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NARRAGANSETT CHAPTER

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Meeting/Seminar Announcement Invitation*
Tuesday Evening, 21 October 2008

Underwater Acoustic Sonar Development in Russia and Historical Perspectives

Dr. Boris Aronov, University of Massachusetts Dartmouth and BTech Acoustics, LLC

From the beginning of the intensive introduction of piezoelectric ceramics, underwater acoustics transducer development for active sonar proceeded largely in different ways arrays in Russia (formerly USSR) then in the United States of America (USA). The main sonar arrays in Russia are equipped with cylindrical transducers, whereas in the USA the implementation is most often made with the bar transducers of the classic "Tonpilz" design. The objective of this presentation is to discuss the reasons for such trends in the transducers development in Russia.

The history of competition of the Russian and American Fleets confirmed that both cylindrical and Tonpilz transducer based arrays were successful in meeting requirements for the arrays that arose from the necessity to accomplish different missions of the sonar systems. Therefore, this presentation will not focus on the comparison between these transducer types and their merits for application in arrays, but rather the underlying objectives and humane factors that shaped the tendency towards application of the cylindrical transducers which prevailed in Russia starting from the late 50's of the last century and continued for many years. The main cylindrical transducer designs and configurations of arrays populated by these transducers, the history of their development, and contributions to theory of the transducers made by the pioneering developers will be considered.

Boris Aronov is currently an Adjunct Professor of Electrical Engineering at the University of Massachusetts, and Chief Scientist at BTech Acoustics, LLC in Fall River Massachusetts. He was formerly Chief Scientist of Hydroacoustics at Morphyspribor (Marine Physical Equipment Center) the Soviet state-operated "company" of the Central Research Institute in Saint Petersburg Russia where he worked for more than fifty years. He is the author of the book *Electromechanical Piezoelectric Ceramic Transducers* (1990 in Russian; translated in 2008 in English) as well as many recent publications in the Journal of the Acoustical Society of America as well as previous works in the Soviet Journal of Physical Acoustics.

Location: Advanced Technology and Manufacturing Center
South Coast Research Park, University of Massachusetts Dartmouth
151 Martine Street, Fall River, MA 02723 (Junction Rt.24/195E) 508-910-9852

*co-sponsored by the Acoustical Society of America, the Electromechanics Seminar Series, and the Coastal Systems Technology Center, UMass Dartmouth.

Donations: $10 at Door; Students Free.
5:30 - 6:30 Social Hour, Appetizers, beverages
6:30 - 7:30 Presentation by Dr. Boris Aronov
(RSVP by 17 October 2008 to dbAcoustics@cox.net)

Afterwards: While there is no formal dinner planned for this meeting, those interested may gather for dinner at Lepage or Whites, two restaurants that are located nearby on Martine Street.

Open to the Public. All are welcome.

Interested in becoming a member?

The Acoustical Society of America – Narragansett Chapter

While the goal of the national chapter of the Acoustical Society of America is "to increase and diffuse the knowledge of acoustics and its practical applications". The Narragansett Chapter is chartered with promoting acoustic interests in Southern New England and building relationships and contacts for those practicing or interested in the field of Acoustics.

We are planning new speakers and seminars for the upcoming year and welcome the expansion of the chapter with the addition of new members, students, or suggestions for speakers and meeting venues. If you are interested in joining, or possibly making a seminar style presentation, or hosting a meeting at a new location contact one of our board members. For more information contact us or visit our website.

2008-2009 Officers and Affiliations

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Directions: http://www.atmc.umassd.edu/ (located adjoining 195 East and 24 South 151 Martine St.)

From Providence and points West: Take 195 West to Exit 8A 24 South.
Take first exit: BRAYTON AVE/EASTERN AVE (Exit 2)
Keep RIGHT. Merge onto EASTERN AVE/BRAYTON AVE proceed to first full intersection (second light)
Turn RIGHT onto US-6/MARTINE ST. ATMC is at 151 MARTINE STREET 0.2 mile on right.

From Boston and points north: Take Route 24 South. To Route 195 West / "Route 24 South-connector". **Take Exit** 8A **to** Continue on "24 South" towards TIVERTON R.I. / NEWPORT R.I. Take very first exit (Exit 2) BRAYTON AVE/EASTERN AVE and proceed as above.

From Newport (RI) and points South: Take Route 24 North toward I-195 / Fall River / Providence Take the Eastern Avenue Exit toward East Fall River / Westport (Exit 2). Follow directions above.

Mini-Open House: The ATMC is a state sponsored center that promotes technology innovation and interaction between business, industry, government, and academia. The center hosts several technology venture companies including a few involved in the area of acoustics (Ocean Server, a maker of Unmanned Underwater Vehicles, BTech Acoustics, a transducer developer and manufacturer, and Mikel Inc. underwater systems technology experts who recently moved to a building next door). The center also hosts a student intern and coop placement service for linking engineering and business students with employers. Tentative plans are underway to have a limited "open house" at the ATMC before the presentation where some of the research laboratories, model making shop, and a few companies will be open for stop-by tours before the scheduled presentation. Visitors will be free to wonder the corridors.

Open to the Public. All are welcome.