

**GARY W. JOHNSON (EXPERT TECHNICAL SERVICES) OFFERS CONSULTING IN THESE AREAS:**

**Civilian Applications ---** (unusual specialties *in italics*)

Eradication of prickly pear cactus from farm and ranch pastures by mechanical processes without disposal or chemicals.

Structural evaluations of residential and commercial buildings: both foundation and superstructure.

Mechanical and structural design of equipment including unusual / harsh environments.

Fire protection equipment design-to-code: sprinklers, piping, pumps, hose, underground lines, and water supplies.

Strength and selection of materials: steel, aluminum, titanium, wood, composites.

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

**Specialty Automotive Applications ---** (unusual specialties *in italics*)

Fuels and systems: *alternative fuels* and general modifications to spark ignition, compression ignition, turbine.

Drag determination of road vehicles by precision (but inexpensive) coast-down drag testing: the "Rolling Wind Tunnel".

Road vehicle configuration, motion, and performance: analysis, design, and test of rolling, air, and inertia road loads.

**Specialty Aircraft Applications ---** (unusual specialties *in italics*)

Fuels and systems : *alternative fuels* and general modifications to spark ignition, compression ignition, turbine.

Propellers: design, selection, and performance evaluation.

Flight vehicle configuration, motion, and performance: analysis, design, and test.

**Military Applications ---** (unusual specialties *in italics*)

Aerodynamics and heat transfer: analysis and experiment from 5 mph to Mach 5, analysis to Mach 25, *experience with low density ceramic composites for applications at extreme temperature gradients.*

Flight test experience with: equipment in military jet aircraft, and *alternative fuels* (in civil aircraft).

Propulsion systems: propellers, jets, piston, turbine, rocket, *ramjet, combined-cycle, and exotics.*

Space vehicle crew escape concepts for retrofits or new designs.

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

Combustion aerodynamics: analysis, design, and test experience with high-intensity flameholding and ignition.

Fuels and propellants at extreme conditions: analysis, design, and test; hot and cold soak; *munitions sensitivity.*

Misc. design and test experience: many different fuels, propellants, explosives, and other *hazardous materials.*

Materials: steel, aluminum, titanium, composites, *low-density ceramics (for combustors and re-entry heat shields).*

Signature production, detection, reduction, and deception: *infrared hot parts, optical stealth, and some radar issues.*