

## STRUCTURAL ANALYSIS & EXPERIMENTAL STRAIN / STRESS MEASUREMENT TECHNOLOGY

### KEYWORDS

Strain Gage  
Applications

Strain Gage  
Instrumentation

Pressure  
Housings/Submersibles

Structural Analysis

Tension/Compression  
Load Testing

Finite Element  
Analysis/Design

**S**outhwest Research Institute® (SwRI®) designs, fabricates, and tests pressure vessels, pressure housings, and subsea diving systems. Structural Engineering Department staff members have a combined total of more than 200 years of experience in experimental strain measurement and analysis of structures under various load conditions. SwRI employs the latest technology in instrumentation to provide clients with real-time data formatted for accurate analysis and verification of finite element analysis.

### Capabilities

SwRI has the capability to perform in-house or field testing services. The staff has performed stress analysis test services for commercial and government clients in many areas including boilers, pressure vessels, submersibles, diving systems, composite housings, titanium instrument housings, and aircraft structures.

### Facilities

- Fabrication facilities
- Tension and compression test load frames
- Ocean simulation chambers
- Computer strain gage data logger systems

### Experience

- High-strength steel, aluminum, acrylic and composite hulls and housings tested for the U.S. Navy and numerous commercial submersible/diving system companies
- Aircraft and related structures testing
- Submarine hull and sail testing
- Steel pipe connectors, composite pipe burst testing
- Harsh environment applications
- Field services for tests on boilers, digester tanks, hulls, decompression chambers, hot taps, pipelines, and many other applications



D0014185

*One-man submersible hull instrumented with strain gages for external pressure test to establish maximum depth capability*



D001415

*Acrylic pressure hull instrumented for external pressure test*

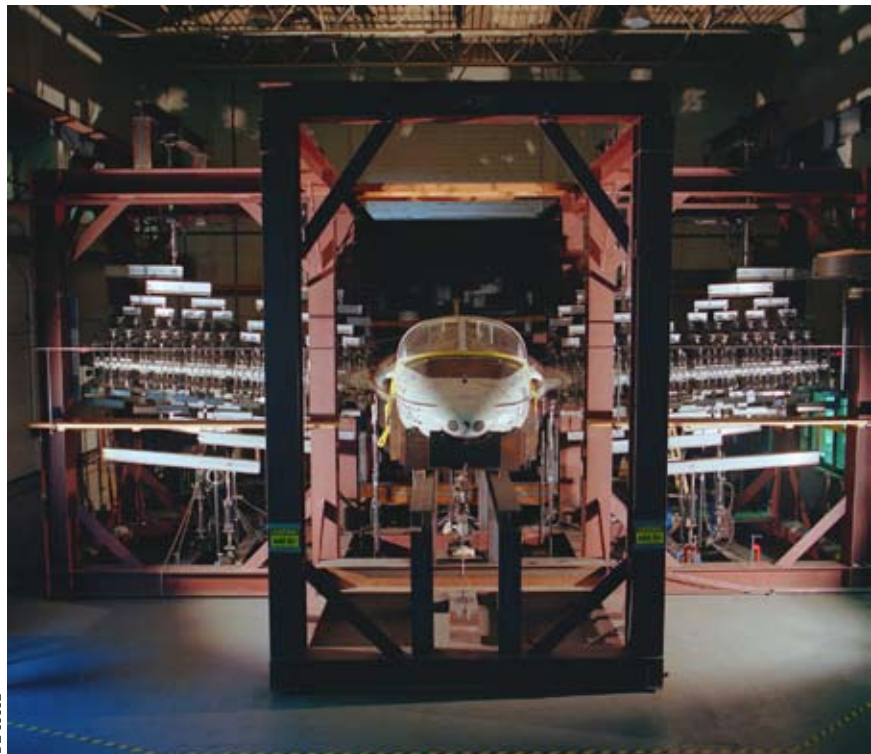


D014184

*Instrument housing strain gaged prior to proof pressure test*



Benefiting government,  
industry and the public  
through innovative  
science and technology



DE-85582

*Full-scale test setup of T-38 on SwRI load frame test facility*



*Southwest Research Institute is an independent, nonprofit, applied engineering and physical sciences research and development organization using multidisciplinary approaches to problem solving. The Institute occupies 1,200 acres in San Antonio, Texas, and provides more than 2 million square feet of laboratories, test facilities, workshops and offices for more than 3,100 employees who perform contract work for industry and government clients.*

**We welcome  
your inquiries.**

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