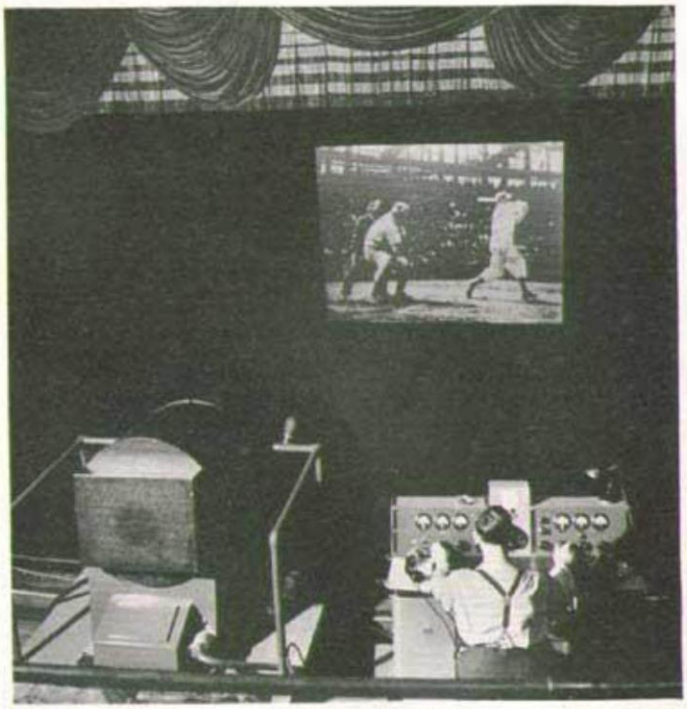


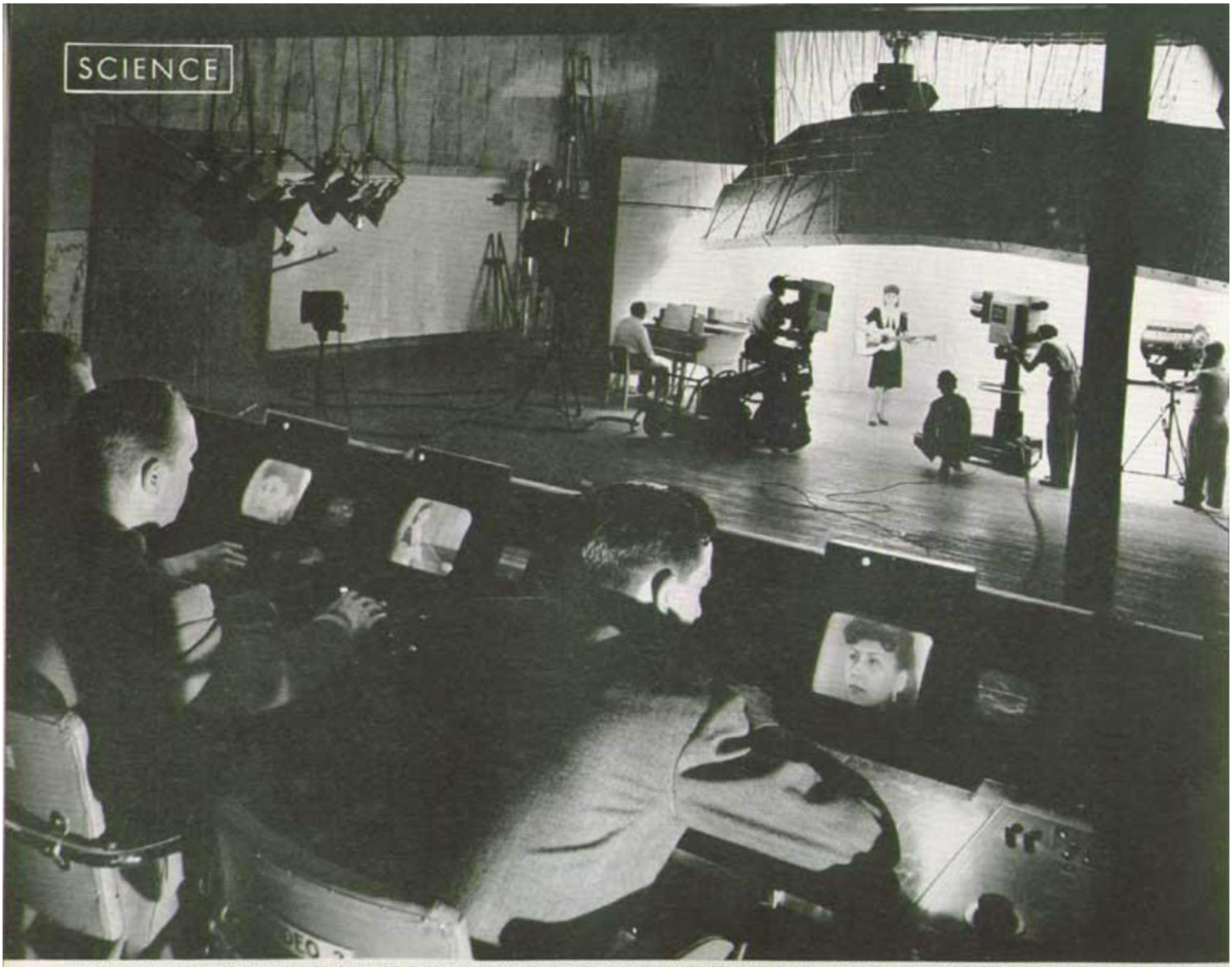
Large-screen television here reproduces a Brooklyn Dodgers home game on full-sized movie screen. Reproducing tube projects image onto curved reflector, in rear of cylinder (*left*), which transmits much-enlarged image onto movie screen. Operator (*right*) controls quality of image.

TELEVISION

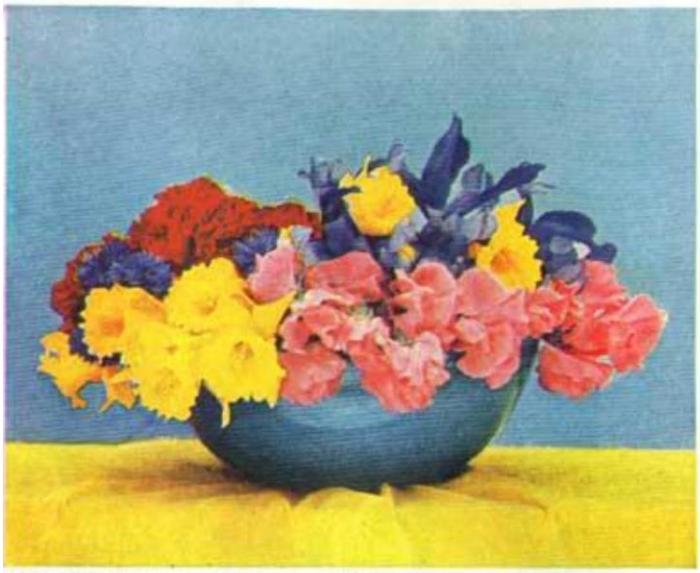
COLOR AND BIG-SCREEN IMAGES OPEN NEW HORIZONS

During this last summer, two years since television made its fanfared studio debut, the biggest television news was made, as before, in the laboratory. In the laboratory, it now appears, television will stay for the duration of the emergency. At the bottom of any priorities list, television's audience will continue to be limited by the insignificant number of sets sold and selling. Television's promoters, however, are satisfied that their Federal Communications Commission commercial franchise, their 22 stations and audience of 6,000 receiver sets are a nucleus on which television will survive and be ready to expand when the war ends. Meanwhile they are cheered by two recent milestones in television's technical progress: large-screen projection of television images (*at left*) and color television (*opposite page*).

Large-screen television, which was developed by NBC engineers and has successfully demonstrated its power to project television programs on a full-sized movie screen, opens up a new horizon for practical application of the television art. Color television is the invention of CBS's engineers, headed by young Dr. Peter C. Goldmark. It employs a simple principle first applied to color movies, explained on the opposite page. As compared with the 30-to-1 contrast range of black-and-white television, CBS's color system has demonstrated an almost unlimited reproduction range for all colors, hues and shades in the spectrum. Though its resolution of detail is weaker than black-and-white television, CBS's color television system transmits much more information, in clear and brilliant images. There is every reason to believe that all television programs in the future will be transmitted in color.

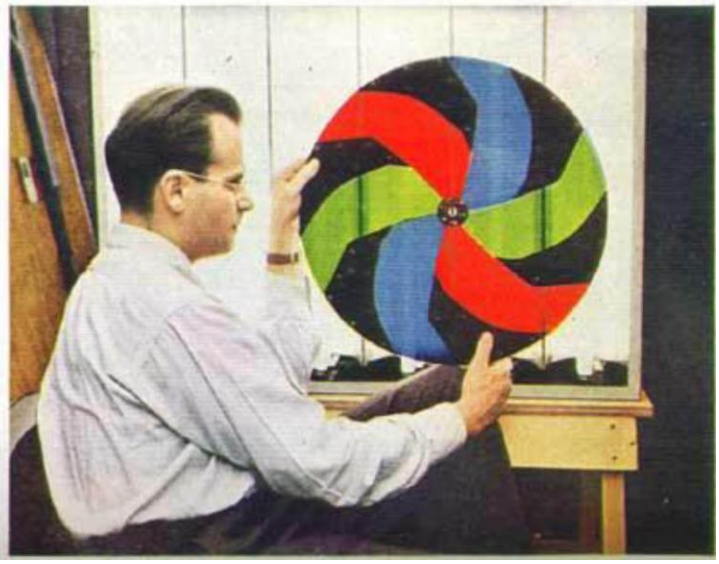


IN CBS TELEVISION STUDIO TWO CAMERAS (CENTER BACKGROUND) GET TWO ANGLES ON PERFORMER. DIRECTORS WATCH IMAGES ON RECEIVER SCREENS, EDIT TRANSMISSION



Pale delicate colors of bowl of flowers provide an exacting test for the CBS color television system. All colors will be reproduced at receiver by mixture of the primary colors, red, green and blue, which are represented in the filters of the color drum and disc (*below*).

Flowers televised appear with their colors accurately reproduced. Kodachrome reproduction of color television image does not do entire justice to it. In particular, horizontal lines on image picked up by camera at close range are not apparent to the eye at normal viewing distance.



Inside the television camera inverted image appears on ground glass at left. Color drum at right, with red, green and blue filters, spins at 1,200 r. p. m. Filters pick out own colors in subject, transmit them separately to inside of electronic scanning tube to right of drum.

Color disc, held by Inventor Peter C. Goldmark, spins in front of cathode-ray tube. Synchronized with color drum, disc transmits the successive single-color images picked up by camera. Persistence of vision in eyes blends separate color images into integrated full-color picture.

In the television studio, Victor Moore, Vera Zorina and William Gaxton perform for color television camera *(left)*. Color television can handle hundreds of thousands of different shades and tones of all colors as against 30 shades of gray for black-and-white television.

Performers televised show program possibilities of color television. Exaggerated in reproduction, loss of image detail is compensated by colors, which convey information lost in black-and-white transmission. Color image resists room illumination much better than black-and-white.

Life, September 22, 1941


LIFE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CBS
COLOR
TELEVISION
SYSTEM
YELLOW
GREEN
BLUE
RED
LIFE