

# **Noise and Vibration Consultant Catalog**

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**May 1994**

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## **Acentech Incorporated**

**Contact Name**  
**Joseph T. McConnell, President**  
**James D. Barnes**  
**125 Cambridge Park Drive**  
**Cambridge, MA 02140**  
**Phone: (617) 499-8000**  
**FAX: (617) 499-8074**

**Consulting Area of Expertise:** Architectural Acoustics, Industrial Sound and Vibration, Environmental Noise, Sound System Design, Video System Design

**Services Offered:** Consulting in all of the above.

**Industry Focus:**

- Education, health and conference facilities.
- Energy, manufacturing and transportation industries.

**Geographic Areas Covered:** United States and International.

**HP Instrumentation Experience:** HP 3561A Dynamic Signal Analyzer, HP 3562A Dynamic Signal Analyzer, HP 35665A Dual Channel Dynamic Signal Analyzer, HP 3569A Real Time Frequency Analyzer.

## **Acoustic Associates, Ltd.**

**Contact Name**  
**Tom Thunder, M.A.,**  
**Mem. INCE**  
**Principal**  
**233 East Northwest Highway**  
**Palatine, IL 60067**  
**Phone: (708) 359-1068**  
**FAX: (708) 359-1207**

**Consulting Area of Expertise:** Industrial, occupational, environmental and commercial noise. Building, mechanical, and room acoustics. Speech transmission, isolation, and communication. Hearing instrument acoustical analysis. Hearing conservation and ear protection evaluation. Litigation support.

**Services Offered:**

- Field noise measurements, reviews, analysis, diagnostics, reports.
- System intelligibility evaluation.

**Industry Focus:** All industries served.

**Geographic Areas Covered:** United States and Canada, but primarily the Midwest.

**HP Instrumentation Experience:** HP 35665A 2-Channel Dynamic Signal Analyzer.  
HP 3569A Real-Time Frequency Analyzer.

## **Acoustic Technology Limited**

### **Contact Name**

**Robert Swindell  
Paul Shrieve**

**58 The Avenue  
Southampton, Hampshire  
S01 2TA  
England**

**Phone: 0703-637811**

### **Consulting Area of Expertise:**

Noise and vibration design, measurement and control. Machinery condition monitoring and commissioning services.

### **Services Offered:**

Environmental impact assessments, noise and vibration control, modal analysis, acoustic intensity analysis, finite element analysis.

Rotating and reciprocating machinery. commissioning and diagnostic services, maintenance audits, condition monitoring integration and routine monitoring services.

### **Industry Focus:**

- Oil and gas (onshore and offshore)
- General industry (power generation, water, production lines)
- Defense (UK Navy and Army)

### **Geographic Areas Covered:**

United Kingdom (England, Scotland, Ireland, Wales), Scandinavia/Europe, Middle East/Far East, North America.

### **HP Instrumentation Experience:**

HP 3852A, HP 35660A, HP 3560A, HP 35665A, HP 3566/67.

## **Central Manufacturing Technology Institute**

### **Contact Name**

**B.G. Kemshetti, Director**

**Tumkur Road  
Bangalore, Karnataka  
India 560 022**

**Phone: 362081**

### **Consulting Area of Expertise:**

Vibration and noise measurement, analysis and control are part of the services offered by CMTI. CMTI is an R&D organization dealing with all aspects of machine tool design and development.

### **Services Offered:**

In situ balancing of rotating machinery, condition monitoring of machinery for predictive maintenance, signature analysis including vibration and noise spectral evaluation, sound intensity measurement and analysis, transfer function analysis at the customer's site and at CMTI.

### **Industry Focus:**

Machine tool industry, paper mills, automobile industries, earth moving machinery manufacturers and general engineering industries.

### **Geographic Areas Covered:**

India.

### **HP Instrumentation Experience:**

HP Workstation 370 with 3565S Multi-channel Measurement System

## **Charles M. Salter Associates, Inc.**

**Contact Name**  
**Charles M. Salter, President**  
**Anthony P. Nash, Vice- President**  
**130 Sutter Street, Suite 500**  
**San Francisco, CA 94104**  
**Phone: (415) 397-0442**  
**FAX: (415) 397-0454**

### **Consulting Area of Expertise:**

Acoustical consulting in the areas of architectural acoustics, engineering acoustics, sound system design, audio/visual system design, environmental acoustics, acoustical research/technology assessment and public presentation/expert testimony.

### **Services Offered:**

Consulting engineering services in acoustics. Acoustical design input, criteria recommendation, assessment and evaluation, measurement and analysis, mitigation recommendations, reports and presentations for their areas of acoustical consulting expertise.

### **Industry Focus:**

Architectural, engineering and construction (AEC) industry, theaters of all types, recording and film production facilities, airports, community noise projects, sound and vibration test measurement programs.

### **Geographic Areas Covered:**

United States and Canada. Some international projects.

### **HP Instrumentation Experience:**

HP 35665A Dynamic Signal Analyzer, HP 3561A Dynamic Signal Analyzer, HP 35670A.

## **Collaboration In Science and Technology, Inc.**

**Contact Name**  
**Robert D. Bruce,**  
**Director of Acoustics**  
**15835 Park Ten Place**  
**Suite 105**  
**Houston, TX 77084-5131**  
**Phone: (713) 492-2784**  
**FAX: (713) 492-1434**

### **Consulting Area of Expertise:**

CSTI and its staff are recognized for their work in noise control engineering and applied research in acoustics. Much of their work is in the area of industrial noise and vibration control. Mr. Robert D. Bruce of CSTI, a Fellow of the Acoustical Society of America and the 1986 President of the Institute of Noise Control Engineering, serves as the Director of Acoustics.

### **Services Offered:**

CSTI offers services in building noise and vibration control, industrial noise and vibration control, environmental noise, sound system design, product quieting, sound power and sound intensity measurements/calculations in laboratories and in situ. CSTI also engages in extensive literature searches about acoustical subjects and performs acoustical research in body volumetry and distortion product emissions.

### **Industry Focus:**

Architects and engineers, original equipment manufacturers, petroleum and chemical facilities, building owners and occupants, government agencies and trade associations, and manufacturing and power industries.

### **Geographic Areas Covered:**

Almost anywhere in the world. CSTI has performed numerous projects throughout the Continental U.S., Alaska, Brazil, Canada, Great Britain and Nigeria.

### **HP Instrumentation Experience:**

HP 3562A Dynamic Signal Analyzer, HP 3569A Real Time Frequency Analyzer, and various other HP products.

## **Décibel Consultants Inc.**

**Contact Name**  
**Guy Nollet, Director**  
**265, boul. Hymus Bureau 2500**  
**Pointe-Claire, Québec**  
**H9R 1G6**  
**Canada**  
**Phone: (514) 630-4855**

**Consulting Area of Expertise:**

Décibel Consultants Inc. is a consulting firm specialized in acoustic, noise and vibration. In acoustics, DCI performs architectural studies related with new or existing facilities. In noise: plant noise surveys, design of noise control for machines, theoretical calculations of noise levels for industrial (inside and outside), and vibration analysis for rotating equipment and structural vibration.

**Services Offered:**

- Noise: Measurement, identification of contributing sources, noise control alternatives, turn-key projects for noise reduction.
- Acoustic: Evaluation of condition, theoretical calculations of noise levels, design/recommendations for noise attenuation.
- Vibration: Analysis of rotating equipment, dynamic balancing, structural analysis. Noise and vibration courses.

**Industry Focus:**

Their concentration is on major sized industrial clients, other consulting engineers who need specialized expertise, and architects and governmental services to a lesser extent.

**Geographic Areas Covered:**

Mainly Québec province but also Newfoundland, Nova Scotia, New Brunswick, Ontario and the US.

**HP Instrumentation Experience:** HP 3569A Analyzer.

## **Haddad Technical Consultancy Services**

**Contact Name**  
**Dr. Sam D.Haddad, President**  
**3241 Janelle Drive**  
**Suite 3673**  
**San Jose, CA 95148**  
**Phone: (408) 223-8001**  
**FAX: (408) 223-8008**

**Consulting Area of Expertise:**

Monitoring the manufacturing process for quality control and noise and vibration control. Condition monitoring and fault diagnosis, machinery predictive maintenance, diesel engineering/optimum low noise engines.

**Services Offered:**

- Training of engineers and technicians on all aspects of noise and vibration control and diagnostics.
- Develop optimum approaches for predictive maintenance and enhanced quality control.

**Industry Focus:**

Automotive, power plants and aerospace.

**Geographic Areas Covered:**

Presently California and Michigan. Have traveled to the UK., South Africa, Abu Dhabi, Belgium, and Canada.

**HP Instrumentation Experience:** Familiar with most HP FFT analyzers.

## **Halvorsen Associates, Inc.**

**Contact Name**  
**William G. Halvorsen, President**  
**1311 Dillon Avenue**  
**Cincinnati, OH 45208**  
**Phone: (513) 321-0913**  
**FAX: (513) 321-2405**

**Consulting Area of Expertise:**

Structural acoustics, noise and vibration control, digital signal processing, modal analysis, and viscoelastic material technology.

**Services Offered:**

Measurement and analysis of sound and vibration data, structural and acoustic frequency response testing, modal analysis, design and testing of noise and vibration control treatments and modification.

**Industry Focus:**

- Automotive Industry: Noise and vibration control of engines, transmission and accessories
- Aerospace Industry: Aircraft interior noise control, propeller vibration
- Process Industries: Community noise, plant noise, equipment noise and vibration

**Geographic Areas Covered:**

US., Europe and Japan

**HP Instrumentation Experience:**

HP 5451, HP 5420, HP 3582A, HP 3562A, HP 3560A Portable Analyzer, HP 3569A.

## **Integrated Motions, Inc.**

**Contact Name**  
**Jack Butler, President**  
**758 Gilman Street**  
**Berkeley, CA 94710**  
**Phone: (510) 527-5810**  
**FAX: (510) 527-7843**

**Consulting Area of Expertise:**

Motion control system analysis and design, digital signal processing and digital image processing. Staff and equipment on hand for electronic hardware development, software development and mechanical design.

**Services Offered:**

Analysis of mechanical systems to be controlled, sensor integration and controller design and implementation.

**Industry Focus:**

Focus includes but is not limited to factory automation, semiconductor manufacturing, automotive and medical applications.

**Geographic Areas Covered:**

Worldwide

**HP Instrumentation Experience:**

HP 3562A Dynamic Signal Analyzer, HP 5528A, HP54501, HP 54502A, HP 1650B, HP 3563A Control Systems Analyzer.

## Kruger Associates

### Contact Name

**Frederick M. Kruger, Ph.D.**

### 37 Somerset Drive

Commack, NY 11725

**Phone: (516) 543-5392**

**FAX: (516) 543-7515**

### Consulting Area of Expertise:

Audio, acoustics, electro-acoustics, active and passive noise reduction, signal processing and communications systems. Microphone, earphone, hearing protector, hearing aid and special device design/testing. Human factors engineering, man/machine interfacing, medical-electronic devices and electronic devices for the handicapped. Telephony.

### Services Offered:

Kruger Associates operates a specialized R&D facility with a fully equipped laboratory (NIST traceable calibrations) to support consulting efforts. Extensive experience in device testing and in enhancing intelligibility of communications in very high noise environment.

Kruger Associates is able to provide technical writing services for all of the above specialty areas. Kruger Associates also supports forensic efforts in a number of fields including telephony. When requested, executive summaries and reports can be provided.

During the past 25 years, Dr. Kruger has designed and developed a number of special purpose communications devices for unique applications. He also designed a 2400 cubic foot high noise acoustic test facility for use in transducer, headset and/or system intelligibility evaluation.

### Industry Focus:

Commercial, military and aviation industry clients.

### Geographic Areas Covered:

Continental United States and the Caribbean. Extended travel considered under special circumstances.

### HP Instrumentation Experience:

HP D54501A, HP 35665A Dual Channel Dynamic Signal Analyzer, HP 339A Distortion Measurement Set, and various other instruments.

## Lewis S. Goodfriend & Associates

### Contact Name

**Lewis S. Goodfriend, President  
M.E., M.E.E., P.E.**

### 301 East Hanover Avenue

P.O. Box 2453

Morristown, NJ 07962-2453

**Phone (201) 540-8811**

### Consulting Area of Expertise:

Architectural acoustics, airport and highway noise surveys, industrial noise control, product quieting, acoustical design of gas turbine test cell and gas turbine drives. Environmental noise assessment, sound reinforcement system design and evaluation.

### Services Offered:

Consulting Engineers in acoustics. Design of noise measurement and monitoring systems. Consultant to government agencies regarding noise assessment and control. Typical applications are architectural acoustics, airport and community noise surveys, traffic noise and vibration control, air conditioning noise control, sound system design, product noise evaluation and control, and acoustical product development.

### Industry Focus:

Problem solving in acoustics. Applications of acoustical instrumentation in clients' test programs. Acoustical monitoring systems.

### Geographic Areas Covered:

United States and Canada. Airport terminals in Jordan, Venezuela, and Saudi Arabia.

### HP Instrumentation Experience:

Test bench instruments and distortion analysis since 1950. Applications of the HP 8054A Audio Analyzer to room acoustics and room tuning. HP 3560A and transducers, HP 3569A..

# Manta Corporation

**Contact Name**  
**Bob Farrell, President**  
**2000 Ford Circle, Suite B**  
**Milford, OH 45150-2713**  
**Phone: (513) 248-5200**

## **Consulting Area of Expertise:**

Manta is a select group of mechanical engineers having considerable experience in the design, analysis and test of mechanical equipment and components. Manta provides quality solutions and expert assistance in the field of advanced structural mechanics, with special emphasis in the areas of structural integrity, dynamics, and machine design. Services include structural testing and analysis for new equipment designs, upgrades and troubleshooting purposes.

## **Services Offered:**

- Testing Services: Fatigue, noise analysis, fluid measurements, data collection & analysis, life estimation, balancing & modal, vibration strain gage, stress coating, performance, and durability.
- Machinery Monitoring: On-line monitoring and predictive maintenance.
- Analysis Services: Thermal, structural, control systems, dynamics, plastics, and kinematics.
- Design Services: Project management, new concept configuration, performance analysis, detailed design, design validation, product enhancement, and design audit.
- Design & Build Test Systems: Custom software, instrumentation & controls, excitation & vibration, and data acquisition.
- Design & Build Custom Machinery: Assembly, material handling, and customer software.
- Training and Education: On-site customer training, and seminars.

## **Industry Focus:**

Manta engineers have assisted a number of companies from a broad range of industries. Power generation, aerospace, transportation, petro chemical, manufacturing, pulp & paper, electronics, off-highway, machine tool, primary metals & mining, appliance, and leisure.

## **Geographic Areas Covered:**

Concentrate on United States, Canada and Mexico, but also have experience working abroad (Europe and Asia primarily).

## **HP Instrumentation Experience:**

HP 3582A, HP 5451B/C, XY Recorder, FM Recorders, HP 5423, HP 3565S Vista System, HP 3560A, HP 35670A.

## **McKay Conant Brook, Inc.**

**Contact Name**

**Mark E. Schaffer, P.E., Associate Principal**

**5655 Lindero Cyn. Rd.**

**Suite 325, Westlake Village**

**Los Angeles, CA 91362**

**Phone: (818) 991-9300**

**FAX: (818) 991-2324**

**Consulting Area of Expertise:**

Architectural acoustics, equipment and machinery noise and vibration control, environmental noise, audio-visual systems, floor vibration and litigation support.

**Services Offered:**

Consulting and testing in all of the areas noted above, with special emphasis on auditorium design and renovation, HVAC and electrical systems noise and vibration control, environmental noise assessment, and floor vibration measurement and analysis.

**Industry Focus:**

All of the above.

**Geographic Areas Covered:**

North America, Europe, Asia and Australia.

**HP Instrumentation Experience:**

HP 3569A, HP 35665A, HP 3581C, HP 3560A and HP 3561A.

## **Müller-BBM GMBH**

**Contact Name**

**Peter Frank**

**Robert-Koch-StraBe 11**

**Planegg 8033**

**Germany**

**Phone: 089-856020**

**Consulting Area of Expertise:**

Digital signal analysis, frequency analysis, noise and vibration, modal analysis, and acoustic intensity analysis.

**Services Offered:**

Consulting, training, measurements and software development.

**Industry Focus:**

Automotive industry, aerospace industry, machine tool industry, energy production industry and oil industry.

**Geographic Areas Covered:**

Europe.

**HP Instrumentation Experience:**

HP 5451, HP 5420/23, HP 3582A, HP 3562A Dynamic Signal Analyzer, HP 35660A, HP 35665A Dual Channel Dynamic Signal Analyzer, HP 3569A Real Time Frequency Analyzer, HP 3565/66/67, Toolkit Programming, HP 3852.

## Navcon Engineering Network

**Contact Name**  
**Jim Steedman, President**  
**M.S.M.E., B.S.M.E.**

**701 West Las Palmas Drive**  
**Fullerton, CA 92635**

**Phone: (714) 441-3488**  
**FAX: (714) 441-3487**

### Consulting Area of Expertise:

Navcon Engineering specializes in the measurement, analysis and control of noise and vibration.

### Services Offered:

Navcon Engineering is a consulting firm specializing in the measurement, analysis, and control of noise and vibration. They offer a complete service which ranges from problem definition to the design, construction, and implementation of the noise and vibration control measures. Navcon Engineering has extensive experience in structural modification including the design of vibration isolation systems, stiffening systems, and discrete and surface damping treatments. Much of Navcon's work focuses on noise control where they have designed acoustic barriers, mufflers, enclosures, and resonators.

Navcon has assembled complete acoustic intensity, environmental acoustic and modal test systems; seismic and modal shakers; structural analysis software (by Structural Measurement Systems), sound propagation and transmission loss software (by Navcon Engineering); and a variety of measurement transducers. Navcon's hardware is based upon Hewlett-Packard analyzers (HP 3561A, HP 3562A, HP 35665A) and computers, Brüel & Kjaer microphones, intensity probes, and sound level meters, and PCB Piezotronics impact hammers, accelerometers, etc.

In 1990 Navcon formed a Technical Sales Group (TSG). TSG is dedicated to promoting products and services synergistic to the field of Noise & Vibration. TSG is currently the exclusive California sales representative for Ometron's Laser Vibrometer, APS Dynamic's Electrodynamic Shakers, and Navcon Engineering's line of Industrial Mufflers and Noise Enclosures. TSG also sells Brüel & Kjaer Intensity probes, Signal Conditioners and Calibrators throughout the US. Navcon's consulting base extends across the US. and Canada and they have confidential clearance.

### Industry Focus:

- Acoustics: Acoustic Intensity Testing, Environmental Impact Studies, Industrial & Product Noise, Mil Std & Product Specification Testing
- Vibration: General Data Acquisition, Mil Std & Product Specification Testing, Modal Testing & Analysis, Industrial & Product Vibration Control, Rotating Equipment Analysis
- Technical Seminars & Training Courses: Acoustics, Theory, Measurement & Application, Acoustic Intensity, Theory, Measurement & Application, Noise & Vibration Control Techniques, Modal Testing, Theory, Measurement Application, Product Training: HP 3561A, HP 3562A, HP35665A

### Geographic Areas Covered:

Navcon Engineering has customers throughout the United States and Canada. Their equipment is portable and they have specially molded plastic carrying cases constructed for shipping. Approximately 80% of Navcon Engineering's work is in California, 15% on the East Coast or southern states, and 5% in Canada.

### HP Instrumentation Experience:

- HP 5451B, HP 5451C, HP 5427A: General Data Acquisition & Analysis, Vibration Control & Modal Testing, and RTE Programming.
- HP 3582A, HP 5420, HP 5423, HP 3561A, HP3562A, HP 35670A: General Data Acquisition & Analysis, Modal & Acoustic Intensity Testing, Instrument Programming.
- HP 9825, HP 9816, HP 319 Computers: Developed Instrumentation Interfaces, Data Analysis and Plotting Software using Rocky Mountain Basic.

## Pope Engineering Company

**Member Firm, National Council of Acoustical Consultants**  
**Contact Name**  
**Joseph Pope, Ph.D., Principal**  
**P.O. Box 236**  
**Newton Centre, MA 02159**  
**Phone: (617) 969-2606**  
**FAX: (617) 969-2606**

### **Consulting Area of Expertise:**

Sound and vibration control. Product noise assessment and control. Sound intensity (acoustic intensity) techniques. FFT and other digital signal analysis. Sound power determination. Specification of instrumentation for noise testing. Noise source identification and control. Development of acoustical test and evaluation programs. Assessment of existing programs and facilities. National and international standards (ANSI, ASTM, ISO, IEC, and others). Laboratory and field measurements. Research and development activities. Use of instrumentation.

### **Services Offered:**

Sound and vibration consulting services. Product development assistance. Development of noise control goals and strategies. Guidance in acquiring and improving measurement capabilities. Special project assistance. Staff training in acoustics and noise control.

### **Industry Focus:**

All industries served.

### **Geographic Areas Covered:**

North America for all services, worldwide when special expertise justifies.

### **HP Instrumentation Experience:**

HP 3569A and HP 35665A Real Time Frequency Analyzers. Most FFT analyzers since the HP 5451. HP 98x6 and 9000/200-300 computers supporting Rocky Mountain BASIC.

## Pro Scientific Consulting

**Contact Name**  
**Paul R. Ogushwitz, Ph.D.**  
**Director of Research**  
**303 Center Street**  
**Hackettstown, NJ 07840**  
**Phone: (908) 850-1636**  
**FAX: On request**

### **Consulting Area of Expertise:**

Precision measurement  
Geophysics  
Underwater acoustics

### **Services Offered:**

- Design, prototype fabrication, and testing of precision measurement instruments, including instruments for geophysical applications, environmental applications, and nanotechnology.
- Bathymetric interpretation and modeling.
- Underwater acoustic propagation modeling, particularly simulations of the interaction of sound with the seafloor.
- Custom scientific programming.

### **Industry Focus:**

Government and industrial technical laboratories.  
The precision measurement industry.  
The geophysical survey industry (oil, gas, and mineral).

### **Geographic Areas Covered:**

United States  
Some international projects

### **HP Instrumentation Experience:**

HP 3588 Spectrum Analyzer.

**Ronald L. Eshleman,  
Ph.D., P.E.**

**Contact Name**  
**Ronald L. Eshleman**  
**333 Ridge Avenue**  
**Clarendon Hills, IL 60514**  
**Phone: (708) 654-2053**

**Consulting Area of Expertise:**

Structural and machine dynamics, rotor-bearing dynamics, machine vibration analysis, torsional vibrations, and isolation & damping.

**Services Offered:**

- Machine vibration analysis for condition & faults
- Turbine generator balancing
- Computer & experimental rotor bearing dynamic analysis
- Predictive maintenance program development
- Piping stress analysis and support design
- Finite element analysis

**Industry Focus:**

Power, paper and printing, petrochemical, confectionery & foods, steel, municipal, pharmaceutical and textile.

**Geographic Areas Covered:**

United States.

**HP Instrumentation Experience:**

HP 3561A Dynamic Signal Analyzer, HP 3582A FFT Spectrum Analyzer, HP 35665A Dual Channel Dynamic Signal Analyzer.

**Seven Springs  
Associates**

**Contact Name**  
**Jim Shaffer**  
**P.O. Box 434**  
**Painted Post, NY 14870**  
**Phone: (607) 937-8125**

**Consulting Area of Expertise:**

Vibration and acoustical testing and analysis, including modal analysis and stress analysis of piping systems or associated equipment. Their area of expertise is on-site testing of structures for vibration problem identification and correction.

**Services Offered:**

- Vibration and pulsation (operational) testing and monitoring
- Modal Impact testing and analysis
- Predictive maintenance
- Piping stress analysis and support design
- Finite element analysis

**Industry Focus:**

Seven Springs Associates is geared primarily to meet the needs of the chemical process, petro chemical and petroleum industries which employ compression equipment in their operation.

**Geographic Areas Covered:**

Their instrumentation has been selected to facilitate a rapid response on a global basis.

**HP Instrumentation Experience:**

HP 5423A Modal Analyzer, HP 3562A Dual Channel DSA, HP 3561A, and HP 3560A Dual Channel Portable DSA.

## Signal Control AB

**Contact Name**  
**Thomass Lago**  
**Sven Olsson, President**  
**Tornavägen 3**  
**Lund, Skåne**  
**Sweden S-223 63**  
**Phone: +46-46152460**

**Consulting Area of Expertise:**

DSA, acoustics and general signal processing.

**Services Offered:**

Presentation days, lectures, articles, training and system design in areas above.

**Industry Focus:**

R&D departments of larger companies and/or companies with special needs.

**Geographic Areas Covered:**

Primarily Sweden and Scandinavia. The rest of the world upon request.

**HP Instrumentation Experience:**

HP 3565 and most DSA products.

## Smith, Fause & McDonald, Inc.

**Contact Name**  
**Peter A. McDonald, Principal**  
**100 The Embarcadero**  
**Suite 260**  
**San Francisco, CA 94105**  
**Phone (415) 243-4305**  
**FAX: (415) 243-4310**

**Consulting Area of Expertise:**

Smith, Fause & McDonald (SFMI) is a full-service Acoustical Engineering firm that specializes in environmental acoustics, architectural acoustics and related systems design. Within environmental acoustics, SFMI performs noise and vibration measurements and engineers mitigation to protect commercial, recreational and residential areas from impacts produced by transportation systems, industrial units and commercial activities. The scope of services offered is below:

- Title 24 and Community Noise Evaluation
- Noise & Vibration Measurements
- Noise Propagation Modeling
- Road and Rail Noise Contour Preparation
- Compliance Testing
- Mitigation Measures and Reports
- Noise Elements & Ordinance Preparation
- Public and Government Agency Presentations

**Services Offered:**

Architectural acoustics, noise & vibration control, in situ field acoustical testing (licensed City of LA. Field Acoustical Test Agency), environmental acoustics, sound system design, and industrial noise exposure monitoring.

**Industry Focus:**

Construction/architectural consulting, with additional services for facilities managers, planners, municipalities, government, etc.

**Geographic Areas Covered:**

Major focus is California, with significant projects throughout the nation and the globe.

**HP Instrumentation Experience:**

HP 3560A Portable Dual Channel Dynamic Signal Analyzer, and HP 3569A Real Time Frequency Analyzer.

## **Technical Associates of Charlotte, Inc.**

**Contact Name**  
**Jim Berry**  
**Vice President**

**347 North Caswell Road**  
**Charlotte, NC 28204**  
**Phone (704) 333-9011**  
**FAX: (704) 333-1726**

### **Consulting Area of Expertise:**

Technical Associates expertise falls in many areas of engineering which include Mechanical, Architectural, Structural, Civil, electrical, Instrumentation and Industrial Engineering, Design and Technical Illustration. The Analytical Group at Technical Associates has expertise in many areas involving noise and vibration. These include predictive maintenance, vibration testing, machinery diagnostic vibration testing, dynamic balancing, modal analysis, finite element analysis, noise control, architectural acoustics, stress and fatigue analysis and public or in-house vibration analysis seminars.

### **Services Offered:**

Technical Associates Analytical Group provides predictive maintenance services from planning through total execution of the program providing any degree of assistance requested, including preparation of comprehensive reports. This can include training of personnel from basic through advanced levels. Diagnostic vibration testing of complex machinery is offered, along with dynamic balancing services, complete modal analysis services and a variety of airborne noise testing services for safety and habitability concerns.

### **Industry Focus:**

Technical Associates has concentrated on developing experience in vibration diagnostic testing of complex rotating machinery. Unusually high or low-speed machinery is a specialty area Technical Associates has developed. Education of maintenance professionals through both public and private seminars has become a major part of what is offered. These seminars range from basic through advanced levels and can be tailored to a client's specific in-house requirements.

### **Geographic Areas Covered:**

Public seminars are offered at various locations including Charlotte, NC and Myrtle Beach, SC. Vibration Diagnostic services and Predictive Maintenance Program assistance are offered nationwide. Predictive Maintenance Programs, which include Technical Associates personnel periodically collecting data, are within a 250 mile radius of Charlotte, NC. However, in-house vibration analysis/predictive maintenance seminars are offered at plants and client headquarters throughout the United States from Denver, CO to the Eastern Seaboard.

### **HP Instrumentation Experience:**

HP 35665A, HP 3561A and HP 3562A Dynamic Signal Analyzers, Tape Recorders, HP 34988 Multiplexers and Frequency Generators. HP computers used as instrument controllers include HP 85, HP 9845B and the HP Integral Personal Computer.

## **The Acoustics & Vibration Group**

**Contact Name**  
**Steve Pettyjohn, Principal**  
**5700 Broadway**  
**Sacramento, CA 95820**  
**Phone (916) 457-1444**  
**FAX: (916) 457-1475**

### **Consulting Area of Expertise:**

Acoustics, vibration and noise control are the areas of expertise of The Acoustics & Vibration Group (TAVG). Machinery Monitoring for preventive maintenance and prediction, impact of pile driving, roadway traffic impact on building vibrations, sound and vibration evaluation of HVAC systems, reverberation time measurements in various spaces and floor/ceiling or wall assembly testing comprise nearly 50% of the company's present workload. The company also performs services in environmental acoustics measurement of airport and roadway noise sources, including field measurements in 1/3 octave bands and of statistical sound levels.

### **Services Offered:**

- Measurement and analysis of machinery generated sound power levels, sound pressure levels and vibration levels.
- Vibration monitoring of equipment.
- Sound level surveys to document employee noise exposures.
- Establishing sound level and vibration level criteria for equipment and writing specifications for new equipment.
- In-house training for company personnel in acoustics, noise control, preventive maintenance and vibration.
- Acoustic and vibration design and analysis of HVAC systems.
- Assessing the impact of transportation noise sources on residential, commercial and industrial sites.
- Field monitoring of sound and vibration levels and analysis of the data from airports, roadways, railway and industrial facilities.

### **Industry Focus:**

TAVG focuses marketing efforts on architects, engineers, developers, contractors, business and industrial firms, government agencies and environmental planners.

### **Geographic Areas Covered:**

TAVG serves all of the western United States and Southeastern Asia. The majority of the work is in California, Oregon and Nevada.

### **HP Instrumentation Experience:**

TAVG has extensive experience with the HP 3561A Dynamic Signal Analyzer, HP 7475A Plotter, HP 3562A Dynamic Signal Analyzer, HP 5420A, and the HP 3569A Real Time Frequency Analyzer.

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SDN BHD**

**Contact Name**  
**KS Lee**  
**92A Jalan, SS 21/62,  
Damansara Utama,  
47400 Petaling Jaya, Selangor  
Malaysia**  
**Phone: 60-3-719-3816**  
**Fax: 60-3-719-5503**

**Consulting Area of Expertise:**

Noise and vibration control, modal analysis, predictive maintenance, machine diagnosis, structural analysis, maintenance system, noise and vibration audit.

**Services Offered:**

Measurement and analysis of sound and vibration.  
Noise and vibration control, audit.  
Training and implementation of condition monitoring.  
Machine maldiagnosis.

**Industry Focus:**

- Automotive Industry  
Noise and Vibration.
- Control Process/Manufacturing/Power Industry  
Machine condition monitoring  
Machine/structure investigation problem solving  
Community noise, plant noise, noise competence certification  
Maintenance system development/improvement.

**Geographic Areas Covered:**

Malaysia, Brunei, Thailand and Indonesia.

**HP Instrumentation Experience:** HP 3569A, HP 35670A, HP 3567A, HP 35665A.

## Unit Circle Designs

### Contact Name

Dr. Ajeet Singh

President

1327 Bonita Avenue

Berkeley, CA 94709

Phone (510) 524-6600

FAX: (510) 524-5732

### Consulting Area of Expertise:

Analysis, design, hardware and software implementation of analog, digital signal processor (DSP) or microprocessor based servomechanisms. Modeling and simulation of control systems containing nonlinear and time-varying elements. Adaptive control systems and estimator (observer) design. Algorithm development for data acquisition and processing. General purpose instrumentation.

### Services Offered:

Unit Circle Designs has a fully equipped hardware and software development laboratory for servo systems design, analysis and implementation. They have in-depth experience in hardware and software implementation of digital signal processor (DSP) and microprocessor based servos. Unit Circle Designs can do analytical design of servo systems and can carry the design through hardware and software implementation.

Currently existing servos can be optimized for maximum performance by carrying out experimental frequency and time domain measurements which are then used in analytical and simulation studies for optimization.

Dr. Singh has done conceptual, hardware and software design of servo systems used in such varied fields as semiconductor manufacturing equipment, medical instrumentation and disk drives. He has conceptualized and coded algorithms for real time data processing purposes. He has over 20 years experience in mathematical modeling and optimization of linear and nonlinear control systems.

### Industry Focus:

Medical equipment, semiconductor manufacturing equipment, disk drives, analytical instrumentation and general purpose robotics and automation equipment.

### Geographic Areas Covered:

California but primarily Greater Bay Area. Other areas can be considered on an individual case basis.

### HP Instrumentation Experience:

HP 3563A Control Systems Analyzer, HP 16500A, HP 16520A, HP 16530A.

**William K. Connor,  
Consultant  
in Acoustics**

Contact Name  
**William K. Connor, Principal**  
**Fellow ASA**

**INCE Bd. Cert.**

**608 Brookhaven Trail**  
**Austin, Texas 78746-5455**

**Phone (512) 327-6052**  
**FAX: (512) 329-8901**

**Consulting Area of Expertise:**

Noise assessment, noise control, community noise, electroacoustics, architectural acoustics, forensic acoustics, acoustical standards and codes, acoustical education and training.

**Services Offered:**

Noise surveys, noise analysis and prediction, design and specification of noise reduction measures, evaluation of noise control materials and devices, design of sound delivery systems, building acoustics and noise control, legal testimony, development and application of noise standards and regulations, and training in basic acoustics, noise measurement, human effects, noise control, and architectural acoustics.

**Industry Focus:**

Corporate, VIP, and head-of-state aircraft operators and completion agencies; petrochemical, gas transmission, and other industries with community noise control requirements; airports; architects and commercial or religious building owners.

**Geographic Areas Covered:**

Primarily USA and Canada; projects in Europe, the Mideast, and Asia.

**HP Instrumentation Experience:**

HP 3561A, HP 3562A, and HP 35665A Dynamic Signal Analyzers.

**William Thornton,  
Ph.D., P.E.  
Consultant in  
Acoustics and Noise**

**250 Shagbark Drive**  
**RD#1 Cheswick, PA 15024**

**Phone: (412) 265-2000**

**Consulting Area of Expertise:**

William R. Thornton, Ph.D., P.E. provides comprehensive consulting services in the general areas of Industrial Noise Control, Community Noise, Architectural Acoustics, and HVAC Design & Control.

**Services Offered:**

A variety of specialized services are available to solve noise and acoustical problems or to anticipate and avoid problems through participation in planning and design. These specific services include engineering controls, new facility design, room acoustics design, building noise control, standards testing and measurement, sound power measurement, HVAC noise control, MRI site vibration measurements, noise impact studies, sound intensity measurements, plant noise surveys, hearing conservation programs, site noise evaluations, noise impact statements, cost-benefit analysis, training seminars, product development assistance, and expert witness.

**Industry Focus:**

Broad range of activities that include Fortune 500 companies, small & middle business, government, architects, communities, attorneys, etc.

**Geographic Areas Covered:**

Primarily USA & Canada but International as needed.

**HP Instrumentation Experience:**

Includes HP 3569A, HP 35670A, and many older analyzers, signal generators, etc.

**For more information, call your local HP sales office listed in your telephone directory or an HP regional office listed below for the location of your nearest sales office.**

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