



The American Society of  
Mechanical Engineers

345 East 47th Street, New York, NY



NON-PROFIT ORG.  
U.S. POSTAGE  
PAID  
American Society  
of  
Mechanical  
Engineers

84

## Noise Control and Acoustics Division Newsletter

Gary H. Koopmann, Editor

March 1991

### Incoming Chair's Remarks—

## NCAD Continues To Grow, Develop

by Bill Hanson

As we enter our eleventh year, the Noise Control and Acoustics Division continues to draw scientists and engineers together



Bill Hanson

to share their knowledge in the many areas the Division encompasses. Our goals have not changed significantly from those stated by our first chair, Dr. Dan Mote. We have accomplished much, grown significantly and gained the respect of other divisions and professional organizations. The structure of our technical committees, however, has changed substantially from the three initially formed. In fact, the Executive Committee recently met and again restructured the Technical Committees to reflect the interests and activities of our members. This evolution demonstrates the Division's willingness to accommodate its members and adjust to current trends.

Our activities at the Winter Annual Meeting (WAM) have increased significantly over the years and this event will continue to be the focus of our efforts for technological exchange and social interaction. Attendance at these meetings has been excellent, due (Continued to page 2)

## Bruel Gold Medal Given Posthumously

Lothar Cremer, Professor *Emeritus*, Technical University of Berlin, Germany, was posthumously awarded the Per Bruel Gold Medal for his monumental contributions to the science and practice of acoustics, particularly his seminal publications on structure-borne sound, room acoustics, and musical acoustics.

The Per Bruel Gold Medal for Noise Control and Acoustics, established in honor of Dr. Per Bruel who pioneered the development of highly sophisticated noise and vibration measuring and processing equipment, recognizes eminent achievement and extraordinary merit in the field of noise control and acoustics, including useful applications of the principles of noise control and acoustics to the art and science of mechanical engineering.

Dr. Cremer began his career in 1933 working in the Heinrich Hertz Institute in Berlin where he investigated the vibrations of wooden panels and floors in concert halls. In 1934 he became chief engineer at the Technical University of Berlin's (TUB) Institute of Mechanics where he researched structure-borne sound for 10 years. It was here that he published his in-



Lothar Cremer

vestigations about sound transmission through indefinite plates with regard to not only their inertia but also their stiffness against bending.

In 1945 Dr.

Cremer was licensed as an acoustical

consultant by the U.S. military and helped with the restoration of the *Residenztheater* and the *Herkuleshall* in Munich. He also developed a theory for impact-noise and its abatement and published *Geometrical Room Acoustics and Wave Theoretical Room Acoustics* in 1949 and 1950, respectively.

Dr. Cremer became full professor of acoustics at TUB in 1954 and was responsible for numerous publications in the field including *Statistical Roomacoustic* (1961), *Koeperschall* (1967), and *Physik der Geige* (1981). He was a consultant for concert halls as diverse as the Scharouns Philharmonic Hall in Berlin, the Garcia de Paredes Auditorio Nacional in Madrid, Spain, and the Apollohall in Nice, France.

He received a *Diplom Ingenieur* in 1930 and Dr. Ing. in 1933 in Electrical Engineering from TUB.

In 1971, Dr. Cremer was elected a member of the German Academy of Science and received *Das Bundesverdienstkreuz am Bande* in 1976. The Acoustical Society of America presented him the Wallace Clement Sabine Award (1973) and the ASA Gold Medal Award (1989).

Dr. Cremer died October 16, 1990.

### Feit to Give Rayleigh Lecture at WAM '91

We are pleased to announce that David Feit of Cambridge Acoustical Associates, Inc. of Cambridge, MA, will give the Rayleigh Lecture at WAM 1991 in Atlanta, Georgia. The subject of Dr. Feit's lecture is "Structural Acoustics from Lord Rayleigh to the Present."

### Hanson and Hsu Join Executive Committee

#### Bill Hanson - NCAD Chairman

Bill Hanson received his B.S. in mechanical engineering from the University of Hartford with specialization in Acoustics. His M.S. degree was from Worcester Polytechnic Institute in management science and engineering. He worked for several engineering and consulting firms in sound and vibration measurement and control, jet aircraft silencing facilities, industrial noise control, community noise measurements, and hearing conservation program development and enforcement. As Project Director - Research Operation, Liberty Mutual Research Center, his responsibilities include engineering support, prosthetics and rehabilitation device development, and acoustics research into sound and vibration affecting industrial workers. With Liberty Mutual's interest in worker compensation and safety and health issues, these activities include the measurement, evaluation, and control of industrial noise, hearing conservation, research and design of modifications for various industrial noise sources, and training. Recent work includes assessment of segmental vibration - exposure to industrial power tools and assessment of vibration isolation materials for control of hand/arm vibration. Future plans include assessment of whole-body vibration exposures in industry and transportation, its relation to low-back pain, and assessment and development of controls to reduce these exposures.

#### K.H. Hsu - WAM Program Chairman

K.H. Hsu received a B.S. from Taiwan Cheng Kung University, a M.E. degree from the University of Florida, and a Ph.D. in engineering mechanics from the University of Michigan, in 1970. He then joined the Research Center of Babcock & Wilcox Company in Alliance, OH. He currently is a Principal Engineer at the Babcock & Wilcox, Nuclear Equipment Division in Barberton, OH. Since 1975, Hsu has been a member of ASME. Hsu became involved with NCAD in 1985, when he proposed to organize a Symposium on Statistical Energy Analysis (SEA). Dr. Hsu and Dr. Donald Nefske of General Motors Research Laboratories successfully organized and conducted the SEA Symposium at the '87 WAM in Boston. In 1988, Hsu became the Chairman of the Analysis Techniques in Acoustics Technical Com-

mittee. Since 1988, the committee has actively sponsored technical sessions/symposia at the WAM. The committee sponsored an International Symposium on Numerical Methods in Acoustics at '89 WAM in San Francisco organized by Dr. Robert Bernhard of Purdue University and a Symposium on Vehicle Noise at WAM '90 in Dallas organized by Sue Sung of General Motors Research Laboratories. Aside from his involvement with the Noise Control and Acoustics Division, Hsu is also actively involved in the ASME Pressure Vessel and Piping (PVP) Division and is also a member of the Pressure Vessel Research Council (PVRC) of the Welding Research Council. He is currently the Chairman of the PVRC Committee on Bolted Flanged Connections.

#### Incoming Chair's Remarks—

*(Continued from page 1)*

to the wide variety of technical presentations, the Raleigh lecture with its distinguished speakers, forums on current topics, technical and general committee meetings, and finally, our Wine and Cheese social event. The Atlanta WAM '91 is progressing nicely. (see page 3) Symposia on Structural Acoustics, Hydroacoustic Facilities - Instrumentation and Experimental Techniques, and Flow Noise Modeling - Measurement and Control are scheduled, as well as a session on High-Intensity Noise and a forum on Current Problems in Turbo-Machinery. Combined with our Raleigh lecture, this is an exciting and full program. The theme for WAM '91 is "Transportation for the Twenty-First Century". Plans have begun already for the '92 session, "Simultaneous Engineering", in Anaheim, CA.

#### Industry/University Interaction

In 1985, we benefited from the guidance of Terry Dear, the first NCAD chairman from the industrial sector. I, too, represent industry and am determined to strike a balance between the needs of our academic and industrial members. Our meetings provide an opportunity to present both research results and practical mechanical engineering controls. We want to bring together members from both sectors in order to find ways to apply the theories developed at our universities and research organizations to real-world problems. What better *(Continued to page 8)*



NCAD Chair Walt Eversman presents a plaque to 1990 Raleigh Lecturer David Blackstock.

### Blackstock Presents 1990 Raleigh Lecture

ASME members attending the WAM 1990 meeting at Dallas had a treat in store for them when they attended the Raleigh Lecture. David Blackstock, a world expert on non-linear acoustics, traced the history of the subject in a lucid and highly entertaining lecture flavored with anecdotes about how the main leaps in understanding come about. The lecture was followed by the traditional wine and cheese reception for Blackstock where he was given a plaque in recognition for his contributions. The lecture will be published in the ASME Journal of Vibration and Acoustics.

### NCAD Hosts Annual Wine and Cheese Reception to Honor Awardees

Following the Raleigh Lecture, NCAD members and their friends gathered to socialize and recognize members for outstanding achievements. A 1990 Dedicated Service award was given to Alan Hersh for his outstanding efforts as NCAD program chairman over the past years. A Certificate of Recognition was given to Bob Bernhard for his leadership in organizing the NCAD's 1990 Symposium on Numerical Methods and Acoustics.

The NCAD thanks **Universal Silencers** and **Larson Davis Laboratories** for their generous support of our social fund.

### Warnaka Winds Up Chairmanship of Active Control Technical Committee

Glenn Warnaka has resigned as chairman of the active Control Technical Committee. Glen's contributions as an organizer of outstanding WAM paper sessions over the years has been much appreciated. Glen organized a very successful WAM '90 session on Active Noise and Vibration Control with C. Radcliffe and A. H. Von Flowtow. Many thanks, Glen.

# 1991 Winter Annual Meeting

## WAM '91 Structural Acoustics Symposium

A Symposium on Structural Acoustics is planned for the WAM '91. The Symposium is jointly sponsored by the NCAD Structural Acoustics Technical Committee and the Analysis Techniques in Acoustics Technical Committee.

The Symposium will present current research activities in all aspects of structural acoustics. Sessions are planned in the following topic areas: statistical energy analysis, wavenumber conversion in structures, sound radiation and scattering, experimental methods, numerical methods, composite structures, and adaptive structures. Papers are requested in these particular technical areas, as well as on other aspects of structural acoustics. The papers will be presented at the Symposium and will be published in a bound volume available at the meeting. In addition, papers may be submitted for publication in the *ASME Journal of Vibration and Acoustics*.

### Symposium Organizers:

Professor Richard F. Keltie

(See below)

Professor Andrew F. Seybert

Dept. of Mechanical Engineering

242 Anderson Hall

University of Kentucky

Lexington, KY 40506-0046 USA

(606) 257-2662

FAX (606) 257-3342

### NCAD WAM Program Chair

Dr. K.H. Hsu

Babcock & Wilcox

Nuclear Equipment Division

P.O. Box 271

Barberton, OH 44203

Tel: (216) 860-2653

FAX: (216) 860-1870

### Paper Review Editor

Dr. Richard Keltie

Dept. of Mech. and Aerospace Engrg.

North Carolina State University

P.O. Box 5246

Raleigh, NC 27650

Tel: (919) 737-3024

## Three Symposia and Technical Sessions Comprise WAM '91 Technical Program

The Noise Control and Acoustics Division (NCAD) is organizing three symposia and a number of technical sessions for the WAM 91 at the Atlanta Hilton and Towers, December 1-6, 1991. The WAM '91 theme is "Transportation for the 21st Century." Symposia topics are:

**Structural Acoustics**, sponsored by the Analysis Techniques and Structural Acoustics Committees (8 sessions)

**Hydroacoustics Facilities, Instrumentation and Experimental Techniques**, sponsored by the Flow Induced Vibration and Noise Committee (2 sessions)

**Flow Noise Modeling, Measurement and Control**, sponsored by the Flow Induced Vibration and Noise Committee (2 sessions)

In addition, the NCAD is sponsoring two sessions on "Forum on Current Problems in Turbomachinery" and two sessions on "High Intensity Noise". All NCAD technical sessions will be presented in the sixteen (16) time slots on Thursday (12/5/91) and Friday (12/6/91) allocated to NCAD. As always, we will have our traditional Wine and Cheese Party and the Rayleigh Lecture. (Dates/times to be announced at a later date.)

K.H. Hsu, Program Chair

### Annual WAM/NCAD Program Schedule

	Due Date	Action By
Draft manuscripts due to Keltie	03/01/(91)	Authors/Developers
Paper review	05/31/91	Keltie/Reviewers
List of sessions on 1337 forms to Hsu	05/31/91	Keltie/Developers
Final program 1337 Forms to ASME	06/05/91	Hsu
Final manuscripts on mats to Keltie	08/15/91	Authors
Final manuscripts on mats to ASME	08/31/91	Keltie

### Tentative NCAD/WAM '91 Program

NCAD Program	Session #	Date	Time
<i>Technical Committee Meetings</i>			
<i>Symposium on Structural Acoustics (Co-sponsor - AMD) (Keltie/Seybert/Kang)</i>			
Structural Acoustics I	NCA-1	Th	7:45-9:15 a.m.
Structural Acoustics II	NCA-2	Th	9:30-11:00 a.m.
Structural Acoustics III	AMD-5D	Th	11:15-12:45 p.m.
Structural Acoustics IV	AMD-6D	Th	2:00-3:30 p.m.
Structural Acoustics V	NCA-6A	Fr	7:45-9:15 a.m.
Structural Acoustics VI	NCA-7A	Fr	9:30-11:00 a.m.
Structural Acoustics VII	NCA-8A	Fr	11:15-12:45 p.m.
Structural Acoustics VIII	NCA-9A	Fri	2:00-3:30 p.m.
Structural Acoustics IX	NCA-10A	Fr	3:45-5:15 p.m.
Structural Acoustics X	TBD	TBD	
<i>Symp. on Hydroacoustic Facilities, Instrumentation and Exp. Tech. (Farabee/Arndt)</i>			
Hydroacoustics I	NCA-3A	Th	11:15-12:45 p.m.
Hydroacoustics II	NCA-4	Th	2:00-3:30 p.m.
Hydroacoustics III	TBD		
<i>Symp. on Flow Noise Modeling, Meas. and Control (Co-sponsor - FED) (Farabee/Keith)</i>			
Flow Noise I	NCA-6B	Fr	7:45-9:15 a.m.
Flow Noise II	NCA-7B	Fr	9:30-11:00 a.m.
Flow Noise III	FE-?	?	
Flow Noise IV	FE-?	?	
<i>High Intensity Noise (Reethof)</i>			
High Intensity Noise I	NCA-3B	Th	11:15-12:45 p.m.
High Intensity Noise II	NCA-8B	Fr	11:15-12:45 p.m.
<i>Forum on Current Problems in Turbomachinery (Swim)</i>			
Turbomachinery I	NCA-9B	Fr	2:00-3:30 p.m.
Turbomachinery II	NCA-10B	Fr	3:45-5:15 p.m.
<i>Rayleigh Lecture</i>	NCA-5	Th	3:45 -5:15 p.m.
<i>Wine &amp; Cheese Party</i>	—	Th	5:10-8:00 p.m.

# Technical Committees Plan Variety of

## Turbomachinery Noise

### 1990 WAM Program

The Committee sponsored a "Forum on Current Problems in Turbomachinery Noise" at the Dallas 1990 WAM. Organized and chaired by Robert Schlinker, the presentations covered noise generation due to distorted and turbulent fans. It generated discussion of the fundamental nature of noise generation in fan systems and highlighted the strong influence of flow anomalies, particularly at the fan inlet, on increased fan noise. We hope this discussion and exchange of ideas can be continued at the 1991 WAM in Atlanta.

### 1991 WAM Program

Two sessions are planned for the '91 WAM in Atlanta. A *Symposium on Fan and Blower Noise*, is being organized by Bob Schlinker of United Technologies (203-727-7242) and Niranjana Humbad of DEC (508-493-3508). Give either a call if you wish to present a paper on aspects of air mover noise — theoretical, experimental or application studies — for either axial or radial flow fans or blowers. Manuscripts need to be presented for review very quickly so the symposium papers can be preprinted by ASME.

The second session, a *Forum on Current Problems in Turbomachinery*, is being organized by Terry Wright, University of Alabama, Birmingham. Presentations on any aspect of turbomachinery noise — pumps, turbines, fans, compressors and blowers as well as system-turbomachine interaction — are solicited. These short presentations will not be published so no formal paper is required. The session organizer does need a 300 word abstract to aid in planning the program. Send your abstracts to Terry at the Department of Mechanical Engineering, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294, or call him at (205-934-8460) and by FAX at (205-934-8437).

### Future Programs

Ideas are needed for future technical programs on turbomachinery noise. The Committee is committed to advancing knowledge of noise generation and control in all types of turbomachinery, with

particular interest on industrial equipment — fans, pumps, compressors and turbines as well as fans used to cool motors or force gas through heat exchangers.

We discussed possible topics for WAM '92 and beyond:

- single-phase flow noise sources in turbomachinery,
- pumping machinery noise (co-sponsor - FED Fluid Machinery),
- experimental methods in turbomachinery noise studies,
- system effects on fan noise,
- wind turbine noise,
- noise problems of industrial type centrifugal compressors,
- electric motor noise — with emphasis on rapid transit motors,
- automotive cooling fan noise, and
- noise from centrifugal fans in HVAC applications.

If you have a suggestion for a session topic, please send it to the committee chair, Bill Swim, Box 5014, TTU, Cookeville, TN 38505, or program coordinator Terry Wright at UAB. If you are willing to organize a session, on a topic you propose or another one, we would be delighted to hear from you. Call Terry or Bill about your willingness and to get some programming guides and organizing tips.

### Expanding Participation

We need additional committee members and participants to expand our activities and increase our effectiveness. If you would like to become active in the committee, please contact Bill Swim or Bob Schlinker, membership coordinator. We will send you an information sheet and offer opportunities to participate in the work of the Committee. The next committee meeting will be during WAM '91, Wednesday morning, Dec. 4, at 9 a.m.. Prospective members and guests are welcome. Check the final program for the committee's meeting room.

Committee Officers:

#### Chairman:

William B. (Bill) Swim  
Department of Mech. Engrg., Box 5014  
Tennessee Technological University  
Cookeville, TN 38505  
(615) 372-3273 FAX (615) 372-6172

#### Vice Chairman & Program Coord.:

Terry Wright  
Department of Mech. Engrg.  
Univ. of Alabama, Birmingham  
University Station, Birmingham, AL  
35294

(205) 934-8460 FAX (205) 934-8437  
*Secretary/Treasurer:*

Thomas Calvert  
Code 2741, DTRC  
Annapolis, MD 21402  
(301) 267-2849 FAX (301) 267-2561

#### Membership:

Robert Schlinker  
United Technologies  
Aeroacoustics Group, M/S 17  
East Hartford, CT 06108  
(203) 727-7242 FAX (203) 727-7656

#### Liaison:

Albert George  
Dept. of Mech. and Aero. Engrg.  
208 Upson Hall  
Cornell University  
Ithaca, NY 14853  
(607) 255-6254 FAX (607) 254-4588

Bill Swim

## Flow Induced Noise and Vibration

Although this Committee did not sponsor technical sessions during the Dallas 1990 WAM, the committee was quite active. Nine committee members attended the annual committee meeting. I thank all those members who were able to attend and help chart the committee's activities for the next few years.

For WAM '91 in Atlanta, the committee is sponsoring two symposia. Drs. Roger Arndt and Theodore Farabee are chairing a symposium on Hydroacoustic Facilities, Instrumentation and Experimental Techniques which has attracted international participation. This symposium has three sessions and the papers will be available in an ASME bound volume. The second symposium is Flow Noise Modeling, Measurement, and Control, jointly sponsored with the Fluids Engineering Division. Dr. William Keith from FED and Theodore Farabee are chairs. The symposium has four sessions, also avail-

# Symposia and Programs for WAM '91

able in an ASME bound volume. The committee's appreciation goes to Drs. Arndt and Keith for helping organize what should be excellent symposia.

Future plans are to participate in the series of multi-divisional symposia on Flow Induced Vibration and Noise being organized by Dr. Paidoussis for WAM '92. The specific topics for the four sessions have not been determined but three candidate topics are: Two-Phase Flow Acoustics, Acoustics of Non-linear Dynamics, and Flow Induced Sources of Turbo-machinery Noise. Any suggestions about these topic areas are welcomed. For WAM '93 we have tentatively identified Cavitation Noise and Active Vibration and Noise Control as possible topics. Extending our planning to WAM '94, we discussed the possibility of a symposium in the area of Piping and Valve Noise.

The committee will again meet during WAM '91 and the committee meeting is open to all. If you have suggestions as to technical areas this committee should be sponsoring, I invite you to attend to discuss them or contact me at the address below. For further information about the committee's activities contact committee chair, Dr. Theodore M. Farabee, David Taylor Research Center, Code 1942, Bethesda, MD, 20084-5000, Phone (301) 227-1731, FAX (301) 227-4405.

*Theodore M. Farabee*

## 1992 WAM Call for Papers

ASME-NCAD is sponsoring technical sessions on all aspects of engineering acoustics at the 1992 WAM in Anaheim, CA. Papers are solicited in, but not limited to, the following areas:

- Active noise control
- Numerical & analytical methods
- Duct acoustics & silencers
- Instrumentation & data analysis
- Machinery noise & mechanical noise
- Flow induced noise & vibration
- Biomedical uses of acoustics
- Vibro-acoustic characterization of materials and structures
- Noise control and plant design

The purpose of these sessions is to exchange information on current research on

## Industrial Acoustics

The Committee on Industrial Acoustics met at the Winter Annual Meetings in Chicago, San Francisco, and again in Dallas to discuss member interests and determine the preferred focus of future technical sessions. The consensus was that *noise control* is the subject of greatest importance to this group. Specific topics considered most important were cost-effective applications, materials, and noise control as it relates to productivity.

The Technical Committee will meet again at the Atlanta WAM, Dec. 4. Please plan to attend. We are considering a forum on "Noise Control and Plant Design" for WAM '92, and will be discussing technical sessions for future meetings. We need more representation from the industrial sector and consultants whose clients are concerned with Industrial Noise Control.

*Bill Hanson*

## Instrumentation

The Instrumentation Technical Group of NCAD will have two paper sessions at the 1991 WAM:

1) Noise and Vibration Control and Measurements for Electronic Packaging - this will deal with issues confronting measurements in packaging: sensors, test

all mechanical engineering aspects of noise control and acoustics.

Prospective authors should submit three copies of an abstract (approximately 100 words) by January 15, 1992, to Dr. K.H. Hsu, Babcock & Wilcox, Nuclear Equipment Division, P.O. Box 271, Barberton, OH 44203, Tel: (216) 860-2653, FAX: (216) 860-1870. If accepted for review, four copies of the draft manuscript should be sent by March 1, 1992 to Dr. Richard Keltie, North Carolina State University, Dept. of Mechanical and Aerospace Engineering, P.O. Box 5246, Raleigh, NC 27650. Acceptance is based on review of the full-length paper.

*K.H. Hsu, WAM Program Chair*

rooms, in-situ tests, regulations, public concern.

2) Computers as Instruments - their role in acoustics and vibrations (can and should computers be used for analysis and measurement? What are the advantages and limitations and what is the difference, if any?)

*Richard Peppin*

**Let's Make WAM '91  
A BIG Success!**

## Future Winter Annual Meetings

December 1-6, 1991  
Atlanta Hilton & Towers  
Atlanta, GA

November 8-13, 1992  
Anaheim Hilton & Towers  
Anaheim, CA

November 28 - December 3, 1993  
New Orleans Hilton  
New Orleans, LA

November 13-18, 1994  
Hyatt Regency Chicago  
Chicago, IL

November 12-17, 1995  
San Francisco Hilton  
San Francisco, CA

November 17-22, 1996  
Atlanta Hilton & Towers  
Atlanta, GA

November 16-21, 1997  
Loews Anatole  
Dallas, TX

November 15-20, 1998  
Anaheim Hilton & Towers  
Anaheim, CA

## NCAD Related News

### Penn State Engineering Center Offers Acoustics and Vibration Focus

Gary H. Koopmann, professor of mechanical engineering and director of the Noise Control Laboratory, was appointed director of the Center for Acoustics and Vibration (CAV). Allan Pierce, Leonhard Professor in Acoustics, is the technical director.

CAV, established in 1986, is one of only three such centers in the United States and, among these, has the largest potential for research funding in acoustics, according to Koopmann. Re-organization of the interdisciplinary center includes the creation of eight affinity groups, focusing on crucial areas of acoustics and vibrations research.

The affinity groups bring together campus researchers and facilities to sharpen the focus of acoustics and vibration research at Penn State as well as foster collaborative efforts with scientists and engineers in industry and government and internationally with institutions such as the Institute of Sound and Vibration Research in England and the DLR in Germany.

Thirty eight faculty members and researchers from five engineering departments, three colleges and several interdisciplinary centers have joined the CAV. Areas of research falling under the CAV umbrella include pollution control, active noise and vibration control, designing with intelligent materials, and the diagnostics of materials using acoustic microscopy.

The CAV affinity research groups, listed with group leaders, are: active control - Jiri Tichy, professor of architectural engineering; aero/hydro acoustics - Gerald Lauchle, professor of acoustics and Applied Research laboratory senior scientist; materials evaluation - Bernhard Tittmann, Kunkle Professor in engineering; particulate and chemical acoustics - Gary Koopmann; propagation and radiation - Allan Pierce; smart materials - John Lamancusa, associate professor of mechanical engineering; structural acoustics - Courtney Burroughs, Applied Research Laboratory research associate; and, vibrations and machinery noise - Sabih Hayek, professor of engineering mechanics.

### 1991 SAE Noise and Vibration Conference

The Society of Automotive Engineers will hold their 1991 SAE Noise and Vibration Conference on May 14-16 at the Grand Traverse Resort Village in Traverse City, MI. This year's conference will be the fourth biennial noise and vibration conference SAE has conducted. Typical attendance has been 600 engineers, mostly from the automotive industry.

Per Bruel of Bruel and Kjaer will be the keynote speaker at this year's conference. The technical program will feature approximately 50 papers which have been organized into two parallel sessions. An extensive exhibit of noise and vibration instrumentation and control equipment is planned with approximately 30 exhibitors registered. Short courses on Basic Noise Control and other topics are planned just before and after the conference.

For more information, contact Patricia Couhig, Specialty Conference Administrator, SAE, Inc., 400 Commonwealth Drive, Warrendale, PA 15096, FAX (412) 776-0002.

Robert J. Bernhard

#### Notes About Members —

Professor **Richard Keltie** of North Carolina State has been appointed for a second three year term as associate editor for the *Journal of Vibrations and Acoustics* for NCAD activities, effective January 1991. The appointment was unanimously approved by ASME's Board on Communications at the '90 WAM. Professor Keltie has served one three year term. His unselfish service is greatly appreciated as well as his willingness to continue.

The Board also approved four new associate editors for the journal. Professor **Chris Fuller**, Virginia Tech, Professor **Dean Mook**, Virginia Tech, Professor **Hal Nelson**, Arizona State and Dr. **Jer-Nan Juang**, NASA Langley. The total number of associate editors is now 11. We have increased the number of associate editors with the hope of reducing the in-review time for the journal. *Daniel J. Inman*

#### Reminder ....

If you have any news about your company, agency, or university that relates to NCAD activities and want to share it in the NCAD Newsletter, please send it along to the editor.



*New V.P. — Environmental and Transportation Vice President Dan Mote passes the gavel to his successor, Terry Dear. Both Mote and Dear are NCAD members. NCAD falls under the Environmental and Transportation Section of ASME.*

### State Government Coordinators Sought

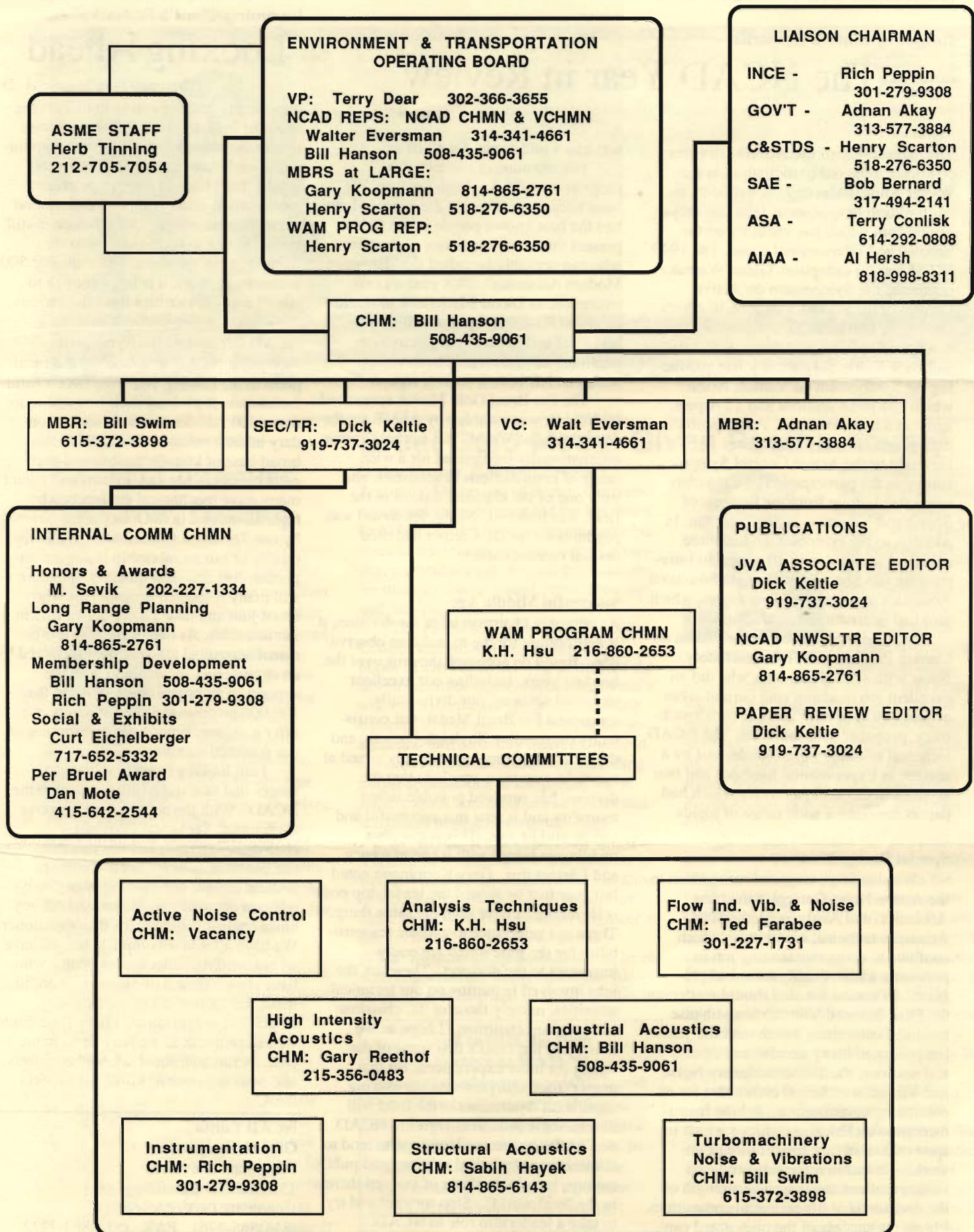
ASME is accepting applications for 1991/1992 State Government Coordinator positions. Coordinators serve as ASME's principal government relations contact with state legislators by providing technical input on legislation to legislators and staff.

Coordinators are often requested to participate on study committees, review and comment on pending bills, and meet with local officials. The position is open exclusively to retired and semi-retired ASME members and is especially suitable for those who are interested in energy, environment, science and technology, and profession-related issues.

To be effective, Coordinators must spend time at the state capital. Therefore, the applicant's proximity to the state capital is a major consideration.

The position receives a monthly stipend of \$200, a monthly expense allowance of \$100, and funded attendance at one yearly conference. Currently there are fourteen Coordinators and several Coordinators are being sought for assignment to begin July 1, 1991. The deadline for completed applications is **April 15, 1991**. For information and application forms, contact State Government Relations, American Society of Mechanical Engineers, 1925 K Street, NW, Suite 218, Washington, DC 20006, Attention: Coordinator Program, (202) 785-3756.

# NCAD ORGANIZATION 1990-91



Outgoing Chair's Remarks —

## The NCAD Year in Review

by Walt Eversman

The major event of the NCAD activities continues to be our participation in the Winter Annual Meeting. It has become our tradition to sponsor at least one major symposium which has visibility on the national and international scene. The 1990 WAM was no exception. Glenn Warnaka organized the Symposium on Active Control of Sound and Vibration in which there were two sessions with seven papers in a bound volume. Sue Sung, K.H. Hsu, and Dick Keltie did a great job in producing the Symposium on Vehicle Noise which had three sessions and 12 papers, again in a bound volume. Participation in both symposia was international. A highlight in the Active Control Symposium was the participation of the widely recognized group from the Institute of Sound and Vibration at Southampton. In addition to the symposia we had three excellent sessions with 10 papers in Intermediate and Short Wave Length Structural Acoustics organized by Tom Geers, which also had international participation.

Bill Swim organized a nice Forum on Current Problems in Turbomachinery Noise with several panelists who did an excellent job in identifying current areas of research in several areas of turbomachinery, propeller, and fan noise. The NCAD technical sessions were rounded out by a session in Experimental Methods and two sessions in General Acoustics which had papers covering a wide range of topics.

### Special Recognition

We should give special recognition to the Active Noise Control, Structural Acoustics, and Analysis Methods in Acoustics technical committees which continue to do an outstanding job in providing a high quality technical program. Of course we also should recognize the Flow Induced Vibrations and Noise technical committee which over the years has produced many excellent symposia and sessions, the Turbomachinery Noise and Vibration technical committee for its continuing contributions, and the Instrumentation technical committee which in spite of a relatively small cadre of co-workers in our division has produced some excellent sessions. The strength of the division is in its technical committees. I hope the success of the ones noted can

serve as a role model for all of us.

The capstone of our technical program was the Rayleigh Lecture. We have been fortunate over the years to have had the best known people in the field present this lecture in honor of the man who can arguably be called the "Father of Modern Acoustics". This year was no exception, as David Blackstock presented the 1990 Rayleigh Lecture and gave a historical and modern perspective on nonlinear acoustics, a difficult field in which he has been a leading figure.

The Per Bruel Gold Medal, sponsored by NCAD, was awarded by ASME for the second time at WAM '90. Lothar Cremer, internationally recognized for a wide range of contributions in acoustics, and truly one of the classical figures in the field, was honored. Sadly, the award was posthumous, as Dr. Cremer had died several months earlier.

### Successful Middle Age

As outgoing chairman of the division, it is appropriate for me to make an observation. Based on accomplishments over the last few years, including our excellent technical sessions, our divisionally sponsored Per Bruel Medal, our consistently outstanding Rayleigh Lecture, and the birth of a journal specifically aimed at our field, one must conclude that the division has survived possible infant mortality and is now in a successful and secure middle age. This is true, but middle age brings with it complacency, and I detect this. Gary Koopmann noted last year that he sensed the leadership pool is shrinking. I have seen the same thing. There is a reluctance to assume responsibility for the jobs which are really important to the division. These are the jobs involved in putting on our technical activities, namely those of TC chairman and program chairman. I hope as we move into the 1990's that some of the young (or more experienced, for that matter) hard chargers who are making significant reputations in the field will devote some of their energies to NCAD. I don't refer just to academics, who tend to dominate our technical sessions and publications, but also to those of you out there in the "real world". Step forward and try to take a leadership role in NCAD.

Incoming Chair's Remarks—

## Looking Ahead

(Continued from pages 1 & 2)

opportunity could we have to discuss the needs of industry and relay this information to the academic and research communities for future planning? It is for this reason that I hope to encourage greater participation at our technical and general committee meetings. Our Division is still small enough to be responsive to the interests of its members, yet with over 500 primary members, it is large enough to attract many authorities from the various branches of acoustics.

### NCAD Offers Unique Synergism

Increasing NCAD membership is a focal point in the coming year. We have a solid foundation of primary members and more than 1500 ASME members with secondary interest in our division. With this broad base of knowledgeable and energetic members, we can inform and attract many more mechanical engineers who have an interest in the many areas covered by our Technical Committees. While the quality of our membership is a more important criterion than quantity, there are still many respected acousticians who could join and take a more active role in our activities. As one of the few professional acoustical associations organized by an engineering society, and with the support of an organization of more than 100,000 professionals and students, we offer a unique, synergistic opportunity to our potential members.

I am looking forward to the challenges that face us to further develop the NCAD. With the help of the Executive Committee, Technical Committee chairmen, veterans, and our members, we can continue to tailor our activities to address current engineering issues, solve relevant acoustics problems, and convey noise control solutions for the practitioner. We have a lot to accomplish, but we have an outstanding collection of people who have shown their willingness to work to make this Division a dynamic and responsive organization. I have little doubt we can progress as we have done in the past, recruit additional talented engineers, and work together to fulfill our expectations.

### NCAD Editor:

Gary H. Koopmann  
Penn State University  
157 Hammond Building  
University Park, PA 16802  
(814)865-2761 FAX (814)863-7222