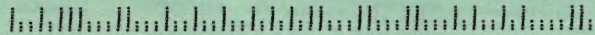
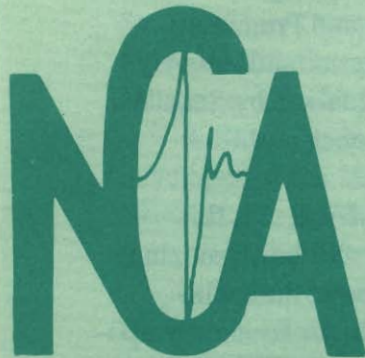




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## Noise Control and Acoustics Division Newsletter

Gary H. Koopmann, Editor

Fall 1996



P.J. Raju, Incoming Chair

## NCAD - Strong and Innovative

The Noise Control and Acoustics Division (NCAD) continues to be strong and innovative as broadly reflected in the breadth and depth of our technical programs, publications and activities. The success of NCAD lies in the commitment of our members. Through

(continued on pg 3)

# Allan Pierce Receives Per Bruel Gold Medal for Noise and Acoustics

ALLAN D. PIERCE, Ph.D., P.E., Chairman of the Department of Aerospace and Mechanical Engineering, Boston University, Boston, MA, was awarded the Per Bruel Gold Medal for Noise Control and Acoustics for significant contributions to acoustics research and education on the environment, and for professional leadership in acoustics.

Dr. Pierce's technical articles on noise control, sonic booms, sound propagation, and structural acoustics are among the most important ever published in the field. Written as far back as thirty years ago, the articles today are referenced in engineering curricula throughout the United States -- a testimony to Dr. Pierce's lasting contribution to the science of noise control and acoustics.

He attended New Mexico State University and Massachusetts Institute of Technology (MIT), receiving a Ph.D. from MIT in 1961. His first job was on the research staff of Rand Corporation, Santa Monica, CA. In 1963, Dr. Pierce joined Avco Corporation as a senior staff scientist,

(continued on pg 3)



# TECHNICAL COMMITTEE NEWS

The Flow-Induced Noise and Vibration Committee co-sponsored two symposia during the 1995 IMECE in San Francisco. R. Lueptow, W. Keith, and Ted Farabee organized a symposium on "Flow Noise Modeling, Measurement and Control" (NCA-Vol. 19, FED-Vol. 230) which was jointly sponsored with the Fluid Mechanics Committee of the Fluids Engineering Division. This was the third presentation of this symposium and attracted 13 papers covering flow excitation of structures, flow noise modeling and control, turbulent wall pressure field characterization, and the relationship of the TBL to the flow field. Rick Marboe, Bill Swim, and Niranjana Humbar organized a

symposium on "Turbo-machinery Noise" (NCA-Vol. 21), jointly sponsored with the Turbomachinery Noise and Vibration Committee of NCAD. It included nine papers devoted to the topics of flow structures and instabilities in axial and centrifugal fans, rotor-stator interactions, fluid-borne active control of pump noise, treatment liner impedance determination, and a technique for separating flow-induced and structural unsteady thrust response of a rotor. Both symposia were well attended and spawned several side conversations.

For IMECE 96, the Structural Acoustics Committee and the Flow-Induced Noise and Vibration Committee are

co-sponsoring a symposium on "Modeling and Predicting Vehicle Interior and Pass-By Noise," organized by Sean Wu, Daniel Raichel, and Rick Marboe.

For IMECE 97, this committee will be organizing two sessions in the multidivisional International Symposium on Flow-Induced Vibration and Noise led by Michael Paidoussis.

The technical committee meeting will be Wednesday, November 20 in Atlanta and is open to all. Suggestions for future symposia are welcome. Topics of particular interest to industry members are especially solicited.

## Preview of the 1996 IMECE

At the next ASME IMECE meeting to be held in November in Atlanta, the NCAD will sponsor a symposium on Vehicle Flow/Structure Noises. This symposium is focused on fluid/structure interaction noises that are of particular interest to the automotive industry.

The papers collected include modeling of noise spectra from axial flow engine cooling fans, fuel pump vibration and noise problems, modeling of vehicle-caused urban noise pollution problems, using composite materials for noise attenuation, space-time analysis of flow-induced vibration of a solid containing an embedded cylindrical shell, structural responses to turbulent wall-pressure fluctuations, direct measurement of turbulent boundary layer wall pressure, wave number-frequency spectra, and sound package materials in automobiles.

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## Future Congresses

November 16 - 21, 1997  
Wyndham Anatole  
Dallas, TX

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

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## NCAD EDITOR

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## Incoming Remarks

(cont'd from pg 1)

their dedicated efforts, the members of the executive committee and technical committees organized an outstanding program at the 1995 ASME IMECE. The program consisted of 19 well-attended sessions with over 70 technical presentations. We had an excellent student paper competition, and of course a very well attended Rayleigh Lecture followed by the wine and cheese reception. Outstanding contributions in the field of acoustics were recognized in the award of our division's Per Bruel Gold Medal during the ASME honors banquet. We are particularly proud of the 1995 recipient, Professor Allan Pierce, who is a very active member of our division and who is currently serving on the executive and technical committees.

The division is fortunate to have on the executive committee for 1996-97 Andy Seybert

as the Vice Chair, Mardi Hastings as Secretary/Treasurer, Gary Koopmann as Associate Editor of our journal and the editor of our newsletter, and Ted Farabee and Allan Pierce as members. A special note of thanks to Ted Farabee, the 1996 Program Chair, for his efforts in planning and organizing our division's Congress activities. Our thanks also to the Chairs of technical committees for their leadership in organizing different activities in the division this year.

One of the highlights of this year's program is a workshop on Materials for Noise and Vibration Control. The aim of the workshop is to bring together engineers and scientists from industry and academia to review the current state-of-the-art of materials for Noise and Vibration Control. The organizers of the workshop were able to attract excellent

scientists from industry and academia who were experts in this area to act as panelists and keynote speakers. This is yet another way to attract our colleagues from industries to become active in our division activities.

The division owes a debt of gratitude to the outgoing chair, Dr. Adan Akay. Adan provided outstanding leadership and services to NCAD in different capacities over several years.

We begin this year with a real sense of excitement and anticipation. We have numerous opportunities to capitalize on our existing strengths, and also develop new initiatives which would allow us to have a more effective interaction on issues related to noise control and acoustics. Please inform us on how we can better serve you —OUR MEMBERS.

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### *Pierce Receives Per Bruel (continued from pg 1)*

remaining with the Wilmington, MA, company for three years.

Allan Pierce left industry in 1966 to serve on the faculty of his alma mater, MIT. In 1973 Dr. Piece moved on to Georgia Institute of Technology, where he was professor of mechanical engineering and after three years, became Regents Professor.

Prestigious academic posts at other schools followed Georgia Tech. He was appointed the Leonard Chair in Mechanical Engineering at The Pennsylvania State University in 1988, and in 1993 became Chairman of the Department of Aerospace and Mechanical Engineering at Boston University, Dr. Pierce's present position.

Named an ASME Fellow in 1986, Dr. Pierce is involved in the Noise Control and Acoustics Division and since 1993 has served as chair of the Society's analysis techniques committee. He currently serves on the executive committee.

In addition to the Acoustical Society of America (ASA) and ASME, Dr. Pierce holds memberships in the Institute of Electrical and Electronics Engineers and the American Institute of Aeronautics. He is a registered professional engineer in Massachusetts.

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# 1996 IMECE PROGRAM

## Tuesday, November 19

NCA-1	Current & Future Appl. of Adv. — In Vibro I	9:30 a - 11:00 a
NCA-2	Current & Future Appl. of Adv. — In Vibro II	11:15 a - 12:45 p
NCA-3	Current & Future Appl. of Adv. — In Vibro III	2:00 p - 3:30 p
NCA-4	Friction Induced Vibration & Noise	3:45 p - 5:15 p
NCA-5	Active Control (Hendricks)	5:30 p - 7:00 p
	Executive Committee Meeting	7:00 p - 8:30 p

## Wednesday, November 20

NCA-6	Active Control (Naghshineh)	7:45 a - 9:15 a
NCA-7	Advanced Materials for Vibroacoustic Application I	9:30 a - 11:00 a
NCA-8	Advanced Materials for Vibroacoustic Application II	11:15 a - 12:45 p
	Technical Committee Meetings	12:45 p - 2:00 p
NCA-9A	Advanced Materials for Vibroacoustic Application III	2:00 p - 3:30 p
NCA-9B	Complexity in Acoustics I	2:00 p - 3:30 p
NCA-10	BS/MS Student Competition	3:45 p - 5:15 p
NCA-11	Complexity in Acoustics II	5:30 p - 7:00 p

## Thursday, November 21

NCA-12	Complexity in Acoustics III	7:45 a - 9:15 a
NCA-13	Complexity in Acoustics IV	9:30 a - 11:00 a
NCA-14	General Acoustics	11:15 a - 12:45 p
	General Committee Meeting	12:45 p - 2:00 p
NCA-15	Noise Sources in Internal Combustion Engines	2:00 p - 3:30 p
NCA-16	Rayleigh Lecture -- "Controlled Interference of Acoustic Fields," P.A. Nelson	3:45 p - 5:15 p
	Wine & Cheese Social	5:30 p - 7:00 p

## Friday, November 22

NCA-17A	Modeling & Predicting Vehicle Interior Noise	7:45 a - 9:15 a
NCA-17B	Sound Propagation in Ducts	7:45 a - 9:15 a
NCA-18A	Modeling & Predicting Vehicle Interior Noise	9:30 a - 11:00 a
NCA-18B	Sound Propagation in Ducts	11:15 a - 12:45 p
NCA-19	Turbomachinery Noise	2:00 p - 3:30 p
NCA-20	Forum Turbomachinery Noise	3:45 p - 5:15 p
NCA-21	Active Control (Hendricks)	5:30 p - 7:00 p

## Turbomachinery Noise and Vibration Committee Report

The Turbomachinery Noise and Vibration Committee, with sponsorship from the Flow-Induced Vibrations and Noise Committee, organized two sessions at the 1995 Congress in San Francisco. These sessions contained papers from a wide range of topics in turbomachinery noise including axial and centrifugal fan noise, rotor-stator interactions and fluid-borne active control of pump noise.

This year, the Turbomachinery Noise and Vibration Committee, with sponsorship from the Instrumentation and Signal Processing Committee, is organizing two sessions at the 1996 Congress in Atlanta. These sessions include papers on guide vanes for centrifugal fans, sound intensity of rotating sources, automotive blower rumble noise and presentations on current topics on turbomachinery noise.

The purpose of the turbomachinery noise committee is to promote discussion on issues related to the understanding and control of turbomachinery noise and vibrations. The committee is inviting papers for the 1998 Congress. Please contact Niranjana Humbad, Ford Motor Company, 15031 S. Commerce Drive, Dearborn, MI 48120 (phone 313-323-8243; or email: nhumbad@ford.com) for details.

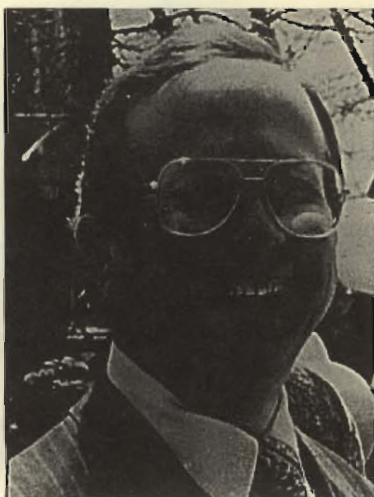
## 1996 IMECE Program Set

The Division's Program at the 1996 IMECE includes participation from nearly all eight Technical Committees. The Technical Committees will also participate in two Multi-Divisional Symposia/Workshops. In addition to the regular technical sessions, this year the Division is again sponsoring a BS/MS Student Paper Competition. Appreciation goes to Dr. Mardi Hastings for her efforts in making the Student Paper Competition happen. This year, we are quite fortunate to be able to have Dr. Philip A. Nelson provide the Rayleigh Lecture on the topic of "Controlled Interference of Acoustic Fields."

It was quite impressive to watch the Division's 1996 IMECE program go from initial concepts developed at the 1995 IMECE to the nearly final stage of forwarding mats to ASME for printing. Now, all that is left is for everyone to harvest the fruits of this hard work by attending the presentations and other Divisional activities in Atlanta.

It is time to begin planning for the Division's 1997 IMECE program. To help focus the Division's efforts, a theme title of "Noise Control in the Information Age" has been adopted for the 1997 IMECE. If there are any topics you think should be pursued by the Division, please convey them to one of the Technical Committee Chairs. *You* are the Society and *You* the Noise Control and Acoustics Division -- we need your proactive support in this planning process to enable the Society/Division to meet your needs better.

## Scarton Selected as Vice President of Environment and Transportation



*Henry A. Scarton, new VP of E & T, begins his term in June 1997*

Henry A. Scarton, founding member of the NCAD, was selected as the Vice President of the Environment and Transportation (E&T) Group with a three-year term beginning June, 1997. In 1979, Scarton served as the Secretary-Treasurer of the NCAD's predecessor, the Noise Control and Acoustics ASME National Group. Having served NCAD in a

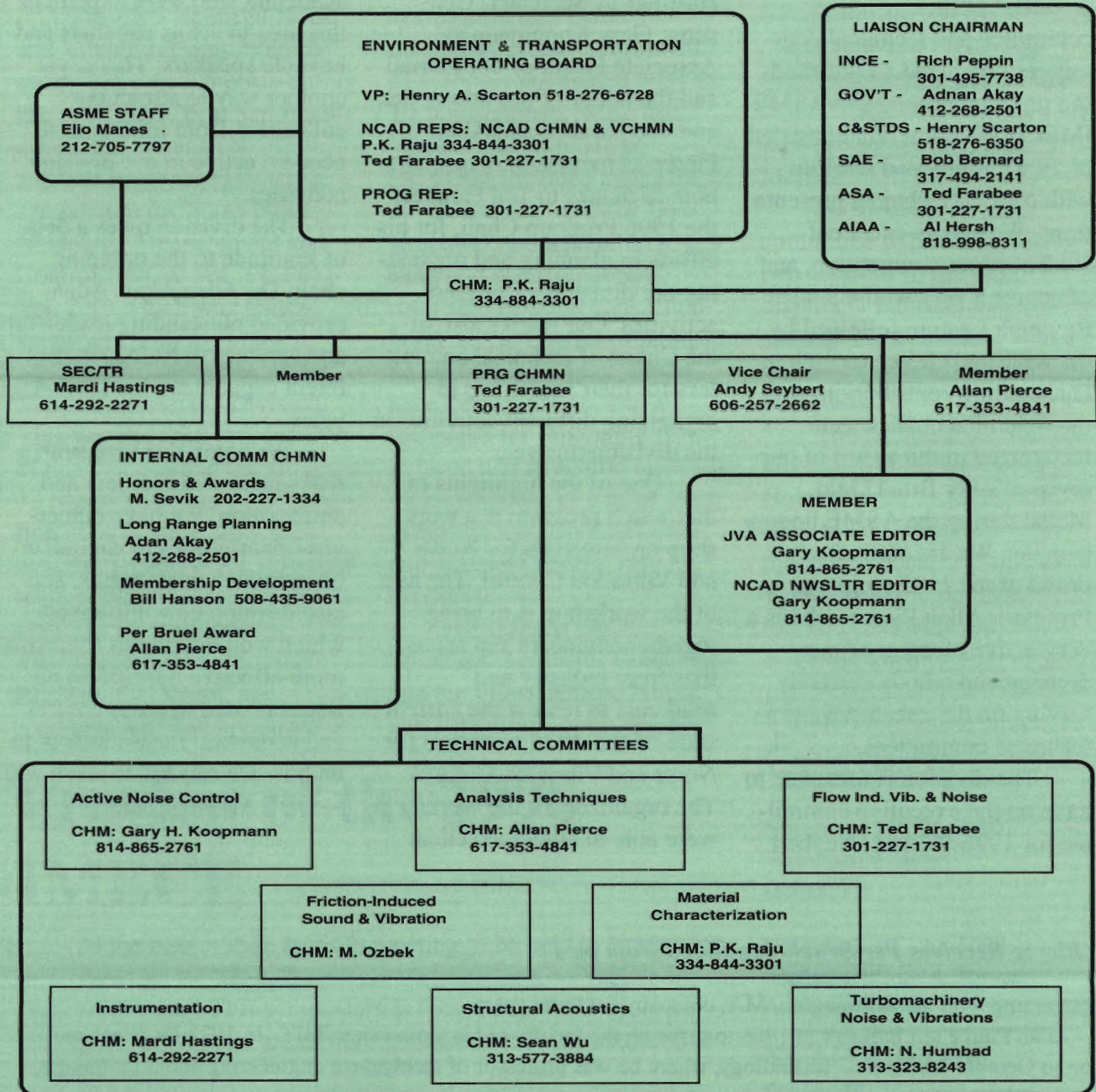
number of capacities including that of NCAD Chair in 1983-84, he continues to assist the group as the Codes and Standards Liaison. In helping to form the ASME NCAD, Scarton's idea was to establish a focus for activities in the generic area of acoustics and noise control.

Scarton hopes to continue the tradition of representing NCAD, along with the other four divisions of the E&T Group within the Council on Engineering (COE). Modern communication within and among the divisions, including encouraging the use of email and the creation of a web page for the group, will be one of the salient activities during his term. Sitting E&TVP Terry Hawthorne has appointed Henry to act as the ASMENET Liaison. He is looking for at least one volunteer from each division and hopes to have a sample home page in the near future. He welcomes your suggestions and your help as the various

home pages take shape, and may be contacted by either email (scarton@rpi.edu), phone (518-276-6728), or fax (518-276-2623).

Henry is currently an Associate Professor of Mechanical Engineering & Mechanics at Rensselaer Polytechnic Institute, Troy, NY, where he serves as the Director of the Laboratory for Noise & Vibration Control Research. A member of ASME for 27 years, he received his BS in ME from Bucknell University in '65; and his M.S. and Ph.D. from Carnegie-Mellon University, '66 and '70, respectively. He is a Member-at-Large of the ASME Council on Codes and Standards and serves on the Board on Metrication. He is also active in the ASTM Committee F8 on Sports Safety, and was a 1991 recipient of the ASME Dedicated Service Award.

**NCAD ORGANIZATION  
1996-97**



## Nelson to Give Rayleigh Lecture at '96 IMECE

Noise Control and Acoustics Division is pleased to announce that Philip A. Nelson will give the Rayleigh Lecture at the 1996 IMECE in Atlanta. The lecture, entitled "*Controlled Interference of Acoustic Fields*," will be presented on Thursday, November 21, 1996, beginning at 3:45 p.m.