

RCA Prototype Vidicon Camera (1952)



Pictures courtesy of Wayne Brett

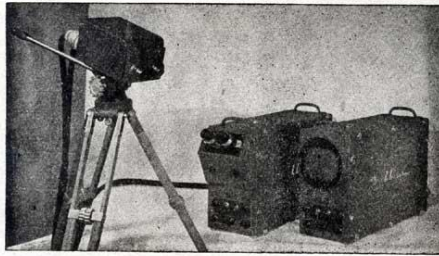
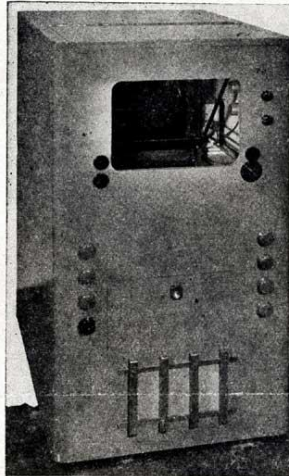


Figure 7. Stereo television camera and control units

which may be of considerable value in specialized applications is the addition of a third dimension to the pictures viewed. For this purpose two cameras mounted side by side are employed, viewing the object from slightly different angles. The signals are transmitted (over two channels, or by time multiplexing, over a single channel) to two separate kinescopes. If these kinescopes are small in dimension, they may be viewed directly through a lens stereoscope. Otherwise the two images would have to be roughly superposed optically and be observed through polaroid viewers matching complementary polaroid filters in front of the two kinescopes. The second arrangement permits the viewing of the 3-dimensional pictures by larger audiences. It may be noted that, since deflection and synchronizing circuits would be common to the two channels, such a stereo television system does not require complete duplication of a single television link.

Figure 7 shows an industrial stereo television system of the

Figure 8. Console receiver for stereo images. In this receiver the images from two kinescopes are superposed by a semireflecting mirror and are viewed through polaroid spectacles, so that each eye sees one of the two images



type described. The pair of cameras are built into a single unit: the objectives, separated by the normal eye distance, are focused together by a single motor.

Two control units are provided. One of them contains the synchronizing signal generator and a 7-inch monitoring kinescope connected to one of the two video channels. The second, or stereo, monitor contains two small kinescopes with $1\frac{1}{4}$ -inch screens which are observed through a lens stereoscope. This unit is provided with a pair of jacks from which the video signals for the two kinescopes of a large console receiver (Figure 8) may be obtained. In this receiver the images from the two kinescopes, plane polarized in mutually perpendicular directions by polaroid film, are superposed by a semireflecting mirror and are viewed through polaroid spectacles, so that each eye sees one of the two images. With such an arrangement larger groups can view the 3-dimensional image simultaneously.

Another obvious modification would incorporate a directional ultrahigh-frequency transmitter with the camera so that the cable, at the cost of increasing complexity of the control problem, could be omitted. The stress to be placed on such further developments would depend on a balance between probable utility and probable cost. For the more complex systems of industrial television this balance may be favorable for only a relatively restricted range of applications. This is not true, however, of the simple television link which was described first. In it we have a tool of wide utility which should fill real needs in industry, research, education, and commerce. Such equipment represents a material step forward in the direction of fulfilling the basic function of television—extending human sight.

