

Steamboats, Trains, and Food for Thought

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From everything I can tell, most of the broadcast world goes to the NAB. Those who don't go to the NAB, don't get anything done for that week.

While most of the broadcast world was at the NAB, I decided to take some time off. I couldn't wrangle any free tickets to the NAB, so I took a mini-vacation. My wife, daughter, son-in-law, and I went to a town called Galena, Illinois.

Galena is a very old town for the mid-west. While Chicago was still an onion field (the name Chicago means "wild onion") Galena was a thriving metropolis. The area around Galena sent seven generals to the Civil War, the most notable being U.S. Grant, who later became President.

Galena was originally a mining town. The area around Galena was rich in lead ore, or galena, from which the town took its name. By the 1850's Galena was *the* commercial center of the upper mid-west. It was only a few miles from the Mississippi, but was situated on a river. It was the closest river port to the mines. However, the businessmen of Galena had also built its power in other ways, so when the mining waned, the city continued to thrive.

However, a few decades later Galena was almost a ghost town. This was a great thing for us today, because the central part of town has been somewhat preserved. By the 1950's a resurrection was taking place in the town. Many of the historic buildings were put on the National Register of Historic Places. Small shop owners opened antique shops in many of the stores, and the town once again began to thrive, but this time because of its age.

What happened to Galena? What caused its demise? There were a number of contributing factors, but one of the most important was the failure of the town fathers to realize the importance of the railroads. You see, the town owed its life to the river and to the steamboats. When the railroad came, providing an alternative to the steamboats, the town fathers could not see how much impact the railroad would have on the river business. As business waned on the steamboats, the town began to wane as well.

I realize that this is a great over-simplification of history, but it does make a strong point. At the NAB, those of you who went saw all the latest and greatest in broadcasting technology. While I was not there, I am sure that a lot of the new technology for radio was digital. Whether we are talking about the latest ISDN devices, or DAB, or a digital editing system, digital transmitters, or some other thing, most of it was digital or supported by digital electronics. I am typing this on a laptop computer, which I am

sure wowed the crowd at some trade show a few years ago. Now we take them for granted. A few years ago all your major appliances were based on relays and mechanical timers. Now almost all of them use microprocessors for control, whether you realize it or not.

Where am I going with all of this? Simple. For the broadcast engineer you have two choices. You can either learn to adapt to the new technologies or die, professionally. The town fathers of Galena didn't learn soon enough to adapt, and the town effectively died. Earlier this week the computer on my refrigerator began to blink an alarm at me. After checking a few things, I called a service man. He put a thermometer in the freezer and it showed everything was fine. The only conclusion was that the computer or a sensor was messed up. He had no clue how to deal with that part of it. I spent about a half hour with the thing and found out that the computer apparently went into never-never land. A few quick checks and all was fine. That service technician could only deal with compressors and mechanical controllers. In a few more years he will not be able to work on any but the most basic devices.

I have met many broadcast engineers over the years who could not, or would not, adapt to new technologies. Most of them are now working in other fields or holding down jobs until retirement. Those who can adapt are the ones leading the industry now. This will not change. We have always had problems with people who could not adapt. However, the problem is more acute now with the rapid changes in technology. Today we take for granted items that were not even dreamed of 20 years ago. The last generation saw much slower change.

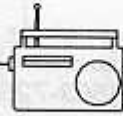
The big question is: how do we keep current? There are a number of ways to do this. Depending on what you have available, you can use any or all of these. One possibility is classes at a local community college. Many offer courses in various technology related subjects, such as digital trouble-shooting, computer programming, etc.

Another possibility is seminars conducted by manufacturers. You can get anything from design ideas on using integrated circuits to training in maintaining equipment. Some of these cost some money, but many are free. Keep your eyes open and you will find them.

Of course, there are always books. A good bookstore or your local library are good starting points. Another possibility is the SBE bookstore (mail order). By the way, SBE and other technical society meetings are another good source of continuing education.

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There are some other less obvious ways of keeping current. One is to study the technical manuals on some of the new equipment. Many of these manuals are nothing more than disassembly instructions, schematics, and a parts list, but often there are accompanying manuals that explain how it works. Sometimes you have to really dig to get this information, but it is worth the effort.

When I was in school, we had lab classes five days a week. The instructor we had for two days a week, taught me one of the most important lessons in my life. The lab he taught was in maintaining and using broadcast equipment. The equipment we were working with was used about three months a year by a variety of students. More times than not, when I got to that equipment, it didn't work. The grade for the lab was based on the quality of the work done, not on

the quantity. When we told the instructor that it didn't work, his stock answer was, "There's the manual. You're an engineer. Go fix it." While we may not have known a thing about the equipment before then, by the time we were done, we knew it inside out and backwards. More importantly, we learned how to keep learning.

The secret of a good engineer (if it is a secret) isn't what you know. It's how well you can keep learning. When I was in school, everything was tubes. We had two weeks (out of four years) on transistors. When we read an article about "integrated circuits" and asked our teachers, the answer was, "Maybe someday they will be useful for the military, but right now they are too expensive for everyday use." Past a few basics like Ohm's Law, and a few others, most of what I learned in school is not very useful now. Learning how to keep learning has enabled me to keep current with things like digital technology and computers.

I hope this will encourage you to keep learning and keep current with technology. Good luck. 