once over

A check-up on products, claims, and performance

COLOR TELEVISION

Observations based on limited tests of one of the first color TV sets on the market

For some time now, color television has made nearly as many headlines as the H-bomb or the high cost of living. The CBS whirling color-disk system, despite approval by the Federal Communications Commission, and some relatively successful experimental broadcasts back in 1950, was widely damned as "incompatible," and never really got off the ground. The star to which the industry's wagon is now hitched is an all-electronic system developed by engineers working under the auspices of the National Television System Committee, an industry group formed for this purpose. The NTSC system is "compatible"—that is, it allows ordinary black-and-white sets with no special attachments, to receive in black and white, programs broadcast in color. The new color system, while similar to the original RCA version turned down by the Federal Communications Commission about three years ago, reflects a great deal of development. And last December the Commission decided that the NTSC system was "an opportunity and a challenge" to the industry, and approved its use for broadcasting. Color television, it appeared, was ready for the public. But was it?

To put this first-blush report in perspective, it should be stated at once that under the best conditions, described below, color programs add a new dimension and a new excitement to television. The oh's and the ah's of first viewers are many and sincere. If the promise suggested by these first halting steps is fulfilled, practically everyone who can afford it will certainly prefer a color set to a black-and-white set.

There is, however, much more to say about color television in the present state of the art, and the following comments are first observations, written after brief experience with one of the first color sets to appear on the market, a *Westinghouse*, selling at $1295.

After many hours of adjustment of the set by Westinghouse servicemen, CU ran it through a number of tests for both color and black-and-white reception. The complex color circuit it employs is expected to be used by most companies for some time to come, and, in the opinion of CU's engineers, the set can be considered fairly representative of what you will get if you buy a color receiver now.

The color receiver tested is a console, and a bulky one at that (about 41x28x27 inches; roughly the same floor area as a refrigerator takes); an oversize cabinet is needed to house the large chassis and separate power supply. The set is equipped with the *RCA Tricolor* tube, which has about 600,000 tiny red, green, and blue phosphor dots distributed in a mosaic-like pattern across the face plate. There are three separate electron beams, each activating its corresponding set of dots on the screen. Although the picture tube is a huge affair, the screen size is small—comparable to that of the early, round 12½-inch black-and-white tube. There were some 43 other tubes in the *Westinghouse* chassis—as compared to the 20 or so tubes found in the typical black-and-white set. With its 550-watt power rating, its operating cost runs two to three times that of a typical black-and-white set. All these characteristics—the large cabinet, the many tubes, the small picture, and the high power consumption—are likely to be inherent in most color sets for some time to come.

Since color broadcasts are limited to a few stations, and a very few hours a week (and are likely to stay so for a while), even color sets can receive only black-and-white programs most of the time. Thus the viewer of a color set currently observes "compatibility" from the other side of the coin, seeing not color programs on a black-and-white set, but black-and-white programs on a color receiver. At reasonable viewing distance (about six feet) for its screen size, CU's test set did not provide the sharply delineated picture which can be obtained on most black-and-white sets today; instead, the picture was fuzzy, and details were blurred. Except at the center of the screen, faint "color fringes" (visible to the viewer fairly close to the screen) outlined the black-and-white objects.

The best conditions for viewing a color program were achieved in a locality free of "ghosts" and with a strong signal. When the transmission was good and the program material consisted of large stationary or slowly moving objects, such as a closeup, and when the set was viewed from a distance of about twelve feet, the image appeared excellent. Many viewers complained, however, that the 12½-inch screen presented a very small picture from a distance of about twelve feet. When the picture was viewed from closer up (about six feet, which would be about average for a black-and-white set of the same screen size), there was a fuzziness of detail and several colors often overlapped. Close-range viewing was especially objectionable with small, rapidly moving objects—a dancer gyrating

across the screen, for example; under these circumstances a pronounced blurring occurred.

When CU's test set was operated to receive color programs in an area where reception was disturbed by "ghosts," these multiple images, often quite tolerable in black and white, turned up in color as extremely annoying. On weak signals approaching those typical of fringe reception, but not so weak as to preclude black-and-white reception, the colors disintegrated and faded out.

Skillful tuning and adjustment of the color controls were required; a slight change in the tuning of some controls altered the color balance.

CU is as optimistic as the next man about the future of color television. But on the basis of the evidence at hand, it appears that only an inveterate (and well-heeled) experimenter should let the advertisements seduce him into being "among the very first" to own a color TV set. The state of the art needs refinement. CU will watch developments.

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