

What *COLOR* Does to *TV*



THE STUDIO More lights, placed lower, is major change on CBS

color set where Director Frances Buss (left), Ed Sullivan, Patty Painter discuss script.

Everyday color television is on the air, adding pleasure for the audience—and some problems for producers.

By Kendall W. Goodwyn

YOU'LL see more on your TV screen, whether it's big or small, when you've converted to color. But putting the color into the pictures poses new problems that producers and engineers are busy solving now.

Shows already being telecast and others being planned prove what color does to television. What it does is good. More than simply adding beauty and realism to a gray picture, it makes possible scenes and whole shows that black-and-white would miss.

Take the impressive program that inaugurated commercial color TV this summer. In one sequence of a ballet, the dancer relinquished her bouquet of red roses for one of black roses, signifying death. In black-and-white, the whole scene would have been meaningless.

And the regular, everyday programs that followed the big "Premiere" hour on the Columbia Broadcasting System, while not so lavish with high-priced talent, have also demonstrated what color can do. Naturalist Ivan T. Sanderson shows you the brilliant feathers of exotic birds or explains why Nature gave unusual tropical plants their strange shapes.

Color Helps You Identify Objects

This fall there will be plays, children's programs, football games. Outdoor sports events come through very effectively in color. And you can always tell which team is which just by the colors of the uniforms.

Science demonstrations are another natural subject for color television. Already one series is being prepared with the cooperation of Kenneth M. Swezey, well known to POPULAR SCIENCE readers for his regular home-experiment articles.

Working independently of CBS with science expert Dr. Gerald Wendt and two young producers, Harvey Cort and Milton Subotsky, Swezey is providing the material for short movies that explain the everyday applications of science.

Color Films Can Be Used

Color television can reproduce 16-mm. color film, such as Cort and Subotsky use, or 35-mm. films. The shows now being



THE CONTROLS An extra panel (extreme right in photo above) adjusts the color-wheel motor and color balance in each camera. The technician's hand is on the knob that sets the amount of red in the picture. Adjacent knobs control blue, green.



THE CAMERA Only when covers are opened can alterations that convert camera to color be seen. Twelve-segment filter disk (above lens turret) spins on long shaft running through camera to motor in rear. Viewfinder shows black-and-white picture.



Scene from "How an Airplane Flies"—one of science films being made for color TV—shows how air blown between apples creates low-pressure area that sucks apples together. Color in such shows heightens interest, lets you actually see chemical changes, wildlife beauty.



Color slave unit developed by Crosley for its receivers can be attached to current models by making two simple connections. Slave shows 12½-inch color picture magnified from its own 10-inch tube. It also has separate controls for brightness, focus, hold and contrast.

telecast by CBS, however, are not films, but "live."

Are they harder to put on than black-and-white? "We've adapted ourselves to color very quickly," says Frances Buss, the comely young woman who directs the Ivan Sander-son show. "Stage settings are hardly different from the black-and-white ones. Those are normally colored anyway, you know. Costuming may be easier—we only have to consider how colors blend, not how they re-produce as shades of gray."

Four Times as Much Light Needed

Another TV showman who expects color programs to be easier to handle is Worthing-ton Miner, producer of such well known black-and-white presentations as "Studio One." He suggests, "An entire chorus of a song, for example, may be carried on a single setup in color without a sense of monotony . . . Camera setups might be re-duced 25 to 30 percent . . ."

Studio engineers, too, find the change to color simple. Ted Lawrence, color-quality supervisor for CBS, points out, "The camera is basically a standard model. We've made some electronic changes and added a color disk and a small electric motor to turn it. The camera disk has 12 filter segments, in-stead of the six segments used in receivers, so that we can use a slower motor.

"We have to use about four times as much illumination because the red, green and blue filters on the camera absorb light," Lawrence adds. "Many lights are placed low, in order to keep the illumination—and the color—even. We usually have several re-flectors at head height.

"Fluorescents? Sure, we can use them. Their uneven color spectrum doesn't bother color television the way it does color pho-tography. Partly that's because the shad-ers can adjust the mixing controls to make, in effect, almost any type color 'emulsion' we need."