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EXPERIENCE

Vibrationdata Corporation. Chandler, Arizona. November 2002 to present. Shock & Vibration Engineering Consultant and Instructor.

I perform shock and vibration testing and analysis for numerous customers. My primary customer is Orbital Sciences Corporation, where I had previously served as a full-time employee for thirteen years.

In addition, I teach shock and vibration seminars, which are based on hands-on software training using C/C++ and Matlab software which I have written. Students from the following organizations have successfully taken these courses (partial listing):

Aerojet	Isothermal Systems Research
ATK Space Systems	L-3 Communications
Boshart Automotive Testing	Lockheed Martin Commercial Space Systems
British Petroleum	Los Alamos National Labs
Carleton Technologies	Mustang Technology Group
DRS Technologies	NASA Marshall Space Flight Center
Dynamic Labs	NASA Wallops Flight Facility
Ensign-Bickford	Northrop Grumman Electronic Systems
Hitachi Medical Systems	Pathfinder Energy Services
HUSCO	Pratt & Whitney
	Texas A&M University

Analex Corporation. Mesa, Arizona. January 2001 to November 2002. Structural Dynamics Engineer.

My colleagues and I designed a spacecraft dispenser for the SBIRS Low program. I performed finite element analysis on the dispenser/spacecraft system in support of the design effort. This analysis included normal modes, buckling, and static load analysis.

Orbital Sciences Corporation. Chandler, Arizona. October 1988 to January 2001. Mechanical Engineer.

I analyzed flight accelerometer data from Pegasus, Taurus, and other rocket vehicles. I transformed this data into concise graphs, such as power spectral density and shock response spectrum plots. My colleagues and I used this data to characterize the rocket performance and troubleshoot flight anomalies. We also used the data to specify component test levels per MIL-STD-1540C and MIL-STD-810E.

In particular, I derived the maximum expected environmental levels for the first Pegasus vehicle. I was the principal author of the Pegasus Environmental Test Plan. I personally conducted most

of the qualification shock and vibration tests on the Pegasus avionics components. My responsibilities included designing test fixtures and operating the vibration control computers.

I had hands-on experience measuring pyrotechnic shock from numerous stage separation tests. The complexity of these tests required close teamwork with other engineers, technicians, and safety personnel. For post-processing, I wrote innovative software programs for removing spurious noise signals from pyrotechnic shock data.

In addition, I performed the following field assignments:

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| White Sands HELSTF | - Pegasus and Taurus fairing separation tests |
| White Sands Launch Complex | - BTTV4 launch shock measurements |
| Cambridge, England | - Flight tests of the L-1011 modified to carry Pegasus |
| Calspan Wind Tunnel | - Modal testing and wind tunnel testing of the Taurus GFO model |
| Wake Island | - Brilliant Pebbles launch preparations |
| NASA/Stennis | - Static fire testing of the USFE engine |
| Vandenberg AFB to NASA/Wallops | - Captive carry vibration measurement of Pegasus mounted to the L-1011 |
| Bosch Proving Ground | - Semi-trailer vibration measurements for GPS tracking unit |

Furthermore, I served as the assistant manager for the environmental test lab. This position gave me the opportunity to supervise three engineers and three technicians. My responsibilities included requisitioning test equipment and data acquisitions systems.

Also, I taught shock and vibration analysis methods to new engineers. I served as an advisor to university students working on the ASUSat project.

Motorola, Inc., Government Electronics Group. Scottsdale, Arizona. June 1987 to October 1988. Mechanical Engineer.

I performed laser holography tests to determine the vibration response of a missile electronics assembly.

Arizona State University. Department of Mechanical and Aerospace Engineering. August 1985 to December 1986. Research and Teaching Assistant.

I tutored engineering students and graded homework.

EDUCATION

Arizona State University, M.S. May 1987. B.S.E. May 1985. Major: Engineering Science. Thesis: Vibration Power Measurement Using a Plate as a Reverberant Structure

WEB SITE

I offer downloadable shock and vibration software and tutorials via my web site: www.vibrationdata.com

This site is recognized by NASA/Goddard, as well as by a number of universities.

CONFERENCE PAPERS

"Waveform Reconstruction via Wavelets," Spacecraft and Launch Vehicle Dynamic Environments Workshop, Aerospace Corporation, Los Angeles, California, June 27--29, 2006.

"A Time Domain, Curve-Fitting Method for Accelerometer Data Analysis," AIAA Paper 2003-1972, 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, Virginia, April 2003.

"Practical Application of the Rayleigh-Ritz Method to Verify Launch Vehicle Bending Modes," AIAA Paper 2003-1608, 44th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Norfolk, Virginia, April 2003.

"Optimal Use of the Vibration Response Spectrum for Enveloping Random Data," IEST 45th Annual Technical Meeting, May 1999, Ontario, California.

"Pegasus Test Program." 13th Aerospace Testing Seminar, October 1991, Manhattan Beach, California.

"Vibration Power Measurement Using a Plate as a Reverberant Structure." 112th meeting of the Acoustical Society of America, December 1986, Anaheim, California.