

## Two Remarkable Encounters with NTSC

Dr. Boris Pevzner, one of the pioneers of color television, recently wrote a wonderful article, “Farewell to the NTSC System.” The article was published in Moscow, in the magazine *Televidenie i Radioveschanie (Broadcasting)*, in the first issue of 2007.

Pevzner’s remarks reminded me of two of my own encounters with NTSC – encounters that took place fifty years apart, yet turned out to be linked by an unexpected metaphysical connection that is worth telling about.

The acronym “NTSC” probably doesn’t mean much to the average person. Yet it would be difficult to find anyone in the world who doesn’t benefit from this system’s products, since it refers to nothing other than color television. Yes, color television: the twentieth-century miracle that has established itself so firmly in every household that it is now taken for granted as a living convenience.

It all began in the late ‘40s – early ‘50s, when NTSC, the world’s first compatible color television system, was developed and implemented in the United States, the birthplace of most of the twentieth century’s great technological achievements. The acronym NTSC stood, quite prosaically, for “National Television System Committee.” American engineers did not hide their achievements from the world and did not classify them, as was the practice in the Soviet Union, and in 1954 they published a detailed description of this system. Boris Pevzner recalls the enormous impression that this report made on researchers at the National Scientific Research Institute of Television in Leningrad (VNIIT), the central facility for the development of television technology in the Soviet Union. They saw the NTSC system as something unfathomably complicated and at the same time fantastically wonderful. At once, projects were initiated in Leningrad and Moscow with the aim of reproducing the NTSC system from the American descriptions and in keeping with European standards. By 1956, VNIIT researchers had conducted a trial demonstration of the system at the Kremlin for members of the Politburo and the government of the USSR. And in 1960, trial color television transmissions using the NTSC system began in the Soviet Union, broadcasting out of the Laboratory of Color Television of the Bonch-Bruевич Electrotechnical Communications Institute in Leningrad (LEIS).

In those distant years, I was a student at LEIS and, of course, had little knowledge about any of this. Out of curiosity, however, I read through a translation of the American report on the NTSC. At the time, I probably didn’t understand much about this complicated system. Yet I still remember the thrill I felt, and the sense of being an accomplice to the great vision that had inspired those who had created the system.

And here begins the remarkable story that is the actual reason for all of these recollections – a story that is not at all technical.

Some time in 1956 or 1957 – I don’t remember the exact date now – the Komsomol committee at LEIS announced a contest, at my suggestion, on the subject of “The Seven Wonders of the World.” Participants were asked to name the seven most significant recent achievements of science and technology – naturally, this meant mainly Soviet science and technology. I don’t remember everything that I wrote down, but what I recall perfectly clearly is that the first “wonder of the world” on my list

was the “American system of compatible color television, NTSC.” I remember this perfectly clearly, because it did not pass without consequences.

The Soviet regime made active use of American technological advances for its own ends, and at the same time constantly fomented anti-American sentiments among the Soviet people. A lot of water has passed under the bridge since that time, but these two parallel strategies continue to be successfully exploited to this day, now by the ruling powers of Russia. But let’s come back to my story.

Naturally, my name was not among the contest winners, probably precisely because I had mentioned the NTSC. Somewhat later, when I was being picked for some Komsomol group, the secretary of the committee reprimanded me: “All right,” he said, “we’ll take you, even though you did list the American system as one of the wonders...” After that, the NTSC caused me no more difficulties. These were no longer Stalinist times—the Twentieth Party Congress had already taken place.

Years passed. I pursued a professional career in the field of digital radio communications, which formally had no connection to television. Although it is probably fair to say that the Laboratory of the Transmission of Digital Information, which I headed for a quarter of a century, produced results – principally in the field of the digital processing of multifrequency signals and digital radio broadcasting – that contributed to the mighty stream of inventions which led to the digital television of today.

Exactly half a century passed before the NTSC system, which I had long forgotten about, reminded me about itself.

In 2007, the Long Island Section of the IEEE gave me the Charles Hirsch Award. In the words of the announcement, the award was given “For outstanding contributions to the phase modulation theory and wireless system design.” I’d never heard of Charles Hirsch. But when I found out who he was, I experienced a genuine shock.

Charles Hirsch was an outstanding American engineer and inventor who had been present at the creation of the NTSC color television system. During the 1940s and ‘50s, he had worked at the famous Hazeltine Corporation, which was named after its founder, Dr. Alan Hazeltine. The firm was based in Long Island, not far from New York City, just a few miles from the places where I now live and work. This firm, which later joined the gigantic international electronic corporation BAE, was a leader in the field of color television.

So the NTSC system once again indirectly entered my life, this time in the form of an award!

And I thought: God did not forsake me, and fifty years after fact, he rewarded me for the sincere and naive actions of my youth.

The NTSC system is fading into the past, giving way to digital television. For over half a century, it adorned the lives of hundreds of millions of people on our planet and was itself an adornment on the tree of knowledge.

“Farewell, NTSC!” I want to exclaim, together with Dr. B. Pevzner.

And also: thank you, NTSC, for all that you have permanently added to our lives.

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