

Edwin Zucker, P.E.
Consulting Engineer
2005 Mayflower Drive
Silver Spring MD 20905
Tel. 301 236-9737 - Fax 301-236-9110 - E- mail engineer@edzucker.com

CURRICULUM VITAE

- EDUCATION:** B.S.E. (M.E.), University of Connecticut
M.S. (M.E.), University of Connecticut
- PROFESSIONAL:** Licensed Professional Engineer, Maryland, Delaware, District of Columbia, New York, and Rhode Island; Life Member of the American Society of Mechanical Engineers. Member of National Society of Professional Engineers
- PATENTS:** 17 US patents and several foreign patents in the fields of machine design, optical and imaging devices, office copiers, web transports, photographic contact printers, photoelectrophoretic processes, etc. List available on request.
- PUBLICATIONS:** "Novel Fiber Optic Connector Development Technology Pertinent to Optical Attenuation During Avionic Vibration, Shock, and Thermal Extremes," Proceedings of the 1992 Joint ASME/JSME Conference on Electronic Packaging, V.1, April, 1992.

SUMMARY OF ENGINEERING AND SCIENTIFIC EXPERTISE:

- Excellent analytical, creative design, and failure analysis skills in diverse disciplines and multiple industries;

Structural analysis (finite elements)	Electronic and optical packaging & thermal management for avionic platforms	Environmental pollution control	Fatigue life, fracture mechanics & fracture control plans.
Machine design, gear design, kinematics	Electrical Engineering	Web & paper handling technology	Photographic science
Vibration, random vibration, shock; analysis & test.	Pressure vessels	Electrostatics	Graphic science
Construction and farm machinery	Optics, optomechanics	Soils	Color science
Thermal sciences	Fiber optics	Systems engineering	Photoelectrophoresis
Thermodynamics	R a d i o m e t r y ,	Applied Mathematics	Image science
Failure analysis, glass fractography	sensitometry	Statistics	Psychophysics of visual and audio perception
Fire cause and origin	Acoustics	Laser technology applications, holography	Biomechanics
	Fluid Mechanics	Materials Science	Medical and scientific instruments.
	Powder technology	Xerography	Patent Investigation
	Rheology	Corrosion	

- Independent Consultant, inventor, Adjunct Professor of Engineering
- Manager of functional engineering departments and technology centers in high technology industries

CHRONOLOGICAL RESUME:

February, 1991 to Present EDWIN ZUCKER, P.E., CONSULTING ENGINEER, Silver Spring, MD

Providing Consulting Engineering and engineering support services to industrial, government contracting, and legal clients in mechanical engineering, electronic packaging engineering for harsh military and space environments, optics, fiber optics, laser technology, and forensic engineering. Assignments with high technology manufacturing clients, DoD and NASA contractors,; and as a forensic engineering expert to attorneys have been completed. Typical assignments have included:

Manufacturing Client Assignments

Opto-mechanical system for helicopter mounted agricultural crop analyzer
Development of industrial coating spray nozzle
Safety design for wind tunnel and space program capital equipment
Development of space optical instrument
Electronic and opto-electronic packaging engineering for space systems
Design review for laser range finder
Pollution Control System for chemical manufacturing plant
Environmental enclosure for remote telecommunication equipment.
Drying system for inorganic chemical powder manufacturing process.
Development and design of air atomizing nozzles for spraying industrial emulsions and foams.
Design and performance analysis of mobile lift system for buses.
Hybrid automobile power electronics materials research.
Design and performance analysis of lift system for coupled railcars.
Corrosion study for chemical manufacturing plant piping and vessels.
Transit escalator refurbishment/replacement for state transit system.
Newspaper printing press bundling machine and platform additions.
Instrumentation for paint scaling machine force measurement.
Machine shop floor loading analysis
Analysis/design of air supply and exhaust system for hazardous fumes in prison shop.
Noise attenuation for outdoor residential emergency electric generator.
Acoustic analysis & design for residential renovation.
Development of military helicopter seating for crash survival.

Forensic Engineering Assignments

Automobile accident reconstruction (plaintiff)
Escalator and elevator accidents (plaintiff)
Power sidewalk accident reconstruction; defective product, maintenance & inspection (plaintiff).

Contract compliance on 2 story biological laboratory construction (defendant)
Contract compliance on underground utility construction (defendant)
Product liability on defective front loader (plaintiff).
Contract compliance on hospital HVAC project (defendant).
Defective product/defective maintenance, automatic sliding and rotary doors (plaintiff).
Slip and fall (sidewalk disrepair, handicap access curb ramp,) (plaintiff)
Breach of contract residential foundation and structural failure (defendant)
Patentability investigation
Breach of contract, water tower collapse (plaintiff)
Breach of warranty, defective products; hand tool, office furniture (plaintiff)
Breach of warranty/contract, defective automobile repair (plaintiff)
Defective product, defective maintenance, negligent operation; hydraulic crane (plaintiff and defendant, separate assignments)
Defective product, lack of due care; electro-surgical instrument (plaintiff)
Breach of contract, wrongful termination of product development/manufacturing contract (plaintiff).
Product liability on defective metal shear (plaintiff)
Negligent operation of urban bus (plaintiff)
Contract compliance on military dormitory construction project (defendant).
Fire loss in paper mill (defendant), retail furniture store (defendant).
Fire loss caused by office machine (plaintiff)
Contract compliance in 4 story Student Union Bldg. construction project (defendant)
Contract compliance in composite materials aircraft repair hangar construction project (defendant).
Contract compliance on railcar lift construction project (plaintiff).
Product liability, uncrashworthy automobile component (plaintiff).
Product liability, unsafe recreational boat (plaintiff).
Contract compliance underground fiber optic and underground mechanical utility construction (defendants).
Product defect in pressurized glass bottle (plaintiff).
Product defect in consumer baking/cooking glassware (plaintiff).

Contract dispute potable water pumping plant construction (defendant).
Contract compliance underground pipeline construction (defendant)
Contract compliance underground fiber optic transmission construction (defendant).
Cause and Origin of electrical fire in furniture store (defendant)
Cause and Origin of burn injury in an acetylene welding fire in a railroad car shop (plaintiff)
Defective product. Folding step ladder (plaintiff).
Breach of warranty. Defective glass shower enclosure (plaintiff)
Product liability. Defective X-Ray package security scanner (plaintiff)
Defective fixed ladder in horse barn (plaintiff)
Defective stairway & walkway (plaintiff).
Defective storm water drainage and defective highway maintenance (plaintiff)
Defective automotive brakes (defendant)
Defective product. Compressed air nozzle blowing tool (plaintiff).
Product liability. Defective tractor starter safety mechanism (plaintiff)
Cause and origin of welding fire on packed bed scrubber tank plus plant loss analysis (defendant).
Construction contract dispute, multiple hot & chilled water pipe failures in convention center (defendant).
Defective humidifier for industrial air conditioning machine (defendant).

Defective swinging door (plaintiff).
Breach of warranty, defective amusement train ride (plaintiff).
Patent infringement, mechanical (2 plaintiff, 1 defense).
Defective vertical carpet carousel (plaintiff).
Breach of warranty, defective all terrain vehicle (plaintiff).
Breach of warranty, defective grinding wheel (defendant).
Investigation of airborne particulate causation of lung disease (plaintiff).
Defective heating pad and 2nd degree burn injury (plaintiff).
Defective product/defective maintenance low energy power operated swinging door (plaintiff).
Defective product / defective maintenance automatic sliding doors (plaintiff).
Electric shock by faulty commercial baking appliance & faulty connection (plaintiff).
Cause of apartment fire (plaintiff).
Construction accident, sheet rock pile collapse (plaintiff).
Automobile engine failure dispute (defendant).
Automobile steering control failure (criminal defense).
Defective automobile steering (plaintiff).
Defective motorized wheel chair and defective automobile wheel chair loading ramp (plaintiff).
Stage prop collapse (plaintiff).
Excavation collapse & collateral property damage (plaintiff).
Personnel boom lift occupant ejection (plaintiff).
Pipeline explosion, construction mortality (defendant).

August, 1983 to January, 1991 LITTON INDUSTRIES, INC., AMECOM DIVISION, College Park, MD (Defense contractor, electronic warfare (EW) and communication products)

STAFF SCIENTIST (1989 TO 1991)

Provided technical consulting to key Amecom personnel and to officers of other Litton divisions on mechanical design risk and technology. Provided design review and analytical support service to Mechanical Engineering Departments in several corporate divisions. Direct contributor in areas of advanced design and analysis. Completed A-12 fiber optic connector development for functionality in Naval aircraft environments previously unachieved. Provided engineering support to NASA.

MANAGER OF MECHANICAL ENGINEERING ANALYSIS (1983 TO 1989)

Directed a staff responsible for EW and communication product development for performance in the harsh environments of avionic, surface ship, submarine, and space platforms. Staff provided failure analysis; design synthesis; structural analysis, thermal analysis; development testing for shock, vibration, acoustics, and thermal behavior; and proposal and bid preparation.

Curriculum Vitae: Page 4 of 4

November, 1982 to July, 1983 **ROCHESTER INSTITUTE OF TECHNOLOGY**, Rochester, NY

ADJUNCT PROFESSOR OF ENGINEERING Taught a full schedule of courses in Dynamics and Strength of Materials for two semesters. Engineering Consultant to industrial clients.

August, 1964 to November, 1982

XEROX CORPORATION, Rochester, NY (Reprographic and information technology products)

MANAGER OF MARKING PROCESS COMPETENCY CENTER (1981-1982)

MANAGER OF SYSTEMS ENGINEERING (1979-1981)

MANAGER OF OPTOMECHANICAL ENGINEERING & MACHINE DESIGN (1975-1979)

Participated in the formulation of business and technical strategies multinationally. Directed the implementation of existent and new technologies in copier product programs that emerged from these strategies. Several successful copier products, within the Xerox 1000 product line, emerged from these efforts.

ENGINEERING UNIT MANAGER (1972-1975)

RESEARCH UNIT MANAGER (1969-1972)

ENGINEERING SPECIALIST (1966-1969)

SENIOR PROJECT ENGINEER (1964-1966)

Provided project engineering, analysis, invention, and development testing in several research and product engineering assignments during the above period (1964 to 1975).

December, 1961 through August, 1964 **COLLEGE HILL INDUSTRIES, INC.**, Warwick, RI (Aerospace recorders and instrumentation manufacturing)

SENIOR MECHANICAL ENGINEER Developed satellite and re-entry vehicle instrumentation tape recorders.

March, 1957 through December, 1961 **THE LEE COMPANY**, Westbrook, CT (Manufacturer of gas turbine fuel control and injection devices)

Developed pressure atomizing dual orifice fuel nozzles, spray bars, and fuel control systems for jet engines. Developed dual fuel (pressure atomizing oil/gas orifice) nozzles for electric utility stationary gas turbines.

June, 1954 through March, 1957 **THE UNITED ILLUMINATING COMPANY**, New Haven, CT (Electric utility company)

Project engineer on capital additions/modifications to electric generating plants and other physical facilities. Conversion of stoker fired boilers to oil firing and design of fuel handling system. Analysis of failures in and redesign of coal handling bridge crane. Addition of soot blowers to 80 megawatt steam generator. Site preparation for Bridgeport Harbor generating station.

PERSONAL DATA: Born in New York City, United States Citizen, Secret Clearance (inactive)