



Alpine Analytics™

PO Box 830

Durango, CO 81302

www.AlpineAnalytics.com

Sound ethical decisions based on data! SM

Root Routledge, PhD — Founder and President

Education

PhD Industrial Engineering — Oregon State University (1991)

Dissertation: *A Paradigmatic Framework for Flight Safety* (345p, UMI # 9130921) [system safety applied to aviation]

MBA — University of Montana (1984)

Emphases: General business and management; economics; philosophy of technology; interpersonal communication; forestry and natural resource management/economics

MS Statistics — Colorado State University (1976)

First recipient of the Department of Statistics annual Franklin A. Graybill Award for Academic Excellence

Emphases: Applied statistics; ecological modeling and simulation; environmental data analysis; natural resource management; environmental science, ecology, botany and biological sciences

BS Mechanical Engineering — Washington State University (1968)

Experience

Over 30 years of scientific, engineering, business, management and high-tech project management (~\$2 million) experience in industry and government. Was on the Industrial Engineering faculty at Oregon State U (engineering economics); also taught at Colorado State U (statistics), Washington State U (MBA Quantitative Methods) and Oregon Institute of Technology (quality technology). Prior to his PhD at age 44, Routledge worked for 20 years in such leading organizations as Hewlett Packard, Weyerhaeuser and the U.S. Forest Service in a variety of functions, including R&D, manufacturing, quality assurance and supplier quality management, metrology and inspection, materials and logistics, long range planning, operations research, environmental research and natural resource management.

Since founding Alpine Analytics in 1991, Routledge has focused his energies as an industrial consultant and trainer on the needs of engineers, scientists and managers from over 100 organizations covering several industries, including: Automotive Industry; Chemical and Hydrocarbon Process Industries; Computer, Electronic and Software Industries; Consumer and Building Products Industries; Defense Industry; Energy and Transportation Service Industries; Environmental Regulation and Reclamation Industry; Food, Drug and Medical Device Industries; Forest Products Industry; Metals and Materials Production and Forming Industries; Service Industries (Legal/Medical); Sustainability, Climate/Energy and Environmental Issues. He has also been involved with Engineers Without Borders.

Specialty Expertise (Consulting and Training)

Critical thinking and analysis; Effective communication of technical data and results
Problem investigations (assessment measure problems; event-based problems and cause-effect analysis; Root Cause Analysis); Investigation of new technologies
Design and analysis of scientific and engineering studies
Industrial statistics; product & process improvement; design of experiments; reliability studies; statistical process control, quality assurance and Six Sigma
Business analysis and general statistics (measures of performance, effectiveness and outcome; benchmarking; statistical modeling, time series and forecasting involving uncertainty and risk; multivariate analysis; engineering economics)
Environmental, ecological, natural resource and climate/energy analysis and statistics
Medical, pharmaceutical and epidemiological statistics
Statgraphics® statistical software (consulting, training; StatPoint Technologies dealer)

Military

United States Air Force (1968 - 1972) — Captain, Navigator

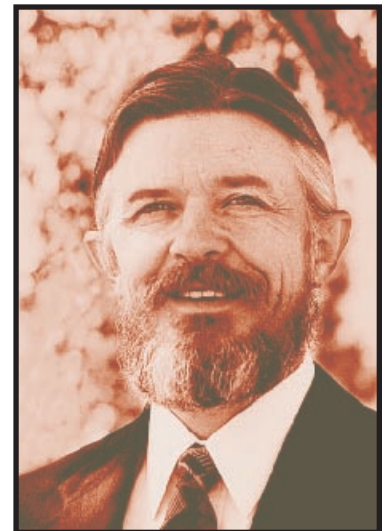
C-141A (Military Airlift Command, 8th MAS, McChord AFB)

EC-47 (360th Tactical Electronic Warfare Sq, 460th Tac Recon Wing, Tan Son Nhut)

Vietnam Combat Veteran: 170 Combat Missions/630 Combat Flt Hours, DFC, Air Medals, Service Medals

Service: Distinguished Graduate, Officer Training School; Top Honor Graduate, Navigator Flight School

2360 Total flying hours, Top Secret Security Clearance (with SIR), Private Pilot



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