RCA Industrial Television Equipment, ITV-1

Features

- Miniature Camera and lightweight 10-inch Monitor.
- Completely self-contained.
- Operates from 115-volt, 60-cycle, 200-watt supply.
- Camera is remotely controlled from Monitor.
- Uses standard 16mm movie lenses.
- Excellent resolution, contrast, and picture quality.
- Wired chain insures privacy.
- Provides safe and convenient viewpoints.
- An aid to education and industrial efficiency.

Uses

RCA Industrial Television Equipment is designed to transmit visual detail from a Camera to a viewing Monitor for application where limitations are imposed on use of the human eye. In factories, laboratories, schools and hospitals there are numerous demands for assisting or substituting for the human eye. Where, for example, the subject of observation is not easily accessible, or where nearness brings danger, the television eye serves a useful function. The Camera is located close to the subject while the observer sits at a convenient distance to view the image on the screen of the Monitor. This television medium can also be of considerable assistance when the subject must be viewed by a greater number of persons, or should be enlarged and projected upon a screen, or where several subjects can advantageously be watched from a central position. Industrial Television may be employed to combat eye fatigue, to combine operations, to monitor, to control from a remote point. Its use promotes safety, speed, and economy.

The practical usefulness of RCA Industrial Television has been proved by those installations already made. In a laboratory, details of dangerous operations are brought close to observers without endangering life but with an increase in efficiency through more precise control. In another installation, objects in rapid flight are continuously viewed by a group of experts to obtain performance data never possible by conventional means. In an industrial plant, production costs are reduced by employing only one man at the Monitor to inspect material at several different places. In addition, product quality is improved because the inspector sees details on the television screen that cannot be seen from the ordinary points of inspection.

Many possibilities for utilizing RCA Industrial Television present themselves. A single observer may watch a number of indicators on widely separated equipments in order to properly synchronize operations or to regulate processing and output. In vehicular tunnels, television cameras could probably replace guards, leaving but a few at headquarters to give instructions over a loudspeaker system for expediting the flow of traffic. For job training in industry, the television camera may be mounted at the best point of view to give that optimum position to each trainee who views the image on the screen.

For educational purposes in the armed forces, schools, and hospitals this newest of the audio visual devices is being employed to probe the extent of its usefulness. Medical students, for example, need no longer be relegated to the relatively distant amphitheatre but through the medium of television may be brought directly to the operating table. The armed forces are experimenting with a television hookup between classrooms in order to make more effective use of topnotch instructors. A network of shore installations and ships could be hooked up by microwave radio relay links and coaxial cables to introduce new methods and equipment or to train personnel. In colleges, close-up views of experiments, demonstrations, and microscopic studies may be enlarged and projected for convenience in teaching to a group of students.

Industrial television cameras in tellers' cages would make it possible to verify signatures directly from the bookkeepers' office, while television systems connecting banks and clearing houses would expedite paperwork considerably. Files, documents, security passes can likewise be scrutinized from a remote point. And, a number of restricted areas could be guarded by a single officer stationed at guard headquarters.

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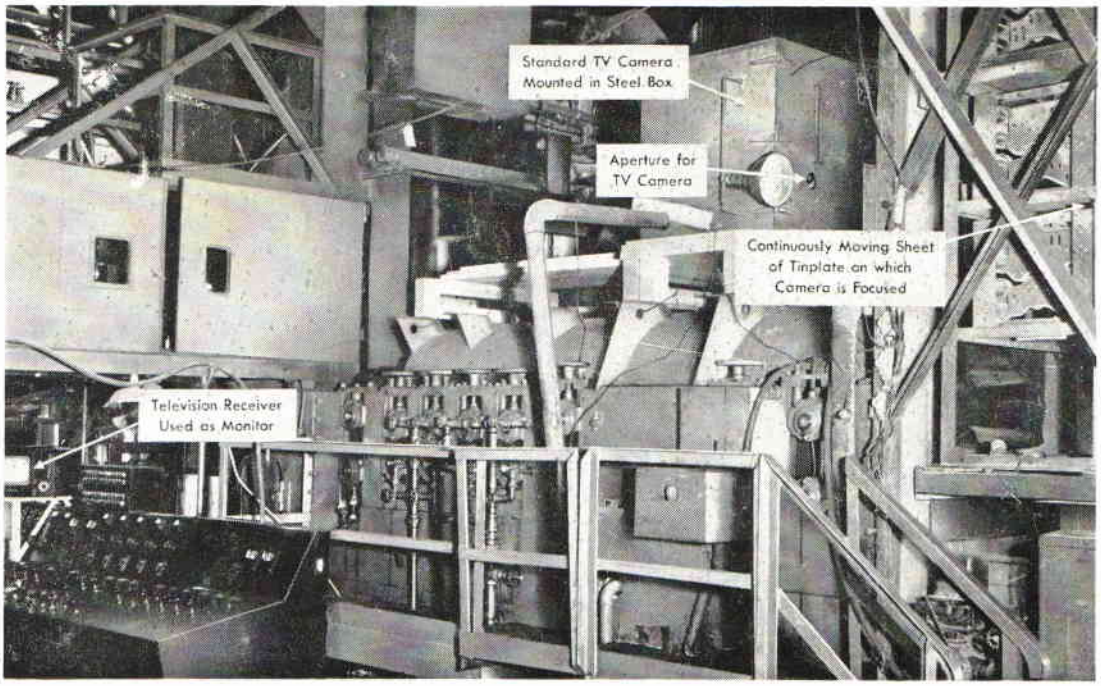
INDUSTRIAL TELEVISION EQUIPMENT
RADIO CORPORATION OF AMERICA
Engineering Products Department
Camden, N. J.



RCA Industrial Television Installation for inspection of quality of tin plating on sheet metal

Time study may be freed from the limitation imposed by the personal presence of the engineer and, in addition, diverse operations may be studied directly in the central office. Several separated operations can be combined so that one operator controls many. A local and a remote action could be viewed simultaneously so that they might be properly timed.

Industrial Television may be used to observe conditions in furnaces, to watch destruction tests, or to analyze combustion products of jet engines and rockets. The progress of multiple, long-time tests at different places may conveniently be followed from one central point. Phenomena associated with neuclear reactions could be observed from a safe position.

For inspecting the underside of rolling stock or fabricated material, Industrial Television offers further usefulness. Inspection of the interior of large manufactured products such as cylinders, cannon bores, and tanks are additional possibilities. Borings, casings, factory chimneys, and grain elevators might also be the subject of television inspection.

It may well be that the day is approaching when many institutions and organizations will build in television systems as an integral part of thir operations. Industry, as well as institutions, may use television intercommunication systems to expedite interoffice conferences, to give rapid interviews to visitors, and to otherwise make more efficient use of executive time.

Description

RCA Industrial TV Equipment consists of a miniature Camera and a Control Monitor, together with Connecting Cable. This 2-unit chain is light in weight, easily moved from place to place, and not difficult to set up. It operates from the ordinary 115-volt, 60-cycle supply and is completely self-contained. The picture is transmitted from the Camera to the Monitor by means of the Connecting Cable. The Monitor may be located at any convenient point from a few feet to 500 feet from the Camera, while greater distances can be covered by use of slave monitors or booster amplifiers. All controls are operated from the viewing position at the Control Monitor.

The Industrial Television Camera is as small and as convenient to handle as the average 16mm movie camera. Its size makes it ideal for mounting close to the operation or object to be observed. While normal industrial lighting usually provides sufficient illumination, a spot or floodlight can be effectively employed to enhance contrast or otherwise improve picture quality. The rugged, durable construction of this Camera makes it suitable for installation in industrial surroundings. It is designed to employ low-cost 16mm movie lenses with the standard Type C mount, which present no problem of availability and which allow a wide range of choice for specific applications. The television camera may either be mounted in a fixed position or may be mounted on a regular tripod and moved by an operator in the same manner as a movie camera to follow action or to move from one subject to another.

The Control Monitor contains a 10-inch viewing screen, as well as all controls for the operation of the television system. Two knobs control the operation of the moitor itself: (1) brightness, and (2) contrast. Three controls for the television Camera are also included on the Monitor panel: (1) beam intensity, (2) electronic focus, and (3) optical focus. The optical focus operates a small reversible motor in the Camera which changes the focus of the lens.

The Monitor also has provision for plugging-in additional television receivers. The Monitor will drive a 71-ohm line for distances up to 3000 feet. Unlimited distances may be employed through the use of booster amplifiers. And, since the scanning frequency of 525 lines, 60 frames interlaced, is the same as that employed for broadcast television, it is possible to use standard RCA television receivers as additional monitors by feeding signal into Antenna Terminals. Construction is rugged, suitable for movement from place to place, as well as for giving dependable operation under normal conditions of industrial service.

Specifications

Scanning Frequency	525 lines, 60 frames interlaced
Power Supply	115 volts, 60 cycles
Power Consumption	200 watts
CAMERA	
Lens Mount	Type C Standard 16mm movie
Scene Brightness	Min. 50 foot candles
Dimensions	10½" Long, 5" High, 3½" Wide
Weight	7½ lbs.
Finish	Umber gray wrinkle
CONTROL MONITOR	
Camera Controls	Electronic Focusing, Beam Intensity, Optical Focusing
Monitor Controls	Brightness, Contrast
Dimensions	20" Long, 15½" High, 13" Wide
Weight	70 lbs.
Finish	Umber gray wrinkle