AES

AUDIO engineering society, Inc.
Pacific Northwest Section

1998 Summer Newsletter/Past Year Recap

A Word from the Chair

Rick Chinn, 1998-99 AES PNW Chair

Another year has passed, and David Scheirman has passed the AES virtual torch to me. The 1997-98 meeting year was memorable; there were many meetings on as many varied topics. David's experience on the Board of Governors was invaluable to this section. David's insight into how the AES functions on a national level is something that we folks out in the colonies have never had. For me, this will be a personal challenge to follow in his footsteps.

At our planning meeting in late August, we brainstormed about potential meeting topics as well as handling some procedural matters. There was no shortage of ideas nor people willing to organize them.

When Exactly is the Next Meeting??

Yes, it's a FAQ. We have long held that we will have meetings whenever it fits the schedule of the speaker, rather than on a certain day of each month. Therefore, you have to stay alert and read the mailings, Emailings, or check the website for the announcements.

In the past we've wrestled with the concept of allowing advertising in our newsletter. Once again, we could find no equitable way of determining what was appropriate and what was not. Thus, we will not accept commercial advertising in the newsletter, even if it is something that the membership might benefit from. We will accept non-profit third-party announcements.

One important function of your AES section is that of networking. We will set up a real bulletin board at future meetings that you may use to inform other section members of: employment opportunities, pre-owned equipment, coming events (for profit or not), and other items of interest to our membership.

Some of the meeting topics that may evolve into actual meetings are: an Evening with Thomas Dolby, a tour of the telephone museum, a tour of Benaroya hall, Russ Berger on studio acoustics, double-blind listening tests, a tour of the Mariner's new stadium, and several other topics that should prove worthy of your time. If you have a suggestion for a future meeting, please be sure to contact either myself or anyone on the Section Committee.

We hope to hold our first meeting in mid to late October, after the Convention. We hope to recap our experiences at the convention and to present an interesting meeting topic.

I hope to see you at our first meeting.
Rick Chinn, Chairman, PNW AES Section

What's New at PNW

The PNW Section officers and committee members met in August to meet one another, socialize, and brainstorm the upcoming year. Among the items discussed:

• Adopting a policy of only non-profit third party announcements considered for inclusion in our mailings. However, audio related job offerings can be from anyone. We realized that this policy would exclude popular profit seminars such as SynAudoCon.

•We agreed not to accept paid advertising on our mailings, due to big hassles.

•To accomodate for-profit announcements, for sale ads, jobs offered and sought, we propose bringing a physical bulletin board to each meeting for posting of this material. Attendees will be encouraged to meet there after the meeting to peruse and chat.

•Committee member Rick Smargiassi volunteered to be Section Webmaster as soon as he learns HTML.

•We will attempt to merge our databases of members and others to allow faster updating of our entire mailing list, some of which is local and some of which is generated by HQ. Non-members can be on our lists for 6 months before being delisted.

•Email notifications of our meetings will announce the meeting and refer to our website for the complete snnouncment.

---

http://www.aes.org/sections/pnw
Know it. Love it. Use it.

The full unabridged meeting reports and many photos are available at the PNW website.
We intend to keep the website up-to-date for the latest announcements and news.

INSIDE

Recaps of our 1997-98 Meetings

Bob Tudor of Mackie shows the 8•Bus. Rick Smargiassi photo

Mackie Digital 8 Bus Preview

The PNW Section gathered at Mackie Designs October 22, 1997, for a preview of its Digital 8 Bus mixer.

Greg Mackie opened the session by welcoming the 70+ attendees to the Mackie training studio located in the Mackie plant in Woodinville, Washington, a half hour outside of Seattle.

David Scheirman, Section chairman, raffled off some door prizes to attendees, then narrated slides of the most recent AES convention in New York.

Bob Dougherty, Chairman of the Seattle chapter of the Acoustical Society of America, addressed the session. He informed us about what ASA was about and told of us some upcoming joint AES and ASA meetings. They can be reached at <http://asa.aip.org>.

Keith Medley, Training Director at Mackie, introduced Bob Tudor, Software Director at Mackie Designs and chief programmer of the Digital 8 Bus.

Tudor presented the technical details and demonstrated a beta version of the Mackie Digital 8 Bus mixing console. It is based on a Pentium platform for which they wrote an entire new operating system. The console uses standard upgradeable and replaceable computer components such as the mouse, keyboard, CPU, memory, hard drive, and floppy drive. It also has a built in SVGA output for a computer video monitor. The console can be run with or without an external video monitor.

The console contains 25 DSPs which can handle one billion instructions per second at 32 bits. The eight main output busses can be dedicated to support Left, Center, Right, 5.1 and 7.1 configurations. 5.1 means 5 surround sound channels with a sub woofer output. 7.1 means 7 surround sound channels with a sub woofer output.

The console also features direct routing architecture so that it is not necessary to use a bus to assign a track to a specific tape out. Other features are 48 input channels, 16 internal effects returns, and 12 aux busses. It is intended to sell for less than $10k, and should be the first in a family of digital mixers.

After the main demonstration of the 8 Bus console some of the attendees went into the control room to see a demonstration of the Mackie HR824 powered monitor speakers and the HUI.

The HUI is a human interface unit for Digidesign recording systems. Finally, attendees enjoyed snacks (courtesy of Mackie) and sodas, and many of the attendees went on tours of the manufacturing facilities.

Report by Rick Smargiassi

PNW Section Visits RealNetworks - Audio and Video over the Internet

The PNW section met November 6, 1997 at RealNetworks (formerly Progressive Networks) in downtown Seattle. Over 40 attendees gathered in the 4th floor "rec room" (along with a pool table and ping-pong table) to hear about streaming audio and video over the Internet.

PNW committeeperson Aurika Hays of RealNetworks gave a brief introduction to what RealNetworks does - stream audio and video over the Internet. Then David and Aurika awarded door prizes courtesy of RealNetworks - coffee mugs and T shirts.

Steve Mack of RealNetworks. Gary Louie Vidcap

Scheirman introduced Steve Mack, manager of the RealNetworks Media Lab. Steve gave his insights on working in a fast moving field, and the technology behind streaming media.

RealNetworks began with their own codecs for streaming audio over the Internet. Audio codecs are now licensed from Dolby and Sipro Lab Telecom. RealAudio sounds much better with every upgrade and is now available in stereo. Regarding stereo, Steve thought that the product managers want to tout the stereo aspect, but the engineers would rather have the bits used for better mono. Video was introduced with RealVideo 4, and improved with RealVideo 5, the current release. The video capability is currently limited to animation-style material.

Steve claimed that for going over the Internet, RealNetworks technology is more robust than something like MPEG. Video takes most of the bandwidth of a stream, so audio gets less bandwidth then ever. Fortunately, the new low bitrate codecs are a marked improvement over previous codecs and make it sound better. Steve stated that a good voice codec is different than a good music codec, which can be a problem. Video+synched

audio is another problem. There is no standard for transmission such as SMPTE/NTSC over the Internet, so the technology must be invented.

RMA (Real Media Architecture) is their next important technology. It allows any number of different media types to be streamed over the Internet. Demonstrations were shown of streamed multiple media: MIDI soundtracks, video, and tickertape text at the same time. There was a real estate catalog demo with music, dynamic photos of houses and text; a Bloomberg news "talking head" with picture, sound and info tickertape; and dynamic car ads with zooming photos, music and text.

David Scheirman then introduced Mary Truscott of The Recording Academy, commonly known as NARAS (the Grammy folks). She gave a quick overview of the Academy, which recently opened a Seattle office. Scheirman noted that interaction between groups like the Recording Academy, the Acoustical Society, and student groups was a good thing.

Refreshments were then provided, courtesy of RealNetworks, and lastly, groups went on tours.

Report by Gary Louie

EASE and EARS Electroacoustic Modeling Software

A joint meeting of the PNW Section of the AES and the Seattle chapter of the Acoustical Society was held November 19, 1997 at Ivar's Salmon House in Seattle. The presentation was by Ron Sauro on the EASE electroacoustic modeling software. Mr. Sauro, of Tacoma, WA, is a consultant who has collaborated with the German developer of EASE, Dr. Wolfgang Ahnert.

Ron explained the gestation of EASE/EARS (Electro Acoustic Simulation for Engineers and Electronically Auralized Room Simulation) in the former East Germany by Dr. Wolfgang Ahnert. It is not a Windows program yet, but has a windowish interface. It started on a Sinclair, went to Amiga, and then to PCs. The Win 95 version is imminent.

Ron described EASE as an acoustic design program, not a systems design program like some other audio programs. It is intended as an acoustic research tool, but systems can be integrated into

Ron Sauro demos EASE. Rick Chinn vidcap

the modeling. Ease of use is perhaps not as important as getting the right acoustic answer.

Computer models of the acoustic space must be constructed, and model building to the "90 percentile" is needed for 90% accuracy in the acoustic predictions. It can be a chore to draw the model in EASE as in other CAD jobs - several days for an experienced operator, depending on the complexity. XYZ coordinates are used for the modeling. Some tools are better than common CAD programs, although you can import CAD data for use.

To model the acoustics, one assigns acoustic material characteristics to surfaces. Data is available for a wide variety of materials, as well as varied sound sources such as human voices and lathes and all major speakers.

In sound system design, marketing specifications are often slightly at odds with real world performance. EASE gives real specs in situ.

EARS is Electronically Auralized Room Simulation, generally referred to as auralization. It takes into account human response factors with a room acoustic model. It can put your ears anywhere in a model room. Ron handed out 6 headphones to demonstrate. An anechoic recording used on an EASE model of the Berlin Philharmonic hall was compared to a real recording with a dummy head. There was some high frequency loss in the simulation, which Ron felt was the PC soundcard, but the simulation was very close.

Software with this capability is obviously a powerful sales tool as well as an engineering tool. Ron played an example of a problematic church sound mixing position, with obvious severe acoustic problems heard in the model. He convinced a church committee to change the position before construction. The architect wasn't convinced - until post construction proved him wrong.

The program is only at the alpha development stage for Windows, but is expected to cost approximately $4500 with EARS when it becomes available.

Report by Gary Louie

Large Array Subwoofer Listening Workshop

On January 20, 1998 over 85 members and guests of the AES Pacific Northwest Section (PNW) and the Washington Association of Production Services (WAPS) converged on the Paramount Theatre in Seattle for a Large Array Subwoofer Listening Workshop. It was an evening of listening, walking, questioning and feeling three industrial-strength subwoofer arrays.

WAPS President and AES Committee member Dan Mortensen organized the event. The goal was to listen to an array of each manufacturer's product in a size that might be representative of a small arena system. The overall mouth area of the arrays was limited to 50 square feet each. In the

end, three manufacturers were present: Aura Systems, Bag End, and McCauley Sound. Aura provided their Seismic Series RS 8.1 with 8 Aura 1808 drivers; Bag End sent their Quartz system with 16 EL-18A drivers and McCauley came with their Eagle-8 system with 12 model 6174-8 drivers. Each manufacturer sent members of their technical staffs: Barry Bozeman and Ted Leamy (of Electrotec) for Aura Systems, Henry Heine for Bag End, and Tom McCauley and Bruce Anderson for McCauley.

Testing consisted of voicing, level balancing,

Yikes! Acres of Subwoofers! Rick Smargiassi photo

and frequency response measurements using both swept-sine on an Audio Precision and TEF measurements. Finally, an AudioControl Industrial IASYS analyzer provided power compression data. All of this information was compiled and duplicated for each attendee. In addition to the IASYS, AudioControl Industrial provided six SPL meters and placed them on stands located throughout the auditorium, giving attendees continuous unweighted SPL readings from a variety of locations. The "official" SPL reference microphone was positioned on the face of the balcony (a large boundary zone), and connected to a very bright and large LED display which was located center stage and visible throughout the theater. McCauley also provided lunch pizzas for the set-up crews.

Of course, the evening was the fun part. Each manufacturer spoke for 15 minutes about their system, then played 10 minutes of their favorite demo material. Before intermission and refreshments, PNW Chair David Scheirman and Dan Mortensen held the random drawing for door prizes donated by Aura Systems - 10 Aura Interactor Cushions. This device connects to one's computer game and you sit on it for a visceral experience while playing.

The remainder of the evening consisted of ABC system comparisons. There was no shortage of program material: pink noise, sweeps, bass guitar, kick drums, synthesizer parts, and music. Musical selections ranged from Toccata & Fugue in D-minor to Bassgasm to Jennifer Warnes. A train wreck from the movie, The Fugitive, provided an interesting source of low-frequency energy.

This was not a contest; it was a listening workshop. Attendees were given extensive instructions on the test methodology and evaluation techniques. Everyone left with their own impressions. On much of the program material, the three systems sounded quite similar. Each of the systems sounded best on different program material. Their strengths were brought out at one part of the evening or another. The three systems represented very unique and individual engineering approaches to the problems of high-level low-frequency sound reproduction. In spite of these differences, all performed very well; never to the detriment of the others.

The AES PNW Section and WAPS would like to thank Aura, Bag End and McCauley for their participation; AudioControl Industrial, Armstrong/Boyce Marketing, Carlson Audio, Dansound, First Choice Marketing, Mackie Designs, Morgan Sound, Paradise Cases and Pro Sound, Rick Fisher/RFI Mastering, Uneeda Audio, and the Paramount Theatre and its staff Allan Bagley and David Allen.

Nobody left for the lack of bass.

Report by Rick Chinn

Tour of Carlson Audio

On February 16, 1998, over 44 people gathered at the facilities of Seattle touring sound company Carlson Audio for a...tour. Section Chair David Scheirman opened the meeting by having everyone introduce themselves. Audio students were encouraged to come and many were there.

Mark Carlson introduced his company, started some 8 years ago with Jonathan Stoverud-Myers. They began with shows up to 3,000 seats, and were headquartered in Everett, WA, north of Seattle. Today they handle shows up to the 30,000 seat arenas, and growth made them seek larger facilities in Seattle proper. They call themselves

Carlson Audio's Mark Carlson. Rick Smargiassi photo

the largest regional sound company today.

Mark described how his company packages systems and operators. He attributes his success to customer service - the customer is king, he says. He said that the company is thinking about branching out into sound system installation and consulting. In answer to a question about how he hires people, Mark said that he looks for a person who is very interested in learning the business.

Dave Stevens then took the group down to the equipment area. Dave described his co-workers Mark as the gentle-touch-customer-oriented part of the business, Jonathan as the accounts person, and himself as the rock musician liaison.

The equipment is tracked with a computerized inventory system called Hiretrack. Dave demonstrated part of the setup being prepared for his tour with Everclear. Large QSC Powerlight amps and BSS Omnidrive controllers were controlled through a Lucent Technologies wireless ethernet system for the "Qs Control" control system. A PC ran sound functions and a Mac Powerbook ran MIDI show control.

The group was led through the equipment storage areas and loading docks, then adjourned to the offices for refreshments and chat.

Report by Gary Louie

PNW's 20th Anniversary

The PNW Section gathered at the Art Institute of Seattle on March 9, 1998, for a special celebration and a look toward the future. 50 people attended a special observation of the PNW Section's 20th anniversary and to hear Roy Pritts, AES Western Region Vice President and AES Education Committee Chair.

Section chair David Scheirman opened the meeting by thanking the hosts - the Art Institute Audio Club and their advisors Tom Dyer and Rich Hinklin. After introductions all around, David introduced Roy Pritts, who played the AES video, "AES Goes Gold." This production, specially prepared for the AES Convention 50th anniversary, highlights the 50 years of audio and the AES, and the special AES pioneers involved.

Next, Roy fired up his laptop and presented the role of the AES Education Committee that he chairs. He pointed out that the AES is unique: unlike other professional organizations, it is worldwide. Roy covered the Education activities at AES conventions and conferences, student sections and the student delegate assembly. He described the AES in the Schools program, with a nicely produced counselor's guidebook and video, and showed the AES Educational Program Directory. All attendees received a copy of the directory.

The slides included pictures of new AES sections around the world. There are now 101 AES Sections, 42 of which are student sections. For the future, Roy described how we need educatable and flexible minds to groom for future audio engineering careers, as well as strong local ties

PNW past chairs and officers with cake (l-r) David Christian, Dan Mortensen, Rick Smargiassi, Roger Ponto, Herb Chaudierre, Dan Kingsbury, Rick Chinn, Van Browne (obscured), Lew Barrett (with cake), Tom Stiles, David Scheirman, Terry Denbrook, Gary Louie and Western Region VP Roy Pritts. Photo/Ron Hyder

between student and professional sections, mentorship/internship programs, and AES in the Schools. Roy then showed the AES Careers in Audio videotape.

A special part of the evening was to honor the 20th anniversary of the PNW Section. Past Chairmen and special officers were honored with AES Certificates of Appreciation. Honored were:
Terry Denbrook, founding chair in 1977 and Treasurer Emeritus;
David Christian, Secretary Emeritus;
Roger Ponto, Chair 1978-80;
Herb Chaudierre, Chair 1980-81;
Dave Moore, Chair 1981-82;
Lew Barrett, Chair 1982-84 and 89-90;
Dan Kingsbury, Chair 1984-86;
Gary Louie, Chair 1986-88 and 90-91;
Rick Chinn, Chair 1988-89;
Tom Stiles, Chair 1991-92 and 94-95;
Al Swanson, Chair 1992-393;
Van Browne, Chair 1993-94;
Rick Smargiassi, Chair 1995-6;
Dan Mortensen, Chair 1996-97.

David Scheirman announced the PNW Section's Audio Mentoring Program (AMP), where seasoned audio professionals would mentor local students. Then the drawing for the door prizes was held, with Terry Denbrook winning a shoulder tote bag and Ryan Smith winning an ATM Flyware rigging handbook. Finally, a Martinelli's toast and cake cutting was held for the honorees.

Report by Gary Louie

Evolution of Modular Sound Reinforcement Systems for Touring Use

The PNW Section met at Seattle's Moore Theater on April 20, 1998 to discuss the history of modular touring sound systems, including a unique demonstration of the current state of the art.

Section Chair David Scheirman began with a drawing for a free EVI polo shirt, won by Nick Dyakanoff. He than passed around the wireless mic for the audience of approximately 50 to each briefly introduce themselves.

Scheirman, of JBL Professional, gave out handouts of reprints of his 1984 article from Recording Engineer/Producer magazine, "Recent Developments in Concert Sound System Design and Operation" as well as text on touring systems from material presented at the 1998 Live Sound Workshop. David then showed slides of various arrays through the years and described them.

Local EVI rep Jim Loppnow introduced EVI VP Charlie Winkler and EVI Engineer Fred Brecht. They showed a video presentation on their EVI X-Array system, and Fred continued with a computer slide presentation on this system.

Finally, Claire Massey of the band, "Claire," sang three songs through this system, backed by a digital multitrack recording of her band.

Report by Gary Louie

Claire Massey sings through EVI system. Rick Smargiassi photo

New Surround Sound Technology in a New Student Audio Production Facility

The PNW Section met May 20, 1998 in the recently completed Bellevue High School Radio/TV production facilities. More than 45 attendees came to see the facility and hear about a new surround sound encoding technique from SAIL (Seattle Audio Imaging Lab).

Section Chair David Scheirman opened the meeting and had everyone briefly introduce themselves. Committeeman Barry James introduced architects George Hallowell and Brenda Ross, acoustician Michael Yantis, and Bellevue High faculty member Juris Jansons. Mr. Jansons described how the former woodshop area was declared a seismic hazard and its subsequent remodelling and conversion into a facility for technology programs: computer labs and the radio/TV production program. The architects and acoustician described the design aspects of the

construction such as NC ratings, mechanical isolation, sound panels and teaching/security concerns. A big challenge was designing for constant equipment changes.

Mr. Jansons introduced high school students Scott Champion and Dustin Maclean, who described their experiences in the radio/TV program.

During the refreshment break, attendees toured the facility. It was very extensive for a high school, with much equipment donated.

The second half of the meeting was a demonstration of a new surround sound encoding technique from Seattle Audio Imaging Labs (SAIL). Bob Reams worked on the system for SAIL, and described how Dolby Pro Logic has become relatively widespread in the consumer market. One big problem though, is compatibility of surround encoded material with stereo playback - the image ususally collapses. Producers must have perfect stereo imaging and will be unlikely to use any surround encoding that destroys that mix. The SAIL process allows excellent compatibility with stereo and Pro-Logic playback. It doesn't encode mono, ORTF or spaced omni (chaotic) type material. Attendees received a CD of the latest YES album encoded in the SAIL process, and could audition material for the remainder of the evening on a 5.1 channel Pro Logic system set up by the Section.

Report by Gary Louie

Bob Reams speaks about SAIL surround at Bellevue HS. Rick Smargiassi photo

Loudspeaker Line Arrays

On May 27, 1998 a joint meeting of the Acoustical Society of America/AES PNW was held at Andy's Diner south of downtown Seattle.

Todd Welti, Audio Systems Designer with Michael Yantis and Associates, gave a presentation on Loudspeaker Line Arrays. The audience of approximately 20 people included committee members from both organizations, industry representatives as well as newcomers interested in the fields of audio and acoustics.

Welti's presentation centered around the line array system upgrade Michael Yantis and Associates had recently finished at St. Marks Cathedral in Seattle. During the course of his presentation, Welty reviewed and explained several topics such

as: unequally or logarithmically spaced line arrays, antenna arrays, shading/filtering techniques, and beam steering. Layouts for simple, curved, tapered, compound and barber pole line arrays were also examined and discussed.

The presentation concluded with the discussion of the positive results obtained by this system at St. Marks Cathedral.

Report by Raul Gonzalez, PNW Committee

An Evening of Sanctuary Acoustics and Sound Reinforcement for Houses of Worship
And PNW Section Annual Business Meeting

38 persons gathered June 2 in the sanctuary of the First Presbyterian Church of Bellevue. The meeting attendees included a sizeable contingent of volunteer sound system operators from this active house of worship, under the direction of Mr. Wayne Hammen. Attendees learned about the church's sound system requirements and the design and installation process for the sanctuary sound system.

Scott Dean, Director of Music, began the program with an explanation of the sanctuary's design elements and the part they played in development of the building acoustics. He pointed out considerations that affect the congregation's worship experience, including placement of the organ chamber, the positioning of the choir and liturgical accessories, and noise sources such as air-handling equipment and pipe organ blower.

Ron Hyder, technical liaison for the church during the construction phase, pointed out some of the audio system needs for the facility. He noted that some compromises are required when juggling the needs of budget, acoustics, architectural design and audio system performance.

The sound system was installed by CCI (Capital Communications, Inc., Olympia, WA). CCI's Ron Simonson was on hand to explain his firm's central-cluster design approach, which included White Instruments' DSP signal processing and large-format midrange horns for improved pattern control (fitted with JBL 2490H midrange 4" diaphragm compression drivers). CCI's experience with sound systems for sports venues, churches and theatres that stress vocal intelligibility resulted in an installation that met the church's requirements and budget.

A playback demonstration was made of digital audio tape (DAT) recordings of the church's pipe organ made in the sanctuary. These were compared to the "real thing", as demonstrated by the Director of Music. The organ used is a 64-rank unit from Casavant Freres in Quebec, featuring 4 voice groups, 46 stops and 3,556 pipes. To enable meeting attendees to fully experience the sanctuary acoustics and the sound system's place in supporting music for worship services in the building, attendees were also treated to a live performance by the 12-piece vocal praise group "Martuero," accompanied by piano and drums. Drummer for the evening was the AES PNW Section's own Rick Smargiassi.

A tour of the pipe organ chambers, mixing console location, and equipment rack room completed the program. The church's volunteer sound system crew made connections with several AES members willing to offer advice regarding operations techniques. The evening's door prize was a VHS-format copy of the instructional videotape, "Live Sound for Houses of Worship", donated by Sound Concept.

Business Meeting & Election

The PNW section's annual business meeting included Chairman's, Secretary's, and Treasurer's reports and the election of new Committee Officers.

17 voting members, combined with mailed ballots, were involved in the election process. Votes were tabulated by Dan Mortensen and Raul Gonzalez, current Committee Members who were not involved in the current election process.

The results are as follows:

Chair - Mr. Rick Chinn; Vice Chair - Ms. Aurika Hays; Secretary - Mr. Gary Louie; Treasurer - Mr. Allen Goldstein

New Committee members:

Mr. Vince Dayton; Ms. Sam Fontaine; Mr. Bob Moses; Mr. David Scheirman

Continuing Committee:

Mr. Terry Denbrook; Mr. Raul Gonzalez; Mr. Dan Mortensen; Mr. Rick Smargiassi (will complete 2nd year of Hays' 2-year term)

Report by David Scheirman

View of the sanctuary from the balcony showing the organ, choir loft, altar, and attendees at First Presbyterian. Rick Chinn photo