

# 3-inch Image Orthicon TV Camera

TYPE TK-14



## FEATURES

- New, advanced yoke design obtains higher resolution from image orthicon
- Peak electrical focus maintained by stabilized I.O. control voltages
- High quality viewfinder with 7-inch aluminized kinescope
- Thermostatically controlled forced ventilation of coil and tube
- Protection circuit for deflection failure
- "Overscan" switch for warm-up and rehearsal
- Transistor amplifier intercom system
- Short "set-up" time; fast, accurate focusing
- Plug-in blower, pre-amplifier, and yoke assemblies

## DESCRIPTION

The RCA TK-14 Image Orthicon Television Camera is designed as an all-purpose monochrome camera head and viewfinder which can be used for either field or studio applications. The camera features a 3-inch, Type 5820A, Image Orthicon Tube and improved circuitry which afford higher horizontal and vertical resolution capability. Excellent video signals under normal lighting conditions (25 to 150-foot candles) are obtained, and good pick-ups with minimum incident illumination of 0.5 foot candle permit use of the TK-14 at sporting events, night clubs, and other pick-up points where lighting conditions are poor. A 7-inch aluminized kinescope tube and high quality viewfinder enables the cameraman to view the scene.

Stability and flexibility in performance are stressed in the design of the TK-14. New circuitry affording greater focus current regulation, target, dynode and image section stabilization with noticeably better picture quality are incorporated in the new camera and camera control. Fringe field effects are greatly reduced through inclusion of an electrostatic shield over the image section of the orthicon tube. A protection circuit for deflection failure, and

thermostatically controlled forced ventilation of coil and tube are features of the camera.

A new, modern appearance is featured by the TK-14 Camera. The camera and viewfinder are finished in an attractive silver gray textured vinyl, with the exception of the camera side doors which are finished in a contrasting light blue. A dome type tally light is mounted at the top of the viewfinder for clear visibility from all directions.

A transistorized intercom system is built into the new camera. Two intercom circuits are provided—one each for engineering and production use. Each circuit has individual volume controls.

"Inside out" accessibility is retained in the TK-14. The mechanical layout and design of both camera and viewfinder afford greater ease of servicing and maintenance. Plug-in blower, preamplifiers, and yoke assemblies permit quick spare interchange. Short "set-up" time, fast, accurate focusing, and convenient "overscan" switch for warm-up and rehearsal are operational features of the camera chain.



New TK-14 Monochrome TV Camera features easy access to circuits and controls. Camera is mounted on TD-10 Hydraulic Pedestal.

The TK-14 Studio Camera Chain includes the Camera, Viewfinder, Studio Camera Control, TM-6C Master Monitor, Focus Current Regulated Supply, Electromagnetic Orbiter Generator and WP-16B Power Supply with Centering Current Unit and Unregulated High Voltage Unit. This equipment is designed to mount in a standard 13-inch console housing and standard racks.

The TK-14 Field Camera Chain includes the Camera, Viewfinder, Field Camera Control, Focus Current Regulated Supply, Electromagnetic Orbiter Generator, Field Case in which the focus current regulator and orbiter generator are to be mounted, and TY-31 Field Power Supply. This equipment is designed as a portable system with all units in field cases for ease of transporting.

Both systems are supplied with lens, cables and tubes, as required. The camera can be mounted on studio or field type tripods, dollies or pedestals.

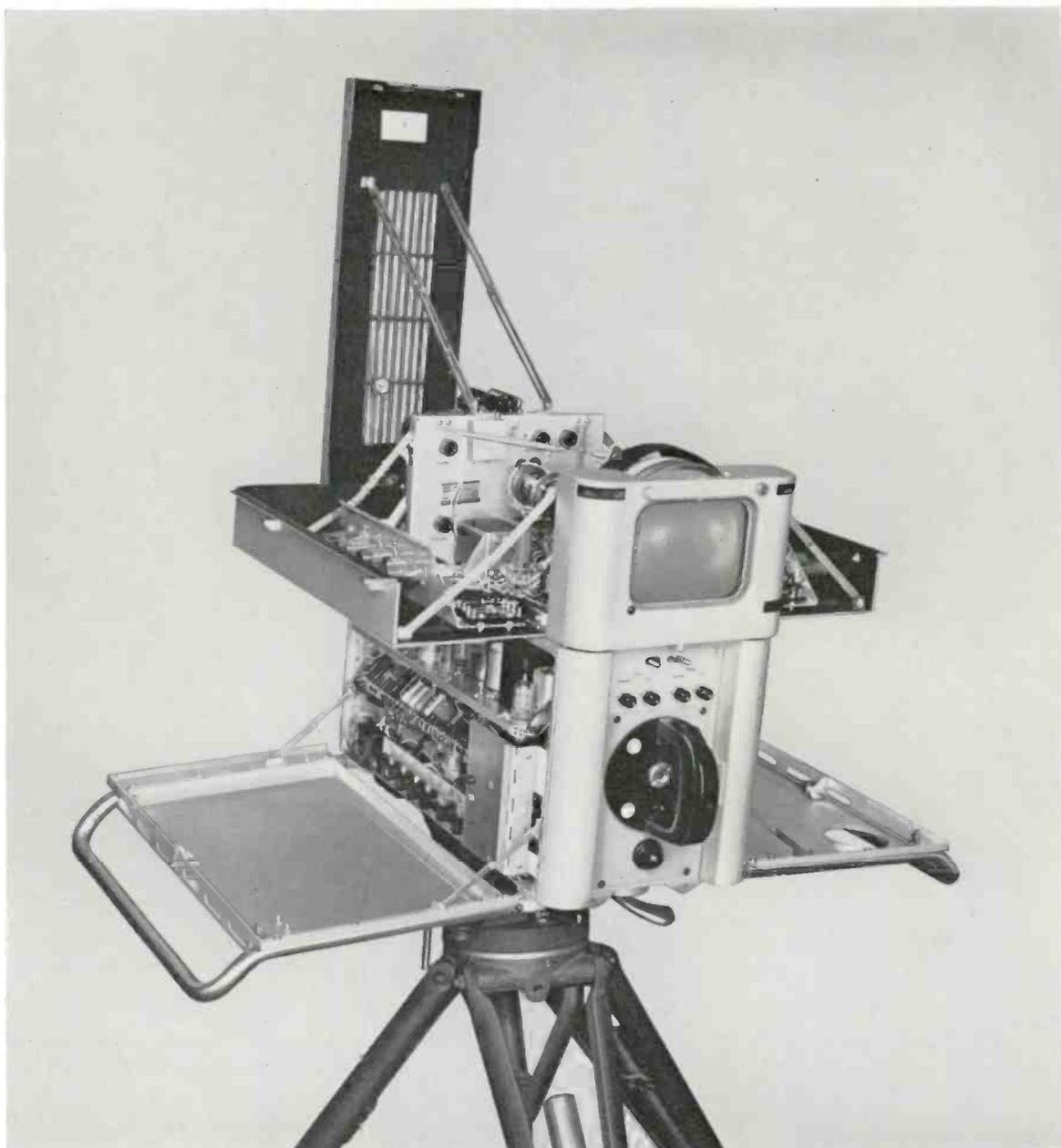
### Camera

The camera comprises a mounting for the image orthicon pickup tube together with its focus, deflection and beam-alignment coils, complete horizontal and vertical deflection circuits, a video pre-amplifier, target heater, blower duct, yoke assembly, and an optical system consisting of a turret with four lens positions and means for adjusting optical focus and iris openings. It is entirely self-contained except for a B power supply and certain electrical controls which are located, for operating convenience, at the camera control. All electrical connections are made through a single cable and plug which carry input power and sync generator signals to the camera, and video output and control circuits from it.

Physically the camera is divided into three main compartments. In the center compartment is located the pickup tube with its deflection, focus and alignment coils. The two side compartments, accessible by opening the side doors, contain the video and deflection amplifiers respectively. On the front end of the camera is the lens turret, and on the rear are some of the electrical controls and the control handle for rotating the turret. The optical focus control is located on the right hand side of the camera (from the rear or operating position). This focus control and the turret handle are normally the only two controls which require the attention of the cameraman during a television program.

A bracket containing seven controls and switches is attached to the camera frame at the base of the deflection chassis. The blower-motor assembly is located at the bottom front portion of the camera under the yoke assembly. A 24-pin connector and two sets of communication and program sound jacks are within easy reach on the bottom of the camera housing. Two tally lights at the front and one at the rear of the camera in conjunction with the tally light dome atop the viewfinder and the tally light in the kinescope mask are used as "on-the-air" indicators. Interconnecting plug and latch locks are incorporated in the camera to accommodate the viewfinder which mounts directly on top of the camera.

Optical focusing is obtained by moving the tube and its associated yoke coils. The complete yoke assembly is supported on a ball bearing slide mechanism which is an integral part of the assembly. Although rigidly fastened to the frame when in position, the entire assembly is removable in a few moments for servicing because it forms a plug-in unit. This suspension is smoothly driven through its entire travel for optical focusing by  $2\frac{1}{4}$  turns of a focus knob. The knob remains in place when the side door is



Hinged doors permit complete access to camera and viewfinder.

opened. This simple yet rugged drive mechanism imparts a non-linear motion so that relatively great image orthicon motion per degree of knob rotation is obtained for close-ups. Conversely, vernier motion is provided near infinity focus, where rapid motion would make accurate focusing difficult.

The improved yoke provides better shading, less geometric distortion and improved shielding. To improve the camera resolution capabilities an electrostatic shield has been incorporated in the yoke to minimize the degradation from deflection fields upon the image section of the orthicon tube. A special wrap-around mu-metal shield extends

from the image end past the alignment coils for complete shielding against external magnetic fields.

The yoke assembly is provided with a toroidal coil which is connected to an orbiting generator located at the control position. The current through this coil creates a slight displacement of the focus coil and magnetic field at the image end. The direction of displacement rotates to keep the electron image at the target in a constant orbiting motion to avoid burn-in of the image orthicon. The rate of orbiting is sufficiently slow and slight to be virtually unnoticeable. This feature prolongs the useful life of image orthicons to reduce operating costs.

### Simplified Alignment

The alignment coil assembly incorporated in the camera comprises two pairs of coils in space quadrature so that independent control of currents in the two pairs of coils will produce a correcting cross field in any direction required. In this system, no mechanical adjustment of the coil is required; it is rigidly mounted. The alignment procedure involves the simultaneous adjustment of two potentiometer controls which determine the currents in the two sets of coils. In order to simplify the alignment procedure, an auxiliary orthicon focus control has been included in the camera.

Vertical deflection incorporates feedback and phase correction for excellent linearity and stability without need for linearity adjustments. Target blanking insertion is at low impedance to eliminate crosstalk problems. Horizontal deflection has excellent linearity, single knob linearity control, for ease of adjustment, better stability, and freedom from transients by an improved push-pull type circuit and a novel ferrite core output transformer.

A seven microsecond return time insures good operation even with the extreme delay conditions associated with 1000 foot camera cable operation. Adequate and symmetrical centering controls are available. Both deflection circuits can be switched from normal scan to 10 percent overscan to guarantee against burned target areas during warm up, rehearsals, and stand-by while maintaining linearity and aspect ratio.

### Thermostatically Controlled Cooling

Thermal control of the operating temperature for the image orthicon tube is incorporated in the TK-14. The "plug-in" blower which is easily removed from the camera is cycled by a thermostat imbedded in the mask on the face of the pickup tube. The output of the blower couples to a gas mask type hose which directs cooling air through the air passages along the surface of the tube and between the coils. This assures proper operating temperature for stable performance and longer tube life. Provisions are also made for continuous operation of the blower and the target heater to meet extreme conditions. Protection for the image orthicon tube is assured through the use of a protection circuit which cuts off the tube when there is a loss of driving signals, deflection circuit failure, or failure of the activating relay.

### Image Orthicon Stability

The stability of the output signal of the image orthicon tube has been greatly improved by incorporating new highly regulated voltage sources. A new subchassis has been added in the camera to supply exceedingly stable +1300 volts for the dynode multipliers and -600 volts for the photo cathode and G-6. These circuits utilize a comparatively new device in the form of a hydrogen gas



TK-14 high voltage regulation circuit utilizing gas discharge tube provides improved image orthicon stability.

filled metal tube which is capable of precise regulation of high voltages. This tube operates on a gas discharge principle.

Further picture improvement is achieved by stabilized voltages and currents supplied from the new Focus Current Regulated Supply. This supply maintains the focus current within 0.2 percent of its optimum value over a wide temperature range. The same unit provides a high stabilized voltage source for the G-4, target and beam setting electrode G-1 of the image orthicon tube.

### Extra Features

For maximum picture sharpness and improved corner resolution, a focus modulation circuit is an important feature of the TK-14 camera. This circuit provides low-impedance feed of horizontal and vertical parabolic wave-shapes in a 4/3 aspect ratio to the orthicon wall to provide continuous beam focus over the usable target area. Blemishes inherent on the surface of the signal multiplier of the tube are defocused and are made to disappear without sacrifice of resolution.

The decelerator control is continuously variable from 0-120 volts for accurate "port hole" control. Image accelerator control provides "S-distortion" correction. Vertical deflection reversal is provided by a switch for special effects applications. Switch is made at the same time to a preset centering potentiometer to insure operation with the same target area. Horizontal deflection reversal is possible in that two coaxial leads feed the yoke so that a simple change of the yoke connections at the yoke plug will permit, for example, mirror image operation.

A multiplier video gain control allows a cure in the case of dynode overload. A line voltage tap switch compensates for line voltage drop associated with different cable lengths. An elapsed time indicator records hours of tube operation conveniently.

The video amplifier is a plug-in unit with all power connections made through a single plug and receptacle and with three small coaxial connectors for the input, main output, and viewfinder output signal connections. The amplifier is mounted on rubber to minimize the effects of vibration and shock.

Amplitude response is uniform to 8 megacycles and performance at low frequencies is free of streaking. Two stages of cathode high peaking eliminate overshoot and smear by very accurately compensating for the amplifier input loss of high frequencies while reducing microphonics associated with conventional high peaking. A separate output of this amplifier provides signal for the viewfinder. Ample gain insures a bright viewfinder picture with even a low-limit camera tube. Shading signals are introduced in the camera amplifier thus allowing shading in the viewfinder picture—a feedback pair in the output stage adds viewfinder isolation, sending-end cable termination, and provides linearity and stability.

### Electronic Viewfinder

The Electronic Viewfinder is a picture monitor using a seven-inch aluminized kinescope tube (RCA-7TP4) which enables the cameraman to view the scene. The design of this unit permits ease of access to the circuits and components, without interrupting operation. The kinescope is enclosed in a magnetic shield which minimizes stray fields and also serves as a light shield around the tube. The video amplifier includes adjustable blanking width controls to match blanking used in the camera control, thus eliminating confusion in determining the actual edges of the transmitted picture. The Viewfinder unit literally plugs into the top of the camera thus forming a complete operating unit. The front is easily detached for kinescope removal. A detachable viewing hood may be rigidly mounted to the mask assembly to prevent stray light from striking the face of the kinescope. The number of exposed operating controls has been reduced to three (contrast, brightness, and focus) with rim-type control knobs protruding through the rounded corners of the kinescope mask assembly.

Variable-width blanking permits adjustment of the viewfinder picture for accurate framing. Horizontal deflection is highly efficient; vertical deflection is a duplicate of the camera circuit; the video amplifier is wide band; and a driven clamp provides accurate d-c restoration. The viewfinder is attached to the camera by a two-finger, one-hand type release mechanism.



Focus Current Regulated Supply and Orbiter Generator shown mounted in Auxiliary Field Case.

### Focus Current Regulated Supply

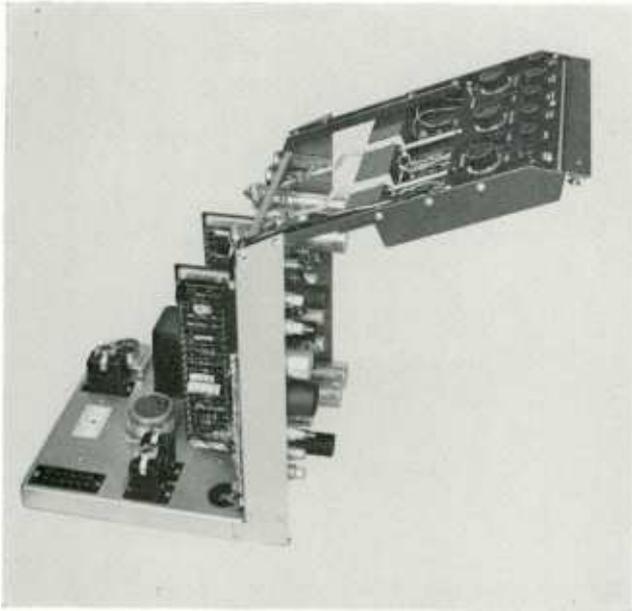
The Focus Current Regulated Supply is a precisely regulated power source for the yoke focus coil and G-4, target, and beam setting electrode G-1 of the image orthicon tube. The focus current is adjustable and a metering jack is incorporated to permit the use of a MI-21200-C Test Meter. Pin jacks are available for circuit test and voltage measurements. A hinged subchassis is utilized to permit ease of servicing.

This unit is designed for rack mounting. However, it is easily mounted in the Auxiliary Field Case along with the orbiter generator when used with the field camera chains.

### Studio Camera Control

The Studio Camera Control enables the video operator to monitor and control the quality of the picture signal produced by the studio camera. It is a desk-type console section with a TM-6C Camera Monitor mounted in the upper part, and the control chassis mounted in the compartment below. The camera monitor has a ten-inch picture tube for displaying the picture and a five-inch oscilloscope tube which reproduces the picture signal waveform. Controls for gain and black level setting are brought out on the monitor front panel.

The major operating controls have been reduced to three: Beam, Orthicon Focus, and Image Focus. These are equipped with standard, medium sized knobs which match those used on the associated Master Monitor. Less frequently used controls are grouped under a hinged cover over the control panel. The lucite panel is coated with dull black paint and utilizes edge lighting which illuminates designations but does not produce any stray light.



Studio Camera Control showing chassis and control panel.

The control chassis contains the necessary circuits for amplifying the video signal, establishing black level, mixing in a sawtooth correcting signal, adding picture synchronizing signal and providing three separate outputs. In order to provide more comprehensive control of the picture quality an arrangement has been included for controlling the non-linearity of the video-amplifier.

### Type TM-6C Master Monitor

The Type TM-6C Master Monitor provides in a compact form a complete monitoring unit for the observation of the TK-14 camera chain's video signals. It is used to show both picture (kinescope) and waveform (oscilloscope) monitoring of signals at any stage of transmission. Careful scrutinization of a number of details of the video signal may be performed which will aid in maintaining proper level as well as obtaining registration during set-up.

The unit employs a special ten-inch aluminized, straight gun, electro-statically focused kinescope for direct picture monitoring and a five-inch, flat faced, cathode ray tube for waveform presentation. The primary operating controls are located on the front panel. Other frequently used controls are mounted under a cover at the top of the panel. Controls used only for initial set-up are mounted on the left side of the chassis. All monitor components are readily accessible for servicing.

### Semiconductor Power Supply

The WP-16B Semiconductor Regulated Power Supply is a rugged, high-efficiency, lightweight source of precisely

regulated voltage, capable of supplying current loads of up to 1600 milliamperes. This is sufficient for an entire monochrome camera chain including the master monitor.

Centering current and unregulated voltage are supplied by means of subchassis units which are powered by separate, non-regulating secondary windings of the power transformer. These units are required when the WP-16B is used with the TK-14 camera chain.

The Centering Current Subchassis Unit is used for supplying centering current to live camera and master monitor. It contains two transistors and associated circuits mounted on a small sub-assembly. The current is adjustable between 300 and 1200 ma. by means of a control located on the front panel of the power supply. The Unregulated Voltage Subchassis Unit is used for the deflection circuits of the camera and master monitor which require a higher voltage than that provided by the regulated voltage output.

The WP-16B Power Supply is factory wired for an unregulated d-c voltage output of 400 volts. Taps are provided on the power transformer which can be connected to provide output voltage of 360, 380, 420 and 460 volts. The ripple content of the unregulated output is only 5 volts peak-to-peak and the output voltage is maintained within one percent for a fifteen percent change in line voltage. When the unregulated voltage sub-chassis unit is used, the capacity of the regulated output is reduced to 1350 milliamperes.

### Portable Field Camera Control

The Field Camera Control for use in remote pick-ups is contained in a suitcase unit for easy carrying, and enables the video operator to monitor and control the quality of the picture signal produced by the field camera. On the front panel are located two cathode ray tubes which serve as picture quality indicators. A seven-inch aluminized kinescope is used as a picture monitor, and a three-inch CRO tube is used as a waveform monitor.

An improved feature of the Field Camera Control is the sub-assembly, plug-in, r-f type high voltage supply. It is a completely separate unit which receives only its B+ and filament voltages from the camera control, and in turn supplies the +1500 volt focus potential and 10 kv ultor voltage for the kinescope as well as the -1500 volt cathode potential for the CRO tube. This extremely compact, efficient, and well-shielded unit provides stable ultor and focus voltages and ensures constant focus and deflection on the kinescope screen.

### Built-in Master Monitor Facilities

A seven-inch kinescope in the Field Camera Control provides the control operator an excellent monitor to evaluate picture quality. Appropriate circuits to obtain the maximum performance from this tube have been included. Its high contrast and brightness provide a picture which is easily observed under outdoor daylight conditions.

The waveform monitor, or CRO, features a highly stable sweep circuit which operates at either one-half of horizontal scanning frequency or one-half of vertical scanning frequency at the operator's choice. Indirect edge lighting is used with a calibrated lucite scale over the face of the CRO tube for easy and accurate measurements. When sync is mixed in the field camera control, a complete presentation of the CRO is available which enables the operator to set the proper levels.

Improved circuitry assures a video-frequency response that in no way limits the system. New sine-wave clamping employed at three places effectively establishes black level and guarantees gray scale rendition without introducing high-frequency unbalance to damage the blanking waveform. A regenerative type blanking circuit stabilizes blanking insertion. Fixed blanking set-up adds a controlled amount of "blacker-than-black" blanking. Ability to "stretch" the whites or grays is sometimes helpful in improving inferior pictures or producing special effects in contrast. Two "black-white" stretch circuit switches permit selection of four different conditions of gray scale alteration while keeping overall video amplitude constant.

From the output stage of the video amplifier are available two identical isolated video outputs which operate at the standard level of one volt of picture signal. Monitoring is direct from the outgoing line. Sync can be mixed in the camera control and thus makes available a composite signal at each output.

The mechanical construction of the Field Camera Control has been designed to realize the benefits of sub-assembly construction as far as possible. A small blower provides forced cooling to the unit. Accessibility is excellent, thereby making servicing easy.

A "target-set" button is provided to automatically reduce the target potential by two volts as a means for rapidly setting the target two volts above cut-off. Both vertical and horizontal sawtooth shading signals of either polarity are available. Video response is compensated by a "3-position" switch for various cable lengths in common use.

Circuitry is provided to allow use of the existing intercommunication lines in the camera cable to feed the driving currents to the electro-magnetic orbiter coil located in the camera, when the orbiting generator is plugged into the camera control. This does not affect normal operation of the intercommunication circuits. A switch on the camera



TK-14 Field Camera Chain showing Field Camera Control on table, TY-31A Field Power Supply and Field Case containing Focus Current Regulator and Electro-magnetic Orbiter Generator beside camera and viewfinder mounted on field tripod and dolly.

control is provided to stop the orbiting motion when a perfectly stationary image is required, as in the case of superimpositions. A tally light provides a warning indication when the orbiter is turned off.

### Auxiliary Field Case

The Auxiliary Field Case is designed to accept the Orbiter Generator and Focus Current Regulator Supply. All cables and connectors required within the case for interconnecting the two units are supplied. No special wiring is necessary. All circuits required for a field installation are brought out to connectors on the rear of the case.

### Portable Field Power Supply

The Field Power Supply, Type TY-31A, is a portable unit designed to supply all the d-c current required by the TK-14 Field Camera, Viewfinder, and Field Camera Control in one camera chain. A blower cooling system directs an air stream directly over the tubes. An important feature is the broad range of output current values at which regulated voltage may be obtained. The addition of a relay to withdraw a series regulator under light load provides a regulating range from 1.25a at 285 volts down to about 400 ma. The low end of the output range is especially useful when servicing only one unit of the camera chain, in which case the current drain is low.

## General\*

Type of Reproduction.....	Monochrome
Number of Scanning Lines.....	525 or 625
Frame Repetition Rate.....	30 or 25 per sec.
Field Repetition Rate.....	.60 or 50 per sec.
Line Repetition Rate.....	15,750 or 15,625 per sec.
Picture Signal.....	0.7 volt, peak-to-peak, non-composite nominal 1.0 volt, peak-to-peak, composite, nominal 1.0 volt, peak-to-peak, non-composite, optional 1.4 volt, peak-to-peak, composite, optional
Viewfinder Kinescope Size.....	7"
Input Signals:	
Horizontal Drive.....	4.0 ±0.5 volts, peak-to-peak, negative <sup>1</sup>
Vertical Drive.....	4.0 ±0.5 volts, peak-to-peak, negative <sup>1</sup>
EIA Blanking.....	4.0 ±0.5 volts, peak-to-peak, negative <sup>1</sup>
EIA Sync.....	4.0 ±0.5 volts, peak-to-peak, negative <sup>1</sup>
Input Termination Impedance.....	75 ohms

Output Signals:	
Studio Camero Video Outputs.....	3, non-composite (Sync may be added to one output)
Field Camero Video Outputs.....	2, non-composite (Sync may be added to both outputs)
Impedance of Output Terminations.....	75 ohms

Power Requirements:	
Studio Camero Chain	
A-C Power	
115 volts, 60 cycle chain.....	960 watts
230 volts, 50 cycle chain.....	960 watts
D-C Power (from camera chain supplies)	
Regulated +280 volts.....	1,290 ma
Unregulated +400 volts.....	160 ma
Focus Current.....	75 ma
Centering Current—5.0 volts (approx.).....	1000 ma
Field Camero Chain	
A-C Power	
115 volts, 50/60 cycle chain.....	1,650 watts
230 volts, 50 cycle chain.....	1,650 watts
D-C Power (from TY-31)	
Regulated +280 volts.....	1,240 ma
Unregulated +400 volts.....	160 ma
Focus Current.....	75 ma
Centering Current—5.0 volts (approx.).....	1000 ma

Picture Quality:	
Limiting Horizontal Resolution.....	650 TV lines, minimum in center
Signal-to-Noise Ratio.....	Nominal 30-33 db peak-to-peak signal/RMS noise for bandwidth of 4.5 mc
Blanking Signal Overshoots.....	Not in excess of EIA specifications
Overall Frequency Response	
with 100 ft. Camero Cable.....	±0.5 db to 7 mc; down not more than 3 db at 8 mc
Scanning Linearity.....	Within ±1%
Overscan Amplitude.....	10%
Orbiting Speed.....	1 RPM

Operational Specifications:	
Pedestal Range.....	0 to 50% clipping of signal
Gammo Correction.....	Separate block and white gammo switches
Camera Cable Compensation.....	Adjustable to compensate for a maximum length of 1000 ft. of camero cable

## Tube Complement

Camero: 4—6AH6, 1—6CU6, 1—6X8, 1—5687, 1—6AQ5, 1—6S4, 3—12AT7, 1—5820-A, 1—6AS6, 1—6U8, 3—12AU7, 1—1300R, 1—600R, 1—6BQ6-GT
Viewfinder: 1—OA2, 1—6AS7G, 1—6S4, 2—5763, 2—1X2A, 1—6BQ6-GT, 4—12AT7, 1—7TP4, 3—6AL5, 1—CL6, 2—12AU7
Focus Current Regulator Supply: 3—6CW4, 3—7119
Studio Camero Control: 1—OA2, 6—6AH6, 1—6AU5-GT, 8—12AT7, 1—6AG7, 4—6AL5, 1—6BQ7A, 2—12AU7
Field Camero Control: 4—1X2A, 2—6BQ6, 1—6S4, 3—5763, 8—6AH6, 1—6BQ7A, 10—12AT7, 1—3KP1, 5—6AL5, 1—6CL6, 6—12AU7, 1—7TP4, 1—6AU5-GT, 1—6L6, 2—991

\* See separate catalog description for specifications and tube complement on master monitor and power supplies.

## Mechanical Specifications

Unit	Dimensions	Weight (lbs.)
Camero (overall)	27½" long, 16" wide, 14½" high	78
Viewfinder (overall)	23½" long, 10½" wide, 8½" high	31
Focus Current Regulator		
Supply	19" wide, 3½" high, 10⅞" deep	12
Orbiter Generator	19" wide, 3½" high, 10¼" deep	5
Studio Camero Control.....	26" long, 11⅝" wide, 23⅝" high	27
Field Camero Control.....	27½" long, 8½" wide, 17½" high	67
Field Power Supply.....	26" long, 8½" wide, 18½" high	58
Field Case for Focus Current, Regulator and Orbiter.....	27½" long, 8½" wide, 19" high	20

## Ordering Information

TK-14 Field Camera Equipment:		230 V., 50 Cycle		
Qty.	MI Number	Description	Qty.	MI Number
1	26014	Image Orthicon Camero	1	556014
1	26024	Camero Viewfinder	1	556024
1	26064	Field Camero Control	1	556064
1	26091	Field Power Supply, TY-31	1	N26091
1	26093	Focus Current Regulated Supply	1	556093
1	26853	Orbiter Generator	1	556853
1	26294	Auxiliary Field Case	1	26294
1	26650	Cathode Ray Tube, RCA 3KP1	1	26650
1	26666	Kinescope Tube, RCA 7TP4	1	26666
1	26656-A	Image Orthicon, RCA 5820-A	1	26656-A
1	43201	Set of Interconnecting Cables	1	43201
1	826160	Lens, 50mm, f/1.8	1	826160
1	826161	Lens, 85mm, f/1.9	1	826161
1	826162	Lens, 135mm, f/3.5	1	826162
1	26725-E5	Camera Cable, 50 feet	1	26725-E5
1	26725-E6	Camera Cable, 100 feet	1	26725-E6
1	26725-E7	Camero Cable, 200 feet	1	26725-E7
1	26372	Set of Call Letter Panels	1	26372
1	26203-A	Camera Cradle Head	1	26203-A
1	26046	Metal Tripod, TD-11A	1	26046

TK-14 Studio Camera Equipment:		230 V., 50 Cycle		
Qty.	MI Number	Description	Qty.	MI Number
1	26014	Image Orthicon Camero	1	556014
1	26024	Camero Viewfinder	1	556024
1	26074	Camera Control Chassis	1	556074
1	26136-C	Master Monitor, TM-6C	1	N26136-C
1	26084-B	Power Supply, WP-16B	1	26094-B
1	26083-A	Centering Current Sub Chassis Unit	1	26083-A
1	26082-A	Unregulated High Voltage Sub Chassis Unit	1	26082-A
1	26093	Focus Current Regulated Supply	1	556093
1	26786	Console Housing, 13-inch	1	26786
1	26579-B	Blower for Master Monitor Housing	1	556579-B
1	26667	Cathode Ray Tube, RCA 5ABP1	1	26667
1	26655	Kinescope Tube, 10SP4	1	26655
1	26656-A	Image Orthicon, RCA 5820-A	1	26656-A
1	26746	Set of Interconnecting Cables	1	26746
1	826160	Lens, 50mm, f/1.8	1	826160
1	826161	Lens, 85mm, f/1.9	1	826161
1	826162	Lens, 135mm, f/3.5	1	826162
1	26725-E9	Camero Cable, 50 feet	1	26725-E5
1	26853	Orbiter Generator	1	556853
1	26372	Set of Call Letter Panels	1	26372

## Accessories

Shock Mount for Field Camero Control and Power Supply.....	MI-26511-A1
Shock Mount for Camero and Viewfinder.....	MI-26511-3
Lens, 8½", f/3.9.....	MI-26550-4
Lens, 35mm, f/3.3.....	MI-26550-9
Lens, 13", f/5.....	MI-26590-14
Lens, 17", f/5.....	MI-26590-15
Lens, 25", f/5.....	MI-26590-8
Orbiter Interconnecting Cable.....	MI-13333
Neutral Density Filter Holder.....	MI-26847
Spare Video Pre-Amplifier.....	MI-26153
Spare Yoke Assembly.....	MI-26747-B

<sup>1</sup> Pulse widths as specified by EIA in RS-170. Terminals for signals are arranged for loop through connections.