

## Random Thoughts From ~~Chicago~~ Santa Cruz

Many of you have asked how (or why) I could move from Chicago to California, especially to a place as remote as the side of a mountain ten miles from Santa Cruz. A better question might be, why didn't we do it years sooner? After all, we've had great examples to follow – our friends Don and Carolyn Davis, Pat and Brenda Brown, John and Linda Murray, all live in beautiful places off the beaten track.

The reasons are both simple and complex. Both Rachelle and I work as consultants (but in very different industries), and we both work at home. While we are certainly connected to key clients, clients will find us if they want to. So our critical infrastructure needs (beyond what we need to live comfortably) are 1) a good internet connection; 2) good telephone service (can come with #1); 3) reliable power; and 4) reasonable access to air travel. All of those conditions are met here – the San Jose airport (Southwest, United, US Air, Northwest) is less than an hour away; another half hour gets us to San Francisco or Oakland. We're on the grid, with Comcast cable and POTS lines on the road in front of our home.

In Chicago, we could walk to several dozen individually owned restaurants of many ethnic persuasions, four coffee shops, a commuter train, elevated train, or bus that would take us downtown. But the city was feeling increasingly crowded to us, and local government was doing things that made it increasingly difficult to get around the city and making traffic worse. The city has an active jazz scene, but each year the city made it harder for us to access it. It was taking a half hour in stop and go traffic to get anywhere, and it was hard (and often expensive) to park when we got there. We found farmers' markets five months a year, but parking was tough. As Rachelle put it after returning from an artists' retreat in the Smokies last summer, "I'm really tired of ugly."

In Chicago, our neighbors were 15 feet away. That commuter train was across the street, parking was regulated, and cost money. A dozen or so cars and an occasional truck passed on the street with each change of the light on the corner. Trash accumulated on the street and in the alley. After 19 years, we knew only a handful of our neighbors and had little in common with them – virtually all of our friends were from the larger community.

On our mountain, we're surrounded by a redwood forest, eight acres of which we own. A well-maintained county road is 100 ft from our front door; rush hour traffic consists of perhaps 50 cars (folks who live around here) spread out over two hours. The sounds we hear are a creek that runs through our property, birds, and the wind in the trees. Our nearest neighbors are 75 yards away; most are three times that distance, and we can't see any of their homes. We meet them in the evening at the row of mailboxes that are in front of our house, or when one jogs or bicycles by, and at community events. It's a 20 minute drive into town, with almost no traffic. Our road winds through the forest down to the Pacific coast (we're at 2,000 feet), where we follow Route 1 along the ocean into Santa Cruz. A different 12 minute drive takes us down the other side of the mountain through an even more dense redwood forest (part of a state park) into the town of Felton; five minutes more gets us to Scotts Valley and the highway across the mountain to San Jose. Each one of these towns offers shopping, restaurants, and other resources. There's a farmers' market in at least one of these communities nearly every day of the week, and at least one runs all year round! Another important resource for Rachelle is easy – it's rumored that California has more yoga instructors than students!

What do we miss? Our friends, that Belgian restaurant/bar, and good jazz on the radio. There's a great 24 hour jazz station just south of San Francisco, 50 miles to

the north, but there's a low power FM station on their frequency less than 2 miles away. It's non-stop preaching, licensed to and relayed from a church in Idaho, nearly 700 miles away. So much for "Low Power FM giving voice to the local community," which would much rather have that jazz station (and has a dozen religious broadcasters).

### GIVING BACK OR "THEY" IS US

This spring, I've had the great pleasure of visiting several dozen contractors, integrators, and consultants as part of a three-man team helping Audio-Technica talk about how they fixed the RFI problems in their family of miniature electret microphones. Lest anyone get the mistaken impression that I'm a partisan, my contribution has been limited to a tutorial presentation on how RF interference occurs in audio gear in general, and microphones in particular. So far, we've made it through the Chicago area, Houston, Dallas, Austin, Tulsa, and Oklahoma City. Trips to New York and the Bay Area are scheduled for later this summer.

One of the first things I learned when working with Audio-Technica was how hard they work at communication and "connectedness," both within their organization and with their customers. AT had "fixed" desktop mics on the street last July, nearly a year ahead of their competitors. I believe that this "connectedness," combined with a corporate structure that had competent customer support people talking to engineering when those first calls about RFI started coming in, and a corporate structure that promptly allocated engineering dollars to the problem, are a big part of why they got the jump on their competition. When I published my work on RFI in microphones several years ago, they were the first to thank me for doing so, telling me that it was quite helpful. As I later learned, they had already begun working on the problem.

There are many good things about visiting with audio professionals (in addition to new gastronomic experiences). I get to renew old acquaintances, to put a face with a name, and to meet new people. We hear about new problems, and, hopefully, new solutions.

On the road, I also get to listen to complaints. One Chicago-based integrator who specialized in video systems complained that I had never invited his firm to bid on my projects. I explained that I required that bidders have expertise and a business focus in the technologies and systems that are used in my projects, and that my business focus was primarily sound reinforcement and other high quality audio systems. Thus, I require bidders for sound reinforcement systems to be members of AES and NSCA, that they participate by attending meetings and conventions, that they be franchised for a reasonable percentage of the products I specify, and that they own test equipment relating to modern sound reinforcement. I also require that they have staff with technical educations relating to electroacoustics, and send them to SynAudCon workshops to grow and stay current. His firm doesn't do any of those things, which is why he never got invited to bid.

And, occasionally, someone tells us how "they" should move the industry forward. As part of my introduction, it's noted that I'm a member of several AES Standards Committee Working Groups and Vice-Chair of the Working Group on EMC. One Chicago-area contractor complained about things that "the AES should be doing" to make things better for him. Now, I don't remember who this guy was or what it was he wanted the AES to do for him, but I do remember that he was not active in the AES or SynAudCon, and I don't remember seeing him or anyone from his firm at AES meetings in the 25 years I was active in the Chicago chapter! What he didn't understand (and, sadly, he's not alone), is that to receive you must give. Indeed,

"them" is us. So my column this time is about how all of us need to "give back" to the industry.

There many ways to "give back." We can develop training programs, take young people under our wing, send employees to educational workshops, support or sponsor events and educational entities like SynAudCon, publish research and tutorial materials, teach our specialty in workshops for the AES and SynAudCon, work with the committee that administers our local AES section, and work on AES Standards. Let's look at some of these in detail.

In my last column, I wrote about employers who encourage and support their people in various industry workshops, manufacturer's training sessions, and even college courses. In helping your employees build their skills and specialized knowledge, you win at least three ways – you build good will and loyalty, contribute to their professional development, and end up with a better employee.

Recruiting quality employees is tough, so recognizing and nurturing young talent can be an investment in your company's future. Sure, there's always the risk that those newly educated employees will move on to greener pastures, especially if you don't provide the other things needed to keep them on your team – interesting work, opportunities for growth, good compensation, benefits, and working conditions, accommodation of their personal needs, etc. But you have to do those things to keep good people anyway! And, as noted in my last column, it's reasonable to tie support for education into a commitment on the part of the employee to stick with you for at least some reasonable period.

Local AES sections provide professional networking, education, and social contact for members in major metropolitan areas. The better chapters will also be working to promote interest in pro audio. Every AES section needs help in the form of officers and members of the committee that plans the activities of that section, especially the technical programs that are an important part of monthly meetings. Volunteer help is also needed to plan and organize the national conventions. Much of this work is done by the members of the local sections where conventions are held – New York, Los Angeles, San Francisco, and various European cities – but those living elsewhere can help by chairing workshops, papers sessions, and other events.

Every convention includes workshops, mostly of a tutorial nature, that focus on various specialties and topics of interest to members. They offer a great opportunity to share what you know with your peers, and, in the preparation, the question and answer sessions and the interchange with other members of the workshop, the opportunity to learn from others working in your field. Individual workshops are often organized by one of the AES Technical Committees. SynAudCon grads are active in several of them, especially the TC on Acoustics and Sound Reinforcement. There are a total of 19 committees, including ones dedicated to Microphones, Loudspeakers and Headphones, Signal Processing, Transmission and Broadcasting, and Studio Practices and Production. Meetings are held at each convention, usually in one of the papers or workshop rooms following a papers session, and are listed in the convention program. For the past year or so, David Josephson has been chairing a committee to address the legal issues relating to pro audio. One hot topic for them is the allocation of frequencies for wireless microphones around the world. All of these meetings are open – all you need to do is show up!

Have you thought of doing research and publishing it? You don't necessarily need a big company name behind you – Neil Muncy published his work on pin 1 and SCIN, and changed the way we think about interference in our systems, and Neil is a one-man band! Craig Janssen presented his work on bass arrays at a SynAudCon

workshop and changed the way many of us think about loudspeaker systems. Dave Gunness led a team at EAW that published their work and changed the way we need to think about measuring loudspeakers and modeling them in systems. Chips Davis' publication of his research on control room design changed that world. Peter D'Antonio contributed his mathematical insights to the world of acoustic diffusion, bringing us a whole new vocabulary of acoustic tools, doing extensive research on how to measure them and leading an AES Standards Working Group on the development of a Standard.

Don Keele has been publishing excellent tutorial papers for years. David Klepper, one of the pioneers in the world of sound system consultants, both presented applications papers showing various techniques he used, and organized tours a day or so in advance of the conventions to show them to us! All of these folks have contributed their time and talents to teaching at AES Conventions and SynAudCon workshops, as have Kurt Graffy, Russ Berger, Jay Mitchell, Peter Mapp, and Bruce Olson.

In the old days, manufacturers took the lead in educating their contractors in the complexities of pro audio in general and the use of their products in particular. Lou Burroughs' workshops on microphones were legendary, and provided the impetus for publication of his excellent book on microphones; Electro-Voice carried on the tradition for several decades, with Jim Long and Bob Coffeen as key participants. At Altec, Don Davis initiated contractor workshops to teach the fundamentals of sound system to support one-third octave equalization and real time analysis. After a few years, those workshops turned into SynAudCon. Crown's introduction of the TEF 10 was accompanied by extensive workshops that taught us about measurements; subsequent workshops covered applications, how to write specialized code to customize applications, and even more about measurement. The launch of MediaMatrix brought beginning and advanced three-day workshops hosted jointly by Peavey and Peak Audio. JBL held three-day workshops for their contractors near their facility in Northridge, with presentations by both their own engineering staff and outside people like Chips, Klepper, Ken Fause, Rolly Brook, Don Davis, and Deane Jensen.

Full or part time teaching can also be quite satisfying. At Georgia Tech, Dr. Eugene Patronis brought us a generation of fine engineers; Bob Coffeen has made a second career for himself at the University of Kansas. Doug Jones' program at Columbia College is well known. John Bracewell (just retired), John Huntington, and Rick Thomas have taught theatrical sound design full time for years. Jim Van Bergen, one of Broadway's finest sound designers, teaches part time and has mentored dozens of young people.

Things have changed, and mostly not for the better. In AES Standards meetings, I hear engineering managers from AKG, Neumann, Sennheiser, and Schoeps decrying the ignorance of their customers, but I don't see their companies doing anything to improve the situation. Getting real technical specifications is like pulling teeth; in some cases, its impossible. And far be it from any of them to invest in a seminar or workshop! Likewise, developers of modern measurement and modeling platforms seem to operate on the assumption that their customers have the math, physics, and design background to use them. If they offer training, it covers little more than how to navigate through the software and menus, in contrast to Crown's support of TEF, which taught the math and physics behind the measurements as well as their application in the field.

There are some positives though. Jim Ford (Ford A/V) showed me the facility in his Oklahoma City headquarters where they hold workshops for their clients. He also

told me how his firm brings in college EE grads as new hires, cycling them through years of work in the shop and in the field before breaking them in on design work. A handful of the better rep firms are holding workshops where staff from contracting firms and sales outlets are exposed to technical presentations both by the factories they represent and outside technical experts. Whitlock, Olson, and I wrote the Appendix to AES48 between sessions we were teaching at a rep workshop in Chicago. I've done several of these, and am always happy to do more. Gold Line's greatest contribution to the industry has been their continuation of the workshops begun under Crown's leadership, and has renewed that commitment by hiring Doug Jones.

AES Standards work is another weak spot. Few contractors or consultants bother to participate, so our needs are generally ignored. Working Groups on Microphones and Loudspeakers are dominated by manufacturers, and the resulting standards (or lack thereof) are written their way. Why is Jerald Stephens the only representative of a major consulting firm who participates in the Standards process? Why does Ray Rayburn have to participate (and chair a Working Group) on his own time, and with no support from his employer? Why are one and two-man consulting firms like Bruce Olson's, Rick Chinn's, Dick Campbell's, Ron Sauro's, John Wodgate's, and mine the only ones that are willing to support the Standards process? Where are the mega-firms like WJHW, Acoustic Dimensions, Arup, Talaske, Kirkegaard, Acoustic Design Group, Shen, Milsom, Wilke, Artec, Theatre Projects, Jaffe? You've got people on the street selling, why can't you find the money to work on standards? Your absence is a major reason we don't have polar data for microphones, and that other important standards get stonewalled by manufacturers. *It's time for you guys to start pulling your weight, not dragging the boat!*

Where are the big integration firms like Ford A/V and SPL? We need you in Standards work too. And there's something else important that you can contribute. It's been proven that shielded twisted pair cable without a drain wire drastically reduces RF interference below about 2 MHz, but NEC/UL compliant cable like this isn't sold in North America. Manufacturers tell me that no one places orders for it, so they don't make it. So one very big thing you guys could do for the industry is place those orders! Dick Heyser was a pretty busy guy working on some pretty big projects (like communications for the space program, research on underwater sound transmission), but he found time to work on AES Standards, teach SynAudCon workshops, write magazine pieces, manage facilities for an AES convention, and be president of the AES (he was President-Elect when he died).

There is much to be gained from this participation. Certainly the industry as a whole benefits, but so do those who pitch in and do the work. Anyone who has ever taught will tell you that they learned far more from teaching than sitting in class as a student. When you take the time to prepare your materials for a workshop, or do research for a technical paper, you're going to learn more yourself than those who come to hear your presentation. You can't help but learn something when you're sitting at a table with guys like Heyser, Guinness, Keele, Whitlock, Rayburn, Olson, Richard Cabot, Jay McKnight, Irv Joel, Dan Queen, and Robin Caine. You'll also get to know other leaders in our industry – guys (and gals) who have that "pitching in" ethic, so when you've got a problem to solve (or are looking for a new job), you've got resources. And with your participation, you'll also be gaining their respect.