation:
-Vehicular collision reconstruction: autos, trucks, motorcycles, bicycles, pedestrians
-Restraint systems analysis: air bag deployment, seat belt use, occupant trajectory
-Vehicle on-board data retrieval and analysis (Vericom & CDR)
-Mechanical failures: brakes, steering, transmissions, electrical, etc.
-Low impact collision reconstruction: rear end, sideswipe, occupant accelerations
-Vehicle trajectory analysis: driver vs. vehicular factors
-Visibility: line of sight, conspicuity
-Fires: fluid leaks, cooler blockage, dragging brakes, electrical, arson
-Collision damage analysis: causes versus effects of collisions
-Tire failure, front end alignment evaluation
-Roll-away, drive-away, transmission park and parking brake analysis
-Sudden unwanted acceleration/braking capacity/surge/stuck throttle analysis
-Motorcycle and bicycle accidents: collisions, alleged brake failures, testing
-Diesel and gasoline engine failures: overheat, hydraulic lock, parts failure
-Truck air brakes: testing, dragging brakes, air line freezing, adjustment
-Forklift truck: pedestrian collisions, rollover, brake and mast failure
-Aerial personnel platform: mechanical and hydraulic systems failure analysis
-Off road & construction vehicles: rollovers, crushing accidents, struck pedestrians

Automotive Engineering Design:
-Imported car bumper design per DOT regulations
-Truck component parts design
-Assisted with truck noise level testing
-Bus emergency exit release mechanism design and signs
-Roll-Over Protective Structures (ROPS) design for Jeep fleet (30 units)
-Electric car chassis, ROPS, and drive train design
-Forklift truck: high capacity fork extensions design
-Truck mounted high-speed hydraulic tree de-limber design
-Mobile scaffold hydraulic system redesign for safety and reliability

Historical Experience and Qualifications:
-Private Pilot, Single Engine, Land
-California Commercial Driver License, Class B, Tank Endorsement
-Motorcycle Driver License, Class M1
-Certified Trainer, transit bus driving, DOT Transportation Safety Institute
-Training: taught defensive driving for commercial drivers
-Certified Safety Coordinator, California Trucking Association
-Auto mechanic: repair, maintenance and overhaul
-Work experience driving forklifts and trucks
-Machine shop work, supervision and training: tool and fixture design, machining and welding
-Assisted in the manufacture of an all hydraulic trenching machine
-Experienced in use of common power tools, plumbing, carpentry, etc.
-Sheetrocking, demolition, and painting on ladders and scaffolding to 25 feet
-Structural steel fabrication, welding, and erection
-Certified Plumbing Engineer, American Society of Plumbing Engineers

PROFESSIONAL EMPLOYMENT HISTORY
ALBERT J. FERRARI, P.E., C.S.P.

ALBERT J. FERRARI, P.E., C.S.P. 8/86 - present
Technical services for insurance companies and attorneys
1000 Elbert Street
Oakland, CA 94602
Position held: Principal

A.J. FERRARI & ASSOCIATES 8/81 - 8/86
Consulting Mechanical Engineer
l825 San Pablo Avenue, Suite 202
Oakland, CA 946l2
Position held: Principal

L.K. COMSTOCK ENGINEERING COMPANY, INC. 2/81 - 8/81
San Francisco, CA
Industrial architects and engineers
Position held: Design Engineer

LAWRENCE BERKELEY LABORATORY
Berkeley, CA National Laboratory
Environmental Health and Safety Department 6/79 - 2/81
Position held: Safety Engineering
Mechanical Engineering Department 11/76 - 5/79
Position held: Staff Scientist/Engineer

PETERBILT MOTORS 4/76 - 10/76
Newark, CA
Class 8 truck manufacturer
Position held: Design Engineer

CONVEYOR ENGINEERING, INC. (dba Engineering Services Inc.) 10/74 - 3/76
Boise, Idaho
Bulk material conveyors and general consulting
Position held: Design Engineer

BIGELOW-HILGEDICK MACHINE SHOP 2/72 - 9/74
Hayward, CA
Machine shop and excavation equipment parts manufacture
Position held: Shop Foreman

AUTO REPAIR (part time and full time) 9/68 - 1/72
San Jose, San Francisco, CA
All phases of diagnostics, repair, overhaul and maintenance
Position held: Auto and Light Truck Mechanic

TRUCK DRIVER (part time and full time) 6/64 - 9/68
Matheson Trucking, Learner GMC,
Colombo Bread Company