

NOISE/NEWS

INTERNATIONAL

Volume 15, Number 4
2007 December

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

NOISE-CON 08
Announcement and Call for Papers

INTER-NOISE 08
Announcement and Call for Papers

Workshop III on Noise Policy

I-INCE Technical Activities

INCE/USA Technical Activities

MEMBER SOCIETY PROFILE
Acoustical Society of
the Netherlands



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NOISE/NEWS

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Volume 15, Number 4

2007 December

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Cover Photo:

Courtesy of the organizers of INTER-NOISE 2008.

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NOISE/NEWS

INTERNATIONAL

The printed version of Noise/News International (NNI) 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).

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 Internet Supplement

www.noisenewsinternational.net

- Links to the home pages of I-INCE and INCE/USA
- Abstracts of feature articles in the printed version
- Directory of the Member Societies of I-INCE with links, where available, to the Member Society Profiles and home pages
- Links to I-INCE Technical Initiatives
- Calendar of meetings related to noise—worldwide
- Links, where available, to NNI advertisers
- Links to news related to the development of standards
- Link to an article “Surf the ‘Net for News on Noise,” which contains links to noise-related sites—worldwide

An Update on INCE/USA "C & C's"

Almost two years ago, at the time I was beginning my second attempt at serving as the President of INCE/USA, I wrote a President's Column entitled "Challenges and Changes in INCE/USA." At the beginning of that column I noted that one of the duties of the President of INCE/USA is to prepare this column twice a year for *NNI*. This will be my sixth and final column in that capacity. As such, it is opportunity to provide you with an update on some of the issues brought out in that column from 2006 June as well as provide some reflections on INCE/USA in general.

One of the issues very real to me has been the two-year term for the INCE/USA President. This change in the length of the President's term began in 2006 as I took the office. I am convinced it is a good change, and one that will serve the organization well in the future. Having now done both, one year seems like just too short of a time to learn the job and to be effective in it. A definite key to the success of the two-year term being a doable job is the effort put in by the INCE/USA officers and committee chairs. Their leadership and effectiveness in getting things done is certainly what moves the organization and makes the President's job manageable. During my term, INCE/USA and I both have been fortunate to have had a strong cadre of officers and chairs in place. Hopefully, this level of support will be available to future Presidents as well.

INCE/USA was very fortunate to have Joe Cuschieri step up and fill the executive director position. With his knowledge of the organization as a past INCE/USA President and his phenomenal dedication to the job, this has been seamless and positive transition. I thank Joe for all of his continuing efforts and particularly, all of help he has been to me.

Two other areas I mentioned in the last "C & C" column were finances and publications. I am happy to report that both of these are going well. Our financial health has been improved by the shift to more volunteer effort in the running of the business of both operations and publications and by the

move to electronic publishing of *NCEJ* and other INCE/USA material. Aiding these have been the efforts of the INCE/USA Treasurer (Steve Marshal) and Finance Committee Chair (Nick Miller) who worked to make our budgeting and accounting more understandable and visible to assist the Board of Directors in making financial decisions. Even though the financial situation does not look bad now, the INCE/USA leadership needs to remain diligent in managing and reducing ongoing operational costs.

Through the efforts of the *NCEJ* Editor (Courtney Burroughs), you may have noticed improvements in the timeliness Journal issues and an increase in papers. To improve *NCEJ* international accessibility, the INCE/USA Board recently approved the concept of individual subscriptions to persons outside of the US. As we advance *NCEJ* as *the* international publication for noise control engineering, your continuing support remains critical.

On membership, the good news is that we are not losing members overall, and the bad news is that we are not gaining either. Besides retaining current INCE/USA membership with the most services possible, we have two primary goals for new members. The first is reach and recruit more students. The second is to reach and attract some of the large number of engineers working in noise control who have yet to form an association with others active in the field.

In closing, I thank all of the INCE/USA Officers, Directors, Committee Chairs, and staff for your support and efforts during the past two years. I know the President-Elect, Patricia Davies, will also be appreciative of your support in the coming two years. ■



Paul Donovan

2006-2007 INCE/USA
President

Noise Papers in *The Bridge*



George Maling

Managing Editor

The Pan-American News Department in this issue of *NNI* contains a brief article about a collection on papers on noise published in the 2007 September issue of *The Bridge*, a publication of the National Academy of Engineering (NAE). The titles of the five papers are given in that article.

Last January, Bill Lang and I received an invitation from the editor of *The Bridge* to have an issue published later in the year that would be devoted to noise and its control. Although this effort was not related to the “Technology for a Quieter America” initiative, it seemed to be a useful supplement, and most of the authors have been involved in that project.

Bill Lang and I wrote on “Noise as a technological and policy challenge.” After a short introduction outlining the well-known source-path-receiver model of Bolt and Ingard, we gave a brief description of challenges in several areas: workplace noise, highway noise, aircraft noise, noise in urban areas, product noise and competitive issues, educational issues, and noise policy. A few interesting statistics are given. For example:

- At O’Hare airport, 6179 homes had been insulated against noise by the end of 2006—at a cost of 187 million USD. Ian Waitz, see below, estimated the annual noise abatement costs near other airports in the United States.
- By the end of 2004, more than 3500 km of noise barriers had been installed in the United States—at a cost of more than 2.6 billion USD.
- At the end of 2004, the monthly compensation payments to veterans with hearing loss as their major form of disability represented an annualized cost of some 600 million USD.

Then, Dick Lyon and David Bowen wrote on “Designing quiet products.” They discussed new technologies as well as current trends that make products noisier. One interesting example of noise that cannot be eliminated has to do with the cooling of electronic equipment. “Turbulent heat transfer,” they said, “inevitably creates a certain amount of noise, which we can label irreducible, because heat-transfer processes and noise generation by turbulent

air flow in restricted passages are inextricably linked.” They go on to discuss sound quality issues.

“Perception-based engineering: integrating human responses into product and system design” is the title of a paper by Patricia Davies. She gives a general introduction to the subject and provides some examples related to noise: metrics such as A-weighting and loudness, community noise, and noise mapping. Because transportation noise is such a broad subject, three authors, Ian Waitz, Bob Bernhard, and Carl Hanson covered aircraft noise, road vehicle noise, and railway noise, respectively. Ian Waitz outlines progress that has been made in the reduction of airplane noise emissions, but points out that in the United States we spend about 300 million USD annually on aircraft noise mitigation within day-night sound level contours of 65 dB. Bob Bernhard discusses highway noise issues, especially tire/road interaction noise and its reduction. Carl Hanson points out that, although railway noise is confined to narrow corridors, these corridors have a high population density so many people are affected.

Bob Bruce is the author of the final paper titled “Engineering controls for reducing workplace noise.” After a short introduction on noise requirements of the U.S. Occupational Safety and Health Administration (OSHA), he gives a number of solutions to noise problems related to fluid flow, machinery housings and shields, barriers, partial enclosures, and enclosures. He points out that “In the 1970s, the emphasis was on engineering controls in the workplace, but since then the focus has shifted because OSHA has not enforced the requirement for engineering controls, and because industry leaders have failed to take into account the risk to hearing when purchasing equipment.”

With a circulation of about 6000, *The Bridge* reaches many individuals in industry and academe, but the circulation in the noise control engineering community is small. Fortunately, copies of these papers in PDF format may be downloaded from the NAE web site. Go to www.nae.edu/nae/bridgecom.nsf/weblinks/MKEZ-78BPPS?OpenDocument. 

Acoustical Society of the Netherlands

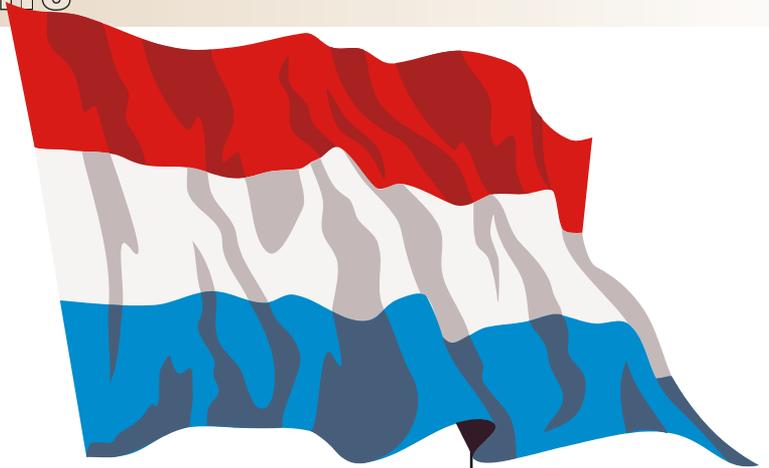
For 73 years, the Nederlands Akoestisch Genootschap (NAG) or Acoustical Society of the Netherlands has existed to encourage the development and application of the science of acoustics and acoustical techniques. It is the second oldest professional organization of its type, formed just five years after the founding of the Acoustical Society of American (1929).

Membership in NAG has remained constant for several years at 500. The group consists of 10 honorary members, 478 full and associate members, and 24 sponsors. NAG maintains an active schedule of scientific meetings, which are held four times yearly. A journal of proceedings is published following each meeting. The society also publishes various other topic-specific journals.

A nine-person board led by a chairman, vice chairman, secretary, and treasurer manages governance of the group. Complete contact information can be found at the end of this profile.

NAG has an interesting history that both pre-dates WWII and has been heavily influenced by it. Originally known as the Noise Foundation, the founders envisaged a broad social organization that would encourage the development of a scientific approach to acoustics but would also be occupied with acoustical consulting measurements, ultimately functioning as an anti-noise lobby. After the war, the foundation focused more intently on the science of acoustics, leaving lobbying measures to other organizations, including private consultants and the Noise Abatement Society.

NAG celebrated its 50th anniversary in 1984 with the publication of a special series of materials. However, the main activity of the group remains the organization of its scientific meetings. As previously mentioned, these are held four times per year and their contributions are published in an issue of the Journal of the Acoustical Society of the Netherlands (NAG-Journal). Over 150 issues have been published. These issues reflect a broad range of topics, which are covered by the membership. Speech, hearing, and perception, for example, encompass the majority of papers followed closely



by machinery noise and noise control. Also available are many papers on electro-acoustics. Other large groups are building acoustics and installations, architectural acoustics and sound absorption, outdoor sound propagation and traffic noise, and echo-acoustics and measurement techniques. Other well-covered topics are medical acoustics, musical acoustics, flow acoustics and ship acoustics.

The group has organized several International scientific meetings. The first ICA-Congress was held in Delft (1953). In 1975 NAG organized the third Anglo-Spanish-Netherlands Symposium on Acoustics, which took place in Rotterdam. The tenth INTER-NOISE Congress was held in Amsterdam (1981), and INTER-NOISE 2001 was held in The Hague in 2001 August.

Education in acoustics is another field that the NAG has always assertively supported. An example of direct involvement is the course in acoustics on an academic level that since 1973 has been organized yearly in co-operation with the Belgium Acoustical Society (ABAV). The length of the course is 70 hours and the yearly number of participants averages about 70.

More information about the organization is available from the NAG Secretariat, P.O. Box 1475, 3430 BL Nieuwegein, The Netherlands. The group can also be reached by e-mail at secr@nag_acoustical.nl. 

This is the 60th in a series of articles on the Member Societies of International INCE.

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



inter-noise 2008

26-29. October. 2008. Shanghai/China



Dear Colleagues:

INTER-NOISE 2008, the 37th International Congress and Exposition on Noise Control Engineering, will be held in Shanghai, China on 26–29 October 2008. The Congress is sponsored by the International Institute of Noise Control Engineering (I-INCE), and is co-organized by the Acoustical Society of China (ASC) and the Institute of Acoustics, Chinese Academy of Sciences (IACAS). The organizers warmly invite and welcome all the prospective participants around the world coming to join us in Shanghai and to communicate in the up-to-date advancements in noise and vibration control engineering. The theme of the Congress is *"From Silence to Harmony,"* technical papers related to that theme will be accepted with special acknowledgement, papers in all fields of noise and vibration will also be welcome.

Shanghai is the most dynamic city in China. It is a historical city, a cultural center, and an international metropolis in China's modernization drive. At the city, you will find all the contrasts of modern China, teeming neighborhoods and birch trees are woven together by elevated highways and modern skyscrapers. It will also be proved that Shanghai is the most appropriate and pleasant venue for the Congress.

The Congress will feature a broad range of high-level technical papers from around the world. The distinguished lecturers will have outstanding presentations for our technical sessions and some discussions with a focus on the Congress theme. Meanwhile, an extensive exhibition of noise and vibration control technology, measurement instrumentation and equipments, various social activities will be provided. At the Congress, you will exchange academic information with international colleagues, and find further development opportunities for noise and vibration control engineering in China's enormous and ceaselessly growing markets.

With your participation, INTER-NOISE 2008 will prove to be a very exciting event, a wonderful opportunity to promote the scientific research and development of noise control engineering in various respects.

We are looking forward to meeting you in Shanghai.

Prof. Dr. Jing Tian
President of INTER-NOISE 2008

Announcement and Call for Papers

Technical Topics

- 1 Acoustical Imaging of Sound Sources
- 2 Active Noise and Vibration Control
- 3 Aeroacoustics and Fan Noise
- 4 Aircraft Noise Control
- 5 Airport Noise (Physical and Human Aspects)
- 6 Architectural Acoustics
- 7 Assessment Methods for Environmental Noise due to Airports, Railways, Road Traffic and Industries
- 8 Assessment Methods for Noise Exposure
- 9 Community Response and Exposure Criteria
- 10 Economic Aspects of Noise, Cost and Benefit Analysis
- 11 Effects of Sound on Humans
- 12 Effects of Vibration and Shock on Humans
- 13 Environmental Noise Problems and Approaches
- 14 Flow noise
- 15 Hearing Protective Devices
- 16 IT Equipment Noise
- 17 Infrasound, Low Frequency Noise and Vibration
- 18 Machinery Noise (including components and sub-assemblies)
- 19 Marine Vehicle and Ship Noise and Vibration
- 20 Measurement Techniques, Instrumentation and Metrology
- 21 Modal Analysis
- 22 Noise and Vibration Mapping
- 23 Noise Barriers
- 24 Noise Control Engineering Education
- 25 Noise Control Materials
- 26 Noise Control of Household Appliances
- 27 Noise Policy and Noise Management
- 28 Numerical Modeling and Simulation Techniques (FEM, BEM, IFEM, SEA)
- 29 Psychoacoustics and Sound Quality
- 30 Room Acoustics
- 31 Signal Processing and Condition Monitoring
- 32 Silencers and Mufflers
- 33 Sleep and Speaking Disturbance
- 34 Sound Intensity and Sound Power
- 35 Sound Propagation
- 36 Sound Propagation in Ducts and Pipes
- 37 Soundscape and Community Noise
- 38 Standards, Legislation and Regulations
- 39 Transportation Noise
- 40 Tyre and Road Noise
- 41 Underwater Noise: Generation and Propagation
- 42 Vehicle Noise Vibration and Harshness
- 43 Vibroacoustics
- 44 Vibration Isolation and Damping
- 45 Vibrations of Rotating Machinery

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IMPORTANT DATES

March 31, 2008

Deadline for the receipt of abstracts

May 31, 2008

Acceptance Notification

August 1, 2008

Deadline for the receipt of the complete manuscripts

October 26–29, 2008

Congress dates

Call for Paper Submission

Papers related to the technical areas listed above are especially welcome for presentation at the INTER-NOISE 2008 Congress, but technical papers in all areas of noise and vibration control may be submitted for inclusion in the technical program. Abstracts must be submitted in the format described in this announcement. The deadline for the receipt of the abstract is March 31, 2008. Notification of the paper's acceptance will be sent to authors on May 31, 2008. Manuscripts for publication in the conference proceedings are due on August 1, 2008.

Manuscripts must be prepared according to the format described on the Congress home page. Final manuscripts must be submitted in PDF or MS-word format by August 1, 2008.

For the sake of guaranteeing a correct display of text, figures, symbols and equations in final manuscripts, the submission of final manuscripts in PDF format is preferred. All registrants for INTER-NOISE 2008 will receive a printed booklet containing all abstracts, the final technical program, and a CD that will include all INTER-NOISE 2008 papers. The Congress organizers reserve the right to schedule papers for the appropriate sessions and presentation format, i.e., poster sessions versus oral presentation in technical sessions.

Abstracts can be submitted through the registration link on the Congress web site: www.internoise2008.org, or through sending an email to the Congress email address: in2008@mail.ioa.ac.cn. The format requirements for the submitted abstracts are listed as below:

1. Paper title (20 words maximum)
2. Subject Classification
3. First author's name, address, phone number, fax, and email for correspondence
4. Additional authors' names and addresses (if any)
5. Indicate specific type of paper
 - invited paper or contributed paper
 - prefer oral or poster presentation
6. Text of the abstract, not exceeding 250 words. The text should include:
 - A brief introduction of the problem being addressed
 - Importance of the problem
 - Method of the development used for problem solving
 - Original contribution of the work
 - Conclusions

Announcement and Call for Papers

Social Program

Sunday, October 26

16:00–20:00 hrs

Opening ceremony with typical cultural performance and welcome cocktail party at SHICC

Monday, October 28

19:30–21:30 hrs

Acrobatics show

Tuesday, October 28

19:00–22:30 hrs

Congress banquet

Wednesday, October 29

16:00–17:30 hrs

Closing ceremony with reception at SHICC

Exposition and Sponsorship

The organizers invite all the companies and organizations to market their services and products at the congress exhibition. If you are interested in the exhibiting at INTER-NOISE 2008 or possibilities to sponsor the Congress, please contact the Congress Secretariat.

Language

The official language of the Congress is English.

Weather

The average temperature in Shanghai in October is 18°C (66°F). The average highest temperature is 22°C (72°F), and the average lowest temperature is 15°C (59°F). October is the perfect time to stay and visit.

About Shanghai

Meaning “go to the sea” in Chinese, Shanghai is a city of 10 million people, that remembers its long history. Divided in half by Huangpu river into Puxi (west of the Huangpu river) and Pudong (east of Huangpu river), Shanghai's story is one of millions made and lost. Recently, Shanghai has benefited the most from China's economic reforms, rapidly rising as the shining “Pearl of the Orient.”

“Dynamic” is the best word to describe today's Shanghai. Since the opening of the Pudong Special Economic Zone (SEC) in 1990s, the city found itself with more building cranes than all of North America, towers of glass and steel sprouting up amidst ivy covered colonial villas and old Chinese homes. Displaying all the contrasts of modern China, teeming neighborhoods and birch trees are woven together by elevated highways and modern skyscrapers. Worldly travelers brush elbows with migrant workers; students and artists mingle as they pursue their dreams of wealth.

Congress Venue

The Shanghai International Convention Center (SHICC) has comprehensive recreational facilities and meeting venues. With a capacity of 3000 persons, The Grand Ballroom on the 7th floor is the largest pillar-less ballroom in Shanghai. Equipped with the latest audio-visual facilities, the 25 additional meeting rooms are located on the 3rd and 5th floor with seating capacity from 25 up to 800 persons.

Hotel Accommodations

The Oriental Riverside Hotel Shanghai, integrated with the Congress Center, will be the most convenient for delegates. The hotel has the city's most comfortable guest rooms, with an average size ranging from 35 square meters to 440 square meters. All of the 260 rooms and suites are equipped with the most modern amenities.

Arrangements are being made for delegates to stay at other hotels within 3 km of the Congress Center. Bus transportation from the main hotels around the Congress Center will be provided.

Pre- and Post-Congress Tours

Several Pre- and Post-Congress tours are being arranged. For further information, please visit www.chinaguide.net.cn/internoise2008/highlights.htm.

Congress Secretariat

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P.O. Box 2712

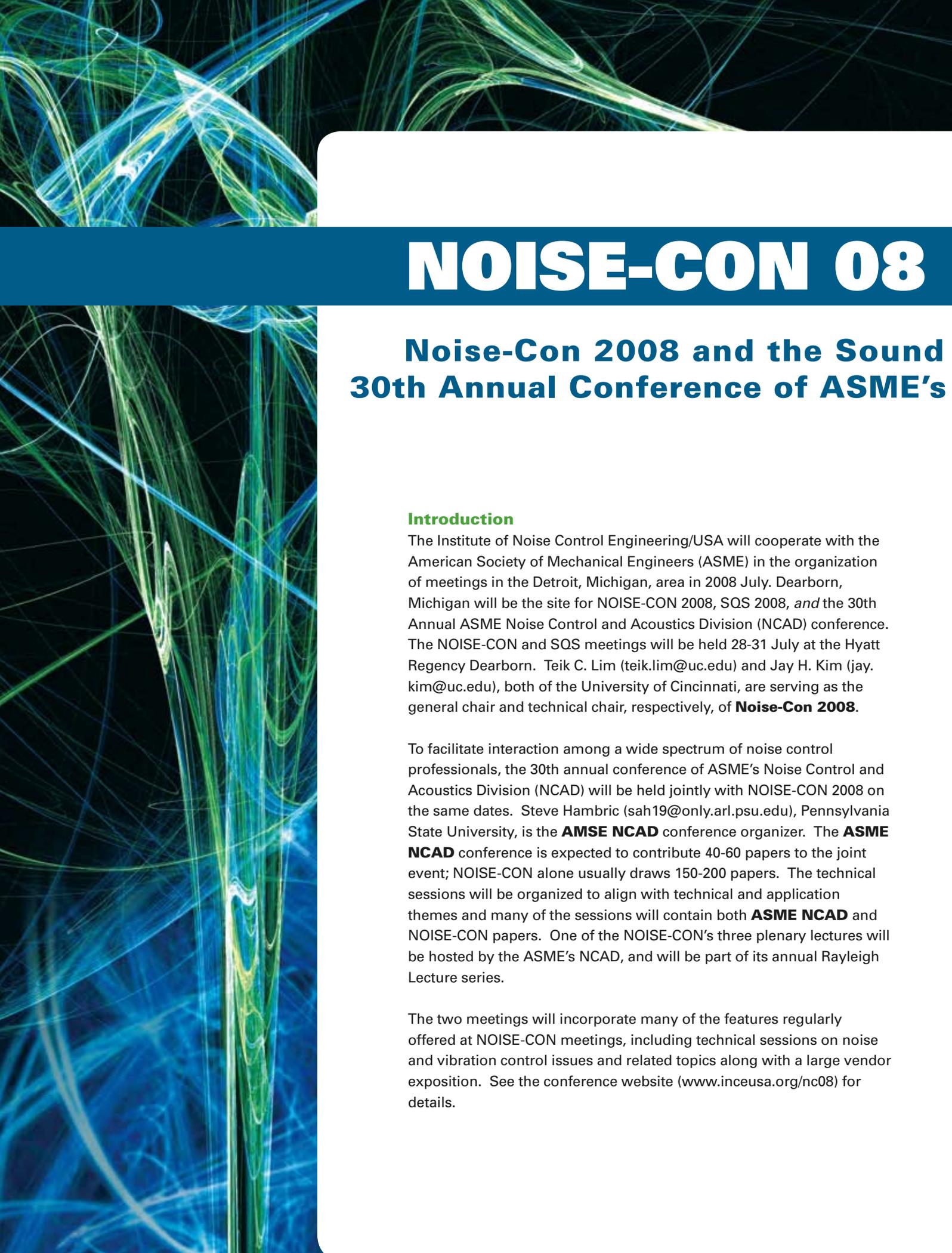
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Website: www.internoise2008.org



NOISE-CON 08

Noise-Con 2008 and the Sound 30th Annual Conference of ASME's

Introduction

The Institute of Noise Control Engineering/USA will cooperate with the American Society of Mechanical Engineers (ASME) in the organization of meetings in the Detroit, Michigan, area in 2008 July. Dearborn, Michigan will be the site for NOISE-CON 2008, SQS 2008, and the 30th Annual ASME Noise Control and Acoustics Division (NCAD) conference. The NOISE-CON and SQS meetings will be held 28-31 July at the Hyatt Regency Dearborn. Teik C. Lim (teik.lim@uc.edu) and Jay H. Kim (jay.kim@uc.edu), both of the University of Cincinnati, are serving as the general chair and technical chair, respectively, of **Noise-Con 2008**.

To facilitate interaction among a wide spectrum of noise control professionals, the 30th annual conference of ASME's Noise Control and Acoustics Division (NCAD) will be held jointly with NOISE-CON 2008 on the same dates. Steve Hambric (sah19@only.arl.psu.edu), Pennsylvania State University, is the **ASME NCAD** conference organizer. The **ASME NCAD** conference is expected to contribute 40-60 papers to the joint event; NOISE-CON alone usually draws 150-200 papers. The technical sessions will be organized to align with technical and application themes and many of the sessions will contain both **ASME NCAD** and NOISE-CON papers. One of the NOISE-CON's three plenary lectures will be hosted by the ASME's NCAD, and will be part of its annual Rayleigh Lecture series.

The two meetings will incorporate many of the features regularly offered at NOISE-CON meetings, including technical sessions on noise and vibration control issues and related topics along with a large vendor exposition. See the conference website (www.inceusa.org/nc08) for details.

ANNOUNCEMENT AND CALL FOR PAPERS

Quality Symposium 2008 Noise Control and Acoustics Division

28-31 July 2008

Dearborn, Michigan, USA

Sound Quality Symposium 2008

Immediately following the joint NOISE-CON/ASME NCAD meetings, a Sound Quality Symposium (**SQS-2008**) is planned for 31 July. Patricia Davies, Purdue University (daviesp@ecn.purdue.edu), and Gordon Ebbitt, Carcoustics (GEbbitt@carcoustics.com), will co-chair this event, which is expected to feature a number of technical papers on topics related to sound quality including, but not limited to, monaural and binaural sound perception, perceptual factors influencing perceived product quality and annoyance, modeling of sound attributes and metrics, sound quality and environmental noise, the influence of non acoustic factors in product sound evaluation, vibration quality, application of sound quality concepts to noise control and product design. Papers focused on sound quality case studies are also welcome.

The fascinating "Automobile in American Life" exhibit at the Henry Ford Museum offers a fascinating look at how developments in transportation have influenced life in the United States. Photo credit: Mark Arpin



<http://www.inceusa.org/nc08>

NOISE-CON 08

Thanks to an above-plant-floor view, you'll be able to watch as actual Ford F-150 pickup trucks are being built.
Photo credit: The Henry Ford



DEADLINES

NOISE-CON 2008 & SQS-2008

Abstract..... February 4, 2008

Final Paper (no peer review) April 28, 2008

30th Annual ASME NCAD Conference

Abstract..... February 4, 2008

Initial paper submission, (for peer review).... April 1, 2008

Final paper submission May 23, 2008

Abstract and Paper Submission Deadlines

Abstract and paper deadlines will vary due to the peer review process for the **ASME NCAD papers**. See the website for formatting and submission details for the conferences. ASME papers will be submitted and reviewed via the ASME's conference website (for which you'll find a prominent link to on the NOISE-CON website).

Exposition

There will be expositions during both **NOISE-CON 2008** and **SQS-2008**. The Expositions, managed by Richard Peppin of Scantek, Inc., will offer displays of materials, instruments and services in the noise and vibration control field. An Exposition reception and off-site social will also be included in the NOISE-CON/ASME NCAD conference. Lunch during **SQS-2008** will be served in the Exposition area. Companies who are interested in participating in one or both events should contact Rich Peppin for details (e-mail: PeppinR@ScantekInc.com or Fax: 410-290-9167). Information has also been posted on the Web site for the conferences.

Venue

A unique blend of sleek sophistication and welcoming hospitality awaits you at Hyatt Regency in Dearborn. This elegant, four-diamond hotel combines all of the amenities of modern city living with a comfortable suburban setting—across from Ford World Headquarters and the Henry Ford Museum, and just minutes from downtown. Enjoy the many advantages of this well designed property—from extensive business facilities and spacious guestrooms to on-site transportation services and delicious dining options. The hotel has a 24-hour fitness center, indoor pool, whirlpool and sauna; discounted rates for these facilities will be available to all conference participants.

ANNOUNCEMENT AND CALL FOR PAPERS

Short Courses

A selection of short courses in noise control topics will be available on the Sunday before the conference. Check the conference website (www.inceusa.org/nc08) for details as they become available.

Student Paper Competition

A student paper competition will be held, with \$1000 prizes for up to five student papers. Entry information will be posted to the conference website in the near future.

Registration Costs

All attendees will receive a CD with the proceedings of the **Noise-Con 2008** and **SQS 2008** papers. However, **ASME NCAD's** paper proceedings will be published on a separate CD produced by ASME. There will be an \$85 surcharge to ASME NCAD paper authors to support the paper review process and ASME CD production costs. Non ASME NCAD authors who wish to purchase the ASME CD may do so for \$30. The various registration options are shown in the table below.

More Information

Additional information on **Noise-Con 2008** and **SQS-2008** will be posted on the INCE website (<http://www.inceusa.org/nc08>) as it becomes available. **ASME NCAD** conference information will also be accessible from that URL. Inquiries about the events can be sent to Pam Reinig, Director of the INCE Business Office (preinig@iastate.edu). The Business Office is also the location of the **Noise-Con 2008** and **SQS 2008** Conference Secretariat. Questions about the **ASME NCAD** conference should be directed to Steve Hambric (sah19@only.arl.psu.edu).



REGISTRATION OPTIONS

	Advance <i>Before April 1, 2008 includes Noise-Con and SQS CD</i>	On-Site <i>After April 1, 2008 includes Noise-Con and SQS CD</i>	ASME NCAD Authors <i>Author of Paper Surcharge 1 required per ASME paper author (authors of multiple papers only pay the surcharge once), includes 1 copy of ASME NCAD CD</i>	ASME NCAD CD <i>(for non ASME authors)</i>
Noise-Con 08 & ASME NCAD 29-30 July	\$375	\$425	Additional \$85	Additional \$30
SQS-2008 31 July	\$135 <i>includes boxed lunch</i>	\$150 <i>includes boxed lunch</i>		Additional \$30
All three conferences 29-31 July	\$430 <i>(includes boxed lunch on July 31)</i>	\$495 <i>(includes boxed lunch on July 31)</i>	Additional \$85	Additional \$30
Student Rate: All three conferences 29-31 July	\$50	\$50	Additional \$30	Additional \$30

2006 Global Noise Policy Workshop III

Honolulu, Hawaii
4 December 2006

A fourth Global Noise Policy Workshop was held during INTER-NOISE 2006 in Honolulu, Hawaii, on Monday, December 4. The theme of the workshop was “Implementation and Enforcement of Noise Control Policies.” William W. Lang and Tjeert ten Wolde were co-chairs of the workshop.

The workshop featured morning and afternoon sessions with presentations by experienced engineers from countries around the world. Summaries of the panel presentations and discussion for the first and second sessions of the workshop were published in the June and September issues of this magazine. This issue contains similar information on the third and final session. Panelists spoke on the development, implementation, and enforcement of noise control regulations in their country at local, state, and national levels.

The following presentations were made during the third session of the Global Noise Policy Workshop. A discussion session followed. Summaries of the presentations as well as a summary of the final discussion are included in this article.

Strategies for engaging city planners in the creation of healthy soundscapes

*Kjell Spång
KS miltek, Sweden*

Building noise policy in Korea

*Hee Joon Eun
Korea Research Institute of Standards and Science*

Progress toward acoustical reform of American schools

*David Lubman, FASA, Westminster, CA
92683*

If OSHA won't lead, perhaps it should follow!

Robert D. Bruce, CSTI Acoustics, Texas

Strategies for engaging city planners in the creation of healthy soundscapes

*Kjell Spång
KS Miltek, Sweden*

Introduction

Soundscape Support to Health is a comprehensive 8-year research program aimed at development of the scientific basis, methods, and models for creation of health-supportive soundscapes in residential and recreational areas exposed to traffic noise. It is mainly financed by the Swedish strategic environmental research fund – Mistra.

Mistra requires that research programs they support include strategies for creating a bridge between the scientists on one side and the problem owners and relevant decision makers on the other side. In addition to creation of scientifically-supported solutions, the success of a Mistra program depends on the quality of the communication strategy and its implementation. The *Soundscape*

Support to Health program includes a project on communication dealing with the development and implementation of a strategic communication plan. It also includes a project on “influencing international, national, regional and local bodies responsible for rules and guidelines concerning environmental noise.”

Soundscapes and City Planning

The goal of the communication project is that the creation of positive soundscapes becomes a natural element in city planning, including planning of new buildings, rebuilding of residential areas, planning of recreational areas, and traffic planning.

Figure 1 at right illustrates the complexity and degree of efforts involved in a program for achieving the attention of decision-makers at all relevant levels.

It is mainly activities at the local planning and decision-making level which determine to what extent access to positive soundscapes and limitation of traffic noise is given priority and resources in practical applications. However, local decision makers and those involved in the planning, usually refer to directives, regulations, and guidelines from authorities on the regional and national levels.

Communications

The communication program has been comprehensive and run in parallel with the research. It includes participating in media, turning to the general public—national and regional television and radio programs, articles and interviews in

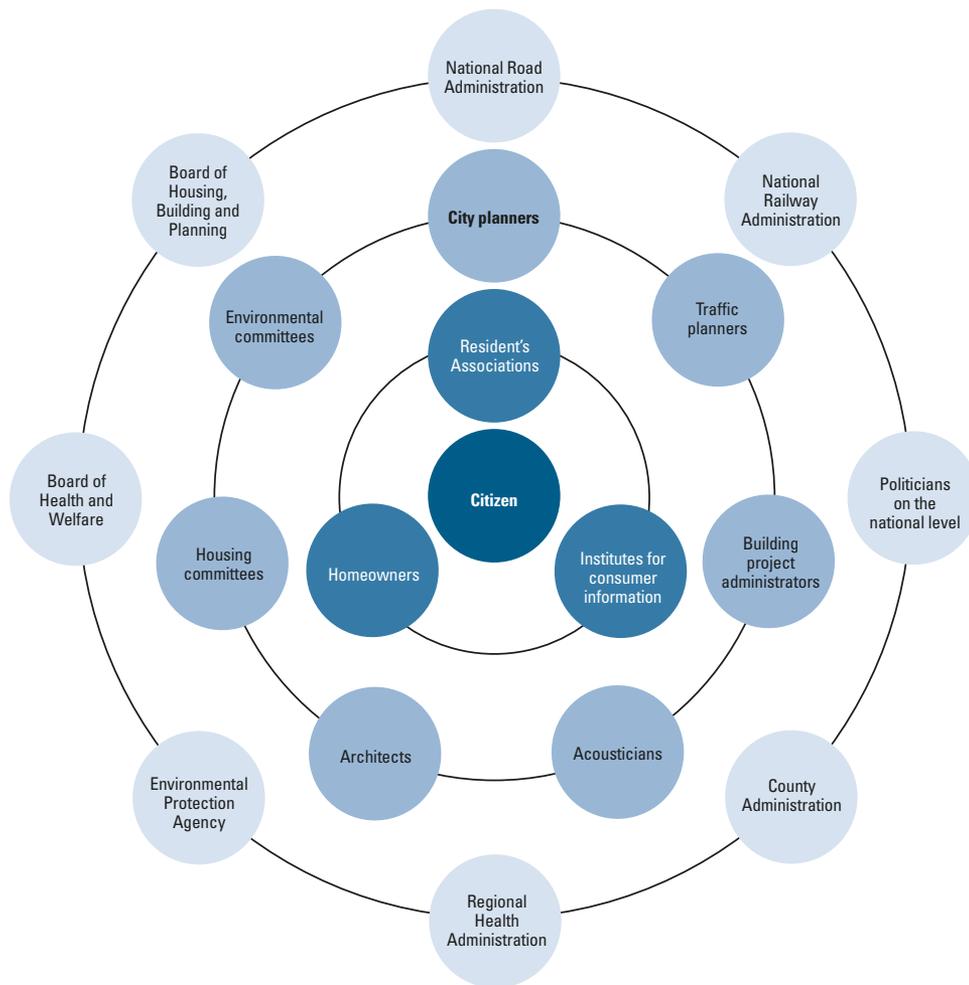


Fig. 1. Illustration of the complexity and degree of efforts involved in a program for achieving the attention of decision-makers at all relevant levels.

newspapers. It also includes participation in Swedish specialist (non-scientific) magazines—articles and interviews—as well as seminars and conferences, informal meetings with authorities and decision makers on local, regional and national levels; and participating in relevant EU working groups and visiting representatives of DG Environment in Brussels

A study was made in the autumn of 2006 on how far we have reached our communication goals.

The positive results are that we have been successful in creating an interest by media (television, radio, news magazines etc.) for our research and in getting our program cited and some of our results implemented in Swedish regulations and guidelines for city planners. We have made comprehensive studies of the benefits to

residents of having access to a silent side of the building. The silent side concept is now brought up in planning for every new-building project in the larger Swedish cities.

Unfortunately, politicians are still reluctant to regard environmental noise as an important issue. The political goal of reducing the housing shortage and a general objective to increase the density of the city in order to reduce the use of private cars and increase access to public transport are used to justify acceptance by the authorities of deviations from the environmentally sound goals and some misuse of the silent side concept (e.g. describing a side with $L_{Aeq,24h} = 55$ dB as “silent”). We need to show that there is not automatically a conflict between increasing the city density and creating healthy soundscapes; it is a question of know-how and willingness to assign resources

Some Other Observations from the Study

- Traffic noise is an issue of great concern for the city and traffic planners. The communication activities related to the research have contributed to this.
- The research and its results are well known, appreciated, and found useful by the national boards of importance.
- Decision makers are requesting more information about health effects of traffic noise as well as examples of the successful applications of positive soundscapes.
- Cost is not the main constraint; information on efficient ways to improve the sound environment and combine it with other goals is more important.
- Too much is said about the problem and too little about the benefits of positive sound environments.

Positive Actions

- Communication activities directed to several levels of rule setters and decision makers are necessary for getting from research results to implementation in city planning.
- Strategy and clear goals for communication activities are important.
- Direct and responsible involvement in the research and communication program of stake-holders and politicians is very beneficial—and not just in a reference group!

From National to International

- The tools available for management of environmental noise on a national level primarily include activities on the immission side. If we are to reach our goal of giving our citizens access to health-supportive sound environments, improvements on the emission side are required.
- Setting goals and enforcing actions to meet goals on the emission side (car design, tires, etc.) requires actions from international bodies.
- Communication activities involving the scientists is a prerequisite for achieving

- attention from local, regional and national decision makers and politicians.
- Attention from national politicians is a prerequisite for bringing the subject to the attention of international bodies.

Building noise policy in Korea

Hee Joon Eun

Korea Research Institute of Standards and Science

Background

Korea is a highly “condensed” country in terms of both human population and social infrastructures. There are nearly 49 million people in a land the size of Indiana where mountains and hills cover 75 percent of the land. Koreans were aware of the potential environmental impact of such natural and social constraints even during its relatively early development stage in the 1970s. In 1980, Korea began an earnest effort for environmental protection and preservation by establishing the Environmental Protection Agency as a vice-ministerial level government body. Although with the developmental momentum, the environment had been deteriorating until the mid-1990s, Korea’s community environment is now improving.

Noise policy in Korea may be classified as either *environmental policy* or *implementation policy*.

Environmental Policy directs the administrative action and defines the environmental goal of Korea. The *Implementation Policy* stipulates the rules and strategy for the realization of the Environmental Policy goals. The policies are defined by the following laws.

- The Basic Law for Environmental Policy** (enacted by the Parliament) defines Korea’s Environmental Policy for factors such as air, water, and noise, and provides the legal basis for the Implementation Policy to enable the realization of the Environmental Policy goals.

- The Regulatory Law for Noise and Vibration** (enacted by the Parliament) derives its legal authenticity from the Basic Law for Environmental Policy and covers areas of noise and vibration problems. This law stipulates policy goals for each area, as well as the general plan to be undertaken by the central and local governments for the realization of this policy.
- The Implementation Order for the Regulatory Law** (Presidential Order) is not a law, but a Presidential Order which stipulates detailed actions to be undertaken by the central and local governments in order to implement the actions stipulated by the Regulatory Law.
- The Implementation Rules for the Regulatory Law** (established by the Ministry) is not a law, but a Ministerial Order which stipulates further detailed actions to be deemed necessary during the course of the execution of the Law.

Evolution of Noise Policy in accordance with Social Demand

In chronological order, the Environmental Policy for Noise was the first declared by the Basic Law for Environment Policy, setting a framework for all other noise policies. The Law stipulates the goal of the Policy numerically in the form of Environmental Standards for Noise as follows:

Area Classification	Zone Classification	Standards	
		Day (06 - 22)	Night (22 - 06)
General Area	Zone A	50	40
	Zone B	55	45
	Zone C	65	55
	Zone D	70	65
Roadside Area	Zone A and B	65	55
	Zone C	70	60
	Zone D	75	70

Table 1. Environmental Standards for Noise [Unit = L_{Aeq}]

The framework for the Environmental Policy comes from an ISO Recommendation, but the details are based on data obtained during a two-year nationwide noise survey between 1981 and 1982. The definitions of various areas and zones are given in detail in the Law—Zone A includes exclusive dwelling sites, 50 m range of schools or hospitals, and Zone B includes dwelling sites with light commercial activities. The Noise Standards are applied to road traffic noise only.

For the purpose of supporting and realizing the Environmental Policy, a series of *Implementation Policies* were developed. Table 2 gives a brief history.

In Table 2, each policy in the first column is accompanied by a reference in the fourth column. These references are the numerical targets for which each of the policies is applied and are specified in the Law. These references may be classified into the following three groups:

- Environmental Standards** are not regulatory limits applied to a specific individual, but policy targets by which the central and local governments establish the legal and administrative framework to protect and preserve the environment. At the moment, there are three Environmental Standards in Korea for air, water, and noise respectively. These Standards also serve as a reference guide for any technical activities related to environmental protection.
- Noise Limits** (Allowed Emission Limit and Regulatory Limit). Unlike the Environmental Standards, the Limits must be observed. The Allowed Emission Limit is applied at the boundary of factories or at a specified location from vehicles. This is a source-control plan. The other, the Regulatory Limit, is applied at the boundary of the affected area. This Limit is intended to provide offenders with some flexibility when noise is inevitable, such as in construction. The Allowed Emission Limit is more stringent than the Regulatory Limit. In

Policy	Laws and Rules	Years	References	Remarks
Environmental Policy for Noise	Basic Law for the Environmental Policy	1983	Environmental Standards	Framework Law
Industrial Noise and Vibration	Regulatory Law for Noise and Vibration	1983	Allowed Emission Limit	
Construction Noise and Vibration	Regulatory Law for Noise and Vibration	1983	Regulatory Limit	
New and Used Vehicle Noise	Regulatory Law for Noise and Vibration	1985	Allowed Emission Limit	
Road Traffic Noise	Regulatory Law for Noise and Vibration	1983	Allowed Range	
Airport Noise	Regulatory Law for Noise and Vibration	1994	Allowed Range	1988 Olympics
Railroad Noise	Regulatory Law for Noise and Vibration	1999	Allowed Range	High-speed Trains
Product Noise Rating	Regulatory Law for Noise and Vibration	1993	Mandatory for Construction Equipment only	

Table 2. Noise Policy and Related Laws in Chronological Order

any case, violation of the Limit may incur penalties and disadvantages as prescribed in the Law.

- **Noise Range** is applied in certain designated areas by the central or local governments for road traffic noise, railroad noise, and airport noise. While the Noise Limit was intended to control individual sources such as industrial machinery and vehicles, the Noise Range protects areas from traffic noise. Because the Noise Range deals with traffic noise and is applied to areas, no penalty is imposed for failure to observe it. Still, the central or local government must take action, either legal or administrative, to protect the designated zone from noise and publish the results periodically for public review.
- **Product Noise Rating** aims to provide the consumer with a means for selecting quieter products. It was initially intended to apply to home appliances, but there was strong opposition from the electronics manufacturers. As a result, the Product Noise Rating is just a recommendation for consumer products but is mandatory when applied to construction equipment. By law this equipment, both domestically manufactured and imported, must carry the Noise Rating Tag.

Conclusions

Noise policy in Korea has evolved during the past 20 years, making it very systematic and comprehensive. The members of the

panel which assisted the government in developing various noise policies remained almost unchanged during that period. This enabled the panel to develop the policy in a very systematic and consistent way, minimizing conflicting factors among different policies and evaluating the workability of the policy.

As a late starter, Korea learned some valuable lessons from the experience of advanced countries, and adjusted its policy goals and implementation schemes accordingly. Although the Korean experience may be unique and may not be readily applied to other countries, the spirit may be shared. Also, the principles set up during the course of establishing noise policy in Korea may be observed with equal validity by any nation that wishes to establish its own noise policy.

Progress toward acoustical reform of American schools

David Lubman, FASA,
Westminster, CA 92683

(This presentation is in the form of questions and answers.—Ed.)

What progress has been made in school acoustical reform in the United States?
American National Standards Institute

(ANSI) Standard S12.60-2002 has specified acoustical performance criteria, design requirements, and guidelines for schools. Acoustical reform in schools is supported by the U. S. Access Board (Americans with Disabilities Act) and many other professional organizations. It is endorsed by the National Academy of Sciences National Research Council for “green” school buildings (2006), and has been adopted by several states.

Many of ANSI’s initial opponents in the HVAC and relocatable classroom industries have been won over; new, quieter products are being developed for the school market. Weakened versions of S12.60 have been adopted by CHPS (Collaborative for High Performance Schools) in California and elsewhere, and CHPS stimulated a draft for Green Building Council’s LEED guideline for green schools with CHPS-like acoustical requirements (August-September 2006).

How did the new policies come about?

This began around 1997 with two independent actions:

1. A populist uprising by Acoustical Society of America (ASA) activists to improve classroom acoustics was fostered by a visionary acoustical consultant, Buzz Towne. ASA supported classroom acoustics activities through its Technical Committees (Architecture, Acoustics, Noise, and Speech Communication. At the same

time, I-INCE began its own parallel activity that is giving momentum to classroom acoustics reform throughout the world.

2. A lawsuit against the State of Georgia by the parent of a hearing-impaired child demanding accommodation in classroom. Legal action on behalf of the parent was fostered by the U. S. Access Board. Although this action was unrelated to the ASA activities, both organizations soon joined forces.

Other activities included an ASA *ad-hoc* classroom acoustics committee which chose as its strategic goal an ANSI standard for schools. A large ANSI Working Group was formed with a goal to involve all education stakeholders in the development of this standard. The U. S. Access Board provided the seed money to “fast track” this standard. In addition, many special sessions on classroom acoustics are held during ASA, NOISE-CON, and I-INCE meetings to establish a credible scientific and engineering base.

The chief opponents of the ANSI classroom acoustical standard were the HVAC industry and manufacturers of portable classrooms, which strongly objected to the 35 dBA unoccupied hourly noise level requirement. A letter-writing campaign was begun by both sides—the portable classroom manufacturers used lobbyists and lawyers; the pro-ANSI standard advocates lacked the money to match its opponents lobbying efforts but had more supporters. An expert noise control engineering panel was chosen to adjudicate a challenge to the draft standard on technical grounds and the ANSI draft was upheld. A subsequent challenge on procedural grounds was also rejected. The ANSI draft became an official standard in 2002.

Two attempts to incorporate the standard into the UBC (Universal Building Code) failed because of continuing industry lobbying against adoption. ANSI advocates then successfully lobbied with the office of the California State Architect and were invited to an acoustical

design review along with its opponents from HVAC and the portable classroom industries. As a result, a compromise was reached whereby the ANSI standard was accepted, but the unoccupied classroom background noise level was set to a maximum of 45 dBA with extra CHPS “points” for 40 dBA and 35 dBA. ANSI proponents did not agree to the compromise, insisting that a 35 dBA level was necessary and feasible. But they did not have the resources to prove it.

But existing wall-mounted HVAC systems could not even meet CHPS 45 dBA compromise noise level. This imperiled the relocatable classroom industry’s huge California market. Then, unexpectedly, a major HVAC manufacturer broke with the solid front of Air Refrigeration Institute (ARI) to become advocates for the ANSI standard. Another important break occurred when two schools needing quiet classrooms to accommodate children with cochlear implants were able to achieve the ANSI-recommended HVAC noise levels by simply replacing the HVAC and re-ducting the plenum. Another major HVAC player boasted that the successful renovation used their product. That success embarrassed the industry and inspired a major provider of wall-mounted HVAC for portable classrooms to try noise control engineering. It worked! Production then started on the first ANSI-compliant wall mounts for portable classrooms.

What marketing tools were successful in promoting the ANSI Standard?

Among the successful marketing tools were presentations and public demonstrations, bilingual booklets sponsored by ASA, TV interviews, and a 10-minute film on classroom acoustics, paid for by the supporting organizations listed below and others.

- Acoustical Society of America
- Institute of Noise Control Engineering of the USA

- International INCE
- National Council of Acoustical Consultants
- Alexander Graham Bell Association for the Deaf and Hard of Hearing
- U.S. Access Board
- American Institute of Architects
- American Society of Heating, Refrigerating and Air conditioning Engineers.

What has worked for implementation?

It was a wise decision to promote good classroom acoustics by developing an ANSI standard. This standard is perceived as having great scientific authority. ASA’s Standards Secretariat, ASA leadership, ASA Technical Committees, and the general ASA membership were all very supportive. Many allied professional organizations also joined this effort. Contribution from other industries benefiting from adoption of the standard was important but not highly visible. Although support of the U. S. Access Board was very useful and even crucial at times, national administrative policies seemed to limit their freedom to act.

Parents of hearing-impaired children were among the most effective advocates. When parents threatened lawsuits against noncom-

pliant schools, the schools backed off. Schools began to realize that ANSI compliance would save them headaches and lawsuits. Within schools the parent-teacher groups were mostly indifferent. Some school audiologists have embraced classroom amplification as an alternative to improved acoustics. We

hope that will change. There was quiet support from certain elected officials of the Los Angeles Unified School District.

Classroom acoustics reform is a team effort. There are more individual and organizational supporters than can be listed here. They include:

- Louis C. Sutherland, Co-chair of the

When parents threatened lawsuits against noncomplaint schools, the schools backed off.

- ANSI Working Group,
- Current and past ASA Standards Directors (Paul Schomer & Daniel Johnson)
- The Office of the ASA Standards Secretariat, led by Susan Blaeser
- Current and past ASA Presidents, and ASA Executive Director Charles Schmid
- The American Institute of Physics Public Relations activity led by Ben Stein
- Rank and file members of the Acoustical Society of America
- William W. Lang and others in I-INCE working toward national and global policy to regulate community noise, including that impedes classroom learning.

If OSHA Won't Lead, Perhaps It Should Follow!

**Robert D. Bruce, CSTI
Acoustics, Texas**

Noise-induced hearing loss (NIHL) has been an industrial problem in the United States for over 100 years. Governments, both state and federal, were slow to regulate noise exposure. In addition, the authority is scattered among a number of agencies that may have different regulations to accommodate their particular industry.

The following U.S. Agencies have occupational noise regulations:

- Occupational Safety and Health Administration (OSHA) – one regulation for manufacturing and one for construction
- Mine Safety and Health Administration (MSHA)
- Coast Guard
- Federal Railway Administration (FRA)
- U. S. Department of Defense

The current noise level limit for non-military workers is 90 dBA with a 5 dB exchange rate, and for military personnel it is 85 dBA with a 3 dB exchange rate.

Prevention in the form of hearing protection is not assured, as workers may not know how to properly wear this protection and it may not always be available. Although the federal government requires manufacturers to label their earplugs with the NRR (noise reduction rating), the NRR does not represent the typical noise reduction achievable in practice in the workplace. NRRs of 20-30 are common but few workers get more than 10-12 dBA of noise reduction using hearing protection during their workday. Perhaps the government should consider a better labeling alternative or a different approach to protecting workers' hearing. *(The labeling requirement is being revised.—Ed.)*

When a worker suffers from NIHL, it is usually family members who first recognize the problem. Eventually the problem gets so bad that individuals can no longer deny it, and they see an audiologist or physician to confirm that it is permanent hearing loss and often it is diagnosed as noise induced hearing loss.

Mild hearing loss is similar to mild asthma—annoying but not critical. As hearing worsens, it becomes like the chronic pain of a slipped disc and eventually severe hearing loss can be likened to continuous pneumonia. With even mild hearing, one may not hear high-frequency speech sounds and may not understand soft-spoken voices in reverberant or noisy spaces (e.g. restaurants). The person often cannot maintain conversations and, as a result, may give up on friendships because they can't hear well enough to carry on a conversation. Obviously, they can feel socially isolated from others.

At the beginning of the 20th century, about 20% of the jobs were white-collar. Often workers would move from noisy jobs to

quieter jobs in lower level management and even to higher positions. At the beginning of the 21st century, about 60% of the jobs were white collar. There is an expanding opportunity for white-collar workers. But if a worker has spent 10–20 years in a noisy occupation and has hearing loss, his opportunity for a white-collar position may be limited because almost all white-collar jobs require good hearing.

As life spans increase, workers at age 50 with extensive noise exposure will have “80-year old ears.” When they reach 80 years, will they have any hearing left? This is definitely a quality-of-life issue. Are we headed toward an older, deafer, depressed male population?

Civilian hearing loss compensation was \$56 million USD in 2003, and that number is rising.

Unfortunately this is really about money and where it is spent. Currently much of the spending is in the form of compensation after NIHL is diagnosed. Military compensation for hearing-loss disability for veterans has amounted to \$7.6 billion over the past 30 years. Civilian hearing loss compensation was \$56 million in 2003, and that number is rising. Non-military benefits for workers are usually covered by Workers' Compensation but may vary by state and are likely to be less than \$10,000. In addition, workers with hearing loss have sued employers and third-party manufacturers of noisy machinery and equipment.

Perhaps a new approach should be tried: spend the money before workers lose their hearing by purchasing quiet equipment and controlling noise at the source. Two major corporations whose expenditures on equipment and facilities exceed \$15 billion now have new limits on the noise level of new purchases. Because current and extensive hearing protection programs have not been adequate, industry must seriously consider buying quieter equipment to prevent hearing loss in workers. OSHA's

focus on 90 dBA for engineering controls and 85 dBA for monitoring has not solved the problem. A recommended new limit for noise exposure at one meter from the noise source should be 80 dBA which might result in workplace sound levels of 85 dBA.

Earlier I proposed the concept of the Lifetime Occupational Noise Exposure (LONE) for workers. This is the sound exposure of a worker over his lifetime of occupational noise exposure—2,000 hours/year for 40 years. The sound exposure is expressed in Pascal squared hours. A sound level of 85 dB for 2000 hours per year for 40 years would be a sound exposure of about 10,100 Pascal squared hours.

The use of Type 2 sound level meters suggests that ± 1 or ± 2 dB is not very important. Perhaps it isn't when it is viewed as a single measurement. But when it is representative of noise levels experienced for 2000 hours a year for a working lifetime, it can be very important. For example, if a sound level of 87 dBA (sound exposure of about 16,000 Pascals squared hours) were misrepresented as 85 dBA (about 10,100 Pascals squared hours) due to inaccurate readings, the sound exposure would be an exposure 60% higher! So 2 dBA is important!

It is time for OSHA and others to establish standards that protect all workers and set these standards sufficiently low so that companies purchasing equipment that can last for 25-50 years will have confidence that this new limit will not change and that their workers will not incur noise induced hearing loss on the job. OSHA should join the international community by using 85 dBA for an 8-hour exposure time with a 3 dB exchange rate. This can be a first step toward protecting

the hearing of workers and making the world a safer and quieter place.

Discussion

The following is a transcription of the discussion portion of Session 3. This includes questions (Q) from the attendees, answers (A) of the panelists, and comments (C) from both attendees and panelists. Bill Lang chaired the discussion. The discussion has been grouped by topic, and is not in the actual order in which the discussion took place.

Soundscapes

Q: Kjell Spång, please say more about the positive impact of good soundscapes.

A: We tend to talk only about the negative aspects of our sound environment. The investigation showed that we should spend more time explaining to citizens that it's healthy for them and good for the development of their children if they live in an environment which has a positive sound environment. That is the message we should put forth instead of saying that it's dangerous to live in an environment with high noise levels. Our program is developing what we call "green labeling" of residential environments which would describe positive residential areas.

C: (David Lubman) When many of us leave our jobs in the city to take a vacation in a quiet area, in the country perhaps, after a few days we become used to the ambience, and we can hear again the sounds of nature. This is a healing experience.

C: (Kjell Spång) Yes. In this program we have investigated how the character of the areas around dwellings affects the residents' rating of the sound

environment. The results show a connection. If you add a silent side to a house in a noise-exposed area, you will reduce the number of annoyed people. The situation can be improved if we also address other aspects of the silent side. Access to "green" is important as is the ability to listen to positive sounds like birds, wind, and children playing. By organizing the living area, a lot of positive things may be added to the sound environment as well as mitigating the noise problem.

Q: Kjell Spång, Sweden has the area in which to build new residences with silent sides. How many countries in the EU have that available area to build silent sides? In Sweden new construction is built with a courtyard in the middle; that's the silent side. How many other European countries build dwellings on that model?

A: I don't know how many countries build with a courtyard in the middle. There is no problem to build silent sides in densely populated local areas. This might be done by closing the gaps between buildings, for example, in Sweden where the program has had some influence, the gaps may be closed by adding some new flats to the building. It can be a win-win situation—quieter with more available flats in the same area. There is not necessarily a conflict between a dense city and a good noise environment.

C: (Hikeki Tachibana) The understanding of soundscape is very important. In your presentation, a soundscape is a pleasing environmental sound situation rather than an area of annoying noise. In Japan and perhaps China and Korea, many insects make sounds during the night; and we enjoy the sounds. But my friend from the northern part of Europe does not enjoy the insect sounds—noisy, very different. So the definition of soundscape may vary.

OSHA should join the international community by using 85 dBA for an 8-hour exposure time with a 3 dB exchange rate. This can be a first step toward protecting the hearing of workers and making the world a safer and quieter place.

C: (Bill Lang) So the definition of soundscape may have a cultural interpretation which one must recognize.

C: (Kjell Spång) We define soundscape in our program as the sound variation in space and time caused by the topography of the city and different sound sources. We differentiate between acoustic soundscapes, which is what we can measure with our acoustical instruments, and the perceived soundscape where we need perceptual methods to measure the quality of the sound environment. So the definition of a sound environment is a bit broader than that of a soundscape. The difference is that a sound environment is a static situation, whereas the soundscape concept includes time variation as part of it. I agree with you that there are different interpretations of soundscapes, and that's one of the problems that we have with promoting positive soundscapes. When we talk with politicians or the community people, they have difficulties in understanding what we mean by soundscapes. Sound environment is easier for them because they are familiar with the term environment.

C: (Bill Lang) I don't see any cultural element in your definition. I think that was what Prof. Tachibana referred to.

C: (Kjell Spång) Yes, that is the difference between the way we use it and the way some others do. Our approach is more technical. The reason that we use soundscape is that it goes beyond what we can measure with acoustical instruments.

Q: Kjell Spång, I'm curious about the silent side of buildings and whether there's any economics to the annoyance that's referred to and the response of people.

A: Part of our study is based on interviews with many people living along the same road with the same traffic where some

of the houses had access to a silent side and some did not, depending on how they face the street. We were able to compare the effect; that's where we get the 50 percent figure. We investigated five different areas like that and they went from 65 dB down to around 50 dB on the exposed side.

C: (David Lubman) There are positive aspects to soundscape that you might consider besides areas of quiet. We don't want silence. When Rachael Carson wrote *Silent Spring*, the book that started the modern environmental movement, silence was death. So silence wasn't all that good. But there are other things that, if the environment is quiet enough, you can hear. Things that bring pleasure and joy and that are culturally related.

For example, if it's quiet enough you can install a children's sound playground so children can enjoy playing with sounds and listening to them. One example of the cultural aspect of a soundscape is in England where they have sound neighborhoods. When the Church of Bow Bells (Church of St. Mary-Le-Bow) was built in London, its bells created a sound neighborhood. Everyone in hearing range of the bells lives in that sound neighborhood. That defined the Cockney ethnicity and anyone born within the sound of Bow Bells was a Cockney. Some nursery rhymes are based on this, e.g. "Oranges and lemons say the bells of St. Clemens."

C: (Kjell Spång) This program is interdisciplinary. We have acousticians, medical personnel, and psychologists. The psychologists are best qualified to define positive soundscapes, and they

have developed a system of perception measurements based on technology using neural metrics. This study has also included aspects of social life in residential areas. There is little social life if one cannot be outdoors in a reasonably pleasant environment.

When we talk with politicians or the community people, they have difficulties in understanding what we mean by soundscapes. Sound environment is easier for them because they are familiar with the term environment.

C: (Bill Lang) This relates to an aspect that we talked about earlier today, namely that the FAA in this country is spending something like USD 500 million a year on sound insulation of houses around airports, but that doesn't allow the individual to use the backyard for a social gathering outdoors. We are sealing the houses better, but they have to stay indoors to enjoy the quiet.

Cardiovascular Disease and Ototoxic Chemicals

Q: Bob Bruce, what are your thoughts about the growing scientific evidence of other health outcomes of occupational noise exposure such as cardiovascular diseases and accidents? What is the impact of this new knowledge on exposure limits?

A: I don't have a lot of experience in that area. We've looked at the combination of noise and chemicals; the double exposure seems to enhance the likelihood of problems. Hearing loss can occur at lower sound levels when one is exposed to chemicals. Although I haven't seen evidence that a combination of noise and vibration may cause cardiovascular disease, some suggest that this is possible.

Office Masking Noise

Q: Bob Bruce, in addition to what you reported about office workers, have you considered the impact of office masking noise?

A: That's a good point. I'm from Houston and Houston is hot. So the buildings are air conditioned. If you were to put sound masking in its place, people would stand underneath it thinking it was air conditioning. We've got to have the AC noise to know that we're cool. Some office cubicles might be 6 ft by 8 ft with a partition as low as 5 ft or as high as 6 ft or 7 ft, and the background noise varies considerably. Some places don't have any background noise masking systems, and you learn to deal with it. Others have masking systems that are in the 45 dBA range.

C: (David Lubman) Consider an office that uses background masking noise to sustain their use of open-plan offices. This is really a low-cost way of filling an office so that the number of workers per square meter is largest and the cost for the owners is lowest. But even if they use the lowest level of masking noise that's usually recommended which is 45 dBA, the average speech level of office workers is 50 dBA. That means that at a distance of one meter, the speech to noise ratio is only 5 dB. Is that enough? The owners are paying the price for this in reduced productivity and might reconsider if they knew they were not saving as much money as they thought.

OSHA and FRA Rulemaking

Q: Bob Bruce, what do you see as the biggest barrier to getting OSHA to lead as opposed to follow?

A: I don't know, it's a difficult problem. The Federal Railway Administration (FRA), in a unique moment in history, revised its rule. They put out a Notice of Proposed Rule Making and many responded, including the National Hearing Conservation Association and a number of individuals. Although the respondents advised 85 dBA with a 3 dB exchange rate, the FRA decided against it and documented the decision with over 130 pages of explanation

sprinkled with names like Ted Schultz and Elliott Berger who urged them to adopt the 85/3 dB rule. My opinion is that they didn't have the courage to go against OSHA directly. But, while OSHA has an absolute cut-off of 115 dB for 15 minutes of exposure, in locomotive cabs the rule permits up to 120 dB but only for 5 seconds. It's as if somebody said, "The horns will blow for short intervals so we'd better get that number up." But FRA did do a number of good things, e.g. they forced in air-conditioned cabs. The railroads for years said they could not air-condition cabs. In the 1980s, the railroads said it was impossible. But then a Canadian locomotive was air-conditioned. That is amusing, but in the late 1930s the railway passenger cars had a new thing called air-conditioning. And one of the reasons they did it was to reduce the noise inside the passenger car.

Toward a Global Policy on Noise

Q: To the panel. How can the different contributions of this workshop be used to move toward a global policy on noise? What is the relationship between this workshop and a global policy on noise?

A: (Bob Bruce) The one place where we've had progress is in the school situation; we've taken a giant step forward in making schools better. Perhaps we could figure out how to apply that to other areas. Nick Ashford from MIT's policy program said that the problem with noise is that the noise inside factories does not get linked to anything that's perceived as important.

C: (Bill Lang) Where do we go from here? Our series of global noise policy workshops has become more focused on specific topics. Today we focused on implementation and enforcement. We will focus on other areas in our future workshops. We have to develop an action plan, and that action plan must involve the NGOs because they represent the public. If we don't

have the public, then we cannot put pressure on government authorities to do something about noise. The more than forty I-INCE Member Societies are part of the action because they are all NGOs, and we would expect them to be founding members of a worldwide organization of NGOs that are united in this effort. Then it must be moved into an international advocacy position to force something to happen at the top. Whether it will take 5 years or five decades is impossible to predict.

C: (Samir Gerges) This workshop is very informative and provides a lot of information. But there are not many people from South America, China, India, and some other countries participating. And we need to involve local authorities. What we propose may look good on paper; but if it's a matter of local policy, it is important to involve people in those agencies to participate.

C: (Bill Lang) But it is not just local people. There are national and international issues that must be addressed.

C: (Samir Gerges) Yes, I can see that. In Asia the problem is much bigger because, for example, in Hong Kong there are only about 300 square miles of area in which 7 million people live. In Sweden they have the luxury of more than 173,500 square miles with 9 million people, and they can enjoy what is unthinkable for those in Hong Kong. In Brazil we have a similar problem. Therefore, it would be interesting to have other countries participate.

C: (Bill Lang) Absolutely. When we get to the international advocacy stage, we must have all countries of the world represented. Today there are over 200 members in the United Nations. This would compose an international advocacy group where all countries are represented and the cultural, geographical, and ethnical differences between them would be taken into account.

C: (Tjeert ten Wolde) Today we have discussed many aspects of noise control, for example, the soundscapes. It is doubtful whether the concept of soundscapes at the global level should be pursued. But product noise emission could be approached at a global level, and it would not be necessary to include representatives from local authorities—just representatives from industry. Another aspect which may be discussed at the global level is definitions. It is a handicap in our profession to have so many different noise indices all over the world. If we can agree at a global level to use the same vocabulary to describe a certain effect, that would facilitate communication and the possibility to learn from each other.

C: (Kjell Spång) I agree that emission should be brought up at the international level. In order to achieve good noise environments, something must be done with emission. We cannot solve the problems solely from the immission side, so it is important for us on the international level to deal with emission issue. As this can be political, we must have two strategies: first, a strategy for the development of a global policy involving all countries and which is favorable to everyone, and second, a strategy to reach those who can implement the first strategy on an international (political) level.

C: (Bill Lang) We are far from being able to distinguish between emission and immission at the political level.

C: (Kjell Spång) But you can talk about the noise from cars with politicians; you don't have to use the term emission.

C: (Bill Lang) The problem is that we have immission criteria in community noise and immission criteria in occupational noise, and the noises we are dealing with are produced by machines which are rated on an emission basis. We need regulatory action to reduce the emission levels

of products that are creating the community and occupational noise. The difference between emission and immission is understood by engineers but difficult for politicians.

Q: Bill Lang, when you mentioned an action plan, did you mean a plan which is applicable for all countries or are you thinking of a framework for a strategy which can be adapted to the individual needs of each country?

A: The latter, but it is the immission criteria that must be selectable by the U.N. member countries depending on their cultural, ethnic, geographical, and historical perspectives. In emission it must be the same throughout the world, and that's why we need a global noise policy on emission because products can be made quieter. As mentioned earlier, it's easy to air-condition locomotive cabs; but the manufacturers of locomotives in North America said it was impossible until the Canadians did it. If we allow manufacturers to say it's

impossible to solve a problem technically, we will not have a quieter world.

C: (Tjeert ten Wolde) It is not the intention of this action plan to develop a guideline for national authorities on every aspect of noise control as a model for countries to implement. It is the aim to select those items which can best be handled at the global level and which will improve the possibility of quieter domestic and occupational environments worldwide.

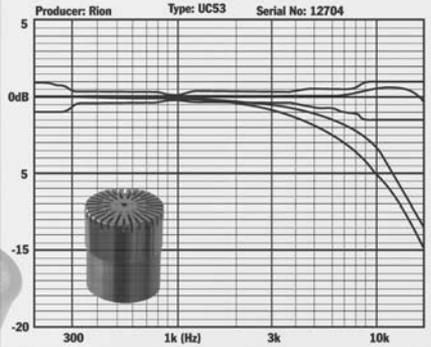
C: (Bill Lang) Where are we going? How do you integrate a dozen different presentations into an action plan? The answer is you don't because you have to build on a large number of workshops to look at all aspects of the problem before you can develop an action plan. We have to walk before we can run. That is our plan here, and this is what the new TSG 7 will be working towards—developing an action plan that will contribute to making this a quieter world. 

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International INCE Technical Study Groups

Alan H. Marsh

I-INCE Vice President — Technical Activities

Introduction

The principal technical activities of I-INCE are carried out by I-INCE Technical Study Groups authorized by the I-INCE General Assembly on recommendation of the I-INCE Board of Directors. Other technical activities were described in the 2002 December issue of *NNI*. The following is a brief history of the formation of the I-INCE Technical Study Groups, and a summary of the activities of each group. More details may be found on the Internet at www.i-ince.org.

In recognition of the need to address noise issues of international interest, the I-INCE Board of Directors, at their meeting during INTER-NOISE 91 in Sydney, Australia, took the first step to enlarge the scope of the activities of the General Assembly. The following year at INTER-NOISE 92 in Toronto, Canada, the General Assembly established technical work on two topics: "Upper Limits for Noise in the Workplace" and "Noise Emission of Road Vehicles."

I-INCE Working Parties were convened and I-INCE Technical Reports were prepared and published on those two important topics [97-1,01-1].

Additional I-INCE technical work was established by the General Assembly at INTER-NOISE 94 in Yokohama, Japan on two additional topics: "Effectiveness of Noise Walls" and "Community Noise." An I-INCE Technical Report from the study of the effectiveness of noise walls was published [99-1]. Work on a report concerning community noise was terminated after a few years because of lack of progress.

Formal guidelines for carrying out the technical work of the Institute were drafted, and, after several revisions, were adopted by the General Assembly at its meeting during INTER-NOISE 98 in Christchurch, New Zealand. These guidelines are given in Part 2 of the I-INCE Rules and are available on the I-INCE website.

Technical Study Groups

At the meeting of the General Assembly during INTER-NOISE 99 in Fort Lauderdale, Florida, USA, it was agreed to establish Technical Study Groups 1-4 with the scopes and objectives described in the status reports given below.

Technical Study Group 5 was established by the General Assembly during INTER-NOISE 00 in Nice, France.

Technical Study Group 6 was established at the meeting of the General Assembly during INTER-NOISE 03 on Jeju Island, Korea.

Technical Study Group 7 was established by the General Assembly during INTER-NOISE 05 in Rio de Janeiro, Brazil.

Technical Study Group 8 was established by the General Assembly during INTER-NOISE 06 in Honolulu, Hawaii, USA.

Status of I-INCE Technical Study Groups as of 2007 November

Descriptions of the work of the I-INCE Technical Study Groups are given below.

TSG 1 — Noise of Recreational Activities in Outdoor Areas

Objective and status

The work of TSG 1 deals with noise from recreational activities in outdoor areas. Recreational activities are those pursuits outside one's regular occupation that are usually engaged in for purposes of relaxation or leisure-time after work. Noise associated with many recreational activities can be annoying and disturbing.

A draft of the report from TSG 1 has been prepared and is under review. The Convener is Philip Dickinson.

TSG 2 — Noise Labels for Consumer and Industrial Products

Objective and status

The work of TSG 2 dealt with noise labeling for consumer and industrial products. Consumer goods are those sold at retail to ultimate customers for personal or household use, indoors or outdoors. Industrial products are sold to commercial firms for a wide variety of purposes. In many parts of the world, consumer and industrial goods are sold without any limits on noise emission, frequently with no indication to the purchaser of how noisy the products will be when installed, either to those who operate the products or to those in the vicinity of an operating product.

After several years of efforts, the Board of Directors and the General Assembly decided during INTER-NOISE 06 that the work of TSG 2 should be terminated and the TSG disbanded with thanks.

The Convener of TSG 2 transmitted the

material that had been gathered on noise labels to the Co-Conveners of TSG 7 for possible use by that Technical Study Group. The Convener was Bernard Berry.

TSG 3 — Assessment of the Effectiveness of Noise Policies and Regulations

Objective and status

The objective of TSG 3 is to collect information about noise legislation and regulations in countries around the world. During the last half of the 20th century, many countries recognized noise as an environmental and occupational problem. Regulations and guidelines were developed for limiting the exposure to noise and for implementing noise-control technologies.

A preliminary draft of a report from TSG 3 was circulated on 2007 July 09 to the Secretariats of the Member Societies for review and comment. The preliminary draft will be revised and circulated to the Member Societies as the first Comment Draft in accordance with the procedures in Part 2 of the I-INCE Rules for the technical work of the Institute. Co-Conveners are Hideki Tachibana and William Lang.

TSG 4 — Noise and Reverberation Control for Schoolrooms

Objective and status

The objective of TSG 4 was to prepare an I-INCE Technical Report with recommendations for acoustical criteria and noise-control features that may be applied in the design of all types of enclosed learning spaces in order to optimize the learning experience for

teachers and students. Learning spaces include any enclosed area where students and teachers interact for educational purposes. Principal acoustical criteria are the level of the background sound and the reverberant quality of the learning space.

The work of TSG 4 began in 2000 with Zerhan Yuksel from Turkey as the Convener. A draft of a report was initiated and some progress was made over the next few years. Because of increased responsibilities at the University where she is employed, Mrs. Yuksel resigned in 2003 as Convener and a new Convener was appointed—Carsten Svensson of Sweden. The first meeting of TSG 4 with Mr. Svensson as Convener was held during INTER-NOISE 04 in Prague, Czech Republic. No progress on the report was made in 2005 or 2006.

At the meetings of the Board of Directors and the General Assembly in 2006 December in Honolulu, it was proposed that the work of TSG 4 be terminated and the TSG disbanded because of a lack of progress. A decision to terminate the work of TSG 4 was taken at the meetings of the Board of Directors and the General Assembly in 2007 August in Istanbul. The TSG was then disbanded with thanks.

At the 2007 August meeting, the Board and the General Assembly accepted the proposal from Carsten Svensson to re-establish TSG 4 with a new scope and new members to be appointed by the I-INCE Member Societies subject to submittal of a revised scope that will concentrate on preparing an I-INCE Technical Report on

the effects on the learning experience of high levels of sound as well as the effects of poor acoustical conditions in classrooms and other school rooms. Members will be appointed after the revised scope is accepted and formation of the re-constituted TSG 4 is approved

TSG 5 — Noise as a Global Policy Issue

Objective and status

The objective of TSG 5 was to prepare an I-INCE Technical Report dealing with noise as a global issue in contrast with noise as a local issue. A major objective was to describe what is needed to create effective global noise-control policies.

The final report from TSG 5 was published in the 2006 September-October issue of the *Noise Control Engineering Journal*, and is available on the I-INCE web site [06-1]. With publication of the final report, the work of TSG 5 was complete and the TSG was disbanded.

TSG 6 — Community Noise: Environmental Noise Impact Assessment and Mitigation

Objective and status

The objective for TSG 6 is to prepare an I-INCE Technical Report that gives practical guidance to policy makers who are involved with regulation and control of community exposure to noise, excluding the sounds generated by neighbors. The emphasis of the report will be on how an environmental impact analysis process can be an integral part of an effective strategy for control of community noise, with land use planning as an essential element of the

continued on page 160

Overview of INCE/USA Technical Activities

Stephen Hambric
INCE/USA Vice President — Technical Activities

Stephen Hambric of the Pennsylvania State University (sah19@only.arl.psu.edu) is now Vice President of Technical Activities for INCE/USA and chairs the Technical Activities Board, comprised of the Technical Activity Committee Chairs who help: 1) produce special sessions at INCE/USA conferences, and 2) identify promising papers for and organize special theme issues of *Noise Control Engineering Journal (NCEJ)*. Associated with the Chairs are 13 committees. The Technical Activity Board meets on the first evening (typically Monday, 7-9 pm) of NOISE-CON and US-organized INTER-NOISE meetings.

Suggestions for conference session titles, volunteers for organizing and participating in conference sessions, and ideas for special issues of *NCEJ* are all welcome. Please contact the relevant Committee Chair if you are interested in becoming involved in INCE technical activities. The name of the chair(s) and the scope of each committee is given below.

Sources & Propagation

Chair: Victor Sparrow (VWSACS@engr.psu.edu) and Kai Ming Li (mmkml@purdue.edu)

This committee brings together INCE members with interests related to noise sources and how that noise propagates to the listener. Regarding noise sources, the committee promotes the characterization of noise sources, understanding their radiation mechanisms, and devising noise control methodologies via source modification. Regarding propagation, the committee seeks improved methods for measuring and predicting the propagation of noise through

both structures and air. Source alteration techniques, outdoor and indoor sound propagation, and scattering and diffraction are all within the purview of the sources and propagation technical committee. The committee is committed both to developing new understanding of how the sound from real noise sources is generated and gets to the listener and to applying engineering principles to minimize the noise.

Passive Control

Chairs: J. Stuart Bolton (Bolton@ecn.purdue.edu)

The objective of the committee is to promote activities and disseminate information related to passive control of noise and vibration. Areas of interest include, but are not confined to, analytical, computational, and experimental efforts on: (1) reactive, dissipative, and hybrid mufflers and silencers; (2) flow noise and suppression; (3) flow-acoustic coupling and suppression; (4) flow-structure interaction; and (5) acoustical materials used for sound absorption, damping, vibration isolation, structures, and sound barriers. The foregoing objective is achieved by: (1) organizing technical sessions at NOISE-CON and INTER-NOISE meetings, thereby creating an effective exchange environment between research and application communities; and (2) encouraging participants to publish their works in the *Noise Control Engineering Journal*.

Active Control

Chair: Scott Sommerfeldt

(Note: Scott will be stepping down shortly, and we are working to identify his successor. If you are interested in working

in this committee, please email Steve Hambric at sah19@only.arl.psu.edu)

The purpose of the Active Control Technical Committee is to foster research, applications, unified practice and communication of new techniques in the active control of sound and vibration. Areas of interest to the committee include not only applications involving noise and vibration control, but also sound field reconstruction and other novel applications of active control. Subtopics of interest include physical principles of active control, algorithms, transducers, sensing and actuating techniques, and hardware design. To accomplish these objectives, the Committee seeks to do the following: (1) organize sessions for NOISE-CON and INTER-NOISE meetings; (2) provide continued support for the ACTIVE symposia which have been held on a regular basis; (3) encourage members and others to publish active control research and case histories in the *Noise Control Engineering Journal*; and (4) provide a forum for information exchange as a means of promoting research and unified practice in the field.

Perception and Effects of Noise

Chair: Wade Bray (wbray@headacoustics.com)

This group has focused on organizing sessions for conferences and one-day symposia associated with INCE/USA and international INCE meetings. Topics of interest include:

1. Sound quality modeling: metrics, psychoacoustic testing, standardization
2. Binaural sound quality

3. Sound quality of environmental sounds
4. Designing the sound of products
5. Influence of attributes other than loudness on sound quality
6. Human response to vibration and coupling of response to noise and vibration
7. Modeling and predicting annoyance including the influence of information and context on response modeling
8. Surveying and psychoacoustic testing techniques

Experimental Techniques and Instrumentation

Chair: Jason Kunio

(Jason.kunio@bksv.com)

Committee Members: W. Steve Shepard Jr., Wen L. Li, Todd Rook

The committee acts as a forum for the dissemination of information and research results on experimental and instrumentation methods in the fields of noise and vibration control, and acoustics. This forum is established through periodic meetings at NOISE-CON and INTER-NOISE conferences, sessions organized at these conferences, and the organization of seminars or short courses in conjunction with these same conferences. From these conferences, the committee will work with the *Noise Control Engineering Journal* Board to identify papers of special merit for inclusion in the *Journal*. In addition, the committee strives to provide an interface to international and national groups on relevant experimental and measurement procedures, facilitate the coalition of divergent approaches to the same experimental and measurement problems, and act as a resource for those seeking information on current

experimental and instrumentation developments.

Transportation Noise

Chair: Micah Downing (micah.downing@blueridgeresearch.com) and Judy Rochat (rochat@volpe.dot.gov)

The Transportation Noise Technical Committee will provide forums for the exchange of technical and regulatory information related to the development and application of noise and vibration research, and methodologies to the transportation industry. A major thrust of the technical exchanges will be the integration and dissemination of applied research results into the industrial community. Technical topics will cover noise and vibration tests, analysis and processes that are related to surface transportation noise concerns from customer and regulatory perspectives.

Industrial Noise

Chairs: Mike Lucas (Mike_Lucas@irco.com)

The Industrial Noise Control Committee provides a forum for exchange of technical and regulatory information related to the management of industrial noise. Areas of interest to the Committee include the application of programs, approaches, technologies, and products for controlling occupational and community exposure to noise generated by industrial processes, facilities, and equipment. In particular, the Committee seeks to do the following: (1) organize sessions for NOISE-CON and INTER-NOISE meetings; (2) sponsor specialized workshops and seminars in conjunction with NOISE-CON conferences or INTER-NOISE congresses; (3) encourage INCE members and others to

publish, in *Noise/News International* and the *Noise Control Engineering Journal*, case histories as well as accounts of successful programs and approaches related to the management of industrial noise; (4) serve as an information exchange and clearinghouse for members and others interested in the management of industrial noise; (5) form alliances with other professional and trade organizations whose charters overlap or complement those of the Committee; (5) develop, provide, and/or advertise the availability of educational materials for members and others to use in their outreach and guidance programs.

Community Noise

Chair: Larry Finegold (LSFinegold@earthlink.net)

Committee members: Frank Brittain, Bennett Brooks, Ken Kaliski

The Technical Committee on Community Noise (TCCN) was formed for the purpose of promoting the use of noise control engineering technologies and adequate noise management policies to reduce noise exposure in communities across America to levels necessary to adequately protect the health and welfare of the US population. To fulfill these objectives, INCE TCCN will pursue the following general priorities:

- Promote the development and use of state-of-the-art noise control technologies, including the provision of information on these technologies to the public and relevant government agencies
- Promote sponsorship and conduct of high-priority research on the effects of noise, including health effects, community annoyance and sleep disturbance research

- Support the development of up-to-date national and local government noise management and land use policies, including increased cooperation between industry, government and the public on noise control issues
- Support programs to educate the public on the adverse effects of community and environmental noise exposure
- Support the continued professional development of the noise control engineering field and promotion of their services to communities
- Coordinate INCE/USA community noise activities with those of other national and international professional acoustics organizations and government agencies

Product Noise Emissions

Chair: Matt Nobile (nobile@us.ibm.com)

The scope of the Product Noise Emissions Technical Committee is noise emission from products in general, without focusing on a specific product type or family. The committee will primarily be concerned with the fundamental aspects of acoustical measurement technology, methodology, and standardization as they are applied to products in general. The scope also includes methods for disseminating information on product noise emissions to consumers and the general public, such as product noise declarations and labels. Noise control topics may be considered when appropriate, but these are usually better placed under the Passive Control and Active Control Technical Committees. Similarly, the perceptual aspects of product noise emissions are not included in this scope since these are addressed in the Perception and Effects of Noise TC. One of the goals of this committee is to spin off sub-committees dealing with particular product families that will address noise emission issues specific to that family and that will develop measurement and declaration test codes specific to their industries. The Sub-Committee on ITE is an example of this (even though it has existed as a separate TC long before the establishment of this parent TC).

Products include small and large household appliances, information technology products, home entertainment products, power tools, lawn and garden equipment, air-conditioning products, medical equipment, test instrumentation, and many others. Transport vehicles, outdoor construction equipment, and typically large industrial equipment are not included in the scope of this committee.

Sub-Committee on Information Technology Equipment (ITE)

Chair: Jeff Schmitt (jeffs@prodigy.net)

The scope of the Information Technology Equipment Technical Sub-Committee is noise control engineering relating to information technology equipment (ITE), with a primary focus on acoustical measurement technology, methodology, and standardization. In addition to organizing special sessions at INCE conferences and soliciting technical papers for *NCEJ*, the principal activities of the Committee are to monitor, elucidate, and continually reevaluate the technical underpinnings of the acoustical standards and test codes pertinent to the ITE industry. Given that our members are volunteers with limited time and resources, the activities undertaken by the committee should meet the following practical criteria: (i) can be reasonably handled by the resources available; (ii) are directly related to the mission of the TC/ITE; (iii) are important to the IT industry as a whole; (iv) are timely, in terms of work being done by other committees allied to the IT industry (such as standards writing groups); (v) are of strong interest to a majority of the TC members or potential TC members; (vi) are within the realm of expertise of the TC members or potential TC members; and (vii) are of a non-proprietary nature to allow competing firms to cooperate freely. The results of TC/ITE activities should benefit either INCE members in general or members of working groups developing standards and test codes for the ITE industry.

Prediction and Modeling Techniques

Chairs: Bryce Gardner (bryce.gardner@esi-group-na.com)

This committee will provide a forum for the dissemination and clarification of information related to the direct application of large scale computer analysis codes or software to noise control and acoustic problems. Analysis methods or codes of interest include finite and boundary element methods, statistical energy analysis, ray tracing, transfer matrix and other computational techniques for addressing interior and exterior sound propagation and radiation issues including interactions with vibrating structures and other media. An attempt will be made to establish a clear forum on the applicability of existing or new codes and numerical techniques to contemporary noise control problems in industry or society. To facilitate this important task, the committee will organize special technical sessions for NOISE-CON and INTER-NOISE meetings, solicit authoritative papers for *Noise Control Engineering Journal*, and provide a forum for its members in maintaining and developing the science and art of computer modeling. Other activities may include the formulation of benchmark noise control problems for analysis verification, organizing round robin modeling exercises, and liaison with other technical committees or professional societies.

Building Acoustics

Chairs: Kenric VanWyk (kvanwyk@acousticsbydesign.com) and Mandy Kachur (mandy@acousticsbydesign.com)

The objective of the Building Acoustics Technical Committee is to advance the understanding of acoustical performance of building components, materials, and systems, with the ultimate goal of improving the acoustical quality for buildings of all types. This is done by organizing technical sessions at INCE conferences, encouraging the publication of papers on related topics,

and disseminating relevant information to the noise control engineering community, American Institute of Architects, American Society of Heating, Refrigeration, and Air Conditioning Engineers, other professional groups, and the public. Primary topics include criteria for sound quality in buildings, acoustical performance of building materials including standard construction materials as well as special acoustical products, prediction of sound levels in buildings, sound propagation through building structures and sound produced by HVAC, electrical and plumbing systems.

The committee seeks to identify building noise control topics of interest to the building development, design, and owner sectors through two means: 1) the consulting practice of acoustical consultants on the committee and 2) standards activities in the building acoustics areas. Once identified, NOISE-CON and INTER-NOISE sessions will be developed that address these areas of interest. Persons who are working in these areas and known by committee members will be invited to give papers at these sessions. These will be individuals known to committee members directly or indirectly through contacts with other members. The invited papers will form the basis of a session to which a general solicitation of papers will be made. The next, and most critical, step is to encourage presenters to prepare manuscripts for submission to *NCEJ* for consideration for publication.

Standards

Chair: Brandon Tinianov (brandon@quietsolution.com)

This technical activity represents the technical interests of INCE as a voting member in the American National Standards Institute (ANSI) Committee S12 on Noise. The Acoustical Society of America (ASA) provides the Secretariat for the committee. Its mission is the development of standards, specifications, and terminology in the field of

acoustical noise pertaining to methods of measurement, evaluation, and control of as related to the areas of environmental and occupational noise.

Recent standards activity is highlighted by the adoption of ANSI S12.68 -2007 *Methods of Estimating Effective A-Weighted Sound Pressure Levels when Hearing Protectors are Worn*. This standard specifies three methods, in ascending order of complexity of use and potential accuracy, for the estimation of the sound pressure levels that are effective when a hearing protector is worn.

There has also been work surrounding several active working groups. Working Group 38 is developing a document concerning the noise labeling of products under co-chairs J. Pope and R. Hellweg. WG 41, under the guidance of co-chairs L. Finegold and B. Brooks, is addressing

model community noise ordinances. Also, Working Group 44 is proposing new standards regarding speech privacy in healthcare facilities. Each working group meets on an annual or semi-annual basis and reports back to the S12 Committee. To participate in any of these efforts, please contact the INCE Standards chair.

Structural Acoustics

Chairs: Stephen Hambric (sah19@only.arl.psu.edu) and Stephen Conlon (scc135@only.arl.psu.edu)

This newly-formed technical committee is focused on the vibration of structures leading to noise generation in buildings and communities and includes prediction and measurement of ground borne vibration from ground transportation systems, rattle and vibration induced by aircraft, and design of structures and construction methodologies to mitigate transmission of vibration and subsequent noise generation.

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USA

NAE Publishes an Issue of *The Bridge* Devoted to Noise

The National Academy of Engineering (NAE) is currently involved in a study titled "Technology for a Quieter America." As a second initiative related to noise, the NAE devoted the 2007 September issue of its quarterly publication, *The Bridge*, to topics related to noise. The titles of the papers and their authors are:

Technology for a Quieter America (editorial)

George C. Maling Jr.

Noise as a Technological and Policy Challenge

William W. Lang and George C. Maling Jr.

Designing Quiet Products

Richard H. Lyon and David L. Bowen

Perception-Based Engineering: Integrating Human Responses into Product and System Design

Patricia Davies

Challenges and Promises in Mitigating Transportation Noise

Ian A. Waitz, Robert J. Bernhard, and Carl E. Hanson

Engineering Controls for Reducing Workplace Noise

Robert D. Bruce

Copies of these papers in PDF format may be downloaded from the NAE web site. Go to www.nae.edu/nae/bridgecom.nsf/weblinks/MKEZ-78BPPS?OpenDocument.

New Hearing Protector Rating Standard is Approved

The Acoustical Society of America has announced the publication of ANSI/ASA S1 2.68-2007 American National Standard Methods of Estimating Effective A-Weighted Sound Pressure Levels When Hearing Protectors are Worn.

This standard will be valuable to managers, industrial hygienists and hearing conservation professionals responsible for selecting and assigning hearing protectors for noise-exposed workers: military and law-enforcement personnel; manufacturers of hearing protectors; hearing protection testing laboratories; acoustic consultants; and regulatory

agencies. Though rating and computational methods have been previously described in the literature, and governmental publications and regulations, this is the first time that an American National Standard specifies such procedures.

This standard specifies three methods, in ascending order of complexity of use and potential accuracy, for the estimation of the sound pressure levels that are effective when a hearing protector is worn. The simplest of the methods is similar to the well-known NRR, but diverges in two key aspects: namely it can be used with A-weighted sound pressure levels instead of requiring the use of C-weighted levels, and instead of specifying a single number at the 98th percentile, it provides values for the 80th and 20th percentiles. This standard is accompanied by an informational spreadsheet programmed to perform the calculations specified in the standard itself.

This Standard was developed by Accredited Standards Committee S12, Noise, under operating procedures accredited by the American National Standards Institute (ANSI). These procedures assure that the Standard represents the consensus of opinion among those with a direct and material interest in the subject matter. The standard was drafted by a working group comprising experts from all segments of the hearing conservation community.

This standard and many other national and international noise standards can be obtained from the Acoustical Society of America Online Store at <http://asa.aip.org>. Or, order by phone, fax or mail from the Acoustical Society of America, 35 Pinelawn Road, Suite 1 14E, Melville NY 11747-3177. Phone: 631-390-0215; Fax: 631-390-0217. Email: asastds@aip.org

New Standard on Loudness is Available

The Acoustical Society of America has announced that a new standard, ANSI S3.4-2007, American National Standard Procedure for the Computation of Loudness of Steady Sounds, is now available. The standard is a revision of ANSI S3.4-2005.

This standard specifies a procedure for calculating the monaural and binaural loudness of steady sounds

as perceived by listeners with normal hearing. The procedure is based on the spectra of the sounds. The possible sounds include simple and complex tones (both harmonic and inharmonic), bands of noise and mixtures of tones and noise. The spectra can be specified exactly, in terms of the frequencies and levels of individual spectral components, or approximately, in terms of the levels in 1/3 octave bands covering center frequencies from 50 to 16,000 Hz. The standard is applicable to sounds presented in free field with a frontal incidence, in a diffuse field, or listening via headphones. The procedure is available as a computer program that provides the loudness level in phons and the corresponding loudness estimate in sones. Examples of the estimates generated by the program for a variety of input spectra are presented in Annex A. The software for calculation of loudness according to ANSI S3.4-2007 is described in Annex B. It accompanies the standard for the convenience of the purchaser. Use of this software is not required for conformance.

To purchase an electronic copy of this ANSI Standard or other National or International Standards on Acoustics, Mechanical Vibration and Shock, Bioacoustics, or Noise please visit the Acoustical Society of America's Home Page at: <http://asa.aip.org> and click the "ASA Store" button. Hard copies of standards may be purchased by contacting the ASA Standards Secretariat, 35 Pinelawn Road, Suite 114E, Melville, NY 11747-3177. Phone +1 631 390-0215; Fax +1 631 390-0217. The price is 95 USD per copy.

NTI's Transit Noise and Vibration Impact Assessment

The National Transit Institute is pleased to announce that they will be offering a new course entitled *Transit Noise and Vibration Impact Assessment*. The course will be offered on March 18–20, 2008 in Oakland, California.

This three-day course is aimed at practitioners who conduct noise and vibration analyses as well as those who prepare and review environmental impact assessments for transit projects. Managers overseeing the environmental review process for a major project may also benefit from this course. The course gives an overview of the environmental

review process and how noise and vibration assessment fits into FTA's planning and project development processes.

The course instructors are Carl Hanson, Herbert Singleton, Jr., and Lance Meister.

*To register, go to www.ntionline.com. From the home page, click on *Multimodal Transportation Planning* and then the course title. The course is free for public transit agency employees and federal, state, and local government employees involved in public transportation. A tuition fee of \$850 applies to all other participants.*

Bill Elliot Joins Cavanaugh Tocci Associates, Inc.

Cavanaugh Tocci Associates is pleased to announce that Bill Elliot has joined the firm as a Senior Consultant. Bill has a Bachelors degrees in Physics and Architectural Design from MIT, and a Masters degree in Architectural Acoustics from Rensselaer Polytechnic Institute.

Prior to joining Cavanaugh Tocci, Bill worked for RPG Diffusor Systems, manufacturers of specialty acoustic finish products. Bill gained experience in their laboratories developing and testing new acoustic products, advising architects on product applications, and acting as project manager for custom installations. According to Principal Consultant Tim Foulkes, "Bill's experience at RPG involved working with architects and builders on institutional and residential listening spaces, and this will be directly applicable to our projects at Cavanaugh Tocci Associates."

At Cavanaugh Tocci Associates Inc., Bill's work will include projects in architectural acoustics consulting, sound and vibration isolation, noise control in HVAC systems, and acoustic finish treatments. Bill is proficient in computer modeling of interior room acoustics, and he will be using these skills to help design theaters, musical performance and rehearsal facilities, and worship spaces.

Bill has won a number of awards and scholarships, including the Robert Bradford Newman Student Award in Architectural Acoustics. 

*A course on
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and vibration
impact
assessment is
available.*

Three CDs are available:

• Wind turbine noise

• Fan noise

• Occupational noise management

France

Wind Turbine Noise Conference is Held in Lyon

More than 150 delegates from 24 countries around the world attended this second Wind Turbine Noise conference. It was held in Lyon, France on 2007 September 20-21. The organisers would like to thank all involved for their support and contributions. Also we would like to thank those at the venue of Grand Lyon who helped make everything run smoothly. More details can be found at www.windturbineoise2007.org. It is hoped that a third wind turbine noise conference can be held in Scandinavia in 2009.

A CD of the proceedings is available from INCE Europe, contact: INCE/Europe, Riverside House, 4 Oakland Vale, New Brighton, Merseyside CH45 1LQ, UK. Tel: +44 (0)151 638 0181; Fax: +44 (0)151 639 5212

Fan Noise Symposium is Held in Lyon

A symposium on Fan Noise was held in Lyon on 2007 September 17-19. It offered a unique opportunity to review the progress that has been achieved over the last 4 years in understanding, predicting and reducing the noise of fans of any type, as well as in integrating them into machines, vehicles and buildings in a more silent way.

Over 250 fan suppliers, integrators and researchers, coming from 27 countries, participated to this event, including 18 exhibitors related to softwares for noise analysis & prediction, and devices for noise measurement and control.

More information, including a list of participants, can be found on the symposium web site, www.fannoise2007.org. The CD with papers from the symposium is available for purchase. Go to www.cetiat.fr/shop. The proceedings of the 2003 fan noise symposium, held in Senlis, are also available from this URL.

Proceedings of the First European Forum on Efficient Solutions for Managing Occupational Noise Risks

The first European forum on efficient solutions for managing occupational noise risks was held in 2007 July in Lille. This symposium aimed at contributing

to increase the dissemination of existing knowledge in all sectors affected by occupational noise. A total of 174 papers was presented during this three-day event. The CD proceedings thus includes more than 1400 pages of texts exclusively dedicated to occupational noise management. For each article, a French-English bilingual abstract is displayed. Two thirds of the articles are written in English. A search engine (title, summary, author, theme) allows easy browsing through the CD.

Main topics:

- Risks due to noise
- Measurements and evaluation
- Political issues
- Methodology to solve noise problems
- Dissemination of information
- Applications to industrial sectors: mining, building and construction works sectors, mechanical industries, food industry
- Individual hearing protection
- Materials and systems for noise control
- Communication in noise
- Noise control of machines and processes
- Offices and tertiary sectors, call centres, hospitals, swimming pools...

The proceedings of the Forum are available. Go to noiseatwork.eu to download an order form.

United Kingdom

Heathrow Expansion is Proposed

BAA, owner of Heathrow Airport, has proposed an addition of a third runway, 2200 m, and a sixth terminal. By the year 2030, this should allow approximately 700,000 flights per year, about 50% more than at present. There is, of course, public opposition to this expansion. The following web sites are relevant:

news.bbc.co.uk/1/hi/uk_politics/7106524.stm

www.dft.gov.uk/consultations/open/

heathrowconsultation

www.hacan.org.uk

www.hacan.org.uk/resources/reports/heathrow_expansion.at.a.glance.pdf

continued on page 159

China

2007 National Environmental Acoustics Conference

The 2007 National Environmental Acoustics Conference was held in Ningbo, Zhejiang Province on 2007 November 12-15. The conference was sponsored by the Environmental Acoustics Branch of Acoustical Society of China (ASC) and was jointly supported by the Environmental Physics Committee of Chinese Society for Environmental Sciences (CSES), Environmental Sciences Department of Zhejiang University and Shanghai Academy of Environmental Sciences (SAES). Prof. Jing Tian, board chairman of ASC and the director of Environmental Physics Committee of CSES, was appointed to be the Chairman of the conference, and Prof. Mingkun Cheng, director of the Environmental Acoustics Branch of ASC, was appointed to be the Executive Chairman. One hundred and twenty eight delegates attended the conference and held discussions on the theme of the conference, "Traffic Noise Control Countermeasures in 21st Century."

2007 National Environmental Acoustics Conference was considered as one of the 2007 important academic conferences. All together, the organizing committee received more and 100 papers, among which 96 excellent ones were picked out to be published in the supplement of *Noise and Vibration Control*. More information is available at www.ioa.ac.cn/english/news/view.asp?id=554.

Japan

2007 CAETS Convocation is Held in Tokyo

The 17th Convocation of the International Council of Academies of Engineering and Technological Sciences (CAETS) was held at Keio Plaza Hotel Tokyo on October 23 to 26, 2007. The theme of the 17th CAETS Convocation was "Environmental and Sustainable Growth." In the opening ceremony, Tsuneo Nakahara, President of the Engineering Academy of Japan, stated that the environmental and sustainable growth is the most important and challenging issue for human society in the world. Following the ceremony, keynotes lectures and presentations were given by representatives from various scientific and technological fields. In the session titled "Global Environmental Issues,"

Prof. Tor Kihlman (Sweden) gave a presentation titled "Noise as a Constraining Factor in 21st Century Urbanization," and he stressed that unlike other environmental pollutions such as air and water, noise is still an unsolved problem. He also stated that the engineering challenge of at least 10 dB reduction at source is necessary as a global environmental issue. It was reported by Dr. William W. Lang (USA) who attended the CAETS Council Meeting, Tokyo, held on October 26, 2007, the proposal from the Royal Swedish Academy (IVA) was approved to organize a workshop on "The design of low noise transportation vehicles for road, rail and air" in Europe during late May or June, 2008.

Korea

Fifteenth International Congress on Sound and Vibration (ICSV15)

The Fifteenth International Congress on Sound and Vibration (ICSV15), sponsored by the International Institute of Acoustics and Vibration (IIAV) and the Korean Society for Noise and Vibration Engineering (KSNVE) will be held in Daejeon, Korea, 2008 July 6-10, in cooperation with the International Union of Theoretical and Applied Mechanics (IUTAM), the American Society of Mechanical Engineers International (ASME International), and the Institution of Mechanical Engineers (IMechE). Theoretical and experimental research papers in the fields of acoustics, noise and vibration are invited for presentation. Companies are invited to take part in the ICSV15 Exhibition. For more information, go to www.icsv15.com. 

CAETS

Convocation

considers

transportation

noise issues

Available from the INCE/USA Page at the Atlas Bookstore

www.atlasbooks.com/marktplc/00726.htm

Noise and Vibration Control — Leo L. Beranek: This classic text on noise and vibration control is very widely used throughout the world. The book is divided into three parts: the basics of noise control (including measurement methods, acoustical materials, and sound propagation), application of these principles to reducing noise from sources, and criteria for noise control.

Noise Control in Buildings — Cyril M. Harris: Noise Control in Buildings features contributions by leading authorities on noise control, and contains a very complete set of data on the properties of acoustical materials and on the sound insulation of walls and floor/ceiling constructions. This wealth of technical information provides an invaluable resource for the professional as well as the non-professional.

*Congratulations
to those who
were awarded
prizes at
NOISE-CON 08.*

INCE/USA

Martin Hirschorn IAC Prize to be Awarded in 2008

For 2008, the \$5000 Martin Hirschorn IAC Prize will be awarded *“For the best paper on new and/or improved cost-effective noise control and/or acoustical conditioning products as published in the two years preceding the award.”* All papers published in *Noise Control Engineering Journal* in the years 2006-2007 will automatically be considered for the award. Authors who published papers elsewhere may also have their paper considered for the award. Submissions should be sent to IBO@inceusa.org. The papers must be in Portable Document Format (PDF), and must be received by March 15, 2008.

Michael Yang, George Lesieutre, Stephen Hambric, and Gary Koopman are awarded the 2006 Martin Hirschorn IAC Prize



Steve Hambric (right) accepts the 2006 Martin Hirschorn IAC Prize on behalf of the four authors.

In even-numbered years, the \$5000 Martin Hirschorn IAC Prize is given for *“The best paper on new and/or improved cost effective noise control and/or acoustical conditioning products as published in the two years preceding the award.”*

The award was given for the paper “Development of a design curve for Particle Impact Dampers” which was authored by Michael Y. Yang, George A. Lesieutre, Steven A. Hambric, and Gary H. Koopman. The \$5000 prize will be shared equally

between the four authors. The award was presented by INCE/USA president Paul Donavan at the NOISE-CON 07 awards ceremony on October 24 in Reno, Nevada. The paper was published in *Noise Control Engineering Journal*, **53**, 5-13, 2005.

INCE Foundation Makes an Outstanding Paper Award

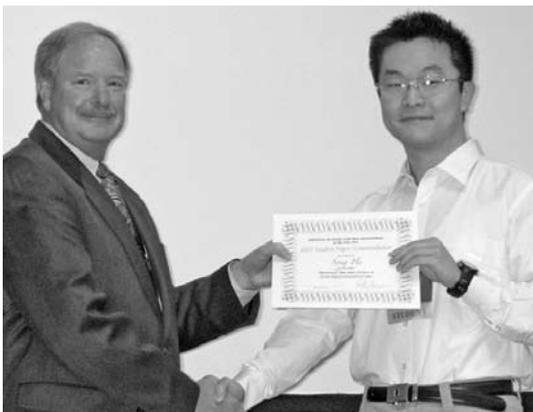
The Board of Directors of the INCE Foundation approved an award of \$2500 for an outstanding paper published in *Noise Control Engineering Journal* for the years 2004 and 2005. The time period was selected to be in conformance with the 2006 Martin Hirschorn IAC award. The winning paper was “Design of a jagged-edge noise barrier: Numerical and experimental study” by Penélope Menounou and Jeong Ho You. The paper was published in *Noise Control Engineering Journal*, **52**(5) 210-224, 2005. The award was announced during the awards ceremony at NOISE-CON 07 on October 24.

Five Students are Awarded prizes in the 2007 Student Paper Prize Competition

Five students from five universities were awarded \$1000 prizes in the 2007 Student Paper Prize Competition. The prizes were awarded at the NOISE-CON 07 conference on October 24. The awards were presented by Paul Donavan, INCE/USA president.



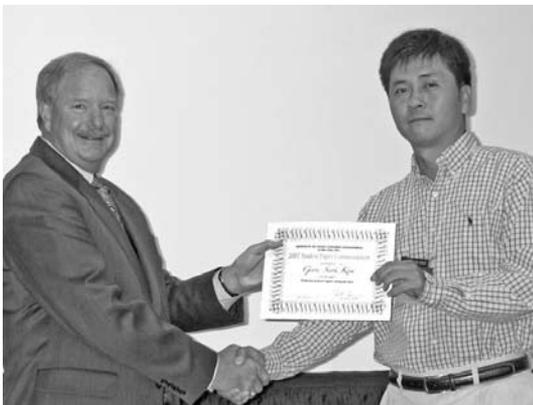
Connor Duke, right, Brigham Young University, for “Optimization of control source locations in a free-field active noise control application using a genetic algorithm.”



Song He, right, Ohio State University, for "Improved gear whine model with focus on friction-induced structural-borne noise."



Portia Peters, right, University of Southern California, for "Loss factors of honeycomb sandwich structures: An experimental approach." 



Geon-Seok Kim, right, The Pennsylvania State University, for "Prediction of diesel engine cooling fan noise"



Kamal Idrisi, right, Virginia Polytechnic Institute and State University, for "Passive control of sound transmission through a double panel using heterogeneous (HG) blankets, Part II: HG parametric studies."

European News *continued from page 156*

Scottish Noise Mapping Site is Established

As required by the European Union Environmental Noise Directive, 2002/49/EU, mapping of Scottish roads, rail lines, airports, and industrial sites has been completed. Details may be found on the web site www.scottishnoisemapping.org. The schedule was to have action plans developed by competent authorities by 2007 July 18. A guidance document on noise action planning is also available at www.scotland.gov.uk/Publications/2007/08/24141743/4

IOA Appoints New Membership and Publications Officer

The UK Institute of Acoustics (IOA) is pleased to announce the appointment of Nezi Yusuf to the newly created position of Membership and Publications Officer. Nezi will be responsible not only for managing and implementing a membership development plan and a publications strategy, but also for providing support to administrators in the areas of engineering and publicity.

Kevin Macan-Lind, Chief Executive of the IOA, "Nezi's appointment is part of the Institute's continuing strategy to raise its profile. Her experience will be invaluable in improving services to the current members and recruiting new members and she will provide much needed assistance to other members of the team." 

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I-INCE TSG continued from page 149

strategy, especially for countries that are still experiencing substantial community development.

TSG 6 met during INTER-NOISE Congresses in 2003, 2004, 2005, 2006, and 2007. At the meeting in 2007 August, a preliminary working draft of a report was presented for review by members of TSG 6. The Convener is Lawrence Finegold.

TSG 7 — Harmonization and Implementation of Global Noise Policy

Objective and status

The objective of TSG 7 is to implement the recommendations that were published in the report from TSG 5 with special emphasis on the noise of products and noise in the workplace (occupational noise).

An organizing meeting for TSG 7 was held during INTER-NOISE 06 in Honolulu, Hawaii. A second meeting was held during INTER-NOISE 07 in Istanbul, Turkey.

The Co-Conveners are William Lang and Tjeert ten Wolde.

TSG 8 — Noise Control Engineering Education Worldwide

Objective and status

The objective of TSG 8 is to collect information from universities and institutions offering courses with content associated with noise control engineering and related teaching resources. The collected information will be used to establish an I-INCE website with links to universities and institutions offering courses associated with noise control engineering and related teaching resources.

In 2007, the Member Societies of I-INCE were invited to appoint expert members to TSG 8. The objectives of TSG 8 were discussed during a Workshop at the meeting of the International Commission on Acoustics (ICA) held in Madrid, Spain in 2007 September. Attendees interested

in the objective of TSG 8 were asked to indicate their interest to the Secretariat of the I-INCE Member Society of their country. The Co-Conveners are William Lang and Keith Attenborough

References

- 97-1. I-INCE Publication 97-1, Technical Assessment of Upper Limit on Noise in the Workplace. www.i-ince.org/data/iince971.pdf
- 99-1. I-INCE Publication 99-1, Technical Assessment of Effectiveness in Noise Walls. www.i-ince.org/data/iince991.pdf
- 01-1. I-INCE Publication 01-1, Noise Emissions of Road Vehicles - Effects of Regulations. www.i-ince.org/data/iince011.pdf
- 06-1. I-INCE Publication 06-1, A Global Approach to Noise Control Policy. www.i-ince.org/data/iince.061. Also published in *Noise Control Eng. J.*, **54**(5)289-346 (2006). 

ICBEN 2008



Grand Pequot Convention Center Foxwoods Resort • Connecticut

July 21-25, 2008

ICBEN 2008, Noise as a Public Health Problem, 9th Congress of the International Commission on Biological Effects of Noise will be held at the Grand Pequot Convention Center, Foxwoods Resort, nine miles north of Mystic, Connecticut on July 21-25, 2008. The Congress will be held one week before the NOISE-CON 08 Conference and related events in Detroit, Michigan. The Congress will be of interest to researchers, policy makers, and others with an interest on the impact of noise on public and industrial health. The official language of the congress is English. The scientific program will emphasize the following topics:

- Noise Induced Hearing Loss
- Noise and Communication
- Non-Auditory Physiological Effects of Noise
- Influence of Noise on Performance and Behavior
- Effects of Noise on Sleep
- Community Response to Noise
- Noise and Animals
- Noise Policy

Accompanying persons are invited to attend the reception and banquet, and will be offered the opportunity to tour such nearby attractions as the

- Mystic Seaport
- Mashantucket Pequot Museum
- Newport Mansions
- Submarine Museum
- Mystic Aquarium
- Local Beaches, and many others

A block of rooms has been reserved at the Grand Pequot Tower at a reduced rate of not more than 154 USD per night. There are other hotels in the Mystic area, but vehicle transportation will be required.

More information on the Congress, a Congress registration form, and hotel information may be obtained from the Congress web site, www.icben2008.org.

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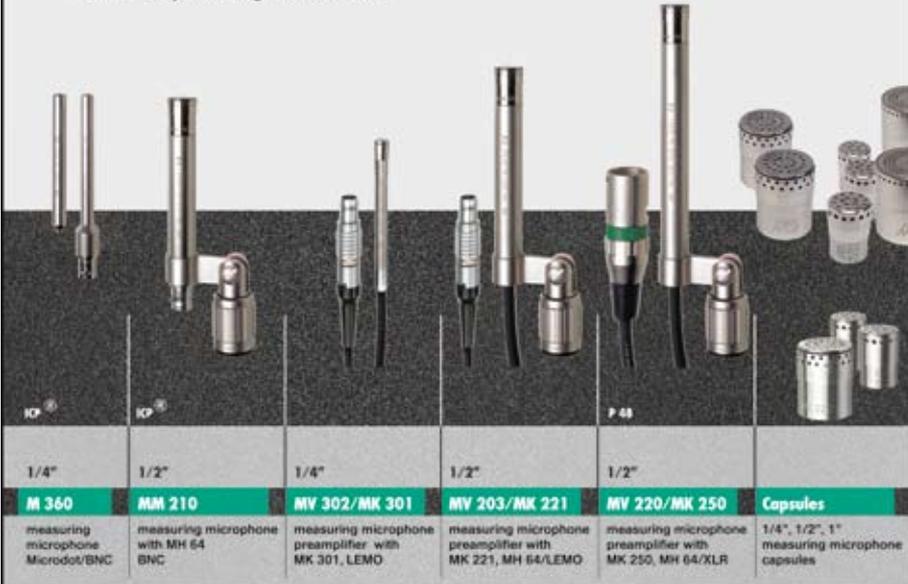
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INTER-NOISE 06 Proceedings

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 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

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.

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The Brüel and Kjær Type 2270 Hand-held Analyzer

The latest innovation and addition to the B&K growing family of hand-held analyzers is the Type 2270. Some of the features of the instrument are:

- Integrated digital camera (to aid documentation of the measurement environment)
- Two-channel measurement capability (two measurement locations in one hand-held analyzer)
- Integrated LAN and USB interfaces (offering fast data transfer to PC and remote control and monitoring of Type 2270)
- Environmental protection IP44

Type 2270 also boasts a wide range of application software modules that can be licensed separately. Currently available measurement software includes:

- Sound Level Meter application
- Real-time frequency analysis
- Logging (noise level profiling)
- Sound and vibration recording
- Building acoustics applications
- Tonal assessment option

The Type 2270 is said to meet head on the demands of today's wide-ranging sound and vibration measurement tasks with the accuracy and reliability associated with Brüel & Kjær instrumentation.

For more information, go to www.bksv.com.

PCB

PCB Introduces New Free Field ICP® Array Microphone

PCB Piezotronics (PCB®) has debuted Model 130D22, a combined ICP® free field response pre-polarized array microphone and preamplifier. The microphone is designed for measuring sound pressure levels and frequencies in the audible range, and can be used simultaneously with ICP® accelerometers to simplify test setups.

Model 130D22 also incorporates a SMB connector, which is easy to assemble, provides seamless transition for many data acquisition systems and software set-ups, and saves time when connecting multiple units, such as in a large channel array setup. When used with data acquisition systems that have 2-20 mA constant current supply, the system does not require additional power supplies.

The unit has high sensitivity (45 mV/Pa), uses standard low-cost coaxial cables, and also has optional TEDS capability, which allows for ease of use, and traceability.

This acoustic test product is said to be ideal for array set-ups (2 D Pressure Mapping, Holography); trending and frequency analysis; predictive maintenance on machinery fans, bearings and other industrial applications; white goods testing; NVH studies for automotive and aerospace; large channel count tests; biomedical research; or general acoustic testing, where a Type 1 compliant microphone is not justifiable and the customer requires a lower cost alternative. For detailed specifications, drawings, or additional information, please visit www.pcb.com

PCB® Introduces Miniature Accelerometer

PCB Piezotronics (PCB®) has introduced Model 357A19, a very miniature charge output accelerometer, designed for performing shock and vibration studies in space-restricted locations and on small, lightweight structures. The unit occupies a 0.11 x 0.16 x 0.27 inch (2.8 x 4.1 x 6.9 mm) envelope, and weighs a mere 0.007 ounces (0.20 grams), for minimal mass loading of a test article. The unit connects to laboratory-style charge amplifiers or in-line charge converters, which condition an output signal for recording or analysis.

Model 357A19 features an operating temperature range of -100 to +350 °F (-73 to +177 °C) and is suited for thermal cycling and vibration stress screening of circuit boards, disk drive mechanisms, mobile phones, PDA's, and other electronic devices. Other applications include NVH studies on automotive parts and modal analysis of small structures and satellite components. For detailed drawings, specifications and additional information, visit our web site at www.pcb.com.

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Norsonic

Scantek

pinta acoustic, inc.

Norsonic

A New Tapping Machine from Norsonic Checks its Specifications Itself

Scantek Inc., a distributor of sound and vibration instrumentation, and the first S&V instrument calibration laboratory accredited by NVLAP (NIST), is pleased to announce a new tapping machine from Norsonic. The rugged N-277 Tapping machine is used for making standardized impact noise tests (foot fall noise) in laboratories and in buildings as set out in international and national standards.

Features:

- Impact sound transmission testing according to ISO140 part VI, VII and VIII, ASTM E-492 and ASTM E-1007
- Remote operation from hand switch or PC
- Mains or battery operation
- Low weight 10 kg (22 lb) incl. battery and wireless remote option
- Built in self check of hammer fall speed, and tapping sequence for automatic calibration of major components.
- Retractable feet provide easy transportation and storage
- Dimensions feet retracted: 165 x 230 x 495 mm (6.5 x 9.1 x 19.5")

Self check details:

- A crystal controlled servo system ensures the correct tapping frequency is maintained at all times and temperatures.
- A level gauge mounted on the top helps the user to align the unit when adjusting the fall height.

The tapping machine continually monitors each hammer with a laser sensor to measure the impact velocity to ensure that the energy imparted into the

test floor is correct hence the effects of any friction or misalignments are immediately apparent. Each hammer has a LED indicator on the front panel that indicates when the impact velocity and tapping frequency are within the requirements of the standard. For more information, visit www.scantekinc.com.

Scantek

Scantek is awarded Contract for Multi-system Calibration of Sound Instrumentation

Scantek Inc., a distributor of sound and vibration instrumentation, is pleased to announce that the company has been awarded a \$1.4 M contract by the US military for four sound instrument and transducer calibration systems. The contract allows an option for an additional number of units in the future. The first four will be delivered, in separate units up to 2008 March. If ordered, the additional four units will be delivered during the late Spring of 2008.

The Norsonic calibration system model 1504A allows the (semi-) automated calibration of any brand of sound measuring instruments such as microphones, sound level meters, analyzers and dosimeters, acoustical calibrators. The tests implemented are according to national and international standards. This acquisition will allow the calibration laboratories to increase productivity and accuracy of their calibrations.

Scantek Inc Calibration Laboratory, the first S&V instrument calibration laboratory accredited by NVLAP (NIST), has used these extremely flexible and accurate systems for years and it's NVLAP accreditation demands, to a great extent, on their accuracy and reliability. For more information, visit www.scantekinc.com.

pinta acoustic, inc.

illbruck acoustic, inc. Changes Name to pinta acoustic, inc.

illbruck acoustic, inc. has changed its name to pinta acoustic, inc. The company's products, management, vision and direction remain unchanged. illbruck acoustic—now pinta acoustic—is a subsidiary of the former illbruck elements GmbH, which has been renamed pinta elements gmbh. The changes were effective on 2007 May 31. The name "pinta" was selected because of the company founder's association with high-performance sailing. In 1969, Willi illbruck named his first sailing yacht "pinta."

pinta acoustic, inc. provides acoustical and noise control solutions for the architectural, commercial, industrial and broadcast/audio markets. Many of our products feature willtec® acoustical material, a porous melamine that is said to have exceptional sound-absorbing capabilities and is Class 1 fire-rated. For information about pinta acoustic, inc. products, visit www.pinta-acoustic.com/company.

Navcon

INSUL 6.0 is Improved

INSUL 6.2 is an improved version of INSUL 6.0 from Navcon. It includes the ability to predict the effect of leakage. This is especially useful for predicting the sound insulation of doors and windows which are notoriously difficult to seal perfectly. INSUL uses the theory published by Gomperts (The Sound Transmission of Circular and Slit Shaped Apertures in Walls (Gomperts and Kihlman 1967 *Acustica* Vol 18)) to firstly predict the transmission loss of thin slits and then the combined transmission loss of the slit and the partition. INSUL 6.2 is Vista compatible.

To download a **INSUL 6.2 trial version** please use following hyperlink: www.navcon.com/download/Insul62USA.zip

Noesis Solutions

OPTIMUS 5.3 is Available

Noesis Solutions, has announced the availability of the OPTIMUS 5.3 with a significant number of new functionalities and enhancements addressing major customer needs.

The new OPTIMUS 5.3 release provides a complete implementation of the Taguchi method and introduces the capability of composing nested workflows allowing for the simplification of complex engineering processes. This is complemented with a new execution management mechanism dedicated to high performance computing environments, a new algorithm for multi-objective optimization and several usability enhancements.

To frontload the engineering procedures and simultaneously incorporate the ability to take into account design and manufacturing related variability of material, operating conditions,

use and aging factors, OPTIMUS 5.3 provides a comprehensive and complete implementation of Taguchi method. "By adopting this technology, OPTIMUS 5.3 is capable to analyze highly sophisticated engineering problems and increase the robustness of a design significantly by tracking the optimum settings of design parameters, taking into account ambient noise variability" says Mr. Najj El Masri, Product Manager of Noesis solutions.

Noesis Solutions is a software provider for the Process Integration and Multi-disciplinary Design Optimization market, one of the fastest growing market segments in the mechanical design automation market. For more information, contact noesis solutions n.v., Interleuvenlaan 68, B-3001, Leuven, Belgium. Phone: +32 16 38 44 95; Fax : +32 16 38 45 05. Internet: www.noessolutions.com.

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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.

2008 July 27-30

NOISE-CON 08

The 2008 National Conference on Noise Control Engineering

The conference will be held at the Hyatt Regency Dearborn, Dearborn, Michigan. The 2008 Sound Quality Symposium will immediately follow the conference.
Contact: Institute of Noise Control Engineering, INCE/USA Business Office, 210 Marston, Iowa State University, Ames, IA 50011-2153.
Tel. +1 515 294 6142 • Fax: +1 515 294 3528
E-mail: IBO@inceusa.org
Internet: <http://www.inceusa.org>.

2008 October 26-29

INTER-NOISE 2008

The 2008 International Congress and Exposition on Noise Control Engineering

Shanghai, China
Contact: Institute of Acoustics, Chinese Academy of Sciences, 21 Beisihuanxilu Road, Haidian District, Beijing, P.R. China.
Tel: + 8610-62553765 • Fax: +8610-62553898
E-mail: internoise@mail.ioa.ac.cn
Internet: www.internoise2008.org

2009 August 23-26

INTER-NOISE 2009

The 2009 International Congress and Exposition on Noise Control Engineering

Ottawa, Canada
Contact: Institute of Noise Control Engineering-USA
Pam Reinig, Congress Coordinator
INCE Business Office
210 Marston, Iowa State University
Ames, IA 50011 USA
Tel: 515-294-0261, FAX: 515-294-3528
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Directory of Noise Control Services

Information on listings in the Directory of Noise Control Services is available from the INCE/USA Business Office, 210 Marston, Iowa State University, Ames, IA 50011-2153; +1 515 294 6142; Fax: +1 515 294 3528; IBO@inceusa.org. The price is USD 400 for 4 insertions.

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NOISE-CON 08

Hyatt Regency Dearborn • Dearborn, Michigan, USA
28-30 July, 2008

The equipment exposition, managed by Richard Peppin of Scantek, Inc., will offer displays of materials, instruments and services in the noise and vibration control field. An Expo reception and off-site social will also be included. Potential exhibitors are encouraged to contact Peppin for details, including costs and floor plan (PeppinR@AMSE.org).

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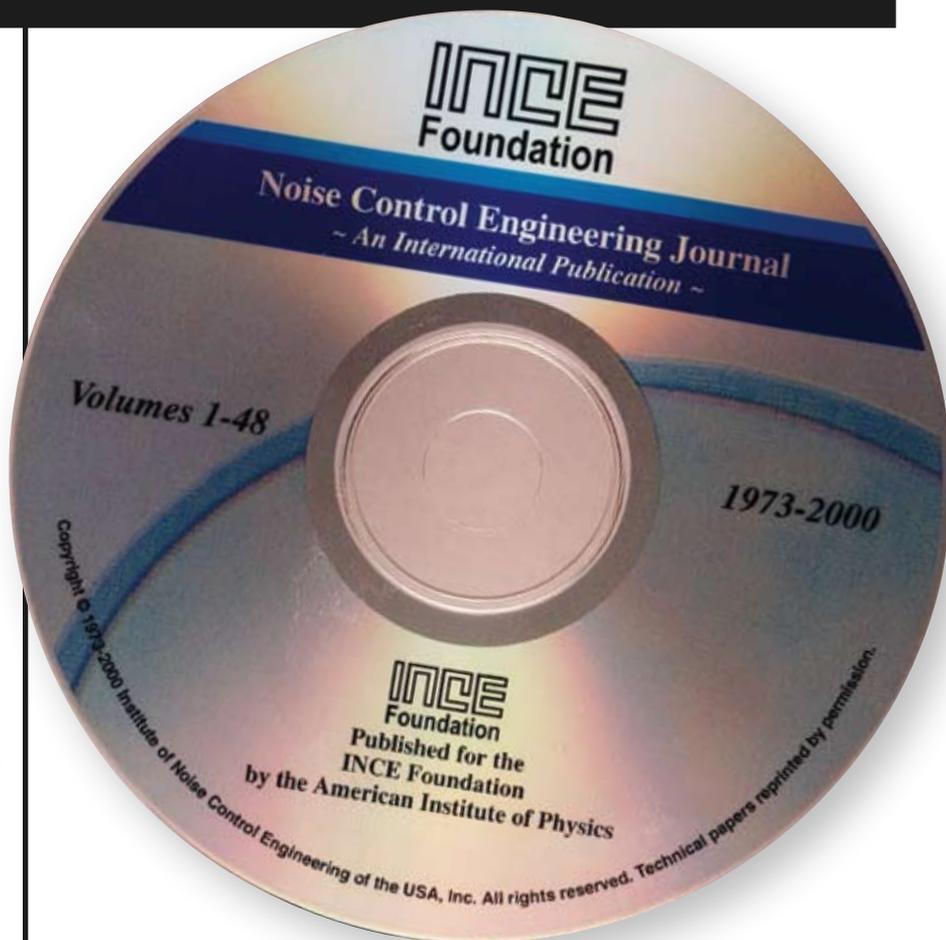
NCEJ CD: Volumes 1-48

1973-2000

In early 2005, the INCE Foundation proposed to the INCE/USA Board of Directors that a CD-ROM be created for the technical papers published in the back volumes of *Noise Control Engineering Journal (NCEJ)* from its launch in 1973 until 2000. This CD-ROM is now available in return for a gift to the Foundation of 100 or more U.S. dollars. The CD-ROM is searchable by any string of characters, and also contains three indices: the papers are indexed according to the INCE Classification of Subjects, by author, and by the papers in each issue. Links from these indices to the individual papers have been created, making retrieval easy. All papers are in PDF format. The papers from 1973 through 1992 have been scanned, and an OCR layer added; the later papers were originally created as PDF files.

INCE/USA is now publishing *NCEJ* on CD-ROM beginning with the 2001 issues. With the availability of this CD-ROM, all papers published in *Noise Control Engineering Journal* are available as PDF files.

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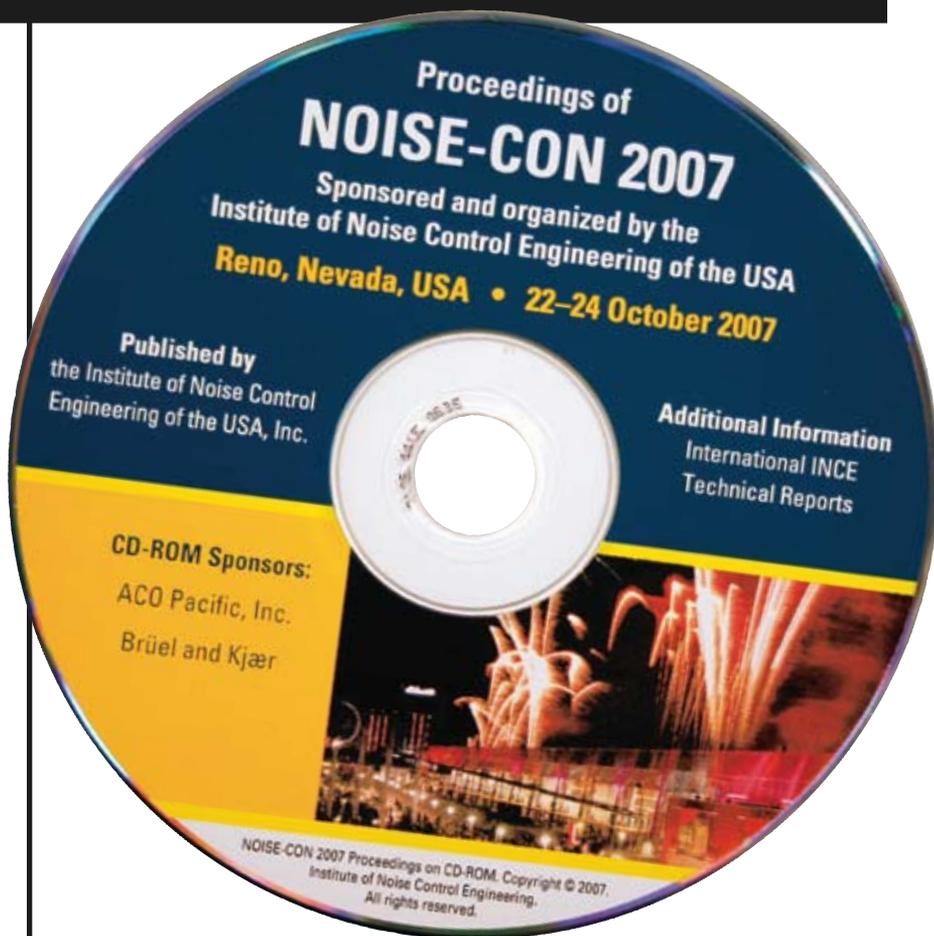
This searchable CD-ROM contains PDF files of the 188 papers presented at NOISE-CON 07, The 2007 National Conference and Exposition on Noise Control Engineering. NOISE-CON 07 was held in Reno, Nevada, USA on October 22-24, 2007. Also included on the CD are four reports published by the International Institute of Noise Control Engineering.

This CD-ROM supplements the NOISE-CON 05 CD-ROM which contains all of the papers published in NOISE-CON Proceedings beginning in 1996.

Below is a partial list of topics covered at NOISE-CON 07.

- Information technology equipment noise
- Tire/pavement interaction noise
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- Automotive noise
- Active control of noise
- Sound quality
- Noise from mining equipment
- Community noise
- Vibration damping for noise control
- Aircraft interior noise
- Noise control for schools
- Fan noise
- Noise from transit systems
- Sound insulation in buildings

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