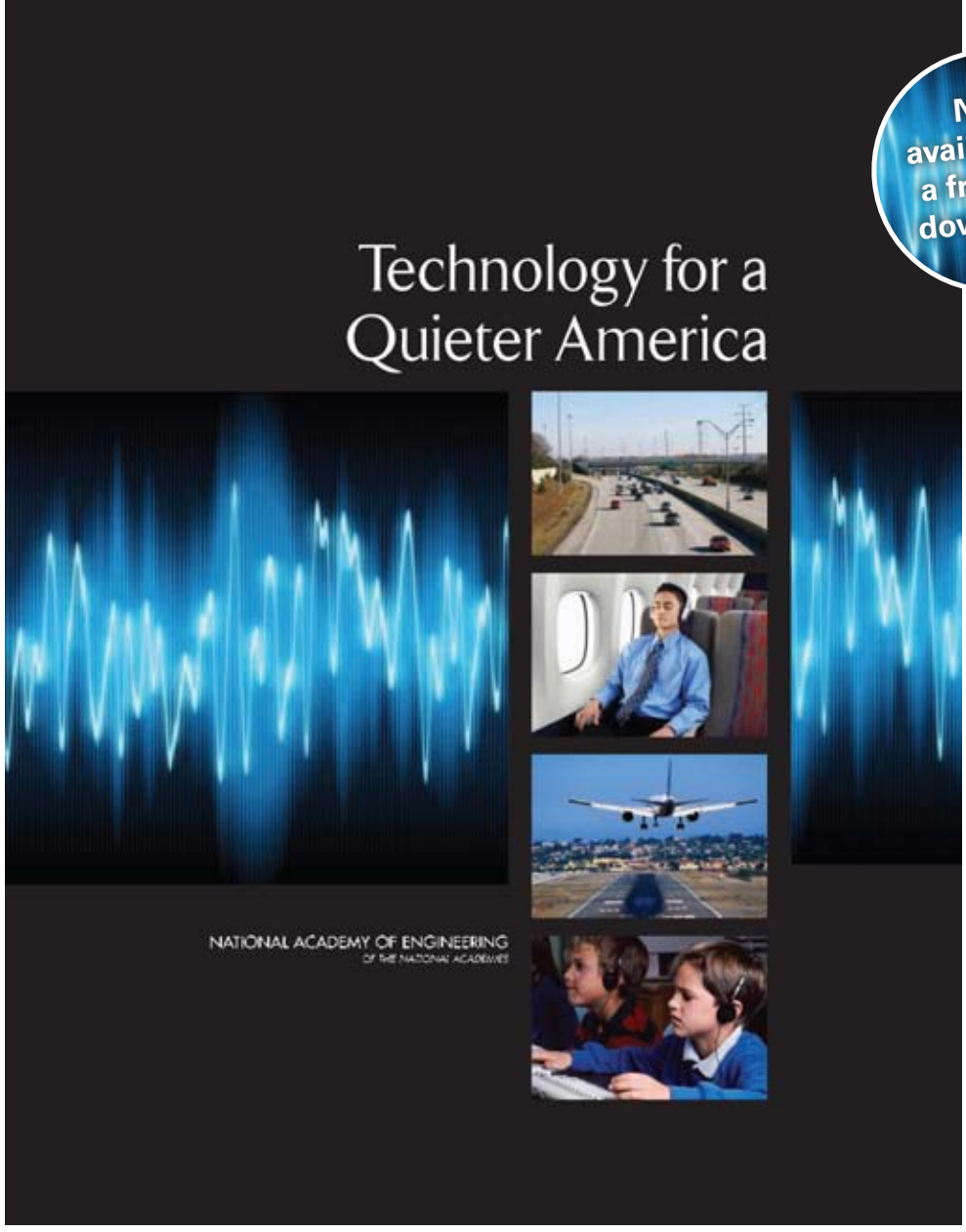
NOISE/NEWS INTERNATIONAL

Volume 19, Number 1
2011 March

A quarterly news magazine with an Internet supplement published by I-INCE and INCE/USA

TESTIMONY REGARDING A 2010 ANNOUNCEMENT BY OSHA CONCERNING THE DEFINITION OF THE WORD "FEASIBLE."

MEMBER SOCIETY PROFILE
The Belgian Acoustical Society



In 2006, NAE initiated *Technology for a Quieter America*, a multi-year study to review state-of-the-art noise-control engineering, describe the technological, economic and political climate for noise control, and identify gaps in research. During the past three years, a 14-member umbrella committee, chaired by NAE member George Maling (managing director emeritus of the Institute for Noise Control Engineering of the USA), five subcommittees, and focused working groups have explored three categories of issues related to noise-control engineering and public concerns: applications of current technologies; research and development initiatives; and intra-governmental and public relations programs. The report is now available from the National Academies Press.

Technology for a Quieter America assesses major sources of noise (transportation, machinery and equipment, consumer products, etc.), how they are characterized, efforts to reduce noise emissions, and efforts to reduce noise in work places, schools, recreational environments, and residences. The report reviews regulations that govern noise levels and the roles of federal, state, and local agencies in noise regulation. It also examines cost-benefit trade-offs between different approaches to noise abatement, the availability of public information on noise mitigation, and noise-control education in U.S. schools of engineering.

Findings of the report focused on several critical areas: Hazardous noise-Occupational noise exposure limits should be reduced and engineering controls should be the primary focus of controlling workplace noise. "Buy-quiet" programs that promote the procurement of low-noise equipment and allow market forces to operate can play an important role.

Cost Benefit analysis: The Federal Aviation Administration has been proactive in cost-benefit analysis of noise reduction at airports; these studies, along with similar research from Europe, could lead to highway noise reduction. The report examines the relative merits of “low noise” highways and the use of noise barriers.

Metrics: Advances in the ability to collect, store, and analyze noise data challenge us to reexamine metrics that were developed in the 1970s. Purchase information: http://www.nap.edu/catalog.php?record_id=12928

NOISE/NEWS INTERNATIONAL

A quarterly news magazine in PDF format with an Internet supplement published by I-INCE and INCE/USA

Volume 19, Number 1 **2011 March**

Features

Departments

Cover Photo:
Nakanoshima Park. Photo courtesy of the INTER-NOISE 2011 organizers.

Produced by
The Institute of Noise Control Engineering of the USA, Inc.
Business Office
9100 Purdue Road. Suite 200
Indianapolis, IN 46268-3165
USA

Noise/News International is a quarterly news magazine published in PDF format only by the International Institute of Noise Control Engineering (I-INCE) and the Institute of Noise Control Engineering of the USA, Inc. (INCE/USA). Noise/News International is available for free download to members of INCE/USA, the members of Member Societies of International INCE and others. Thus, the availability of NNI is a benefit to these members, and to the noise control engineering community. Advertising sales are handled by Richard J. Peppin. Feature articles for this magazine are selected by the editors. Responsibility for editorial content rests upon the authors, and not upon I-INCE or INCE/USA, the Member Societies of I-INCE, or their members. Product information is published as a service to our readers, and does not constitute an endorsement by the societies or their members. **SUBSCRIPTIONS:** The Member Societies of International INCE and members of INCE/USA will be notified by e-mail when a new edition of NNI has been posted on the NNI web site and is available for download. Anyone who wishes to be notified by e-mail of the availability of NNI for download may go to the NNI web site and sign up as a subscriber. Any problems related to sign-up or other issues should be directed to the Institute of Noise Control Engineering Business Office, 9100 Purdue Road. Suite 200 Indianapolis, IN 46268-3165. **EDITORIAL CORRESPONDENCE:** Address editorial correspondence to George C. Maling, Jr., 60 High Head Road, Harpswell, ME 04079, USA. Telephone or FAX: +1 207 729 6430; e-mail: maling@alum.mit.edu.

ADVERTISING: For information about advertising, contact Richard J. Peppin, Advertising Sales Manager, Scantek, Inc., 6430 Dobbin Rd. #C, Columbia, MD 21045, e-mail: PeppinR@ScantekInc.com.

NOISE/NEWS INTERNATIONAL

This PDF version of Noise/News International and its Internet supplement are published jointly by the International Institute of Noise Control Engineering (I-INCE) and the Institute of Noise Control Engineering of the USA (INCE/USA). This is the first volume that is being published in PDF format only. The PDF format means that the issues can be read by freely available software such as that published by Adobe and others. It reduces publication time, saves printing costs, and allows links to be inserted in the document for direct access to references and other material. Individuals can sign up for a free subscription to NNI by going to the web site http://www.noisenewsinternational.net

I-INCE

The International Institute of Noise Control Engineering (I-INCE) is a worldwide consortium of societies concerned with noise control and acoustics. I-INCE, chartered in Zürich, Switzerland, is the sponsor of the INTER-NOISE Series of International Congresses on Noise Control Engineering, and, with the Institute of Noise Control Engineering of the USA, publishes this quarterly magazine and its Internet supplement. I-INCE has an active program of technical initiatives, which are described in the Internet supplement to NNI. I-INCE currently has 46 Member Societies in 39 countries.

INCE/USA

The Institute of Noise Control Engineering of the USA (INCE/USA) is a non-profit professional organization incorporated in Washington, D.C., USA. The primary purpose of the Institute is to promote engineering solutions to environmental noise problems. INCE/USA publishes the technical journal, *Noise Control Engineering Journal*, and, with I-INCE publishes this quarterly magazine and its Internet supplement. INCE/USA sponsors the NOISE-CON series of national conferences on noise control engineering and the INTER-NOISE Congress when it is held in North America. INCE/USA Members are professionals in the field of noise control engineering, and many offer consulting services in noise control. Any persons interested in noise control may become an Associate of INCE/USA and receive both this magazine and *Noise Control Engineering Journal.*

NNI and its Internet Supplement

www.noisenewsinternational.net

The primary change in this PDF-only volume of *NNI* is the ability to have "hot links" to references, articles, abstracts, advertisers, and other sources of additional information. In some cases, the full URL will be given in the text. In other cases, a light blue highlight of the text will indicate the presence of a link. At the end of each feature or department, a light blue back to toc will take the reader back to the table of contents of the issue.

- The Internet supplement contains additional information that will be of interest to readers of *NNI*. This includes:
- The current issue of *NNI* available for free download
- *NNI* archives in PDF format beginning in 2003
- A searchable PDF of annual index pages
- A PDF of the current *NNI* conference calendar and a link to conference calendars for worldwide meetings
- Links to I-INCE technical activities and I-INCE Technical Reports

Progress in International INCE

The 40th International Congress and Exposition on Noise Control Engineering (INTER-NOISE 2011) will be held in Osaka, Japan from 2011 September 4- 7 in the Osaka International Convention Center (Grand Cube Osaka). The Congress is being co-organized by the Institute of Noise Control Engineering of Japan (INCE/J) and the Acoustical Society of Japan (ASJ). The main theme of the Congress is *Sound Environment as a Global Issue*. The technical program includes two plenary lectures and six keynote lectures. At the close of abstract submissions, the organizers had received over 900 abstracts. Please visit the web site at www.internoise2011.com for full details to plan your trip.

Plans to award between ten and twelve Young Scientist Conference Attendance Grants ware announced on the INTER-NOISE 2011 web site earlier this year. These grants will assist young noise control professionals in attending INTER-NOISE 2011. In addition to the main technical program, I-INCE will again hold a Workshop for Young Professionals. The Workshop follows the one held in Lisbon last year. The purpose of the Workshop is to mentor young noise control professionals, discuss research problems, and provide an informal forum for networking between senior and junior professionals. A detailed program will be posted on the web site about 3 months in advance.

In an effort to involve younger noise control professionals in the affairs of the Institute, changes to the Bylaws were proposed during the General Assembly in Lisbon. The changes allow the General Assembly to nominate candidates for positions of Director-at-large. Thus every third year the General Assembly will elect to the Board one member from each of three Member Societies from the different geographical regions (Europe-Africa, Pan-America, and Asia-Pacific). The term of office of the three Directors will be for three years beginning on January 1st of the year following the election. The first election is expected to be held during the General Assembly in Osaka.

In order to meet the expanding needs of the field of noise control engineering, I-INCE has now established a Symposium Series. The I-INCE Symposium Series replaces the past procedure in which the Institute was requested by other organizations to co-sponsor a series or an individual event. Thus, when approved by the Board as a co-sponsor, the Institute had little or no influence on the programs of the co-sponsored symposia. The I-INCE Symposium Series will be sponsored by the Institute, and requests for co-sponsorship of events outside the I-INCE Symposium Series will no longer be accepted.

The first I-INCE Symposium titled *Inducing 'Buy-Quiet' Purchasing Attitudes Through Simplified Product Noise Ratings* will be held in Paris on 2011 July 5-6. The Symposium is being organized by INCE/Europe in cooperation with the Federal Institute for Occupational Safety and Health (BAuA) in Germany and the Centre d'Information et Documentation sur le Bruit (CIDB) in France, and in partnership with the International Council of Academies of Engineering and Technological Sciences (CAETS). The objectives of the Symposium are to stimulate noise ratings and to provide manufactures with the information needed to design low noise products. Further details of the Symposium were published in the European News Department of the December NNI.

I am also pleased to announce that I-INCE has now signed a Memorandum of Understanding with CAETS. Recall that CAETS is a worldwide consortium of national academies. CAETS is without affiliation or bias and independent of the stakeholders on the noise issue. With broad engineering expertise, CAETS brings an independent voice and source of information to the discussion by policymakers of what is technically feasible. The cooperative activities under the agreement are undertaken by the CAETS Noise Control Technology Committee and the new I-INCE Noise Control Evaluation Panel. The CAETS Noise Control Technology Committee is currently chaired by past I-INCE President Tor Kihlman. As part of the interaction between I-INCE and CAETS, Tor made a presentation at a workshop held in Brussels, Belgium on 2010 October 29. The workshop was organized by the Belgian Presidency of the Council of the European Union and by the European Commission. It brought together various stakeholders, representatives from national governments and noise experts in order to launch a dialogue on complementary measures to develop a market for low-noise machinery and to enhance environmental awareness and commitment. A summary of Tor's presentation was published in the December issue of NNI. back to toc

Gilles Daigle
President,
International INCE

Whither Occupational Noise Control?

George Maling
Managing Editor, NNI

The study committee for the National Academy of Engineering report titled "Technology for a Quieter America" (which I chaired) included in its report (NAE, 2009) a chapter on hazardous noise. While subjects such as noise from consumer products, impulsive noise, and the characteristics of hearing protective devices (HPDs) were covered, a large portion of the chapter dealt with occupational noise and buy-quiet programs. One recommendation directed to the Occupational Safety and Health Administration (OSHA) concerned what we informally called the "100 dB Directive," which was not actually a Directive, but an instruction to OSHA inspectors. In brief, an OSHA inspector examining a facility for excessive noise is allowed to assume that use of hearing protective devices will allow the exposure to noise to be reduced by 10 dB. So if the 8-hour noise exposure limit is 90 dB, no citation will be written unless the measured level is more than 100 dB. In my head, this means that HPDs are automatically the first line of defense—which is contrary to OSHA policy which is that engineering controls should be the first line of defense.

The "100 dB Directive" has another consequence that we didn't think about when the report was written. More about the word "feasible" below, but for now assume that cost and other factors enter into the decision as to whether engineering controls are feasible. If, in high-noise environments, cost were considered in the application of engineering controls, OSHA would have information on the costs of compliance which, over time, would lead to a database of the costs and benefits of engineering controls. This, together with other cost/benefit information such as that developed by David Nelson (2009) as part of a National Aeronautics and Space Administration (NASA) program could be used to determine the most feasible solution to reduce occupational noise.

Independently, OSHA announced another approach to the application of engineering controls—which was published in the *Federal Register* on October 19, 2010. The announcement was that the word "feasible" should be defined as "capable of being done." This is the ordinary meaning of the word, and doesn't include consideration of factors such as costs and benefits, technological, economic, operational, and other factors in the determination of feasibility. The proposal was based on a 1981 Supreme Court decision related to the above definition. While one has to read the full announcement to have a good understanding of the background, it means that, if implemented, engineering controls for noise reduction would be required, but with the proviso that the costs would not put the company out of business.

Predictably, American industry came down very hard on this proposal. Comments came directly to OSHA. Congress got involved (see the Pan-American News Department in this issue), and testimony was given in one hearing (see below). In the end, OSHA was forced to withdraw the announcement. The withdrawal release is published in the Pan-American News Department of this issue.

One example of the opposition to the announcement is the testimony of Stuart Sessions, representing the Coalition for Workplace Safety, on February 15, 2011 which appears later in this issue. One statement made is that compliance costs were estimated to be between 1 USD and 200,000 USD per employee per year. Clearly, American industry needs a better handle on the costs of compliance through engineering controls.

So where do we go from here? It is unlikely that additional regulatory action will be taken in the near future. Occupational noise exposure is a long-range problem (and was 50 years ago!). One long-range solution is the "buy quiet" approach which Beth Cooper (2009) has been driving for NASA and which is intended to be relevant to industry. Bob Bruce (2009) has also discussed a "buy quiet" approach in American industry.

Continued on page 14

Acoustics in Belgium and the Belgium Acoustical Society

The Belgian Acoustical Society was founded in 1966 in order to promote and advance the science and practice of acoustics and to facilitate the exchange of information in the field. Since then the association has steadily increased its activities and it has now meetings on a regular basis and its members contribute to many of the important international congresses and meetings.

The membership of the association includes the foremost workers in the field of acoustics in Belgium. The members are engineers, physicists and architects working in academic institutions, governments and consulting firms having a strong interest or involvement in the effects and control of noise related areas. ABAV has also sustaining members.

As well as holding national meetings each year, the association has run a number of international conferences, the most notable being the 5th International Congress on Acoustics (I.C.A.) held at the University of Liège in 1965. At this meeting a total of 450 papers were presented and 1600 participants attended. Also a FASE Symposium on Speech Intelligibility was held at the University of Liège in 1973. A total of 32 papers were presented and 135 participants attended the meeting. Several joint meetings have already been organised together with the Acoustical Society of the Netherlands (NAG, Nederlands Akoestisch Genootschap) and the Société Française d'Acoustique (SFA).

Since 1973 the Belgian Acoustical Society, together with the Acoustical Society of the Netherlands and the Royal Flemish Society of Engineers (KVIV, Koninklijke Vlaamse Ingenieursvereniging) have organized a specialised course in acoustics and noise control. Up to now (2011) 37 courses have been organised and more than 2000 people attended.

The Belgian Acoustical Society has been a member of International Institute of Noise Control Engineering (I-INCE) since 1979, and, during the past years, has been an active participant in the affairs of the Institute, with representation at all intervening INTER-NOISE conferences and meetings of the Board and the General Assembly. The Belgian Acoustical Association has organized, in collaboration with the Royal Flemish Society of Engineers, the 22nd International Conference on Noise Control Engineering INTER-NOISE 93 ('People versus Noise') at the Catholic University of Leuven in 1993. At the congress 410 distinguished, invited and contributed papers were presented and over 900 participants attended the meeting.

ABAV was one of the founding members of the European Acoustical Association (EAA-EEIG) in 1993 and organized in 1996, the first EAA FORUM ACUSTICUM in Antwerp. About 400 papers were presented and 700 participants attended. The Belgian Acoustical Association also collaborated with the Société Française d'Acoustique (SFA) for the successful organisation of the 6th CFA (Congrès Français d'Acoustique) in 2002 in Lille, France.

On the 15th of September 2006 the Belgian Acoustical Society celebrated her 40th birthday with a one-day conference at the University of Liège (Sart Tilman); the program attended by 120 participants included 4 general lectures from internationally renowned acousticians, a session of 14 posters presented by young researchers, a technical exhibition organised by 10 of our sustaining members and an academic session.

On the 29th and 30th of April 2010, the congress "Noise in the Built Environment" was organized in collaboration with the Institute of Acoustics (IoA) in Het Pand, Ghent. This EAA symposium was attended by 125 participants. Some eighty papers were presented over 3 parallel sessions.

Finally one can also affirm that the Belgian acoustical profession is well-known due to the international activities of several major development and consultancy firms and offices, and due to the work of several university research groups and acoustically related research institutes.

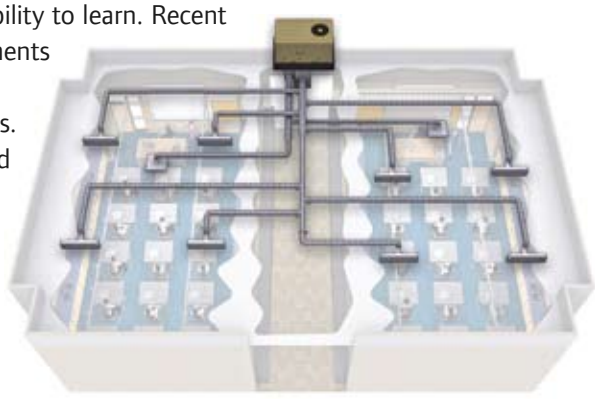
For further information on the activities of the Belgian Acoustical Society (ABAV) , contact D. Wuyts, WTCB/CSTC, avenue P. Holoffe 21, B-1342 Limelette, Belgium, FAX: +32 2 653 07 29, e-mail: debby.wuyts@bbri.be or visit the ABAV-website on http://www.abav.be/.

This is the 75th in a series of articles on the Member Societies of International INCE. This is an update of the profile that appeared in the 2001 September issue of this magazine.—Ed.

Member Society Profile is a regular feature of *Noise News International*. If you would like to have your society featured, please contact George Maling at inceusa@aol.com.

Creating the optimal learning environment.

The acoustic quality of a classroom is critical to a child's ability to learn. Recent acoustical testing has confirmed that meeting the requirements of the Acoustical Society of America's ANSI/ASA Standard S12.60 is possible with traditional commercial HVAC systems. Trane supports Standard S12.60 by using industry-accepted practices, carefully designed products supported by tested sound data and predictive software tools. We can help you meet these acoustical requirements with minimal additional cost.



Visit Trane at Booth 17 at NoiseCon 2011 to get a copy of our white paper on how you can deliver comfortable, sustainable, Standard S12.60-compliant classroom spaces or go to www.trane.com/acoustics

trane.com/acoustics

TRANE®

Testimony on an Occupational Noise Proposal by the Coalition for Workplace Safety

The Editors View in this issue of NNI is a discussion of recent actions by the Occupational Safety and Health Administration (OSHA) with respect to occupational noise exposure. The OSHA proposal was announced in the Pan American News Department of the December issue, and the subsequent withdrawal is announced in the same department in this issue. There were many comments in favor of the proposal, and many against. These comments can be found in the OSHA Docket for the proposal, OSHA-2010-0032. This statement by Stuart L. Sessions, president of Environomics, Inc. on behalf of the Coalition for Workplace Safety was presented to a hearing on "Investigating OSHA's Regulatory Agenda and its Impact on Job Creation." The hearing took place on February 15, 2011 before the Subcommittee on Workforce Protections, House Committee on Education and the Workforce. It is being published here so that readers of NNI have a better idea of cost estimates for noise control in American industry, and the thinking behind solutions for control of occupational noise in American industry. —Ed.

Introduction

Good morning, Mr. Chairman and Members of the Subcommittee on Workforce Protections. Thank you for inviting me today to testify on OSHA's recent proposal regarding the noise exposure standard and the potential impact of the proposal on job creation.

I am Stuart Sessions, President of the consulting firm Environomics, Inc. I am here today representing the Coalition for Workplace Safety (CWS). The Coalition for Workplace Safety is a group of associations and employers who seek to cost-effectively improve workplace safety. The Coalition has retained me to analyze the potential costs and economic impacts if OSHA were to finalize their proposed new interpretation of the term "feasible" as it applies to the Agency's standards for occupational exposure to noise.

As an economist, I have worked for more than 30 years in analyzing how a wide variety of environmental, health and safety regulations and administrative actions may affect the U.S. economy. Roughly half of my work in analyzing the economic impact of environmental, health and safety requirements has been as a Federal government employee or contractor, and about half has been as a consultant to private industry.

OSHA proposed its reinterpretation of the noise standard as a policy interpretation and not specifically as a regulation. Nevertheless, this proposed action is typical of how a new government requirement, whether achieved by formal regulation or simply as a declaration of policy by the agency that enforces the regulations, can affect the U.S. economy and jobs. I want to share with the Subcommittee today some initial results from two recent analyses of OSHA's proposed noise reinterpretation by CWS and its members. These analyses have not yet been completed, and they may well not be completed, since OSHA has withdrawn its proposed new interpretation. These analyses, however, focus directly on the Subcommittee's concern about how OSHA's requirements may affect job creation I expect that our preliminary findings from these analyses will be of interest and I have no expectation that the thrust of these analyses will change in a material way. The two analyses are:

1.Case studies. I have been working with about a dozen different companies on case studies of what the OSHA proposal would mean to their operations. The case studies examine how each of these employers complies with the OSHA noise standard now, what they would have to do differently if the proposed interpretation were finalized, and how much compliance with the new interpretation would cost them. And then, the case studies proceed to analyzing the impacts of these compliance costs: what would these compliance costs mean to these businesses and their competitive position, and what would the costs mean in terms of jobs? Would some of the current employees of these companies lose their jobs because the companies become less competitive and lose business, or might the noise compliance measures open new opportunities for these businesses and perhaps result in increasing numbers of jobs in the future?

2.NAM survey. The National Association of Manufacturers (NAM) has conducted a large survey of its member companies with regard to the companies' hearing protection programs for their employees and the potential impact of the OSHA noise proposal. NAM asked a broad set of questions of the companies, including similar questions as in my case studies about the costs and economic consequences of OSHA's proposed new interpretation. NAM has obtained more than 315 responses to their survey from manufacturing companies.

In addition to reporting today on some of the results from my case studies and the NAM survey, I have combined data from these and other sources and have

estimated the overall potential impact on the national economy of OSHA's noise reinterpretation in terms of costs and in terms of jobs. While I readily admit that my estimates are rough and uncertain, they contrast with the complete absence of any economic analysis conducted by, or at least made public by, OSHA.
I draw four conclusions from this set of analyses -- from the combination of my case studies, the NAM survey, and the national aggregate analysis:

1. The proposed OSHA noise interpretation would affect a large number and very broad range of American businesses and their employees.
2. The costs for American businesses to comply with OSHA's proposed new policy would be very high.
3. OSHA's proposed new interpretation would have substantial negative impacts on U.S. jobs and competitiveness.
4. All this would be for relatively little benefit in terms of improved hearing protection for workers.

Before I explain these conclusions in more detail, I would like to summarize what OSHA's proposed noise reinterpretation would have required.

OSHA has long had a standard that prescribes 90 decibels as the maximum average noise level to which a worker may be exposed over an 8-hour work shift. OSHA has for several decades maintained the policy that an employer can comply with this 90 decibel standard through whatever combination of three noise-limiting approaches that the employer finds is cost-effective. The three noise-limiting approaches include what are known as: 1) Engineering controls; 2) Administrative controls; and 3) Personal protective equipment. "Engineering controls" include measures to reduce noise by engineered means such as mufflers on noisy equipment, sound-deadening enclosures for noisy equipment, redesigning or changing equipment or processes so as to make them less noisy, and so forth. "Administrative controls" include measures such as rotating a worker's tasks so as to limit the fraction of his work shift that the worker spends performing activities with high noise levels. "Personal protective equipment," or PPE, includes such things as ear plugs or ear muffs that reduce the amount of noise exposure the individual worker receives despite whatever level of ambient noise surrounds the worker. In general, reducing a worker's noise level is substantially less costly through use of personal protective equipment than through engineering controls or administrative controls.

OSHA's noise standard does not treat these three means of reducing a worker's noise exposure equivalently. The standard requires an employer to limit exposure to 90 decibels first by implementing all feasible engineering and administrative controls. Only then, after all feasible engineering and administrative controls have been implemented, can an employer add personal protective equipment in order to get below the 90 decibel limit. The key in how OSHA has sensibly implemented for many years this preference for engineering and administrative controls lies in how OSHA has interpreted the term "feasible" as a limitation on the engineering and administrative controls that will be required. OSHA has long interpreted the word "feasible" as meaning "cost-effective relative to PPE." Those engineering and administrative controls that are defined as feasible and required to be implemented first consist only of those that are cost-effective relative to PPE. Or, said in a different way, if PPE is effective in limiting workers' noise exposure to less than 90 decibels and is less costly than engineering and administrative controls, the employer can choose to implement PPE rather than more costly engineering and administrative controls.

In the fall of last year, though, OSHA proposed to reinterpret the term "feasible" as it applies in the noise standard. OSHA proposed to reinterpret "feasible" to mean "capable of being done" instead of meaning "cost-effective." Under OSHA's proposed new interpretation, then, in seeking to limit noise exposures to below 90 decibels, an employer would need to implement all possible engineering and administrative controls without regard to cost unless the employer can show that the engineering and administrative controls would threaten the employer's ability to remain in business. Under the proposed new interpretation, the limit on required engineering and administrative controls would change from only those that are cost-effective to all such controls that are available short of putting the employer out of business.

Obviously OSHA's proposed new interpretation of the term "feasible" would greatly increase the required use of engineering and administrative controls relative to PPE in reducing noise exposures. I and the Coalition for

Workplace Safety have been working to estimate the costs and economic impacts that would result from OSHA's proposed new policy. I would like to summarize the four conclusions that I have drawn from our analyses thus far.

1. The proposed OSHA noise interpretation would affect a large number and very broad range of American businesses and their employees.

There is a wide variety of tools, machines, vehicles and processes that can generate noise exceeding 90 decibels: saws, hammers, punches, presses, sanders, burners, boilers, blowers, crushers, generators, compressors, aircraft, trucks, busses, locomotives, boats, compressed air, combustion, abrasive blasting, welding and many, many more. Workers operating or maintaining these items, or performing other tasks in the vicinity of these items, can be exposed to noise that may exceed an average of 90 decibels across an 8-hour work shift.

I have reviewed various data sources in order to develop a rough estimate for the number of employees that are exposed above 90 decibels and that therefore could be affected by OSHA's proposed reinterpretation. I have organized these estimates by industry:

- Manufacturing. In regulatory impact analyses that OSHA developed in the late 1970s/early 1980s to support potential changes to the noise standard, the Agency estimated that 19.4% of all production employees in manufacturing industries (SIC codes 20 through 37, plus SIC 49, utilities) work in settings with average ambient noise exceeding 90 decibels. This estimate is rather old, but is apparently the most recent comprehensive estimate that OSHA has developed. Noise exposures in manufacturing have likely been reduced since OSHA's estimate. I will assume in my calculations that the fraction of manufacturing production workers now exposed above 90 decibels is somewhere between the roughly 20% that OSHA estimated 30 years ago and 2%, a level one-tenth as high.
- Construction (SIC 15 - 17). A large recent noise survey for residential construction trades found for virtually every job category that at least 10% of full-shift samples exceeded 90 decibels (roofer, framing carpenter, finish carpenter, excavator, drywall installer, brick mason and helpers, landscaper, miscellaneous trades). Exposures among commercial construction workers are higher than among residential workers, while exposures among heavy/public works construction workers are likely also to be higher. Any particular construction worker's noise exposure can vary significantly from shift to shift as a function of how much of the shift he spends using or near a noisy tool. A brick mason, for example, may spend a large share of one shift using a noisy brick saw, but may not use the saw at all on the next shift. The result is that the fraction of construction workers who are occasionally exposed above 90 decibels for a shift substantially exceeds the fraction of all full-shift samples that exceed 90 decibels. I will assume that somewhere between 20% and 50% of all construction workers are occasionally exposed above 90 decibels, in contrast to the roughly 10% or so of all construction worker samples that exceed 90 decibels.
- Transportation (SIC 40 - 49). Workers around concentrations of transportation vehicles, particularly aircraft, can be exposed to noise levels exceeding 90 decibels. I will assume that the fraction of non-office transportation workers exposed above 90 decibels is similar to that for manufacturing production workers; somewhere between 2% and 20%.
- Other industries. There are many additional industries where workers can often be exposed at average levels exceeding 90 decibels, such as lawn care, tree service, automobile repair, maintenance and repair of large, noisy equipment, and warehousing. These other industries likely account for many fewer highly exposed workers than manufacturing, construction and transportation. I have not sought to estimate the likely much smaller numbers of highly exposed workers in additional industries. Combining recent employment figures for manufacturing, construction and transportation with estimates of the percentages of each industry's workers that are exposed to average noise levels exceeding 90 decibels, I estimate that there are some 2 to 7 million workers currently exposed at such levels. These workers and their employers would be directly affected by OSHA's proposed new interpretation.

I have provided a table at the end of this testimony that shows these estimates and summarizes how I proceed further to calculate the costs and job impacts of OSHA's proposed policy.

2. The costs for American businesses to comply with OSHA's proposed new policy would be very high.

OSHA has not estimated what the costs would be for the additional engineering and administrative controls that would be necessitated by the policy. The most recent nationwide cost estimates that OSHA has developed involving additional noise controls can be found in the regulatory impact analyses in the late 1970's/early 1980's that I referred to earlier. At that time, OSHA estimated the costs for additional technologically feasible engineering and administrative controls sufficient to reduce ambient noise to 90 decibels or less as the equivalent of $4,037 per affected employee per year in 2010 dollars. Said another way, OSHA estimated for each employee exposed to ambient noise levels exceeding 90 decibels that the cost of engineering and administrative controls to reduce

these levels to 90 decibels or below would average $4,037 per year. This cost estimate is OSHA's most recent, but it is still roughly 30 years old.

A much more current estimate for the costs of the engineering and administrative controls necessitated by OSHA's proposed reinterpretation can be developed from the NAM survey results and my case studies. Across these two data sources, 45 companies or facilities have estimated both the number of their employees exposed to average ambient noise levels exceeding 90 decibels and the costs of available engineering and administrative controls to reduce these exposures. The resulting estimates for the cost of the proposed OSHA policy per affected employee span a very wide range, all the way from less than $1 per employee per year to more than $200,000 per employee per year. The median estimate from the case studies and NAM's survey is $2,950 per affected employee per year, while the average across the 45 companies or facilities is $18,137 per employee per year. I believe that this average figure is skewed by several very high estimates of cost per employee that represent situations where costly controls would reduce noise exposures for very few workers, and that these controls might not actually be implemented in practice. I will assume that the controls more likely to be implemented in practice might average somewhere between about $3,000 and about $10,000 per employee per year. This range brackets the figure that OSHA derived previously of about $4,000 per affected employee per year.

These represent my estimated costs per affected worker of OSHA's proposed new policy for manufacturing industries specifically. (Both OSHA's estimate and the NAM survey that provided most of my cost data addressed manufacturers only.)

I would expect that the cost per affected worker for transportation industries would be roughly similar to these estimated costs for manufacturing industries. I thus will assume an identical range of between $3,000 and $10,000 per affected employee per year.

For construction industries, I believe that these costs for engineering and administrative controls would be much lower than for manufacturing, perhaps only one-tenth as much. Most of the engineering controls for construction involve changes to small equipment – less noisy saws, compressors, jackhammers, etc., in contrast to manufacturing where the noise-reducing measures would often involve changes to large machines, entire process lines or significant portions of a shop floor. For my very rough total national cost estimate for OSHA's proposed policy, I estimate the cost per affected worker in construction industries at one-tenth that for manufacturing, and thus roughly $300 to $1,000 per worker per year.

To develop an estimate for the total national cost of OSHA's proposed policy, we can multiply each of these figures on the cost per affected employee by the estimates I discussed earlier for the number of employees in different industries that are exposed to ambient workplace noise exceeding 90 decibels. In total, we get a national cost estimate for OSHA's proposed noise reinterpretation that is somewhere in the range from $1.2 billion dollars per year to $27 billion dollars per year. The total national cost is nearer the higher end of this range if we assume OSHA's figure to the effect that nearly 20% of manufacturing production workers are in work settings with ambient noise levels exceeding 90 decibels, while the figure is near the lower end of this range if we assume conservatively that only one-tenth as many workers are exposed to high noise levels as OSHA estimated.

An annual cost of somewhere between $1.2 and $27 billion is quite large relative to most other new requirements that the Federal government imposes on private industry. Only a few Federal regulations, typically fewer than five per year over the several decades that OMB has been keeping records, impose a burden of this magnitude on the economy. This figure reflects all Federal regulations for all purposes – environmental protection, homeland security, transportation safety, consumer protection, etc., as well as occupational health and safety. OSHA's proposed new policy on noise would be among the most expensive new requirements that the Federal government considers each year.

This is a very large cost for a policy that OSHA proposed to adopt by simply declaring it, without meeting the due process sorts of requirements that would apply if the policy reinterpretation were instead to be a regulation. If OSHA's reinterpretation were to have been proposed as a regulation, as many would say it should have been, at a cost of more than a billion dollars per year this initiative would have been subject to the following important requirements:

- Executive Order 12866. The Executive Order requires any agency proposing a regulation that would cost more than $100 million to prepare a regulatory impact analysis (RIA). In the RIA, OSHA would need to: 1) Provide a clear and thorough explanation of the need for the proposed action; 2) Explicitly estimate the benefits and costs and economic impacts of the proposal; and 3) Fairly consider alternatives to the proposal.
- The Small Business Regulatory and Enforcement Fairness Act (SBREFA). OSHA's proposal would undoubtedly have a significant impact on a substantial number of small businesses. As such, pursuant to the requirements of SBREFA, OSHA would need to: 1) Analyze the impact of the proposed policy on small businesses specifically; 2) Convene a panel of small business representatives that would provide the Agency with advice on how potentially to reduce the impact of the proposal on small businesses; and 3) Consider a range of alternatives that would reduce the economic burden on small businesses.

By attempting to issue the noise standard interpretation as a policy declaration instead of a regulation, OSHA avoided all these procedural safeguards. OSHA avoided the need for analyzing costs and benefits and considering alternatives under Executive Order 12866. Indeed, the Office of Information and Regulatory Affairs was not even informed of this proposal. OSHA avoided the need to examine impacts on small businesses and the need to consider alternatives that might reduce these impacts. In my view, avoiding these requirements for analysis, disclosure and transparency makes for poor public policy.

3. OSHA's proposed new interpretation would have substantial negative impacts on U.S. jobs and competitiveness.

The companies responding to the NAM survey and those involved in the case studies have offered a variety of comments on what OSHA's proposed new interpretation would mean for their businesses. I will quote some responses to the question of whether OSHA's proposal would affect the company's competitive position:

- Foreign imports (even from Canada) are coming in at lower delivered cost. Labor content is already more than 25% of each sales dollar. More labor inefficiency [from administrative controls] will push us far higher.
- I would shut down.
- Most of our facilities agreed that given the estimated costs required to comply, they would in many cases either contract the work to outside suppliers (who would have to meet the same requirements) or consider moving the work out of the U.S.
- Cost increases would significantly increase cost for two processes where there is already significant and growing competition from China.
- Added costs with no commensurate increase in efficiency or output make us even less competitive than we are against the Chinese who have no such requirements to hamper them.
- The changes would have to be paid for. With already slim margins it would almost certainly require an increase in our product cost. It is already difficult to compete with foreign competitors on a cost basis. We can't and won't produce product for free or at a negative margin.
- Negative impact. We would have to invest precious assets in equipment that actually negatively affects productivity.
- We would shift more of our production overseas.
- We would attempt to fully automate the noisy process so it would not need an operator who would be exposed to the noise.
- As we continue to spend money on new and existing compliance requirements the cost to do business goes up each year. It gets tougher to stay competitive especially with the overseas markets because you can't pass these costs on to the customers.
- It would cost us a lot of unnecessary money. We are a small company and it would be a hit to our bottom line for sure, but our competitors would have the same issues so we'd all lose money together at least.
- There is no return on that investment. We don't see hearing loss now, so why invest any money in it?
- Our competition would be investing their money into projects that make them lower cost producers. Significant distraction from what we need to do to stay competitive in a globalized manufacturing economy.
- Implementing all feasible engineering and administrative controls would be a very expensive exercise that would have significant safety and financial consequences.

The great majority of the responses forecast an important negative impact on the responding company's competitiveness. In answer to another question on whether OSHA's proposed new approach would cause the company to reduce its number of employees in the U.S., 70% of the respondents said "yes" and 30% said "no".

In my view, the best way to quantitatively estimate the ultimate economic impact from a broad new requirement such as OSHA's noise reinterpretation is to use a national economic forecasting and policy simulation model. The estimated industry-by-industry compliance costs from the new requirement are loaded into the model, and the model then predicts the particular industries that will be winners and losers and the overall impacts on GNP, employment and other economic variables of interest. We have not yet run such a model to estimate the impacts that would ensue from OSHA's proposed noise reinterpretation, but I believe that we can reasonably extrapolate from the recent results when such a model was run for a comparable potential new requirement.

The REMI Policy Insight Model is one of the most respected national economic forecasting models that is used to estimate the aggregate economic impacts from significant new spending initiatives, whether the initiatives involve private industry compliance spending such as may be required by a regulation, or investment spending such as might be associated with a governmental stimulus program. The REMI model was recently run to estimate the impact of EPA's proposed national regulation to tighten the air quality standard for ozone. EPA's potential requirement regarding ozone and OSHA's potential requirement regarding noise are qualitatively similar: both affect primarily the manufacturing and transportation industries, both will have broad national impact, and both have costs estimated to exceed a billion dollars per year. The recent REMI run for EPA's proposed ozone standard found that a net of about 8 U.S. jobs would be lost for every million dollars per year in compliance costs. Applying this factor to the compliance costs that we estimate for the proposed OSHA noise reinterpretation, we project a net loss of

somewhere between about 10,000 and 220,000 U.S. jobs if OSHA's noise proposal were to be finalized.

4. All this would be for relatively little benefit in terms of improved hearing protection for workers

I would like to make two points here:

- First, it does not appear that work-related hearing loss is a frequent problem now, under OSHA's existing and long-standing noise regulation and enforcement policies.
- Second, it seems unlikely that OSHA's proposed policy shift would significantly reduce the already low rate of work-related hearing loss. *The current rate of work-related hearing loss is low* OSHA's noise standard requires an employer to operate a hearing conservation program if any employees are exposed to an average noise level exceeding 85 decibels. A hearing conservation program must include monitoring of ambient noise levels and employee noise exposures, provision of hearing protectors, annual audiometric testing of employees, specific follow-up activities if the annual audiogram shows indication of hearing loss, and more. The employer must provide hearing protection devices to all employees exposed above 85 decibels, and must both provide and require the use of hearing protection devices for all employees exposed above 90 decibels. And, as I discussed previously, the employer must also implement all feasible engineering and administrative controls to reduce exposures exceeding 90 decibels.

Among the companies responding to NAM's survey, more than 90% have employee exposures exceeding 85 decibels and operate a hearing conservation program as they are required to do under the noise standard. I want to emphasize these two important characteristics of the vast majority of the companies that have responded to the NAM survey. These companies: a) Have relatively high noise exposures (employees exposed over 85 decibels); and b) Take measures to protect their employees by operating the hearing conservation programs that OSHA requires. These companies provide an ideal test for how well OSHA's longstanding approaches are performing in protecting workers' hearing. These companies have the relatively high noise levels that OSHA is concerned about, and they have been implementing the programs that OSHA mandates. What is the result in terms of hearing loss among the exposed workers at these companies? The answer from the NAM survey is that these companies show very low rates of worker hearing loss. For the year 2010, 132 companies provided information on both the number of their employees exposed above 85 decibels and the number of employees that showed evidence of work-related hearing loss (a "Standard Threshold Shift" or STS). The percentage of these relatively highly exposed workers that had a recordable STS was only 0.59% (184 with STS out of 31,074 employees exposed above 85 decibels among the 132 companies that responded). This incidence of STS is very low.

This already low rate of work-related hearing loss is unlikely to decline much further with OSHA's proposed policy shift

Most companies in my case studies (and additional companies in the NAM survey) reported that the feasible engineering and administrative controls they would implement under the proposed OSHA policy shift would not be sufficient to reduce current exposures exceeding 90 decibels to below 90 decibels. PPE would continue to be required for these employees, despite the additional engineering and administrative controls. Under current OSHA requirements and policy the rate of work-related hearing loss among highly exposed workers is low and depends substantially on the efficacy of PPE -- this situation would change little if OSHA changed its policy as proposed.

Summary of Conclusions

1. The proposed OSHA noise interpretation would affect a large number and very broad range of American businesses and their employees.
2. The costs for American businesses to comply with OSHA's proposed new policy would be very high.
3. OSHA's proposed new interpretation would have substantial negative impacts on U.S. jobs and competitiveness.
4. All this would be for relatively little benefit in terms of improved hearing protection for workers.

Thank you for the opportunity to participate in this hearing.

Sector	Current or Typical # of Workers	Percent in "Line", non-Office Jobs	Percent of "Line" Workers Needing Controls Because of Ambient Exposures >90 dBA		Cost/yr of Engr/Admin Controls per Worker Exposed >90 dBA		Estimated Total Cost for OSHA Policy (in $Billions/yr)		Estimated Jobs Impact of OSHA Policy	
			High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate
Manfacturing	14,000,000	60%	19%	2%	$10,000	$3,000	$16	$0.5	130,368	3,911
Construction	10,000,000	90%	50%	20%	$1,000	$200	$5	$0.4	36,000	2,880
Transportation	6,500,000	50%	19%	2%	$10,000	$3,000	$6	$0.2	50,440	1,513
Total			**6,760,100**	**2,026,010**			**$27**	**$1**	**216,808**	**8,304**

Estimated Cost/yr of OSHA's Proposed New Interpretation of Feasibility for Noise Standard

ANNEX

THE CWS's APPROACH TO WORKPLACE SAFETY

The Coalition for Workplace Safety (CWS) is comprised of a wide range of employers and employers' associations representing every type of industry from coast to coast. The goal of the CWS is to work with its members to improve workplace safety and health through the following principles:

- **Cooperation.** The CWS believes that workplace safety can be improved through a cooperative approach when all parties involved in this process (employers, employees, and OSHA) work together to achieve better results. Cooperation includes training and education so that employers, employees and OSHA all have a clear understand of what is required to comply with all applicable workplace safety and health obligations.
- **Assistance.** The CWS believes that most employers want to protect their employees and to maintain safe and healthy workplaces, and that OSHA should serve as a resource to assist employers to understand their obligations.
- **Transparency.** The CWS believes that OSHA safety and health regulations must be developed with the full transparency of the data, science and studies relied upon by OSHA. The CWS further believes that an open process with a sufficient opportunity for the public including employers, employees and stakeholders to participate in the rulemaking process and to provide helpful information to OSHA will achieve the best result in the development of a rulemaking that is clearly understandable and takes into account the impact of such rulemaking on employers and employees.
- **Clarity.** The CWS believes that standards and regulations must be written in simple and clear language so that all employers, especially small employers, will be able to understand their requirements without the expense of consultants and attorneys. The CWS further believes that greater clarity will result in greater compliance and lead to improved workplace safety and health.
- **Accountability.** The CWS believes that all parties (employers and employees) must be held accountable for their roles and responsibilities. Employers must provide the necessary training, equipment, resources and company emphasis to ensure that workplace safety and health is a priority and employees must accept that workplace safety depends on their actions and decisions.

More information is at www.workingforsafety.com

back to toc

Editor's View *Continued from page 4*

INCE/USA and International INCE could provide leadership through republication of selected papers on occupational noise reduction from the thousands of papers on noise control engineering presented at past INTER-NOISE and NOISE-CON conferences. The National Institute for Occupational Safety and Health (NIOSH) could collect case histories and make them available to American industry. There are undoubtedly other actions that could be taken by industry that would involve cooperation and not confrontation. Noise control engineers are the first persons who want to see engineering controls for occupational noise to be implemented, and it is up to us to lead the way. back to toc

George Maling
Managing Editor

References

Bruce et al., 2009. Bruce, R.D., Bommer, A.S., Lefkowitz, K.A., and Levesque, B.R., A new approach to noise control in the workplace. Paper in09-011, Proc. INTER-NOISE 2009, the 2009 International Congress on Noise Control Engineering, Ottawa, Canada

Cooper, 2009. Cooper, B.A., Development and implementation of policy-compliant site-specific buy-quiet programs at NASA. Paper in09-050, Proc. INTER-NOISE 2009, the 2009 International Congress on Noise Control Engineering, Ottawa, Canada. The NASA program is online at http://adl.amygelfand.com/buy-quiet-purchasing/

NAP, 2010. Technology for a quieter America. A report produced by the National Academy of Engineering (USA) and published by the National Academies Press. Now available for free download. See http://www.nap.edu/catalog.php?record_id=12928

Nelson, 2009. Nelson, D.A., A buy-quiet program incorporating career-cycle noise costs. Paper in09_154, Proc. INTER-NOISE 2009, the 2009 International Congress on Noise Control Engineering, Ottawa, Canada.

Pan-American News

Paul Donovan, Pan-American Editor

USA

The OSHA Noise Proposal

This is a noise-related portion of a statement by David Michaels, Ph.D, MPH, Assistant Secretary , Occupational Safety and Health Administration, U.S. Department of Labor. The statement was made on March 16, 2011 before the Committee on Oversight and Government Reform, Subcommittee on Regulatory Affairs, Stimulus Oversight and Government Spending. —Ed.

Second, I'll describe briefly the intent of OSHA's proposal regarding noise – which, as you know, we have withdrawn. First, let me provide a little background. Between 20,000 and 25,000 workers every year suffer noise-induced hearing loss. Hearing loss is also a major problem for construction workers. OSHA has a history of working constructively with employers to develop cost-effective ways to control noise. Most construction workers have suffered substantial loss of hearing after 15-25 years on the job and have to live with a significant loss of hearing for the rest of their lives. Hearing aids can increase the sound levels, but do nothing to increase comprehensibility or decrease problems like ringing in the ears. Hearing loss is rarely compensated among construction workers.

Last year, OSHA issued a Federal Register notice announcing a proposal to change the way we interpret OSHA's noise standard. I wa proposal, issued for public comment in order to gather information. It was not a final decision. The Agency committed to reviewing all of the comments prior to making any final decision. In fact, OSHA extended the comment period and is continuing to accept comments, even though the proposal has been withdrawn. OSHA withdrew the proposed interpretation because it became clear from the concerns raised that addressing this problem would have required much more public outreach and many more of the agency's scarce resources than we had originally anticipated. The agency decided to suspend work on the proposal in order to conduct more education and consultation on work-related hearing loss. We are initiating a robust outreach and compliance assistance effort to provide enhanced technical information and guidance on the many inexpensive, effective engineering controls for dangerous noise levels.

OSHA Withdraws Noise Proposal

This is a press release issued on January 19, 2011 by the U.S. Department of Labor Office of Public Affairs.—Ed.

US Department of Labor's OSHA withdraws proposed interpretation on occupational noise

Agency examines other approaches to prevent work-related hearing loss

The U.S. Department of Labor's Occupational Safety and Health Administration today announced that it is withdrawing its proposed interpretation titled "Interpretation of OSHA's Provisions for Feasible Administrative or Engineering Controls of Occupational Noise." The interpretation would have clarified the term "feasible administrative or engineering controls" as used in OSHA's noise standard. The proposed interpretation was published in the *Federal Register* on Oct. 19, 2010.

"Hearing loss caused by excessive noise levels remains a serious occupational health problem in this country," said Dr. David Michaels, assistant secretary of labor for occupational safety and health. "However, it is clear from the concerns raised about this proposal that addressing this problem requires much more public outreach and many more resources than we had originally anticipated. We are sensitive to the possible costs associated with improving worker protection and have decided to suspend work on this proposed modification while we study other approaches to abating workplace noise hazards."

Michaels met earlier this month with the offices of Sen. Olympia Snowe and Sen. Joseph Lieberman, members of the Senate Committee on Small Business and Entrepreneurship, in response to a letter from the senators. Sens. Snowe and Lieberman are also co-chairs of the Senate Task Force on Manufacturing.

Thousands of workers every year continue to suffer from preventable hearing loss due to high workplace noise levels. Since 2004, the Bureau of Labor Statistics has reported that nearly 125,000 workers have suffered significant, permanent hearing loss. In 2008 alone, BLS reported more than 22,000 hearing loss cases, and Michaels emphasized that OSHA remains committed to finding ways to reduce this toll.

As part of this effort, the agency will:

- Conduct a thorough review of comments that have been submitted in response to the *Federal Register* notice and of any other information it receives on this issue.
- Hold a stakeholder meeting on preventing occupational hearing loss to elicit the views of employers, workers, and noise control and public health professionals.
- Consult with experts from the National Institute for Occupational Safety and Health, and the National Academy of Engineering.

Continued on page 17

European News

Bernard Berry, European Editor

Europe

New Evidence from WHO on Health Effects of Traffic-related Noise in Europe

Traffic-related noise accounts for over 1 million healthy years of life lost annually to ill health, disability or early death in the western countries in the WHO European Region. This is the main conclusion of the first report assessing the burden of disease from environmental noise in Europe, released March 30 by WHO/Europe. Noise causes or contributes to not only annoyance and sleep disturbance but also heart attacks, learning disabilities and tinnitus.

"Noise pollution is not only an environmental nuisance but also a threat to public health," says Zsuzsanna Jakab, WHO Regional Director for Europe. "We hope that this new evidence will prompt governments and local authorities to introduce noise control policies at the national and local levels, thus protecting the health of Europeans from this growing hazard."

Among environmental factors in Europe, environmental noise leads to a disease burden that is second in magnitude only to that from air pollution. One in three people experiences annoyance during the daytime and one in five has disturbed sleep at night because of noise from roads, railways and airports. This increases the risk of cardiovascular diseases and high blood pressure.

The new publication presents the results of an international study, coordinated by WHO/Europe and supported by the European Commission's Joint Research Centre (JRC), which reviews the evidence on health effects, provides guidance to quantify risks from environmental noise and estimates the burden of disease in western European countries. Better surveillance and data collection are needed in south-eastern Europe and central Asia, where a lack of exposure data inhibits estimates of the extent of health effects in these parts of the Region.

"This new review of evidence is WHO's contribution to the policy process in the European Union. We hope that it can influence the update of the European Union directive to include stricter limit values for noise pollution, and that it can be extended to other parts of the Region," comments Rok Ho Kim, Scientist, Noise and Health at WHO/Europe, who coordinated the WHO project to draw up the report.

"To protect public health from environmental noise, collaboration between WHO/Europe, the European Commission and the European Environment Agency is increasingly strengthened, with the aim of implementing in a synergistic way the 2010 Parma Declaration and the European Union's noise-related directives. This collaboration is enabled by the common noise assessment methodological framework (CNOSSOS-EU) being developed by the European Commission," says Dr Stylianos Kephalopoulos, coordinator of CNOSSOS-EU.

This publication is primarily for policy-makers, experts, supporting agencies and other stakeholders that need to estimate and act on the effects of environmental noise. It provides the basis for revised WHO guidelines on noise, which Member States requested at the Fifth Ministerial Conference on Environment and Health, held in Parma, Italy in 2010.

France

International Conference on Fan Noise, Technology and Numerical Methods

After the success of the previous editions of the International Symposium on Fan Noise organised by CETIAT and CETIM, a new edition is planned on April 18-20, 2012 at CETIM, Senlis with an expanded scope. This conference co-organized by IMechE (Institution of Mechanical Engineers, UK), CETIAT and CETIM will include technical presentations in three parallel sessions focusing on:

- Fan Technology,
- Fan Noise,
- Theoretical and Numerical methods applied to fans.

This conference should interest not only fan manufacturers and designers but also fan users in various domains: industrial processes, HVAC, automotive and rail applications, electronics, household appliances, etc. If you work in this field, you are greatly encouraged to present a paper at FAN 2012. The first step is to submit an abstract of 300-400 words in English **before September 1, 2011**.

You will find more information on this event and on how to submit an abstract in the **Call for papers** and on the website www.fan2012conference.org which will be periodically updated.

United Kingdom

Noise Action Week

Noise Action Week will be taking place on the 23-27 of May and it is hoped that the huge success of last year can be matched and built upon. We are very much looking forward to hearing what previous participants (and new!) are doing to get involved.
Noise Action Week is an annual initiative coordinated by Environmental Protection UK, which aims to raise awareness of the problems caused by community noise and the solutions available to tackle it.

For more information and examples on Noise Action Week and details of past events, see our website at www.noiseactionweek.org.uk. We have resources to help you raise awareness of noise in your community – including information on noisy neighbors, headphones and hearing, noise from pubs and clubs, and many more.

Asia-Pacific News

Marion Burgess, Asia-Pacific Editor

Australia

Acoustics 2011 Gold Coast

The annual conference of the Australian Acoustical Society will be held in the Gold Coast 2-4 November 2011. The theme for this conference is "Breaking New Ground" and many of the papers will be highlighting the role of acoustics in the recent boom in large infrastructure projects around Australia. In addition to papers on this theme, papers on all aspects of acoustics will be welcomed including Underwater Acoustics and Architecture and Building Acoustics. There will be a technical exhibition, workshops and a great social program. For more information see http://www.mech.uq.edu.au/acoustics2011/

Acoustics 2012 Hong Kong

The Acoustics 2012 Hong Kong conference and exhibition consists a joint meeting of the 163rd meeting of the Acoustical Society of America (ASA), the 8th meeting of the Acoustical Society of China (ASC), the 11th Western Pacific Acoustics Conference (WESPAC) and the Hong Kong Institute of Acoustics (HKIOA) organized by the Hong Kong Institute of Acoustics. It will take place at the Hong Kong Convention and Exhibition Centre from May 13 to May 18, 2012. The Acoustics 2012 Hong Kong meeting will provide the best opportunity for engineers and scientists in all fields of acoustics to learn about and share their work with colleagues from around the world. More than 10 parallel technical sessions would be arranged for exchange of views and sharing of experience. For more information see http://acoustics2012hk.org/

Vale Michiko So Finegold, Ph.D.

On 26 April, 2011 Michiko So Finegold died suddenly shortly after a visit to her home country of Japan. In her professional life, she became a leading Japanese community noise scientist with important contributions in both research on the effects of noise and on national and international noise policy issues. Michiko has been a strong advocate for management of environmental noise over many decades. Michiko and Larry Finegold have participated very regularly at INTER-NOISE congresses as well as working tirelessly on I-INCE technical studies and related activities. As well they have contributed to acoustics activities around the world. At the time of the ICA 2010 they enjoyed revisiting Sydney, which is where they met during the ICBEN conference in 1994.

As well as her high level of professionalism, Michiko was friendly, compassionate and respectful and demonstrated the best of Japanese culture. The acoustics fraternity has experienced the loss of a significant person who was important to all of us. Our thoughts and condolences go to Larry Finegold during his grief for the loss of his life and work partner.

Pan-American News (contnued)

- Initiate a robust outreach and compliance assistance effort to provide enhanced technical information and guidance on the many inexpensive, effective engineering controls for dangerous noise levels.

For small businesses, OSHA's On-site Consultation Program offers free and confidential advice on health and safety solutions with priority given to high-hazard worksites. Through this program, small and medium-sized employers can obtain free advice on addressing noise hazards. On-site consultation services exist in every state, and they are independent from OSHA's enforcement efforts. On-site Consultation Program consultants, employed by state agencies or universities, work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management systems.

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to assure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit http://www.osha.gov.

International Representatives

Below is a list of international contacts for the advertisers in this issue. The telephone number is followed by the fax number where available. In cases where there are two or more telephone numbers per location, or several locations within a country, a bullet (•) separates the telephone number(s) from the respective fax number. Advertisers are asked to send updated information by E-mail to INCEUSA@aol.com.

ACO Pacific

Hong Kong/China: AP Technology Limited
852 3114 6028; 852 3114 6038
Apmanli@biznetvigator.com

Hong Kong/China: Gelec(HK) Limited
852-29198383; 852 2591-0548
alexwu00@hotmail.com

Korea: ABC Trading Co.
+82-2-2226-3161; +82-2-2226-7383
abctrd@abctrd.com

Atrium Companies

USA: Atrium Companies
+1 214 630-5757 • +1 214 630 5001
http://atriumcompanies/contact_us.asp

BSWA

Australia: KINGfDOM PTY LTD
+61 2 9975 3272
kingdom@kingdom.com.au

Australia: Noise Measurement Services
+61 7 3217 2850
bob@noisemeasurement.com.au

Austria: Ing. Wolfgang Fellner GmbH
+43 1 282 53 43
wf@shallmessung.com

Belgium: ABC International Trading B.V.
+31 162520447
nl@abctradings.com

Canada: Soft dB
+1 418 686 0993
contact@softdb.com

Egypt: Elnady Engineering and Agencies
+20 2 23425763
info@elnadycompany.com

Finland: APL Systems Ltd.
+358(0)442199940
Ville.ilves@apl.fi

France: ViaXys
+33 2 38 87 45 35
oliver.blazere@viaxys.com

Germany: ROGA Instruments
+49 (0) 6721 98 44 54
roga@roga-messtechnik.de

India: Welan Technologies
+91 20 25393126
info@welantechnologies.com

Ireland: Sonitus Systems
+353 01 2542560/+44 020 81236009
enquiries@sonitussystens.com

Israel: Emproco Ltd.
+972 (0) 8 6718187
sales@emproco.com

Italy: Spectra Sri
+39 613321
ecaglio@spectra.it

Korea: SM Instruments Co., Ltd.
+82 42 861 7004
youngkey@smins.co.kr

Serbia: NORTH Point Ltd.
+381 24 62 62 72
gajins@north.rs

Singapore: SHAMA Technoligies (S) Pte Ltd.
+65 6776 4006
shamatec@signet.com.sg

South Africa: Vibranalysis Instruments S.A./
+27 118867993 qqq +27 115075823
laurence@vibranalysis.co.za

South America: SMART Tech
+55 11 3168 3388
marcelo@smarttech.com.br

Spain: Anotec Consulting S.L.
+34 916 897 540
nico@anotec.com

Spain: PROTOS Euroconsultores de Ingeneria S.L.
+34 91 747 5891
Kimono.alexiou@protos-eci.es

Spain: Uros Ingenieria
+34 91 3329621
Jalon_id@uros.es

Sweden: Acoutronic AB
+46 87 650 280
toby@acoutronic..se

Sweden: Arotate-Consulting AB
+46 708 955150
janos@arotate.com

Sweden: Sound View Instruments
+46 (0) 70 681 79 89
Anders.norborg@soundviewinstr.com

Taiwan: OE SCIENTECH CO., LTD.
+886 -2 25115747
terry@oe.com.tw

Taiwan: Tops Technologies, Inc.
+886 932 068 059
kenlee@topstech.com.tw

Thailand: Geonoise Instruments Thailand Co. Ltd.
+66 042 342091
info@geonoise-instruments.com

The Netherlands: ABC International Trading B.V.
+31 162520447
nl@abctradings.com

Turkey: DTA Ltd Sti.
+90 224 280 84 44
Akif.goksa@dta.com.tr

Turkey: VibraTek
+90 0312 479 0302
Ibrahim.Caglayan@vibratek.com.tr

United Kingdom: Sonitus Systems
+353 01 2542560/+44 020 81236009
enquiries@sonitussystens.com

USA: Scantek, Inc.
+1 410 290 7726
PeppinR@scantekinc.com

NGC Testing

USA: NGC Testing
+1 716 873 9750 • +1 716 873 9753
email@ngctestingservices.com

NTI

Australia: Amber Technology Pty Ltd
+61 2 9452 8600
lhart@ambertech.com.au

Austria: Wien-Schall GmbH
+43 1 811 55 100
proaudio@wienschall.com

Bahrain: ATEIS Middle East FZCO.
+971 4 6091325
info@ateis.ae

Belgium: Belram sa/nv
+32 2 672 95 90
info@belram.com

Brazil: NTI Americas Inc.
+1 503 684 7050
ntisales@ntiam.com

Bulgaria: ATC Ltd.
+35 988 9528 649
hlebarovg@dir.bg

Canada: NTI Americas Inc.
+1 503 684 7050
ntisales@ntiam.com

Chile: NTI Americas Inc.
+1 503 684 7050
ntisales@ntiam.com

China: NTI CHINA CO.,LTD.
+86 10 5791 0038
china@nti-audio.com

Czech Republic: NTi Audio Praha
+420 2209 99992
info@ntipraha.cz

Denmark: Kinovox Pro ApS
+45 44 53 3011
ck@kinovox.dk

Estonia: EW Sound & Light Vaarmann OÜ
+372 6612 768
ewsound@ewsound.ee

Finland: Noretron Components Ltd.
+358 (10) 525 8000
ari.nissinen@noretron.fi

France: SCV AUDIO
+33 1 486 322 11
f.voiffray@scv.fr

Germany: Hermann Adam GmbH & Co. KG
+49 8131 2808 0
info@adam-gmbh.de

Germany: Schalltechnik Süd & Nord GmbH
+49 201 5456 980
besselmann@akustiktest.de

Germany: Schalltechnik SÜD & NORD GmbH
+49 941 94 555 85
kotterer@akustiktest.de

Greece: Bon Studio S.A.
+30 210 380 9605 8
bon@bonstudio.gr

Hungary: Elimex Kft
+36 1 239 8270
zsofi@elimex.hu

India: AVF Distributors (I) Pvt. Ltd.
+91 22 2405 1686
info@avfindia.com

India: AVF Distributors (New Dehli)
+91-11-2 874 11 31
info@avfindia.com

Indonesia: Santika Multi Jaya
62 21 6583 3535
andre@cbn.net.id

Iraq: ATEIS Middle East FZCO.
+971 4 6091325
info@ateis.ae

Israel: Sontronics Electr. Equipm. Ltd
+972 3 570 5223
sales@sontronics.co.il

Italy: Spectra SRL
+39 039613321
info@spectra.it

Japan: NTI Japan Limited
+81 3 3634 6110
okayasu@nti-japan.com

South Korea: SOVICO Corporation
+82 2 2106 2877
ijchoe@sovico.co.kr

Latvia: Audio AE Ltd.
+371 67807310
audioae@audioae.lv

Lithuania: Midiaudio Ltd.
+370-37-223288
sales@midiaudio.com

Malaysia: TekMark Broadcast Sdn Bhd
+603 9057 8999
gs.wong@tekmarkgroup.com

Mexico: NTI Americas Inc.
+1 503 684 7050
ntisales@ntiam.com

Netherlands: TM Audio Holland B.V.
+31 30 2414070
reinier.bruijns@tmaudio.nl

International Representatives continued

New Zealand: Amber Technology (NZ) Ltd.
+64 9 443 0753
ross@amber.co.nz

Norway: Benum siv. ing. AS
+47 2213 9900
post@benum.com

Poland: Konsbud Audio Sp. Z O.O.
+48 226 44 3038
info@konsbud-audio.com.pl

Portugal: Arestel S.A.
+351 213 030 850
audiovideo@arestel.pt

Romania: db Technolight
+40 268 331 410
dan@dbt.ro

Russia: I.S.P.A. Russia
+7 495-784-75-75
ispa@ispa.ru

Singapore: d&b Audiotechnik S.E.Asia Pte
+65 67952268
info.asia@dbaudio.com.sg

Slovakia: NTi Audio Praha
+420 2209 99992
info@ntipraha.cz

Slovenia: AVC Slovenia
+386-1-530 78 70
jani.medic@avc-group.si

South Africa: Wild & Marr (Johannesburg)
+27 11 974 0633
info@wildandmarr.co.za

Spain: Neotécnica, S.A.
+34 91 542 09 00
neotecnica@neotecnica.es

Sweden: Sennberg AB
+46 8 566 16400
stephan.segermark@sennberg.se

Switzerland: Contrik AG
+41 44 736 50 10
contrik@contrik.ch

Taiwan: NTI CHINA CO.,LTD.
+86 512 6802 0075
china@nti-audio.com

Thailand: Vichai Trading Co., R.O.P.
+662 559 0956 8
victorco@truemail.co.th

Turkey: SF SES VE Isik Sistemleri Ltd
+90 212 227 6800
samimm@sf.com.tr

Ukraine: Real Music Ltd.
+380-482 347382
realmusic@realmusic.ua

United Kingdom: Neutrik (UK) Ltd.
+44-1983-811 441
sales@neutrik.co.uk

USA: NTI Americas Inc.
+1 503 684 7050
ntisales@ntiam.com

Scantek, Inc.

Mexico and South America: CIAAMSA División Acústica
(55) 1054 3209 • (55) 1054 3210
nbenitez@ciaamsa-acustica.com

SoundPLAN LLC

Argentina: Dakar ingenieria acustica Argentina
+54 (11) 4865 79 84; +54 (11) 4 865 79 84;
soundplan@dakar-acustica.com.ar

Australia: Marshall Day Acoustics
+612 9282 9422; +612 9281 3611;
MCottle@marshallday.com.au

Brazil: GROM Acustica & Automacao
+55 212516 0077; +55 21 2516 0308;
comercial@grom.com.br

Canada: Navcon Engineering Network
+1 714 441 3488; +1 714 441 3487;
Forschner@navcon.com

China: BSWA Technology Co., Ltd.
+86 10 62526360; +86 10 82251626;
conghaidong@bswa.com.cn

Chile: Sinruido
+562 2398736
Ing.mora@gmail.com

Czech Republic: SYMOS s.r.o.
+42 220 999 977; +42 257 225 679;
symos@symos.cz

Dennmark: SoundPLAN Nord
+45 (39) 46 12 00; +45 (39) 46 12 02;
jkl@soundplan.dk
Egypt: Elnady Engineering and Agencies
+20 2 23420896; +20 2 23421791;
info@elnadycompany.com

Finland: Oy Teknocalor Ab
+358 9 825 46024; +358 9 826 151;
johanna.hokkanen@teknocalor.fi

France: Euphonia
+33 02 40 18 05 18; +33 02 40 19 05 20;
bsuner@euphonia.fr
Germany: Braunstein + Berndt GmbH
+49 7191 91 44 0; +49 7191 91 44 24;
bbgmbh@soundplan.de

Greece: I Acoustics Hellas
+30210 6630 333; +30210 6630 334;
dpramas@acoustics.gr

Hungary: VIBROCOMP GmbH
+36 1 3107292; +36 1 3196303;
bitep@vibrocomp.hu

India: Foretek Marketing Pvt. Ltd.
+91 80 2525 4706; +91 80 2525 6813;
info@foretek.in

Italy: Spectra s.r.l.
+39 039 613321; +39 039 6133235;
spectra@spectra.it

Israel: RTA Engineering Ltd.
+972 (0) 77 5503994; +972 (0) 77 6499964;
Ronen@rtaeng.com

Indoneisa: SHAMA Technologies (S) Pte Ltd.
+65 6776 4006; +65 6776 0592;
shamatec@singnet.com.sg

Japan: Ono Sokki Co., Ltd.
+81 45 935 3833; +81 45 935 3805;
Watanan@onosokki.co.jp

Kenya: Mackenzie Hoy Consulting Engineers
+27 214245719;
machoy@iafrica.com

Korea (South): ABC TRADING
+82 2 2226 3161, +82 2 2226 7383;
yklee@abctrd.com

Kuwait: Elnady Engineering and Agencies
+20 2 23420896; +20 2 23421791;
info@elnadycompany.com

Malaysia: SHAMA Technologies (S) Pte Ltd.
+65 6776 4006; +65 6776 0592;
shamatec@singnet.com.sg

Mexico: Ingenieria Acustica Spectrum Sa Cv
+52 55 55 67 08 78; +52 55 53 68 61 80;
acusticaspectrum@prodigy.net.mx

New Zealand: Marshall Day Associates
+64 3 365 8455; +64 3 365 8477;
siiri.wilkening@marshallday.co.nz

Norway: SoundPLAN Nord
+45 (39) 46 12 00; +45 (39) 46 12 02;
jkl@soundplan.dk

Peru: Global Group S.A.
+51 1 4464627;
globalgroupsa@gamil.com

Poland: PC++ Software Studio S.C.
+48 606 110 270;
support@pcplusplus.com.pl

Portugal: AAC Centro de Acustica Aplicada SL
+34 45 29 82 33; +34 45 29 82 61;
aac@aacacustica.com

Romania: Vibrocomp Kft
+40 723 614 524; +36 1 3196303;
bitep@vibrocomp.hu

Russia: Baltic State Technical University
+7 812 5338907; +7 812 5338907;
marina_butorina@inbox.ru

Serbia: Dirigent Acoustics D.O.O.
+381 11 763 887; +381 11 763 887;
dgtdejan@yahoo.com

Singapore: SHAMA Technologies (S) Pte Ltd.
+65 6776 4006; +65 6776 0592;
shamatec@singnet.com.sg

South Africa: Mackenzie Hoy Consulting Engineers
+27 214245719;
machoy@iafrica.com

Spain: AAC Centro de Acustica Aplicada SL
+34 45 29 82 33; +34 45 29 82 61;
aac@aacacustica.com

Sweden: SoundPLAN Nord
+45 (39) 46 12 00; +45 (39) 46 12 02;
jkl@soundplan.dk

Thailand: Geonoise Instruments Thailand
+662776857833; +6628603600;
sales@geonoise-instruments.com

Taiwan: Purtek Engerprise Co Ltd.
+886 2 2769 3863; +886 2 2756 7582;
purtek@ms13.hinet.net

Turkey: Hidrotek Mimarlik Muhendislik Ltd.Sti,
+90 216 384 7251; +90 216 384 72 51;
aakdag@hidro-tek.com

United Arab Emirates: Elnady Engineering and Agencies
+20 2 23420896; +20 2 23421791;
info@elnadycompany.com

United Kingdom: SoundPLAN UK&I
+44 1787 478498;
david@soundplanuk.co.uk

USA: Navcon Engineering Network
+1 714 441 3488; +1 714 441 3487;
Forschner@navcon.com

Vietnam: Viet Phuong
+84 8 22148911;
nqluan@vietenvico.com

Trane

USA: Trane
www.trane.com/Corporate/Contact/index.asp

New Sound Level Meters from Scantek

Scantek, Inc., is pleased to announce the availability of the newest sound level meters from RION, the NL-42, NL-52, data logging, integrating sound level meters. These meters, meeting both ANSI and IEC specifications and differing only by Class type (2 or 1, respectively), have dust- and water-resistant cases, 3-in high contrast color TFT screen, 26-hrs battery operation using regular or rechargeable batteries, and available software. Scantek, Inc. is a distributor for multiple sound and vibration lines, including Norsonic, RION, CESVA, Castle Group, KCF Technologies, Metra Vibration Transducers, DataKustik, BSWA Transducers, and Extech Sound and Vibration Instruments. Scantek also has an ISO 17025 NIST/NVLAP accredited Calibration Laboratory, and is committed to providing quality sales, customer repair, service, full instrument rental, and calibration of sound & vibration instrumentation. For more information, call (800) 224-3813 or visit www.scantekinc.com.

New Spectrum Analyzers from Rigol

Rigol Technologies, Inc. introduces a line of 2 and 3 GHz spectrum analyzers, designed to improve efficiency with a new interface as well as a widescreen construction, new key layout and feature set. These analyzers are said to be ideal for bench top or field service measurement in the cellular, education, automotive, wireless and electronic industries. The latest spectrum analyzers from Rigol help users save time in instrument set-up and in reacquiring signals by making front panel measurement easy through use of auto-functions, saving/recalling setups, traces and test states. With compact designs of under 15 lbs, these spectrum analyzers are well suited to portable applications, and come with optional battery packs capable of 3 hours of continuous operation.

The new Rigol spectrum analyzer line includes the DSA1000A series, designed with high performance testing and measurement capabilities, and the DSA1000 series, ideal for basic measurement. Features include an 8.5" widescreen TFT color display, bandwidth ranging from 9kHz to 3GHz with a minimum resolution bandwidth (RBW) of 10Hz, and phase noise indicators at -88dBc/Hz at 10kHz. Additionally, Rigol's spectrum analyzers have a displayed average noise level (DANL) of -148dBm, an overall uncertainty factor of less than 1dB and are available with 1 GB of inter nal storage for saving thousands of measurements and system configurations, improving overall analysis at an affordable cost.

The DSA1000A and the DSA1000 series provide a variety of interface options for production test and system environments, including: USB host/device, VGA, LAN interface (LXI-C compliant), and PictBridge printing. An optional USB-GPIB adapter is also available, and the new rack mount kit enables easy integration into existing system infrastructures.

Additional customization features include a tracking generator for testing RF components or insertion loss, analysis software, GPIB, and RF kits. Rigol's spectrum analyzers are widely used for benchtop or field service of RF signals, including measurements of channels, noise and bandwidth, as well as in electronic manufacturing, RF education, and R&D. These spectrum analyzers are available immediately upon request. Pricing begins at $2999 and is dependant upon frequency and other options.

Rigol Technologies, Inc, an ISO9001:2000 Quality Management System and ISO14001:2004 Environmental Management System Certified company, is one of the worldwide leaders in test and measurement instrumentation. Rigol's premium line of products includes Digital Oscilloscopes, RF Spectrum Analyzers, Digital Multimeters, Function/Arbitrary Waveform Generators, and Digital Programmable Power Supplies. With their US Headquarters just outside of Cleveland, OH, Rigol also offers products and services in over 60 countries/regions on six continents, with more than 150 distributors and representatives.

For more information, contact Chris Armstrong, General Manager, 7401 First Place, Suite N, Oakwood Village, OH 44146. Tel: 440-232-4488, e-mail: info@rigol.com

Automatically Matched Layer (AML) from LMS

With the latest release of its acoustic simulation software, LMS Virtual.Lab Acoustics, LMS is said to push the limits of acoustic simulation. The star of Rev 10 is certainly AML (Automatically Matched Layer), a cutting-edge FEM acoustics technique. Additionally, there are a variety of other new features that accelerate the acoustic simulation process, including a highly performant MUMPS Solver (Multi-Frontal Massively Parallel Sparse Direct Solver) and a new range of modeling tools dedicated to duct acoustics.

AML is also considered as the "next generation PML" (Perfectly Matched Layer) for simulating noise radiation problems. The big difference is that there is no need to model the absorbing PML layer, as AML automatically creates the absorbing PML layers. The AML technology works with extremely small yet highly accurate FEM meshes that are very manageable and quickly solved.

The quality of the solver is said to make all the difference in acoustic work. Fast and extremely robust, the new MUMPS FEM

solver is said to solve equations much faster than any other technique. A direct solver, MUMPS can easily handle different load cases, for example, multiple engine rpms.

Duct acoustics, or more specifically the efficient attenuation of noise inside ducts, represents a major application in the acoustic simulation field e.g. for Turbo-machinery, aero-engines or intake and exhaust systems. LMS Virtual.Lab Rev 10 embeds dedicated functionality for duct acoustics, including powerful duct mode propagation, including efficiently handling of temperature distribution within ducts, including effects of flow and more. AML makes the difference here again by allowing extremely fast simulation of exterior radiated noise and very accurate modeling of non-reflective duct terminations up to high frequencies.

For further information regarding the new release, please see www.lmsintl.com/automatically-matched-layer

Children's Museum of South Dakota controls acoustics and enriches aesthetics with pinta acoustic SONEX® One

MINNEAPOLIS—A children's museum that promotes interactivity and play is bound to be a lively environment. Prudent members of the architectural and design team for the Children's Museum of South Dakota, in Brookings, involved an acoustical engineer in the project who suggested sound-absorptive products from pinta acoustic. The museum installed pinta's SONEX® One and Linear Absorber acoustic products in the facility, which opened in September 2010.

The museum's Our Place on the Prairie gallery has pinta's SONEX One 3-inch (76.2 mm) thick panels applied to the walls and 2-inch (50.8 mm) thick panels, custom-cut into cloud shapes, mounted to a wood substrate with pinta's acouSTIC adhesive and suspended from the ceiling.

The miniExplorers room has 192 square feet (17.84 square meters) of SONEX One 2-inch (50.8 mm) thick panels, custom-cut into cloud shapes, and mounted to a wood substrate with pinta's acouSTIC adhesive.

The Splash exhibit includes 400 feet (121.92 meters) of pinta's willtec® Linear Absorbers, attached via a metal track mounted to the ceiling.

SONEX One Panels feature a softly sculpted surface pattern and excellent sound absorption across all frequencies, helping to reduce noise, unwanted sound and reverberation in interior applications. These panels have an NRC rating of 0.85 to 1.10. SONEX One Panels are made from willtec open-cell foam to convert sound energy into quiet, kinetic energy.

SONEX ONE Panels are said to be easy to clean with a damp cloth and easy to install on any wall or ceiling surface with pinta's acouSTIC water-based adhesive. SONEX One Panels are Class 1 fire-rated according to ASTM E 84, for flame spread and smoke density. willtec natural foam meets the corner burn test UL 1715. pinta acoustic's willtec Linear Absorbers are available in custom designs and can be attached to ceilings or walls with an aluminum C-channel.

The Children's Museum of South Dakota is an environmentally friendly facility and is seeking LEED Silver Certification from the U.S. Green Building Council. SONEX One Panels may qualify for LEED credits for new construction and school projects.

For information about pinta acoustic products, visit www.pinta-acoustic.com/cmsd or call 1-800-662-0032 or +1 612-355-4250.

LMS International Participates in CRESCENDO Consortium

LMS International is pleased to announce its participation in the European CRESCENDO project consortium. The ambition of the consortium is to make a step change in the way that Modeling and Simulation activities are carried out, by multi-disciplinary teams working as part of a collaborative enterprise, in order to develop new aeronautical products in a more cost and time efficient manner.

The project goal is to research and develop what is referred to as the Behavioural Digital Aircraft (BDA). The BDA can be viewed as a federated system that will comprise all the modeling and simulation capabilities and services required to enable a more complete, mature and reliable definition of the behavioral, functional and operational aspects of an aircraft and constituent systems. The deployment of the results will contribute towards the high level objectives of 10% reduction of development lifecycle duration and cost; 50% reduction in rework; and 20% reduction in the cost of physical tests."

"We are very proud to be part of CRESCENDO," stated Dr. Jan Leuridan, Executive Vice President and Chief Technical Officer. "Building on our experience with other successful aeronautics research projects, it represents a unique opportunity to work together with the leading European aerospace organizations on advancing the LMS solutions for aerospace simulation."

LMS understands how critical it is to simulate various aircraft systems and subsystems – including controls - very early in the development cycle.

The LMS simulation solutions, such as LMS Imagine.Lab AMESim and LMS Virtual.Lab, directly address the

challenges of the Simulation Factory concept in the BDA. LMS Imagine.Lab SysDM provides a collaborative backbone for mechatronics system engineering, supporting physics-based system simulation and model based controls engineering, and brings a critical component to the Model Store and the Quality Lab.

About CRESCENDO: The CRESCENDO project is co-funded by the European Commission under Grant Agreement n° 234344 within the 7th Framework Programme (FP7/2007-2013). CRESCENDO stands for Collaborative & Robust Engineering using Simulation Capability Enabling Next Design Optimization. The project is coordinated by Airbus, starting in May 2009 with a total budget of 55 million Euros over 3 years duration, and involves 59 partners representing industry, research institutes, universities and technology providers from 13 countries. For more information about CRESCENDO, visit http://www.crescendo-fp7.eu/

UTAC Accelerates Noise and Vibration Testing with LMS Test.Lab

UTAC, a company in testing and certification services, deployed LMS Test.Lab in its environmental laboratory for acoustic testing, citing its testing speed, engineering capabilities, precision, and ease of use as key differentiators. UTAC estimates that testing campaigns run with LMS Test.Lab deliver a 30% time gain compared to tests with other tools. Thanks to LMS Test.Lab, UTAC can offer its customers a precise diagnosis of acoustic problems, not only helping customers achieve certification, but also supporting prototype and other development activities. LMS Test.Lab's ease of use and short learning curve allowed UTAC to increase their technicians' testing capacity in a short time, while maintaining test result quality and consistency.

UTAC is a company in testing and certification services with headquarters in Montlhéry, France, and subsidiaries in China and Russia. Worldwide, the company employs 255 test specialists. Known for its certification testing on cars, buses and motorcycles, UTAC has expanded into industrial system testing. UTAC is officially designated by several governments to perform tests for vehicle and equipment homologation according to national and international standards. UTAC labs are equipped to perform standardized assessments such as the Euro NCAP crash tests. UTAC's customers include world-leading car manufacturers, such as PSA Peugeot Citroën and Renault, as well as leading equipment suppliers, such as Valeo, Delphi, Bosch, Parrot and Thales.

Next to regulation testing activities, UTAC has a fast-growing testing and engineering consultancy business. Its specialized laboratories for safety, environment, and electronics conduct tests for product certification preparation as well as supporting product development activities. In its environmental laboratory in Montlhéry, UTAC specializes in engine performance characterization, chemical composition analysis, electromagnetic compatibility studies and noise and vibration phenomena diagnosis. To support its growing acoustic engineering business, UTAC utilizes a powerful LMS acoustic engineering solution to efficiently characterize noise and vibration phenomena and pinpoint the sources of excessive noise and vibration levels. This system includes LMS Test.Lab with LMSSCADAS III systems for data acquisition. The LMS Test.Lab software solution set-up includes Acoustics, Signature and Order Analysis, Spectral Analysis, 3rd Octave Analysis and Sound Diagnosis modules. For more information, go to http://www.testandmeasurement.com/

Residential, Commercial, or Multi-Family. No matter where you live or work we have your Acoustical Solution.

It's Hard to Stop a Train...

But you can make it a **LITTLE QUIETER** with Silent Guard Acoustical Windows & Doors from Atrium.

Air, road and rail traffic are among the most uncontrollable noise sources today as homes are built closer together and neighborhoods expand into higher density areas. Atrium's Silent Guard acoustical products offer the perfect solution for reducing noise in single and multi-family homes and light commercial construction. These technologically advanced windows and doors deliver cutting edge sound suppression, outstanding energy efficiency, and the aesthetic beauty and low maintenance of premium vinyl windows. Available in a wide selection of styles, shapes and sizes.

www.silent-guard.com

Silent Guard™
Acoustical Windows and Doors

Serious Noise Suppression

ATRIUM
WINDOWS AND DOORS

800-375-5570 Denver, Colorado

Acknowledgements

INCE/USA Liaison Program

ACO Pacific, Inc. ..... Belmont, California

AVAC Continuing Education ..... Pittsburgh, Pennsylvania

Colin Gordon and Associates ..... San Bruno, California

Acoustical Solutions ..... Richmond, Virginia

Cavanaugh Tocci Associates ..... Sudbury, Massachusetts

G.R.A.S. Sound and Vibration ..... Vedbaek, Denmark

Harris Miller Miller & Hanson Inc. ..... Burlington, Massachusetts

Noise Control Engineering, Inc. ..... Billerica, Massachusetts

Overly Door Company ..... Greensburg, Pennsylvania

Scantek, Inc. ..... Columbia, Maryland

Vibro-Acoustics ..... Scarborough, Ontario, Canada

Wyle Laboratories ..... Arlington, Virginia

Sustaining Members of International INCE

Acoustic Technologies (A-Tech). ..... Brussels, Belgium

Brüel & Kjær ..... Nærum, Denmark

Ecophon ..... Hyllinge, Sweden

G.R.A.S. ..... Vedbaek, Denmark

LMS International, NV Numerical Integration Technologies ..... Heverlee, Belgium

Narita International Airport Corporation (NAA) ..... Narita-City, Japan

Norsonic AS ..... Tranby, Norway

Rion Company, Ltd. ..... Tokyo, Japan

NTI Audio AG

Institutional Members of International INCE

Belgium ..... Laboratorium voor Akoestiek en Thermische Fysica, Leuven

Portugal ..... Laboratorio Nacional de Engenharia Civil, Lisboa

Sweden ..... Department of Applied Acoustics, Chalmers University of Technology, Gothenburg

Conference Calendar

Below is a list of congresses and conferences sponsored by International INCE and INCE/USA. A list of all known conferences related to noise can be found by going to the International INCE page on the Internet, www.i-ince.org.

2011 July 25-27
NOISE-CON 11
Portland, Oregon
Contact:
Institute of Noise Control Engineering-USA
Amy Herron, Conference Coordinator
INCE/USA Business Office
9100 Purdue Road. Suite 200
Indianapolis, IN 46268-3165
Telephone: +1 317 735 4063
E-mail: ibo@inceusa.org
http://www.inceusa.org/nc11

2011 September 4-7
INTER-NOISE 11
Osaka, Japan
Contact: INCE/Japan
c/o Kobayasi Institute of Physical Research
3-20-41 Higashimotomachi, Kokubunji
Tokyo 185-0022
Facsimile: +81 42 327 3847
e-mail: office@ince-j.or.jp
home page: http://www.internoise2011.com

2012 August 19–22
INTER-NOISE 12
New York City, USA
Contact:
Institute of Noise Control Engineering-USA
Amy Herron, Conference Coordinator
INCE/USA Business Office
9100 Purdue Road. Suite 200
Indianapolis, IN 46268-3165
Telephone: +1 317 735 4063
E-mail: ibo@inceusa.org

Directory of Noise Control Services

Information on listings in the Directory of Noise Control Services is available from the INCE/USA Business Office, 9100 Purdue Road, Suite 200, Indianapolis, IN 46268-3165. Telephone: +1 317 735 4063: e-mail: ibo@inceusa.org. The price is USD 400 for 4 insertions.

NGC TESTING SERVICES

Acoustical Testing Laboratory

ASTM, ISO, SAE test capabilities including: E 90 (Floor-Ceiling & Partitions); E 492; C 423; E 1414; E1222 (Pipe Lagging); SAE J1400 (Automotive Barriers)

Rental times also available

Plus Fire Test Services:
E 84 (Flame Spread); E 119 (Endurance).
1650 Military Road
Buffalo, NY 14217-1198
716 873-9750
716 873-9753 (Fax)
email@ngctestingservices.com
http://www.ngctestingservices.com

HESSLER ASSOCIATES, INC.

Serving the Power Industry Since 1976

- *Ambient, Diagnostic and Certification Surveys*
- *Environmental Assessments*
- *Computer Modeling*
- *Expert Witness*

Hessler Associates, Inc.
3862 Clifton Manor Place, Suite B
Haymarket, Virginia 20169 USA

Phone 1: +1 703-753-2291
Phone 2: +1 703-753-1602
Fax: +1 703-753-1522
e-mail: George@HesslerAssociates.com
Web: www.HesslerNoise.com

SCANTEK, INC.

Sound and Vibration Instrumentation & Engineering

- Sales
- Rentals
- Calibration
  - NVLAP (NIST) Accredited
- Service
- Technical Support

6430c Dobbin Rd.
Columbia, MD 21045 USA
Richard J. Peppin
Telephone:+1 410 290 7726
Fax:+1 410 290 9167
Web: www.scantekinc.com
Info@ScantekInc.com

The **Index of Advertisers** contained in this issue is compiled as a service to our readers and advertisers; the publisher is not liable for errors or omissions although every effort is made to ensure its accuracy. Be sure to let our advertisers know you found them through *Noise/News International* magazine.

Mark your calendar and plan to participate!

NOISE-CON 2011

Portland, Oregon
July 25 – 27, 2011

The 27th annual conference of the Institute of Noise Control Engineering, NOISE-CON 2011, will run concurrently with the summer meeting of the Transportation Research Board, Committee on Transportation-Related Noise and Vibration (ADC40) on Monday through Wednesday (25-27 July, 2011). This conference is joining the overlapping transportation noise and vibration interest of the two organizations in Portland, Oregon to take advantage of the strong public interest and readily accessible public transportation project sites currently found in the Pacific Northwest. The technical program for the joint conference will provide an opportunity for public and private organizations to share technical information on noise and vibration topics associated with high speed rail, light rail systems, highway surface and tire noise and aircraft noise to name a few.

The INCE/USA Page at the Atlas Bookstore

www.atlasbooks.com/marktplc/00726.htm

INTER-NOISE 06 Proceedings
This searchable CD-ROM contains the 662 papers presented at INTER-NOISE 06, the 2006 Congress and Exposition on Noise Control Engineering. This, the 35th in a series of international congresses on noise control engineering was held held in Honolulu,Hawaii, USA on December 3-6, 2006. The theme of the congress was "Engineering a Quieter World."

The technical topics covered at INTER-NOISE 06 included:
- Aircraft and Airport Noise Control
- Community Noise
- Fan noise and aeroacoustics
- Highway, automobile and heavy vehicle noise
- Machinery noise
- Noise policy
- Product noise emissions
- Sound quality.

The NOISE-CON 05 Proceedings Archive (1996-2005)
This searchable CD-ROM contains 198 papers presented at the joint NOISE-CON 05/ASA 150th meeting as well as 749 papers from the NOISE-CON conferences held in 1996, 1997, 1998, 2000, 2001, 2003, and 2004 as well as the papers from the Sound Quality Symposia held in 1998 and 2002. All papers are PDF files.

Several papers are taken from sessions organized by the Noise, Architectural Acoustics and Structural Acoustics Technical committees for this 150th ASA meeting. The three plenary lectures related to noise and its impact on the environment are included. Also included are papers in one or more organized sessions in the areas of aircraft noise, tire/pavement noise, and hospital noise.

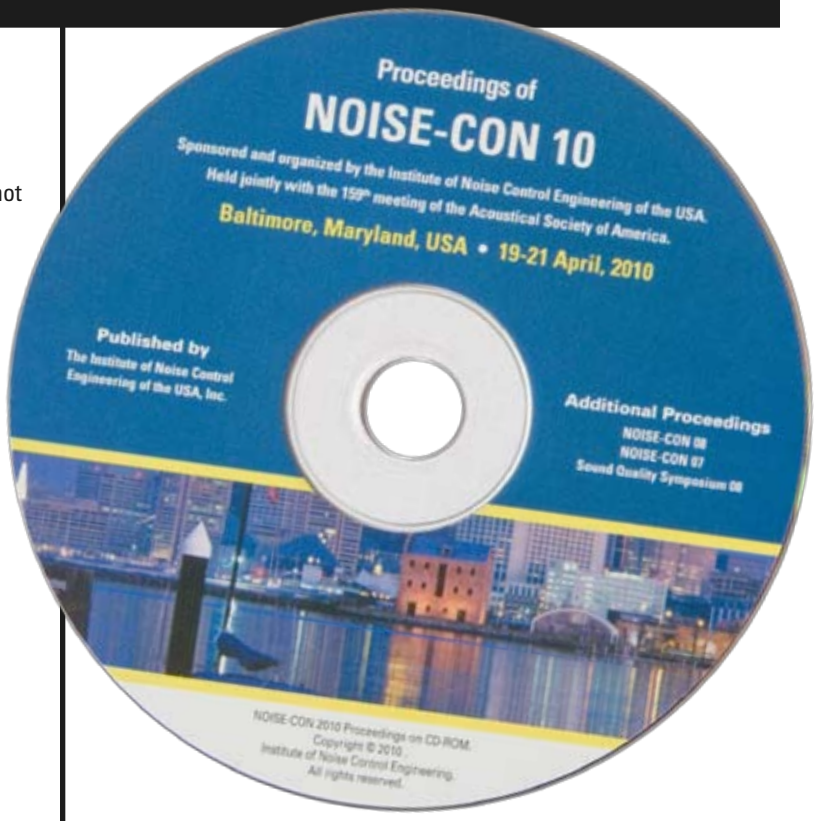
NOISE-CON 10 CD-ROM

This searchable CD-ROM contains PDF files of the 198 papers presented at NOISE-CON 10, the 2010 National Conference on Noise Control Engineering. NOISE-CON 10 was held jointly with the Acoustical Society of America on 19-21 April 2010 in the Marriot Waterfront Hotel in Baltimore, Maryland. This CD does not contain the papers presented as ASA contributions.

In NOISE-CON 10, there were 24 technical sessions:

- Rocket Noise Environments
- 15 papers Noise Control in Complex and Urban Environments
- 11 papers Ventilation, Fan and Duct Noise Control
- 21 papers Military Noise Environments
- 16 papers Case History, Application and Integration of Architectural Acoustics in Building Modeling
- 14 papers Materials for Noise Control
- Manufacturer Presentations
- 10 papers Building Design and Construction for Effective Acoustic Performance
- 10 papers Experimental Techniques
- 10 papers Construction Noise
- 14 papers Information Technology Noise
- 10 papers Aircraft Interior Noise

This CD also contains Proceedings from NOISE-CON 08, NOISE-CON 07 and papers on sound quality presented as SQS08, the 2008 Sound Quality Symposium. This CD-ROM supplements the NOISE-CON 05 CD-ROM which contains all of the papers published in NOISE-CON Proceedings from 1996 through 2005. These papers are a valuable resource of information on noise control engineering that will be of interest to engineers in industry, acoustical consultants, researchers, government workers, and the academic community.



NOISE-CON 10 CD ORDER FORM

Enclosed is my check (or credit card authorization) for _____ U.S. dollars. Please send me _____ copies of the NOISE-CON 2010 CD-ROM at 70 U.S. dollars each. Shipping and handling charge: domestic, 2 U.S. dollars; all other countries, 5 U.S.dollars. Shipped by first class mail in the United States and by air mail to other countries. Stock number: NC10.

Name ☐ Mr. ☐ Ms. ☐ Dr. ☐ Prof._____

Address _____

City _____ State/Province_____ Zip/Postal Code _____

Country _____

E-mail _____

Credit card authorization: ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover card

Name on card (please print) _____

Card number:_____

Expiration date (MM/YY): _____

Signature _____

You may order by postal mail, telephone (USA and Canada only), by FAX, or by e-mail. Postal mail: Bookmasters, Inc., Distribution Services Division, 30 Amberwood Parkway, Ashland, OH 44805, USA. Telephone: 1 800 247 6553; FAX: 1 419 281 6883; e-mail: order@bookmaster.com. Internet: Go to the INCE/USA page at Bookmasters Atlas Bookstore. http://www.atlasbooks.com/marktplc/00726.htm

The INTER-NOISE 2010 Proceedings

Five Distinguished Lectures • 844 Technical Papers • Poster Sessions • Parallel Sessions

Parallel Sessions *(the number in parentheses is the number of sessions)*

- Acoustic and thermal interactions for energy efficient buildings
- Acoustic comfort in buildings
- Acoustical holography, imaging and beam forming (2)
- Acoustical metrology (instruments, measurements, standards, uncertainty) (cont.) + Instrumentation and standards (2)
- Action plans of urban areas: strategies and experiences (2)
- Active noise and vibration control (3)
- Aeroacoustics and fan noise
- Aircraft interior noise and related technology + Aeroacoustics and fan noise
- Aircraft noise modelling and control + Aircraft noise characterization
- Airport noise (2)
- Asphalt rubber pavements - noise and sustainability (2)
- Assessment and strategies for managing noise (2)
- Bioacoustics
- Building acoustics properties and comfort classes
- Characterization of structure-borne sound sources (2)
- Classroom acoustics
- Community noise around airports
- Community noise maps and action plans (2)
- Community response and exposure criteria in environmental situations
- Computational techniques in room and building acoustics
- Concert halls, theaters and opera houses (2)
- Diffraction reducing devices on noise barrier top
- Ducts and mufflers
- Economics of noise for sustainability
- Environmental noise (policy, standards, problems and approaches)
- Environmental vibration and its impacts on buildings and people
- Floor impact noise evaluation and control (2)
- General acoustics and vibration (2)
- Hearing protectors
- Industrial noise and noise at work
- Legislation and noise control policies
- Lightweight partitions and systems (2)
- longevity of pavements
- Low frequency and airport ground noise
- Measurements in room and building acoustics (3)
- Measurements of surface properties

- Metrics for environmental noise
- Musical acoustics
- New directions in noise and health research (2)
- Noise annoyance
- Noise barriers (2)
- Noise control engineering education
- Noise control materials
- Noise from information technology equipment
- Noise from renewable energy technologies
- Noise in healthcare facilities
- Noise mapping. Precision and uncertainty (2)
- Noise problems and solutions in developing and in transition countries (2)
- Non linear dynamics of acoustic resonators (2)
- Numerical techniques (FEM, BEM, IFEM, SEA) (3)
- Occupational noise (2)
- Outdoor sound propagation in living environment (2)
- Physiological health effects from environmental noise exposure
- Product sound auralization
- Psychoacoustics and sound quality (3)
- Psychological effects of noise (3)
- Public space acoustics for safety + Sustainable quiet buildings
- Recreational noise
- Signal processing and analysis (2)
- Sonic crystal noise barriers
- Sound insulation at low frequency
- Sound power measurements and analysis
- Soundscape and its applications (2)
- Soundscape-metrics (2)
- Speech communication in road vehicles
- Speech privacy
- Tire/road noise (2)
- Transportation noise (air, road, rail, marine vehicles) (3)
- Ultrasound
- Underground noise control
- Underwater acoustics
- Urban noise and its control
- Urban sound propagation and evaluation
- Vibration isolation and damping
- Vibro-acoustic performance of structures and vehicles (2)

THE INTER-NOISE 2010 PROCEEDINGS ON DVD MAY BE ORDERED FROM THE PORTUGESE ACOUSTICAL SOCIETY FOR 50 EUROS. CONTACT SPACUSTICA@LNEC.PT