

NAB Television Engineering Achievement Award Acceptance Speech

Robert Hopkins

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Thank you very much Lynn, and thank you very much NAB. It is extremely gratifying to receive the NAB Television Engineering Achievement Award. I am happy to know that others value my work.

Digital terrestrial broadcasting is scheduled to begin later this year. A large number of people have put tremendous effort into the systems development and standards process. Without the dedicated efforts of so many of my colleagues, my own efforts would have been fruitless. My personal effort on the DTV standard spans about a dozen years. I accepted a position with ATSC at the beginning of 1985 — replacing Dick Green, our luncheon speaker. I left ATSC at the end of 1995 after the FCC's Advisory Committee on Advanced Television Service gave its final report to the FCC. The Advisory Committee's recommendation was that the FCC should adopt the ATSC Digital Television Standard, a document which is so familiar to me that I could probably recite it from memory right now!

I had a personal goal when I joined ATSC — I wanted a standard for high definition television. I left ATSC having satisfied my personal goal.

The position I accepted upon leaving ATSC, in many ways, is a logical extension of the ATSC work — I am running a company which uses high definition technology. Over the two years I have been at the Sony Pictures High Definition Center, we have transferred about 250 movies to high definition.

As I look back over the years, I remember well my first engineering endeavor — using an Erector Set! My Dad was an electrician, so I was drawn to electronics. During high school, I took an electronic technician correspondence course. I studied electrical engineering at Purdue University, a state school in Indiana. My roots were modest. We lived in the country. I remember the summer that electricity was first run to our house. How many of you can say that? We were able to turn off the kerosene lamps. I went to a small country high school. My graduating class was larger than the average — there were 21 students.

Leaving Purdue I went East, to RCA's David Sarnoff Research Center. I wanted to be a research engineer in the field of solid state electronics. I did begin that way, but suddenly found myself involved in television systems engineering. Then I veered back to a solid state project, but ended up again in TV systems engineering. I guess that is not surprising, though, as RCA was basically a television company.

I became involved with digital video in the early Seventies. You realize that is 25 years ago — digital video has been around a long time. And, I might add, my digital video beginnings were accidental. I needed something I could not get with analog video, so I designed a video A/D converter and a digital video frame store using 1K shift registers. Imagine the situation if you had to use 1K memory devices in your computer. If you have 32 Megs of RAM, you would need 32,000 of these integrated circuits just for the memory.

Eventually, because of that frame store, I ended up at RCA's Broadcast Systems Division. I stayed involved with digital video and was asked by SMPTE to organize and chair a digital

video standards group. The work of that group eventually led to the CCIR 601 world-wide digital video standard. That was my first involvement in standards work. At that time, you could call it a hobby. Eight years later, standards work became my profession.

I am very excited about the future possibilities of digital high definition broadcasting. You will be able to broadcast a movie to homes and your viewers will be able to have large screen quality that is comparable to that previously available only in movie theaters. This is not just an enthusiast's prediction. It is a fact which I can demonstrate to you in the High Definition Center's screening room. I can show you a 35 mm theatrical release print on a 16 foot wide screen. Then, thanks to WHD-TV, the industry's model HDTV station in Washington, DC, show you a broadcast of the same movie the same size on the same screen. The results are simply amazing.

I am very proud to say that the standard we have adopted has very wide capabilities. It was designed that way to make sure that we can exploit its full capabilities in the future.

I would like to acknowledge the influence Jim McKinney and Joe Flaherty had on me during my ATSC years. Both, by the way, are previous winners of the NAB Engineering Achievement Award. Jim was Chairman of ATSC. Joe was a member of the Advisory Committee and Chairman of its Planning Subcommittee and Technical Subgroup. I would like to acknowledge the influence Dick Wiley had on me also. Dick was Chairman of the Advisory Committee.

Likewise, the efforts of the companies of the Grand Alliance were irreplaceable. Without their investments, the standard, if it had been developed, would not have been worth the paper it was written on.

And, I would like to acknowledge the efforts of the NAB. Although it seems there have been millions of opinions expressed during this effort, legitimately reflecting different perspectives I hasten to add, the NAB has always been deeply involved in an effort to ensure the standard was right for broadcasting.

Finally, I would like to acknowledge the patience of my wife, Anne, without whose love and understanding, through long and late hours, I would never have been able to stay the course.