IEEE Broadcast Technology

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Traffic Begins To Build On The Road To Next-Gen Television At The NAB Show — See Complete Show Coverage Beginning on Page 5

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President's Message

Bill Hayes, BTS President

Greetings BTS members! This is the issue of **Broadcast Technology** where I have traditionally joined with many of the other authors and written about the technological innovations that I saw at the National Association of Broadcasters convention in Las Vegas. Unfortunately, I had health issue come up on April 1st which put me in the hospital for a few days. While I have fully recovered, I unfortunately had to cancel my trip to NAB for the first time since 1980. While I know this was the right thing to do, I must confess that I feel like I missed an important event.

Next-generation broadcasting was certainly one of the hot topics. Many manufactures were showing hardware that is designed to operate using the new ATSC 3.0 standard. There were also presentations about the ATSC 3.0 broadcasts that are taking place in Korea, as well as the tests going on in the United States in Cleveland, Ohio, Phoenix, Ariz., and Dallas, Texas. The BTS' own Symposium at NAB included an exciting program that looked at business models for ATSC 3.0 stations.

However, there is more to next-generation broadcasting then the ATSC 3.0 over-the-air transmission standard, as was also highlighted by the BTS Symposium at NAB and several other presentations. The wireless industry is also deploying the 5G suite of standards and looking over the summaries for the presentations, you can quickly see that a significant portion of the vision for 5G services looks very much like traditional over-the-air broadcasting. This should be enough for all BTS members to realize that we must widen our field of view to encompass a much broader array of technologies.

I liken this to what has happened in the areas of content creation and the introduction of information technology-based systems and networks. I remember having discussions with colleagues who were, in my view, afraid to embrace technologies that they didn't understand, and were unwilling to spend the time and effort to learn and adapt. Many facilities are, in fact, still dealing with this issue even now. A few days before writing this message I read an article that described the need within broadcast facilities to begin melding their IT and engineering departments. I believe facilities that are just starting to move in this direction are way behind the curve and will struggle and possibly fail because of it.

The same thing may happen to broadcasters that look at the world of wireless and broadband delivery as not their business. My advice to anyone that is a member of the BTS, or working in the business called broadcasting, is to adjust your thinking. Broadcasting is not a business and in fact never has been. Broadcasting is a methodology for distributing content to audiences. In the early days when there were fewer delivery methodologies, and the technology for receivers required the devices to be large and stationary, broadcasting as we know it was adopted. Since there were so few options for delivery, the business adopted the name of the distribution methodology.

Thanks to technology advances in receivers and a broadened array of wireless delivery options, the audiences are no longer tethered to a fixed receiver location or a fixed schedule for content consumption. The entire ecosystem is evolving and while what many consider traditional broadcasting will continue to offer benefits for content delivery of a certain type, it is but one of the many methodologies that the audience can and will utilize based on their own needs and situations.

I started off this message essentially expressing my sadness that I missed attending NAB this year. While it is a curiosity

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Inside

From The Editor

Industry Loses Mourned, ATSC 3.0/BTS At The NAB Show, And The Continuing Sad State Of U.S. Radio Broadcasting

By James E. O'Neal, Editor-in-Chief, BTS Life Member

The Passing Of Some Old Friends

I don't like to start this bit of commentary on a down note, but this time it seems unavoidable, as our industry has lost several stalwarts, all with in a very short time while this issue of BT was being put together. The first of the black-edged notices came in the form of passing of Charlie Rhodes in March. I sincerely doubt that there's anyone in broadcasting who has not heard of Charlie and his many accomplishments. At the time of his death, Charlie had been a member of the BTS from more than 40 years, and an IEEE member for much longer. However, records aren't really clear as to the date he first joined. (I imagine it was some time prior to the merging of the Institute of Radio Engineers and the American Association of Electrical Engineers to form the IEEE in 1963, and this may explain the uncertainty.)

I admit that I didn't really know Charlie well until after I retired from broadcast engineering and began my second career as technology editor at **TV Technology** magazine in 2005. Certainly, I knew his name (who in the industry back in the 1960s, 70s, and beyond didn't?) and I'd read many of his papers and heard his presentations at various industry conferences. However, it seems somehow that there had never been an opportunity for a one-on-one conversation. This changed within my first month or so at **TV Tech**, as Charlie was doing a semi-regular column for the publication and it fell my duty to edit it for publication as I was "the staffer with the technical background." It was in connection with prepping that column that I got to know Charlie quite well. I was new on the job, and wanted to be extra vigilant in connection with the column, even to the point of checking the math in it. You can imagine my reaction when I discovered a mistake in the figures. Assuming that it was me who had made the mistake, I went over the numbers again—no change. I worked my calculator for the third time. (Surely, I'd made an incorrect entry.) No difference in the outcome. In disbelief, I took the galley proof home for my wife, who had spent most of her life teaching basic and advanced mathematics, for her to check and show me where I'd gotten off the track. Her numbers came out the same as mine.

What to do? How was I going to break it to a well-respected industry stalwart that he'd erred in his calculation?

I put the matter off as long as I could (we had deadlines and a production schedule to maintain) and finally placed a phone call to Mr. Rhodes. I would imagine that he noticed the slight tremor in my voice as I identified myself as the new technology editor and needed to speak with him about his article.

Somehow, I got the message across, halfway expecting to be lectured to about flaws in *my* mathematical background, or even hearing the sound of a telephone handset being slammed down.

Neither happened. Charlie excused himself for a moment to retrieve his copy of the article and went through the problematic math with me. Very quickly, he recognized where he'd gotten off the track and thanked me profusely for calling this to his attention.

What a gentleman of the old school!

After that, we became good friends, frequently visiting vis telephone (by then he made his home all the way across the country from the magazine's offices in Virginia). Later, when I assumed editorship of the BTS publication, Charlie and I became even better long-distance friends. I never ceased to be amazed at his extremely comprehensive knowledge of just about everything there was to know in the area of television. On one occasion, the topic of a very obscure methodology for creating a color TV system came up: line-sequential color. (Back in the early 1950s, this system was proposed briefly by a west coast group of backers, and competed with the CBS field-sequential "semi-mechanical" and RCA all-electronic backwardly compatible systems in initial FCC hearings for establishing the best color TV system for the nation.) Line-sequential didn't last long, as it had some basic flaws that appeared insurmountable to engineer away. Few people had even heard of it, but Charlie revealed that he actually built an experimental receiver while he was in his early 20s to view the test transmissions being carried out by a San Francisco station. I asked him to send me more information about this arcane bit of technology and he did. (It's an interesting story, and one I plan to share in a future issue of **BT**.)

Charlie's contributions will be greatly missed in these pages and in many other places.

I was also saddened to learn of the recent passing of another acquaintance, Clyde Haehnle. Clyde was not as well known as Charlie, but both gentlemen had their feet very deeply implanted in the roots of the broadcasting business. Clyde's forte was radio, and he got a head start in his career in the early 1940s by working part time as a co-op engineering student at one of the country's most prestigious and innovative broadcasting operations, Cincinnati's WLW. The station had begun billing itself as "the nation's station" when it was given the FCC's nod to up its power on an experimental basis to 500,000 Watts in the early 1930s. Situated in the lower portion of the AM band, and the only North American station on that frequency (700 kHz), it likely lived up to its slogan. Although fulltime broadcasting at the half-megawatt level had ceased by the time Haehnle came on board, the station was still operated occasionally during "experimental hours" at