

RESUME**George W. Kamperman, P.E., INCE Bd. Cert.
Consulting Engineer in Acoustics**

Education & Professional Experience: B.S., Alma College; graduate study (acoustics), Massachusetts Institute of Technology; Noise and Vibration Laboratory, General Motors Proving Ground; Bolt Beranek and Newman Inc., Consultants in Acoustics; President of Kamperman Associates Inc.

Professional Societies: Fellow, Acoustical Society of America; Board Certified Member: Institute of Noise Control Engineering; National Council of Acoustical Consultants; Registered Professional Engineer.

Professional Responsibilities: Mr. Kamperman was in charge of the acoustical Instrumentation Laboratory at Bolt Beranek and Newman Inc., Cambridge, Mass., where he was responsible for developing new equipment and procedures for the measurement of sound and vibration. He opened a Chicago area office and developed a consulting activity in industrial noise control for Bolt Beranek and Newman Inc. In 1972 he established the firm of Kamperman Associates Inc., specializing in noise and vibration control and environmental impact studies. He has lectured at many courses and seminars. His project responsibilities have concentrated in the area of noise and vibration measurement and control in a wide variety of buildings and machinery.

Standards & Test Codes: Mr. Kamperman has had a major role writing numerous Noise Regulations, Standards, and Test codes to assist business, industry and agencies in the development of practical methodology:

City of Chicago Noise Ordinance.
State of Illinois Noise Regulations.

SAE J184 Qualifying a Sound Data Acquisition System.
SAE J952B Sound Levels for Engine Powered Equipment.
SAE J1075 Measurement Procedure for Rating Sound Level of Construction Job Sites.
SAE J88 Sound Level Measurement Procedure for Powered Mobile Construction Equipment.
ANSI S1.2 Method for the Physical Measurement of Sound.
ANSI S1.11 Octave, Half-Octave, & Third-Octave Band Filter Sets.
ANSI S1.4 Specification for General Purpose Sound Level Meters.
ANSI S12.7 Methods for the Measurement of Impulse Noise.
ANSI S1-62 Measurement and Evaluation of Community Noise.
ANSI S1.25 Specification for Personal Noise Dosimeters.
ANSI S12.9 Quantities/Procedures for Description and Measurement of Environmental Sound

A Partial Listing of Papers and Publications:

"Performance of Sound and Vibration Instrumentation," *Noise Reduction*, L. L. Beranek, Ed. (McGraw-Hill Book Co., Inc., New York, 1960), Chap. 6.

"Sound," *ISA Transducer Compendium*, E. J. Minnar, Ed. (Instrument Society of America/Plenum Press, New York, 1963), Chap. 6.

"Vibration Isolation Effectiveness of Inertia Pads Resting on Soil," *Journal of Spacecraft and Rockets, AIAA*, Vol. 2, No. 2, March-April 1965, pp. 182-186.

"Instrumentation For Noise Measurement," *Tutorial Papers on Noise Control, Inter-Noise 72*, October 1972, pp. 84-97.

"Effects and Control of Highway Traffic Noise," *Transportation Engineering Journal of ASCE*, May 1973, pp. 307-322.

"Ways to Weigh Noise Outdoors," *Noise Control Engineering Journal*, Vol. 1, No. 1, 1973, pp. 40-45.

"A New Technique for Evaluating Personal Noise Exposure - A Statistical Approach," *National Safety News*, January 1974, pp. 76-79.

"Operator Noise Control in Construction Machinery," *Proceedings, Reduction of Machinery Noise*, Purdue University, 1975, pp. 261-277.

"Machine Element Noise," *Handbook Of Industrial Noise Control*, L. Faulkner, Ed. (Industrial Press Inc., New York, 1976), Chap. 8.

"Real Time Frequency Analyzers for Noise Control," *Noise Control Engineering Journal*, Vol. 9, No. 3, November/December 1977, pp. 131-136.

"Human Response to Blasting Noise and Vibration," *Proceedings of Inter-Noise 80*, December 1980, pp. 979-984.

"Motorcycle Acceleration Noise in the Urban Setting," *Proceedings of Noise-Con 81*, June 1981, pp. 241-244.

"Controlling Noise at the Source," *National Safety News*, April 1982, pp. 60-62.

BUILDING SOUND AND VIBRATION CONTROL **by George W. Kamperman**

Air Liquide: Large air separation facility enclosed in a custom noise reduction building
Baxter Travenol: Headquarters office acoustics and sound isolation for research laboratories
Belltone Electronics: Low noise anechoic test chamber for hearing aid research
Borg-Warner Corporation: Anechoic chamber design for testing automotive components
Caterpillar Tractor: New iron foundry plus product noise research facility
Chicago Board of Trade: Trading floor design and scale modeling of trading floor alternatives
Chicago Public Building Commission: Acoustic design of public high schools
Chicago, University of: Lecture hall acoustics and Law Library noise control
Cummins Engine Company: Engine test cells noise controls and engine research anechoic chamber
Detroit Diesel Corporation: Reverberation chamber design for noise testing large engines
Dow Chemical Company: Chamber design for static test firing Apollo Service Module
Eastman Kodak Company: Headquarters offices acoustics and research laboratories
Elmhurst College: Music building sound control and sound isolation
General Cinema: Evaluation of acoustics in numerous theaters for future digital sound systems
General Motors Corporation: Research Office & Proving Ground Noise and Vibration Laboratory
Hupp Corporation: Acoustical test facility design and performance evaluation
Iowa State Court House: Courtroom restoration acoustics and sound system design
John Hancock Center, Chicago: Apartments and offices sound isolation and vibration control
Knox College: Fine Arts Center, sound isolation and HVAC noise and vibration control
Lear Siegler, Inc.: Anechoic chamber design used for product testing
Lever Brothers Co.: New production plant with internal noise control to 80 dBA Max.
Levy Corporation: HVAC fan rumble problems in high-rise office buildings
McQuay-Perfex Inc.: Design of reverberation test facility for product research
Miami State University: Micro Biology Building vibration control for electron microscopes
Michael Reese Hospital: Sound and vibration control in electron microscope laboratories
NASA-Kennedy Space Center: Noise and vibration design of Space Shuttle launch complex
Northwestern University: Acoustics for lecture halls and HVAC noise controls
One Thousand Lake Shore Drive, Chicago: High rise building sound isolation and noise control
Outboard Marine Corporation: Engine test cells, sound isolation and noise control
Pickands & Mather Company: Process noise control for several coal preparation plants
Pratt & Whitney Aircraft Group: Teleconferencing facilities, acoustics and audio system
Quaker Oats: Chicago headquarters, open plan office acoustics and noise control
Underwriters Laboratories: Reverberation testing chamber design and evaluation
United States Gypsum Company: Acoustical test facility and improved gypsum wall systems
Xerox Corporation: Headquarters office acoustics plus noise and vibration control
Wisconsin, University of: Psychology building sound isolation and HVAC noise control
Wisconsin, DNR: Sportsmen gun firing range sound reduction enclosure

ENVIRONMENTAL NOISE CONTROL AND IMPACT STATEMENTS
by George W. Kamperman

Addison Wind Energy: Analysis for multi-megawatt wind turbine generator sighting near residential area
Amax Coal Company: Environmental noise impact statements for several open pit mines
Amcast-Automotive: Quieting a metal casting facility located in a residential area
Argonne National Laboratory: Environmental impact studies on noise for large projects
Blandin Paper Company: Large facility environmental noise reduction
Bollinger & Mabillard: Research and testing for significant roller coaster noise reduction
Burlington Northern: Noise reduction in a large railroad classification yard
Busch Gardens Tampa: Roller coaster noise assessment and control for “Kumba” and “Montu”
Busch Gardens Williamsburg: Roller coaster noise assessment and control options
Central Counties Cooperative: Noise reduction for large grain elevator located within a close community
Charter Steel Corporation: Total facility noise reduction with rank ordering of annoying sources
Chicago, City of: Development of the Chicago Noise Ordinance
Chicago Transit Authority: Noise control design for an urban rail transit car yard
Clark Oil & Refining Company: Reduction of refinery noise at the neighbors
Clifford Jacobs Forging Company: Reduction of exterior forge shop noise emission
Commonwealth Edison: Silencer design for gas turbine generating units
Corey Steel Company: Material handling exterior noise control in a steel stockyard
Detroit, City of: Numerous impact statements on noise for urban renewal projects
Dames & Moore: Environmental impact statement reviews for highways
General Railway Signal Company: Elimination of railcar wheel squeal in railroad retarder yards
Honeywell Inc.: Control of blast noise from Army ordnance production testing
Illinois Bell Telephone: Cooling tower noise control for residential location
Illinois, State of: Development of State wide noise regulations
International Harvester: Forge hammer isolation to reduce ground vibration
Liquid Carbonic: Special inlet silencer design for large compressors
Material Service Corporation: Stone quarries, noise assessment and noise reduction
Merriweather Post Pavilion: Pop music sound control for neighboring areas
Miller Brewing Company: Spotter truck noise control at freight handling facility
Northeast Illinois Planning Commission: Noise impact statement for O'Hare Airport
Morton Arboretum: Expressway noise berm design and expressway EIS review
National bureau of Standard: Consultations on noise measurement methodology
Nederlander Inc.: Environmental sound control for all amphitheaters
Pioneer Service Engineering Company: Scale model tests on gas turbine silencer designs
Poplar Creek Music Theatre: Contemporary music sound control beyond property
Resource Assessment Inc.: Numerous urban noise environmental impact statements
RMT, Inc.: Noise assessment and controls for combustion turbine and coal fired power plants
Sea World Orlando: Noise criteria and control for “Kraken” roller coaster
Shell Oil Company: Environmental noise control for an entire large refinery
Standard Brands: Exterior environmental noise control for a number of process vents
Tenneco: Noise barrier design for heavy vehicle test track in urban area
United States Army CERL: Design of environmental noise monitoring systems
Universal Studios Florida: First quieted all steel roller coaster “Dueling Dragons”
USA Ft Belvoir: Noise emission and control for air cushion vehicles over water
US EPA: Quarry and pit mine blast noise and vibration measurements and impact on dwellings
United States Gypsum: Large ventilation fan noise controls for underground mine
Wisconsin Department of Natural Resources: Gun firing range noise reduction
Vital Resources Inc.: Camp Grayling cannon fire and bombing noise impact on residents
Yellow Freight Company: Environmental noise control for a truck freight terminal yard

INDUSTRIAL NOISE CONTROL ENGINEERING

by George W. Kamperman

Advanced Transformer Company: Production facility noise control
Allis-Chalmers: Noise control on dozers, tractors, loaders, lift trucks
Amcast Meta-Mold Corporation: Interior noise reduction for aluminum casting operations
American Air Filter Company: Noise control in product development
American Bridge: Vibration analysis of bridge operating mechanism
American Can Company: Plant noise control seminar
American Motors Company: Auto production line noise control
Amoco Oil Company: Process noise control at Whiting oil refinery
Ampacet Corporation: Noise control in plastics manufacturing
Appleton Papers: Reduced noise exposure on high-speed paper coating systems
Aqua-Chem, Inc.: Quiet reverse osmoses water purification systems in ISO Container enclosure
Brumund Foundry: Noise control in foundry operations
J. I. Case: Noise test facility design and tractor noise control
Caterpillar Tractor: Crawler tractor noise control
Chrysler Airtemp: Development of low noise domestic air conditioning unit
Colt Industries, Fairbanks-Morris: Large engine noise and vibration control
Cooper-Bessemer Company: Noise reduction on a 10,000 HP engine/compressor
Dayton T. Brown: Quieting an Army 10-ton rough terrain forklift truck
Dickson Weatherproof Nail Co.: Earth borne impact noise reduction from a large cold header
General Electric Company: Quieting through the wall air conditioning units
Gorman-Rupp Company: Quieting mobile engine/pump systems for Army
Harley Davidson: Engine/transmission production facility with lower noise exposure
Illinois Tool Works: Noise control on plastic granulators and air conveyors
International Harvester: Large construction vehicle noise control
Kelsey-Hayes: Auto wheel rim plant noise reduction to 85 dBA
Kimble Office Furniture Company: Noise control in wood working facility
Kohler Company: Brass manufacturing facility noise control
Lamb Electric: Design of quieter high-speed vacuum cleaner blowers
Libby Corporation: Quiet Army mobile electric generator sets of 5, 10, 15, 30, 60, 200 KW
M&M Mars Inc.: Process noise reduction in a chocolate factory
Outboard Marine Corporation: Quieting outboard motors and lawn mowers
Peabody Barns Incorporated: Noise enclosure for mobile 100 HP engine/pump for Army
Roberts & Schaefer Company: Process plant engineering noise control
Sears Roebuck & Company: Design and testing of quieted outboard motors
Standard Oil Company: Fibers Division plant noise control to 85 dBA
Stora Enso Kimberly: Residential noise emission measurement and controls for a large paper mill
Superior Engineering Company: Vibration control in a steel mill laboratory
Sweetheart Cup Corporation: Quieting plastic forming machines
Turner Construction Company: Conveyor noise reduction for new USPS mail center
USA Corps of Engineers: Vibration isolation of massive inertial guidance test platform
USA Ft Belvoir: Off-road heavy construction equipment noise control projects
VSE Corporation: Noise control for mobile diesel engine powered Army equipment