

memorylane

Television's standard of excellence

In 1940, with the world descending into turmoil as Hitler and Mussolini attacked Europe's most venerable cities, an escalating unease domestically was matched by a growing fascination with the diversions of media. And 1940 was the year when animated rabbit Bugs Bunny made his debut in a movie called "A Wild Hare," and the publisher All-American Comics produced the first comic book to feature Atom, a prototypical 98-pound weakling who willed himself to become a mighty defender of good. Both characters would remain popular for years as enduring symbols of American character.

Longevity also would come to be a signature characteristic of another media creation that took hold in 1940. The National Television Standards Committee convened for the first time that year under oversight from the FCC. Its charge was to sift through the existing science associated with the transmission of black-and-white television signals to come up with technical standards relating to image resolution, frame rate, aspect ratio, bandwidth and modulation approaches for television pictures and sound.

As is customary when the scent of big opportunity wafts, there were vehement disputes over key standards. In particular, industry participants who worked on the committee battled over the line-resolution issue. The powerful chairman of RCA, David Sarnoff, wanted to stick with a 1936 Radio Manufacturers Association recommendation that a television signal comprise 441 lines. RCA already was deploying 441 line-resolution in broadcasts from its NBC television network, and was weaving the same resolution capability into a limited output of TV sets the company manufactured. On the eve of the NTSC's formation, RCA had announced plans to ramp up production of sets featuring 441-line resolution, escalating the stakes for adoption of a standard. But RCA rival manufacturer Philco was equally intent on advancing its interests, arguing for resolution of 605 to 800 lines. At its final meeting in 1941, the NTSC adopted a compromise, settling on 525 lines as the standard for analog television in the U.S., partly as a concession to limitations associated with vacuum tubes used then.

The work of the NTSC was admirably sparing. After commercial adoption of the monochrome broadcasting standard in July 1941, the committee waited nine years before reconvening to add a subcarrier frequency to the black-and-white signal that would pass along color-picture information. Along with the modifications introduced to accommodate the introduction of color in the early 1950s, and ensuing tweaks that accommodated digital video routing in the late 1980s, the NTSC standards for television broadcasting have endured to the present.



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Today more than 250 million television sets present in U.S. households speak the language of NTSC and are compatible with fundamental signal delivery approaches conceived when the world was on the brink of WWII. The NTSC's 66-year run within the U.S. is remarkable. Admirers believe NTSC has survived a convulsion of television technology changes, and adapted to a range of unforeseen device extensions like VCRs and DVD players, because of inherent flexibility.

That, of course, is about to come to an end as the U.S. broadcasting system approaches its own version of D-Day on Feb. 17, 2009. The wholesale conversion of the country's television broadcasting system to an all-digital approach relegates NTSC and its analog transmission standard to history. How the television viewing populace reacts to what will surely be a confusing transition will itself one day make for an interesting historical analysis. The digital television standards produced by NTSC's successor – the Advanced Television Systems Committee – are being sold to the public by a constellation of broadcasters and consumer electronics manufacturers as an improvement. "With digital television, broadcasters are able to offer free, over-the-air television of higher resolution and better picture quality than is possible under the current mode of TV transmission," promises the ATSC within its Web site. But there is no getting around the built-in skepticism of a public that is about to learn its federal government is effectively quashing a television system – and the billions of dollars in consumer investment behind it – that has served many a living room very well for seven decades.

In the end, consumer outcry may be the ultimate compliment for the work of the NTSC. The collective American moan over being forced to affix new boxes and converters to TV sets in order to get them merely to do what they've always done will codify the value of the work the committee began in 1940. "If it ain't broke, don't fix it" is a common-man's lament. And despite the wonders of digital TV, there's nobody who can argue NTSC was broken. Not once in 66 years.