THORBURN ASSOCIATES
ACOUSTIC AND AUDIOVISUAL CONSULTANTS

eNEWSLETTER February 2004

In this issue:

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1. Greetings

It is the start of the tradeshow and conference season. We will be out learning about new products and technologies to make our services better. We will also be leading sessions that help raise the bar for our industries. This is where we come up with the topics for our newsletters. Let us know what you think; our goal with the eNewsletter is to provide useful information in a timely manner and readable format!

As always if you have an idea, question, suggestion please drop us a note at TA@TA-Inc.com for general information or eNews@TA-Inc.com for specific comments about our eNewsletter.

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2. ICIA's Winter Institute 2004 -- Memphis IPD was a success

For the second year in a row ICIA held their Winter Institute for Professional Development (IPD), in Memphis, Tennessee. The intensive hands-on training classes for AV professionals have been an industry tradition for more than 35 years. The classes are led by working audiovisual experts, allowing participants to ask questions and explore new concepts while building professional skills. In addition to the training, participants networked with others during meals, at the opening reception and while visiting the sites of Memphis. We overheard that trips to Graceland, Beale Street and the Civil Rights Museum were on the list of extracurricular activities. The three classes that were ultimately offered included:

- Project Management for the AV Industry -- Instructor: Steve Thorburn, PE, CTS-D, CTS-I. and Lisa Thorburn, CTS.
- Streaming -- Instructor: Scott Sharer, CTS.
- All About Audio -- Instructor: Gordon Moore, CTS.

Steve and Lisa Thorburn developed the IPD course "Project Management for the AV Industry" as an introduction to project management designed specifically for AV professionals. Over the last three years it has become one of the most popular IPD courses. Comments from the participants included: "Steve and Lisa spent a lot of time in research and it really showed." -- "There was plenty of information that provided many tools for the tool kit." – "They've reinforced my confidence as a project manager."

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3. Noise Criteria (NC) vs. Room Criteria (RC)

Quite often we are asked why does Thorburn Associates Inc. use Noise Criteria (NC) as opposed to Room Criteria (RC) during our mechanical system noise calculations. Both NC and RC are measures of mechanical system noise in a room. Noise Criteria curves were defined in 1957, by Leo Beranek of the Boston based Acoustical Consulting

firm of BBN. Room Criteria curves were first proposed by Warren Blazier for the American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) in 1981.
Both sets of Criteria plot the noise level measured in a room against a set of curves across the different standard octave bands that are used in our acoustical work. For Noise Criteria we plot the octave band sound pressure levels in 8 bands and then select the highest curve that is crossed to come up with a single number to report. The Noise Criteria curve very closely resembles equal loudness curves that correspond to our sensitivity to higher frequency tones and our lack of sensitivity to lower frequency tones.

For Room Criteria we plot the sound pressure levels in the same 8 bands, and we also look at the curve, but now we must add a subjective decision to the curve to report the level. The RC curve is a straight line with a slope of 5 decibels per octave (in English, it does not correspond to how we hear).

So the short answer to the original question is – we use NC whenever we can because it does not require a "subjective" decision and it corresponds more closely to how a person hears.

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4. Making Audiovisual Systems Easy to Use

As technology evolves it seems that it becomes harder to operate and control. Manufacturers are giving us features and options that while useful at some level are not needed most of the time. Control systems are what make systems easier to use.

Complicated Systems
In the project described below the control system was what allowed the Clerk of the Board to run the meeting from a parliamentarian point of view and from a presentation point of view. To run the meeting three people had the ability to control items; the Clerk, the production operator in the control room, and the Chair of the session. All of these individuals had a touch sensitive control panel located at their seat. The Clerk and the Production Operator had the same controls. They typically would use the control system to:

- Power the system on and off
- Select the proper meeting set up; the system could be used for meetings from 7 to 39 depending on the governing body that was using the facility.
- Board Member's Page with list of Board Member's associated with their seat at the dais. The clerk has the ability to edit/add/remove names for board member's. Once set these board member names will be stored for future use. The Clerk has the ability to mark a board member absent or non-voting for that session. Once set the board member assignments will be used for subsequent voting and vote tallying pages.
- Display control with controls to turn on/off the video projection equipment and determine what source is displayed on the Video Projection Screens.
- Lighting and volume control.
- Audio and Video conference system control.
- Presenter Timer controls the public speaker's allotted time and allotted warning time in one-minute increments. The Clerk and Session Chairperson have the ability to stop/start/pause the allotted time. These timer settings control 3 lights at the podium to alert the presenter of their status.
- The voting module uses the currently selected Board member's page along with columns for their vote. When the Clerk initiates voting this tally area will indicate voting is occurring and will provides indication which member has cast their vote. It does not show their actual vote until the clerk selects the Vote Tally button. At that point the actual votes will be displayed by the member's name on all of the video projectors and monitors.
- Speaker Queue Page with buttons indicating who has selected their request to speak button and the order in which that was selected. The Clerk or the Session Chairperson has the ability to select the next speaker which will un-mute their microphone or to directly select anyone on the list which will cause their name to move to the top of the list and un-mute their microphone.

The Chair of the Session has the following limited control.
- Speaker Queue Page.
- The volume and mute controls for each board member's microphone.

- The chairperson has the ability to pass the chair position to any other member at the dais at which point their panel will assume the chair functions and the previous Chair's panel will revert to a regular member panel, the Chair's panel functions can only be passed, they can not be taken. When the system is turned on a selected default position is selected as chair.

All in all a complicated system that could only be handled with a custom programmed control system.

Simple Systems
At the other end of the spectrum we are seeing simplified systems of push buttons on a wall panel in many higher education and some corporate training rooms. The wall panel sends the commands to the display device to select the source, raise and lower the volume, dim the lights, lower the projection screen, etc. at a fraction of the cost that existed a few years ago.

The Solution
The common point to both extremes is to have a clear understanding of what needs to be controlled, select the correct system either complicated or simple, but most importantly clearly label buttons with words and terms that the end user understands.

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5. Riverside County Boardroom Replacement Project

Due to the explosive growth of the county of Riverside a larger County Building was required to support the needs of the county taxpayers. Part of the new County Building included a new County Boardroom. The new Boardroom functions were, in part, dictated by the existing 7 Member Board Dais, which needed to be translated to a 39-seat Board Dais boardroom capable of cable broadcasting, local viewing and archiving of presented information.

The County of Riverside is the fourth largest county in California, stretching nearly 200 miles across and comprising over 7,200 square miles of fertile river valleys, low deserts, mountains, foothills and rolling plains. By 2003, the County was "home" to over 1.7 million residents - more than the entire population of 13 states, among them Maine, Nevada, Hawaii, and New Hampshire.

When Thorburn Associates Inc. was brought on board for the acoustical and audiovisual engineering, we were able to incorporate the design of the room with the technology design. The original plan included front projection with sight line issues from both the camera and display systems. The building design allowed for dual rear-projection displays on the left and right sides of the full Dais layout. The Board and Committee members view all display information on XGA flat panel displays. To support the viewing of high-resolution images, all visual images are scaled to XGA resolution when viewed in the chambers. Likewise all computer images are scaled for display in the lobby and for the feed to the cable television system.

All of the audiovisual technology seen in the boardroom has been integrated into the casework for a clean finished look. The production control area can view the activities of the boardroom through one-way glass; the "static equipment" is located in the equipment room behind the main Dais area.

For more detailed information go to: http://www.ta-inc.com/projects/RCBR.htm

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6. Quiet Floors

Floor systems in multifamily housing are getting thinner and lighter in weight. Both of these work against a successful acoustical design. To overcome this we are constantly looking at and reviewing new products. Something that has caught our eye is a product from Pennsylvania based Dodge-Regupol.

Dodge-Regupol, Inc. (DRI) was founded in 1989 through a partnership between Dodge Cork and Germany based BerleburgerSchaumstoffwerk (BSW). Combining over 100 years of similar experience, cultures and technologies, Dodge Cork and BSW quickly established DRI as North America's lowest cost producer of cork, cork/rubber and recycled rubber materials. Now one of the world's largest users of scrap tire rubber, DRI relies on proprietary state-

of-the art technology to clean, recycle and convert over 35 million pounds of scrap tires (growing 30% annually) for the manufacture of a broad range of rubber products including Regupol-QT.

Regupol-QT is made from 100% recycled rubber and is a floor underlayment that reduces impact noise transfer from the floor above to the unit below. Their laboratory test reports show an Impact Isolation Class (IIC) improvement of over 20 points in "before" and "after" testing using their 5mm system, and 25 points using their 10mm system. Regupol-QT can be used in either concrete slab or wood frame construction and is compatible with all types of floor finishes including tile, wood or vinyl.

Now for the legal disclaimer: As with all products that have been designed to improve our acoustical environment, they are items that must be properly incorporated in the design of a project. There are no acoustical silver bullets, this information has been provided as a service to our clients to highlight new products and technology we come across.

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