Industrial Closed-Circuit TELEVISION

COLOR increases utility of this rising new medium

While the battle over color television broadcasting is on, another type of color television has been taking over without fanfare or opposition. The first being inaugurated peacefully is industrial closed-circuit television, already established in many areas, it is finding color a valuable adjunct.

The term "industrial television" has been interpreted to mean roughly all non-entertainment uses of the new medium, including its employment in fashion shows and in banks. In a number of applications, industrial television supervises operations too dangerous or human beings. It makes possible certain types of advertising displays and saves manpower in work requiring observation at a number of separate points.

Possibly the most practical application of closed-circuit color television is televising surgical operations. Since interns can learn operating techniques only by watching skilled surgeons, making the operation visible to larger num-

[Image of a woman standing in front of a TV set and various industrial scenes with televisions]
Here is important. The equipment shown in this chapter was part of an installation for Dr. Mont at St. Clare's Hospital, New York City, where it was used during a large meeting of doctors and surgeons, who viewed a number of important operations which otherwise could have been seen by only a few.

Certain tasks on machines, such as high-speed rotors (and now jet units) used to be made in concrete pits, with engineers watching over a wall. In case of an explosion or a motor firing accident, the engineer's footing speed was more important than his technical knowledge. Now these tasks can be made with a camera focused right on the most important feature of the task; either on the motors as in Image 1 or on some critical part of the equipment itself.

Large department stores have already found use for television in making their display windows to a larger number of people as well as to bring colorful displays to the attention of customers in other parts of the store or to window shoppers, as indicated in Image 2. "Grades of Philadelphia and Gents of Jamaica, New York, have been considerable commercial success with store television. The scene on the cover also shows how closed-circuit television could be used by a maid to demonstrate clothes or to advertise other items.

This is occasionally lost in a bank, while the signature is being identified, under some circumstances good and a valuable account is lost or spoiled. Image 3 shows how this can be prevented. The clerk can call for a copy of any signature, which can be flashed on screen in a matter of seconds. The same equipment can also be used to make records available for inspection at a number of points. The records can then be kept in a central depository.

Some types of inspection, while not perfect in the sense of Image 1, bring records of forces, heat, gases orouts.
Television

factor in its versatility. It can be used for a short-time job with little expense, as in the show business, and then, when setting up a telecasting system would be practical only in a permanent installation. In many cases of disaster, a

tant phenomena to be observed.

The closed-circuit feature of industrial television has one great advantage. Since there is no broadcasting through space, there is no need of regulating bandwidth. So the industrial color tele-

Close-up of an RCA Vidicon, a compact TV camera specializing in industrial use.

camera can be placed where human eyes can not be placed, and where danger of falling material, etc., Image 9 shows how an industrial television camera might be used in a mine disaster.

Further research and work with radioactive material call for remote control operations to locations where no person may enter once the process has started. A television viewer to watch flow of materials, gauges, reactions, and in some instances to control mechanical robots, is of course the natural solution to the problem, as shown in Image 10.

Another version of the "white" problem is seen in Image 11. Vehicular tunnels pose a problem of traffic control which requires policemen at a number of points along the tunnel. Monoxide gas makes the job dangerous and unpleasant, and accidents are a hazard, as in the recent case where a guard in a New York tunnel was crushed when a truck got out of control. With the help of television, one man can do the work of a number, and do it in safety and comfort.

In many of these applications, color is quite unnecessary and is not used. In others, it is essential. For example, the effect of the fashion show of Image 2 would be ruined tremendously in black and white. Compare the models' dresses with the one on the evers, for example.

Image 4 is another good example where color is extremely useful. In many applications dealing with great heat, temperature is often estimated by color of metals or gases.

The same is true in observing chemical reactions, as in Image 10. Often the color of a solution is the most impor-

RADIO-ELECTRONICS, JANUARY 1951