

Contact: **Gary W. Johnson, Ph.D., P.E.** 7-20-07
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Formal Education:

B.S. Aerospace Engineering	University of Texas at Austin (major: aerothermodynamics & propulsion)	1972
M.S. Aerospace Engineering	University of Texas at Austin (high-speed aerodynamics; math minor)	1974
Ph.D. General Engineering	Kennedy-Western University (study field: manufacturing & production) (dissert.: alternative fuels in piston aircraft)	2000

Continuing Education:

Laser Technology cont.-ed. course	company-sponsored education at TSTC	1978
Scramjet Propulsion Short Course	AIAA-sponsored training at UCLA	1987
Beech B-90 systems training	Worldwide Aviation Training	1998
Fire sprinkler professional training	National Fire Protection Association	2000

Certifications:

Professional Engineer	State of Texas # 46233	1979
Fire Sprinkler RME "general"	State of Texas # 0649	1999-02
NIASE Certified Mechanic	engine diagnosis and engine performance	1996-01
State of Texas Certified Educator	SBEC, Secondary (8-12) Math	2003

Patents:

Fuel Injector for Ducted Rocket Ramjet Motor (assigned to employer)	US 4,416,112	1981
Eradication Implement for Controlling Prickly Pear Cactus (self-held)	US 6,722,446	2004

Consulting Experience:

Private consultant in aerospace, automotive, mechanical, energy, and manufacturing, as Expert Technical Services, since 1991. Offering services in air, land, and sea vehicle design, test, and modification. Equipment and process design. Management and project control. Structural design, analysis, and in-the-field evaluations of structures and buildings. Aircraft STC experience with FAA. Alternative fuels and energy. Mechanical cactus eradication processes. Invented and offered to NASA a simple and practical crew escape means for Shuttle ascent and re-entry accidents.

Aerospace/Defense Industrial Experience:

16 years with a missile propulsion manufacturing concern, working with rockets (Sidewinder, Sparrow/Shrike, Phoenix, AIM-120, and more), ramjets (VFDR-PTV, ASALM-PTV, AAAM, and more), air turbo-rockets, and pulse detonation engines. Managed plant IR&D program for 5 years, comprising 10-20 projects and investigators, funded at \$1-2 million annually. Technical lead in airbreathing propulsion research, design, test, and evaluation for 15 of those 16 years. Developed cycle analyses, testing protocols, and facility design updates for airbreathing test. 16 years of ground test experience in both rocket and ramjet work. Program manager for two funded contracts (SFDR and UFDR). Technical lead for foreign technology exploitation of the SA-6 airbreathing sustainer (a ducted rocket ramjet, Project Group Work).

3 years with a decoy and deception equipment manufacturer, working flares, chaff, and multiple types of advanced towed and free flight decoys, for both aircraft and ICBM re-entry application. Technical lead for design and demonstration of an infrared towed decoy powered by fuel-air combustion for 3 of those 3 years. Technical lead for deployment dynamics of various items for 3 of those 3 years (two towed ribbon radar decoy classified applications, one

towed hard-body radar decoy TAAED, and one forward-fired free-flying hardbody radar decoy FFAED). In-plant expert for anything propulsive for all 3 years (including a decoy rocket for use with Stinger missiles in Afghanistan for the CIA). Ground test experience of multiple types, and flight test experience in jet aircraft with towed decoys of all types.

Summer tour as a graduate student with an aircraft/missile prime manufacturer, working in the satellite launch business with the “Scout” vehicle. Advanced configuration studies and advanced mission analysis, plus orbital mechanics support for launch customers. Demonstrated feasibility of dual launch chase mission that was later flown.

Civilian Industrial Experience:

3 years in commercial construction and environmental work. Residential and commercial foundation design for highly expansive clays. Structure evaluations for integrity, primarily foundation-related. Septic system design-to-code. Cleanup and disposal of very hazardous materials. Air/water/waste permitting. Fire sprinkler system design-to-code and construction oversight, including piping and supports, pumps, supplies, and underground water mains.

Teaching Experience:

3.5 years in university level education. For Minnesota State University, was Associate Professor of automotive and manufacturing engineering. Taught all the design analysis and composite materials courses for 4-year technology degrees in these areas (including labs), plus served on accreditation committee and semester conversion curriculum committee. For Baylor University, was simultaneously (1) Lecturer and (2) Research Associate, in aviation sciences. For (1) Taught aerodynamics, aircraft systems, aviation safety, and airport management to commercial pilot candidates. For (2) Conducted departmental contract research into alternative fuels for both piston and turbine engines, including both ground testing and flight testing.

4 years in public education: For two Texas high schools, taught secondary math, grades 8-12, plus one 7th-grade math course. Secondary math courses include Algebra-1, Algebra-2, Geometry, Pre-calculus & Trigonometry. Served as school anchor / instructor for dual credit college courses in College Algebra, College Trigonometry, and Calculus 1.

4 years in other college-level education: For McLennan Community College (MCC), as adjunct Professor, taught evening courses in engineering. Curriculum and program correspond to freshman and sophomore years in most engineering degree programs, and specifically designed for transfer of full credit to major institutions in Texas. Courses include Introduction to Engineering, Statics, Dynamics, Graphics, and Basic Circuits.

Informal experience in industry: over many years, taught many young engineers on-the-job the essentials of ramjet work, flow visualization, dynamical simulations with convenient models, interior ballistics, and safety engineering. Some of these topics were of a classified nature and substantially ahead of the open literature available in higher education.

Current Engagements:

Professor of Mathematics at TSTC, Waco, Texas (started July 2nd 2007); Adjunct Professor of Engineering for MCC, Waco, Texas; experimenting with owner conversion of gasoline-only vehicles to E-85 ethanol operation, plus continued business activity building and selling cactus eradication implements.

Some Selected Areas of Expertise in Which Consulting is Offered:

Eradication of prickly pear cactus from farm and ranch pastures by mechanical processes.

Conversion and testing of road vehicles and aircraft to alternative fuels.

Mechanical / structural design of components and equipment, in unusual / harsh environments.

Combustion, fuels, & propellants: high-intensity flameholding / ignition; analysis, design, and test.

Design and test with many different fuels, propellants, explosives, and other hazardous materials.

Signature production, detection, reduction, and deception: infrared, optical, and some radar.

Aerodynamics, heat transfer, & materials: analysis and experiment from 5 mph to Mach 5, analysis to Mach 25+

Vehicle configuration, motion, modification, and performance: analysis, design, and test; land/sea/air applications.

Residential and commercial buildings: foundation and superstructure structural evaluations.

Space vehicle crew escape concepts for retrofits or new designs.