

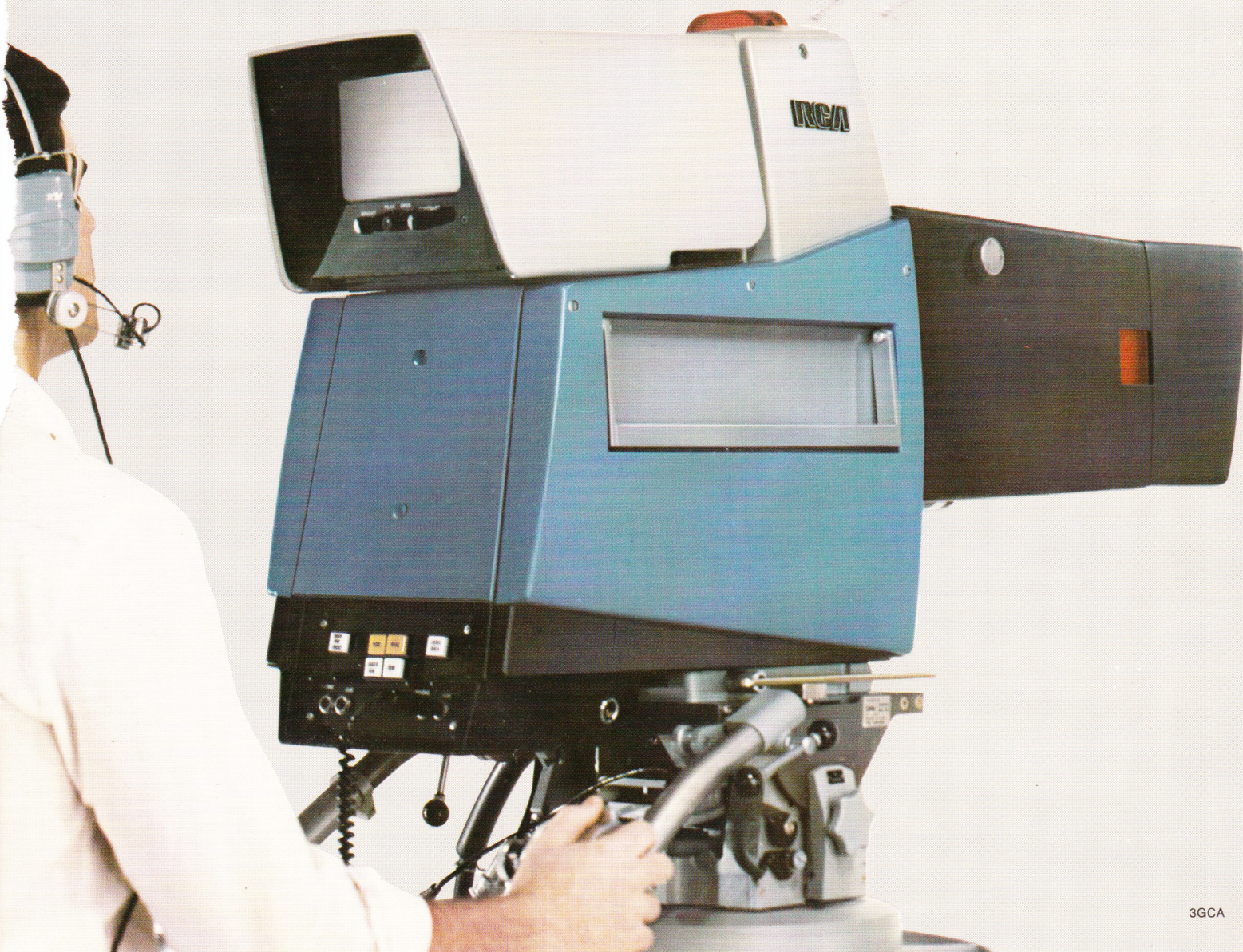
RCA

TK-47B

A GENERATION BETTER . . .

COLOR TELEVISION CAMERA

- Second generation TK-47 Series
- Automated, microprocessor-based system
- Extensive performance enhancements
- New operating ease
- New software features
- New Lens Correction Files
- New selective Automatic Set-Up
- New "Smart" Remote Control Unit
- Multicore and Triax Systems available



THE EVOLUTIONARY NEW TK-47B

With the introduction of the TK-47 color television camera, the evolution began. This new camera design, with its superior performance, operating simplicity and extensive automated functions, quickly established itself as the preferred choice for broadcast and teleproduction operations. To date, more than 500 TK-47 cameras have been sold worldwide—with numerous product and design improvements made along the way. In 1981, the TK-47 was honored with the prestigious Emmy Award from the National Academy of Television Arts and Sciences.

New design concepts—many stemming from user operating experiences—have resulted in the second generation TK-47: the evolutionary new TK-47B. It does everything the TK-47 does—and more.

There are new features, new functions, new accessories plus more versatility and more operating conveniences. Triax and multicore systems are available, as is a remarkable new “smart” Remote Control Unit.

The camera employs latest technology in its circuit integration and design; in solid state memories; in microprocessor-controlled functions, and in computer-assisted component matching and assembly techniques.

The result is a camera system that achieves superior performance and new levels of stability, reliability and operational simplicity. A camera that's equally at home in the studio or on location.

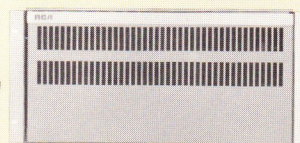
Like its predecessor, the TK-47B is the camera that's right for its time—the demanding decade of the '80's.



TK-47 Cameras . . . at home in the field or in the studio.



TK-47B . . . THE BETTER SIMPLE SYSTEM



Remote Control Unit



Only three basic units are involved in normal TK-47B operation: the Camera Head; the Camera Processing Unit (CPU) and the Remote Control Unit (RCU). The CPU and RCU are interconnected by twisted pair cabling. The CPU corresponds to the Control Unit (CCU) on conventional cameras, except that it has no operational controls. It functions as the interface

between the Camera Head and the system. There are also no controls at the Camera Head, thus freeing the operator to concentrate more on creativity and picture composition. With the TK-47B there is no need for the time-consuming “tweaking” of the camera controls to maintain optimum adjustments. The simplicity of the system means consistent high level performance.

SUPERB PICTURE QUALITY

The TK-47B delivers superb picture quality, with full fidelity reproduction that captures every nuance of color. Picture performance is achieved through extensive built-in camera capabilities and automatic operational controls—automatic white and black balance and automatic iris.

Prism optics, contours out of green and red, scene contrast compression, axis and modulation shading combine with the excellent performance characteristics of 30mm pickup tubes to produce superior pictures under a wide range of lighting conditions.

Simplicity of Operation

Simplicity of operation has been enhanced in the TK-47B camera. With software improvements and new operational conveniences, better results can be attained consistently, even with less skilled personnel.

There are no technical controls in the camera head. The camera system is extremely stable, resulting in faster set-ups, more production time and a day-in, day-out consistency of performance that minimizes the need for adjustments and "tweaking" of controls.

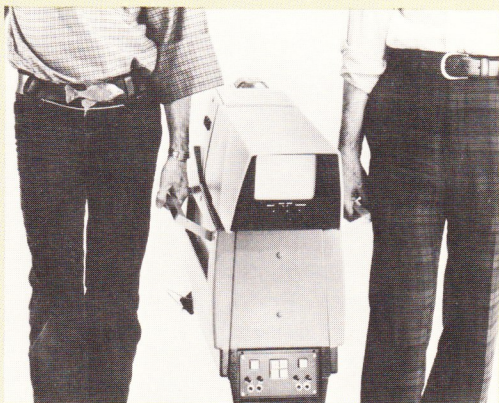
Stability and Reliability

Stability and reliability have long been hallmarks in RCA camera design and performance. The new TK-47B extends these performance standards to new limits.

New circuits, components and assembly methods combine to stabilize operation. Feedback techniques are used extensively to keep signals and voltages constant regardless of environmental conditions. LSI circuits are extensively employed in the TK-47B, and the inherent stability of these devices further contributes to overall stability.

Registration stability is such that the TK-47B is practically impervious to the shocks, vibrations and jolts encountered in normal operation.

Further, replacement of mechanical potentiometers with semi-conductor memories results in improved camera stability and reliability.



Recessed, long-length carrying handles ease mobility.

TK-47B CAMERA HEAD

The TK-47B Camera Head is built to handle rugged operating conditions in the field or in the studio. It is weather-resistant for outdoor use, making it operable under adverse environmental conditions, including RFI fields.



A unique shock-mounted optical system assures registration stability with immunity to microphonics. Prism, yokes and tubes are packaged as a single assembly on specially developed vibration isolators. Pick-up tubes are hard-mounted in the yokes.

A new asymmetrical Pin Cushion and Trapezoidal correction facility in the TK-47B results in improved registration performance.

The TK-47B Camera Head contains no set-up controls requiring routine adjustment. A digital semi-conductor memory in the Camera Processor Unit—controllable from the Set-Up Terminal—permits all necessary adjustments to be conveniently made from a control room or mobile van. This memory is non-volatile so the camera may be disconnected without any disruption. All circuits in the camera head are modular and easily accessible.

AUTOMATIC OPERATIONAL FEATURES

In keeping with its advanced design concepts, the TK-47B camera is extensively automated in its operational control functions.

Automatic iris control maintains constant video level under wide variations of lighting conditions.

A new iris "over-ride" facility has been included in the TK-47B for those users who desire a limited amount of manual control while in the auto-iris mode.

White balance is achieved at the touch of a "balance" button, which puts a cursor on the viewfinder. When the camera is focused so that this cursor falls on a white object in the scene, white balance is achieved automatically—in a matter of seconds. If the balance

error is beyond the capability of the automatic system, an indicator warns of this condition.

Black balance is also automatic, whenever the "balance" button is pushed and the lens is capped.

Automatic multicore cable equalization eliminates the need to check and make adjustments when camera cable lengths are changed. Timing and equalization are adjusted automatically for any length of cable up to 2,000 feet, with full compensation for cable non-uniformity and temperature effects.

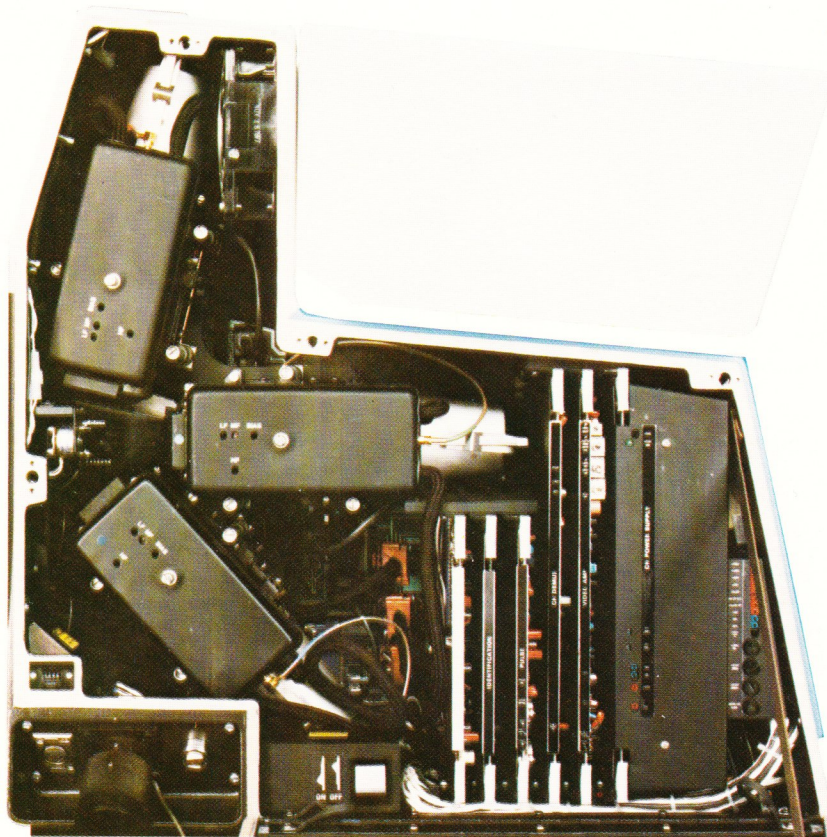
CTS AND CONTOURS-OUT-OF-RED

Picture performance is improved by an automatic CTS circuit which optimizes beam current, depending upon highlights present in the picture. CTS in the TK-47B solves the problem of "comet tailing", without compromising resolution and without affecting tube life.

Contours-out-of-red is another design feature which further enhances the picture performance of the TK-47B. When the green signal in any part of a scene falls below a pre-determined level, a contour signal derived from red is automatically switched on, resulting in sharp pictures with crisp detail.

PRISM OPTICS

RCA optics have been acclaimed for precise colorimetry. The TK-47B optical system consists of a simple dichroic prism for maximum efficiency sensitivity, resulting in precise color matching for superior picture quality. A single unit, with only four exposed surfaces, the prism is easily removed for cleaning.



Interior view, showing shock-mounted optical system and modular plug-in construction.

CHOICE OF LENSES

The TK-47B accepts a wide selection of highest quality lenses, using a simple quick-change mount. New hardware and software provides six lens correction files which permit compensating for differences between diascope and through-the-lens viewing. As an additional convenience in making set-up checks, either the in-lens diascope, or an external chart may be used, as preferred by the user.

Another convenience for the camera operator is a two-level tally system—an LED display at the viewfinder showing whether the camera is on-air or being used for an "iso" recording. There is also a two-position tally switch which permits the operator to disable the main tally light when desired.

The 7-inch viewfinder is tiltable, rotatable and removable. Improved brightness, contrast and peaking will satisfy even the most demanding camera operator.

The dual interphone system accommodates dynamic or carbon microphone headsets and is compatible with RTS interphone systems.

TK-47BT Triax Camera System

The TK-47BT Triax camera has been designed for maximum transparency to deliver the superb picture quality produced by the basic camera. Full bandwidth R, G and B video signals are returned to the CPU. The convenience and versatility of triaxial cable operation are realized without compromising any of the operational features or facilities of the multicore camera. Even the AC utility outlet is available with 100 watt capability. And two high fidelity microphone channels are provided from the camera head to the CPU for stereo sound.

Technical set-up functions in automatic or manual modes are not affected by the triax operation. All circuitry for triax operation is self-contained within the Camera Head and the Camera Processing Unit. Conversion between the triax and multicore camera operation can be achieved in less than five minutes, providing complete flexibility of functioning in either mode.

Cable runs of 11,000 feet (3.4 KM) and more are possible with the TK-47BT, making it an ideal system for use in mobile TV units. Triax cable is simple, lightweight and uses connectors which are easily repaired in the field. The cost is significantly less than multicore cable, and the reduction in bulk is substantial, as shown on the comparison chart.

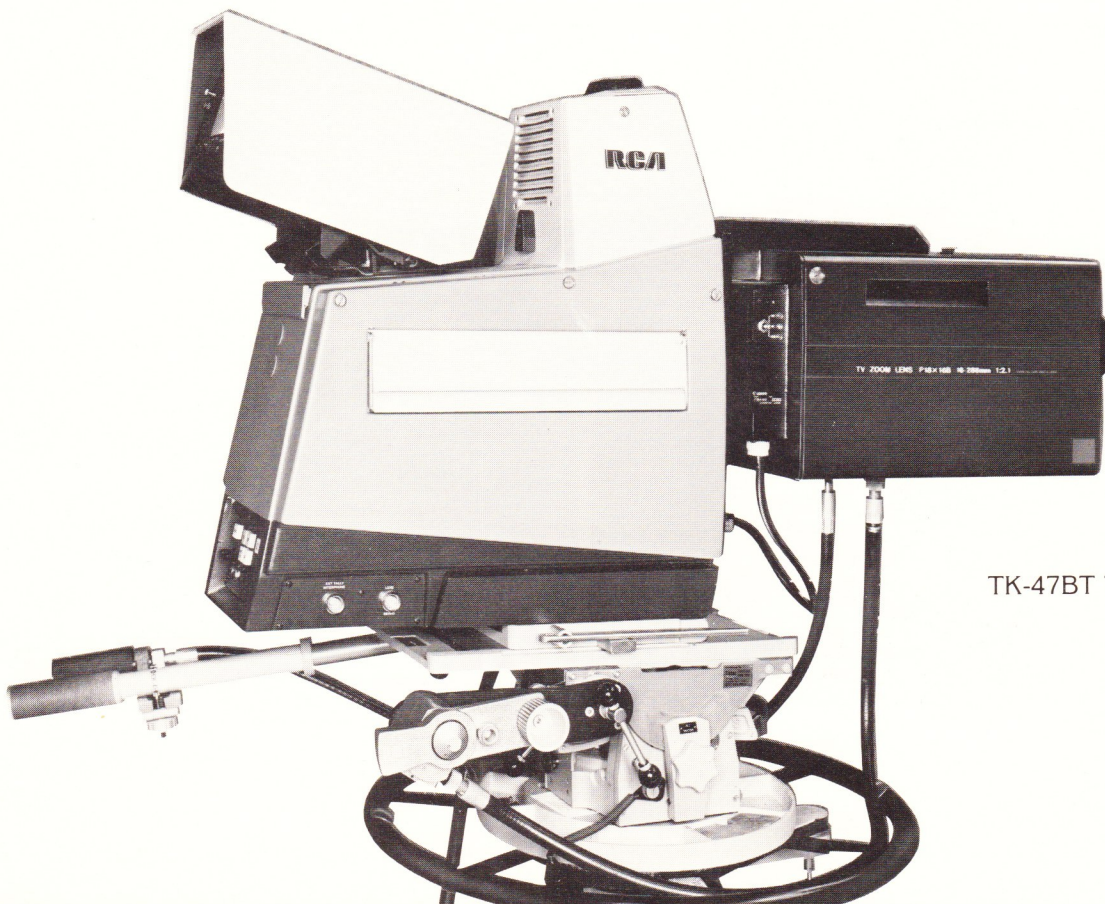
TK-47B ACCESSORIES

Camera operation for many applications will be enhanced with the use of two new accessories designed for TK-47B cameras.

Viewfinder Display Unit. Gives the camera operator four useful displays:

1. **Zoom Indicator.** A bar graph at the top of the viewfinder which is continuous across the screen for a wide angle and reduces from both edges as the zoom angle is reduced.
2. **Center Cross Hairs.** A small cross in the middle of the viewfinder permits exact center framing of objects.
3. **Box Cursor.** Two horizontal and two vertical lines which can be individually controlled to form either a box, a cross, or a line. Four knobs at the rear of the camera are used for positioning the cursors, and a memory facility permits storing two selected displays for future recall.
4. **Safe Title Area.**

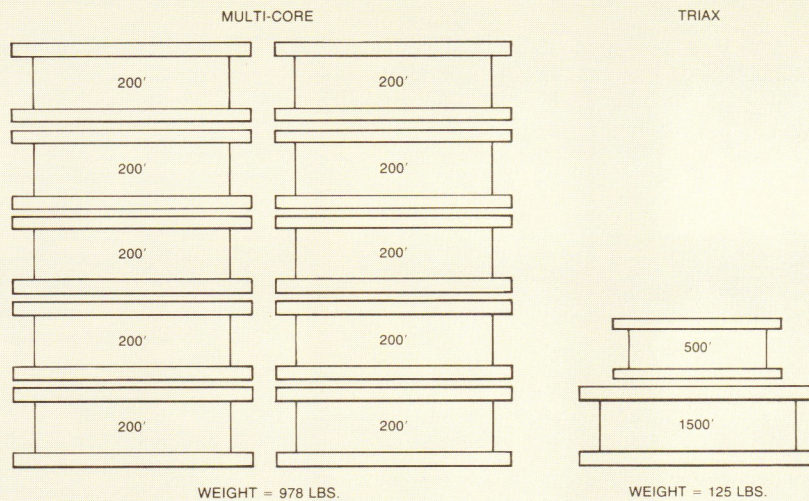
Motorized Filter Wheel. This accessory is supplied in conjunction with the Viewfinder Display Unit. The Motorized Filter Wheel consists of a special motor and gear drive system installed behind the manual filter wheel knob. A viewfinder readout displays the filter wheel position. Control is available from the rear of the camera or from the Smart RCU. In either case, during "Auto" or "Check" set-up, the filter wheel is automatically set to the clear position and then returned to the selected position when set-up is complete. Additionally, manual filter wheel control is retained.



TK-47BT Triax

CAMERA CABLE COMPARISON:

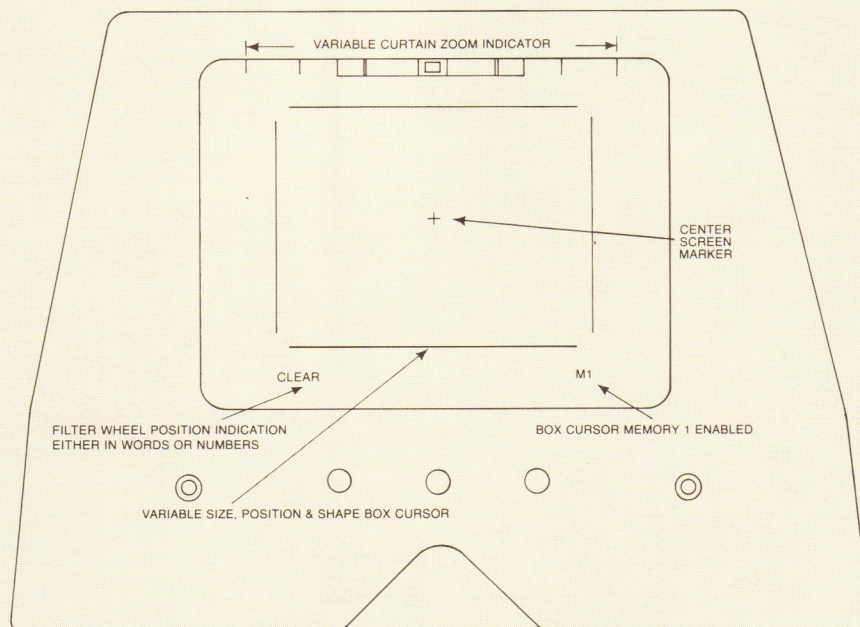
2000 Feet of Multicore and TRIAX



TRIAX CABLE LENGTH

Belden	9267	0.31 in. (7.9 mm) OD	3,500 ft. (1065 m)
Belden	9232	0.51 in. (13 mm) OD	6,500 ft. (2000 m)
F&G	1.0	0.33 in. (8.5 mm) OD	4,000 ft. (1200 m)
F&G	1.4	0.44 in. (11 mm) OD	6,500 ft. (2000 m)
F&G	2.1	0.58 in. (14.8 mm) OD	9,000 ft. (2750 m)
F&G	2.4	0.64 in. (16.2 mm) OD	11,000 ft. (3400 m)

VIEWFINDER DISPLAY UNIT



Camera Processing Unit

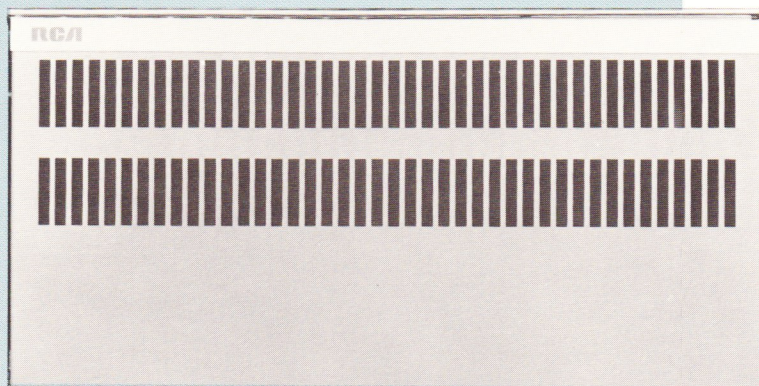
The Smart Black Box

The Camera Processor Unit (CPU) functions as video processor and total systems interface. It is the connection point between the Camera Head, Remote Control Unit, Set-Up Terminal, and the external system. All circuitry for video signal processing including contour enhancement and aperture correction, is incorporated in the CPU, as are the camera's main operating memory and the many user files. The CPU consists of plug-in modules (for easy accessibility and service) including the encoder, video processor, source sync generator, and system power supply. Having no controls requiring routine adjustment, the CPU need not be located near the video operator.

An automatic equalization circuit compensates for high frequency loss in the multicore cable. In the Triax mode, this module is replaced and the adjacent empty slot is filled with triaxial cable interface modules.

With its complement of plug-in modules and its lack of controls, the CPU epitomizes the differences between the TK-47B and conventional camera designs. The potentiometers common to older designs have been replaced with solid state digital memories. The functions of more than 100 "potentiometers" are now handled by solid state digital memories in the TK-47B. Since potentiometers are subject to moisture, dirt, vibrations and wear, their replacement by solid state memories results in better reliability and stability.

The rear of the CPU is a centralized junction panel for the camera system. All interconnecting cables for the camera chain and the system terminate at the CPU on reliable easy-to-service connectors.



Camera Processing Unit

Remote Control Units

A Choice of Two Comprehensive Control Centers

For TK-47B Camera buyers, selecting the Remote Control Unit is a "can't lose" proposition, since the choice is between two excellent systems:

1. **Full Function RCU.** This proven system provides a remarkable level of camera control.
2. **Deluxe Function "Smart" RCU.** This new micro-processor-based design offers all of the features and capabilities of the Full Function RCU—plus an extended range of additional operational facilities.

FULL FUNCTION REMOTE CONTROL UNIT

Total operational control for the TK-47B camera is provided by this RCU. A joystick on the panel permits convenient control of Iris and Black level.

The "Paint Enable" Button allows white and black balance controls to be switched in or out, permitting the operator to revert instantly to the standard balanced condition.

Automatic operation modes may be selected from the Remote Control unit via pushbutton controls, including:

- Auto Iris
- Auto White Balance
- Auto Black Balance

Complementing the automatic operational controls on the TK-47B are artistic controls which permit video operators to make fine-tuning adjustments to suit artistic requirements.

To compensate for varying light conditions, a Color Temperature Switch covers the range from 3000°K to 9000°K in 1000° steps.

Master Gain operates simultaneously on the gain of all three color channels. It is adjustable in 3 dB steps from -3 dB to +12 dB permitting "super-quiet" operation in sufficient light to "super-sensitive" operation in low light conditions.

Other RCU features:

- Joystick Match Monitor Switch
- Contour enhancement level adjustment
- Scene Contrast Compression level adjustment
- Recall of Camera Set-up Files
- Connection to CPU with only three twisted pairs
- Operation up to 1000 feet from CPU

When the TK-47B is equipped with the "Automcam" option, routine operational performance checks can be initiated from the RCU via the "Check" pushbutton on the panel.

Up to four Full Function Remote Control Units may be mounted side-by-side in a frame which can be fitted into either a console housing or a rack.

DELUXE FUNCTION "SMART" RCU

The "Smart" RCU is a microprocessor-based system which extends the versatility of the TK-47B, permitting unprecedented functional control of camera operations and adjustments. It provides all of the operational controls of the **Full Function RCU**, and includes a memory capability for File and Recall of selected "paint" control settings for up to 32 different scenes.

Other exclusive features of the Deluxe Function

"Smart" RCU are:

- Flare Paint
- Gamma Paint
- Lens F-Stop Display
- Paint Parameter Displays
- Filter Wheel Control
- Three Knob Iris
- Self-test diagnostic facility

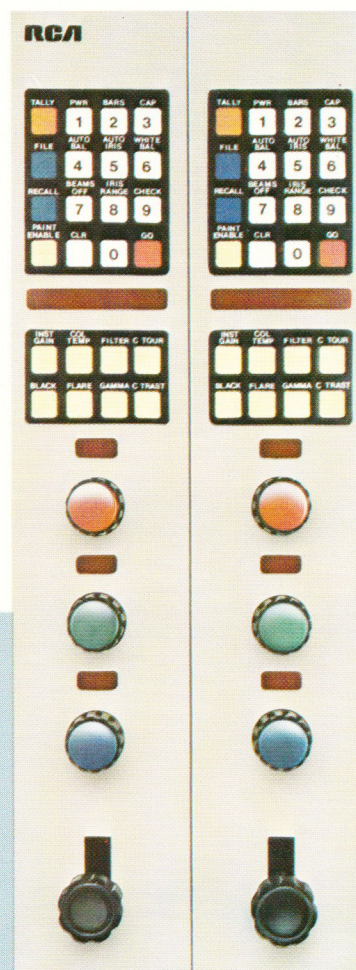
An 8-character alpha-numeric readout on the RCU is used to display control settings; F-Stop; diagnostic messages, and operator "prompts". Digital Resolvers are employed to adjust various controls (instead of the "pots" used with conventional RCU's). The self-test diagnostic feature of the RCU is an automatic function when power is turned on. It completely analyzes the unit, including controls, displays and pushbuttons —and it signals faults.

The operational File and Recall facility can be used to store optimized "paint" control settings for scenes, events, people, lighting. Recall can be by file or scene number, or sequential. This capability permits a multiplicity of scene paint settings to be defined and saved during rehearsal or during the first show for subsequent rapid recall.

The "Smart" RCU comes in a space-saving dual panel configuration for controlling two TK-47B cameras. Three of these dual panels can be mounted side-by-side in one console or rack width for controlling six cameras.



Full Function RCU



Deluxe Function "Smart" RCU

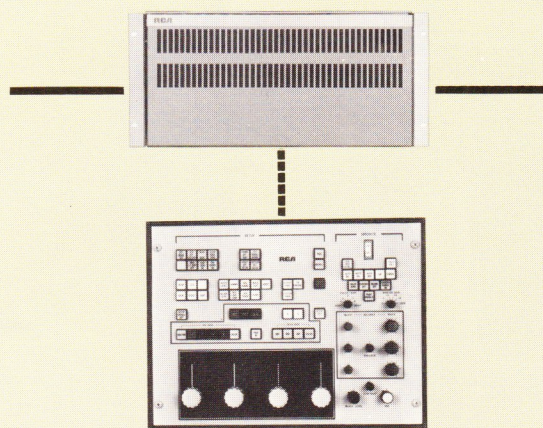
ADDITIONAL TK-47B CAMERA FEATURES

- Establishes new standards for color camera performance
- Superior picture quality, consistently
- A minimum of controls for simplicity of operation
- No technical controls at camera head
- Digital, solid state memories replace mechanical potentiometers
- Hard-mounted tubes; shock-mounted optical system for stability
- "Autocam" option uses single pushbutton for completely automatic camera set-up
- New levels of stability, reliability and operational convenience
- Full range of automatic functions
 - Automatic Iris Control
 - Automatic White Balance
 - Automatic Black Balance
 - Automatic Pulse Advance
 - Automatic Cable Equalization
- Extensive use of LSI circuits
- Scene Contrast Compression
- Contours out of Green and Red
- Built-in Sync Generator with Genlock
- Memory File and Recall capability
- Camera check without misadjusting controls
- Centralized set-up
- "Electronic Instruction Book" sequencing speeds manual camera set-up
- Diagnostic parameter display
- Alpha-numeric function display
- Centralized set-up controls for multiple camera systems
- Automatic Monitor Mode Switching
- Video bus for Waveform and Picture Monitors
- Data bus for control signals
- Tilttable, rotatable viewfinder
- Weather-resistant Camera Head
- Recessed carrying handles
- Lens cap automatically closes with power off
- 7-position Color Temperature Switch
- 6-position Color Filter Wheel
- 6-position Master Gain Switch
- Total system versatility for studio or field use

The remaining camera system component—the Set-Up Terminal (SUT)—is only connected to the camera during set-up and is disconnected during normal camera operation. Thus, a single Set-Up Terminal can serve an entire multiple-camera system.

For those desiring the ultimate in convenience, the TK-47 "Autocam" option reduces the set-up operation to a single pushbutton for major camera set-up adjustments. And, as a part of the "Autocam" option, a "Check" pushbutton is routinely used for a quick 15-second check of more than 60 functions, using the green channel as reference.

"Check" automatically handles the pre-operational check-out to verify that the camera is optimized for peak performance. Either the lens diascope pattern or an equivalent external chart may be used.



Set-Up Terminal

TK-47B “Check” and File/Recall Features

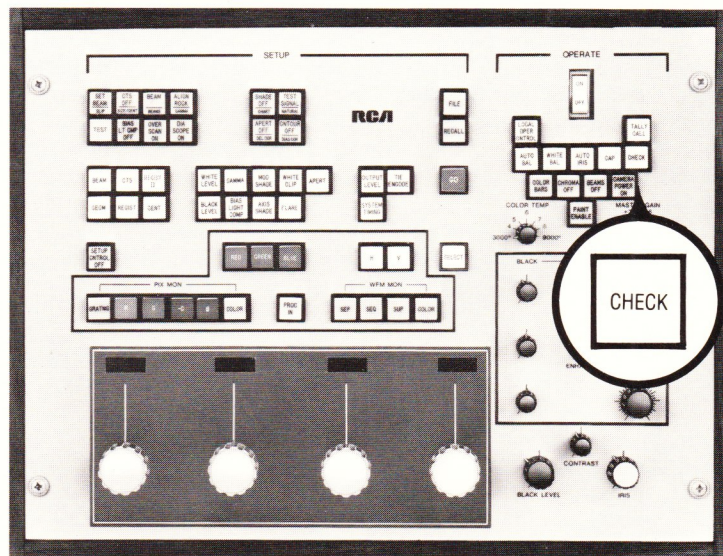
Check

“Check” is an invaluable facility that comes with the “Autocam” option. It performs a cycle of routine pre-operational checks to be sure that the camera is set for optimum performance.

The touch of a button activates the “Check” mode, and the automatic system rapidly checks more than 60 separate camera functions involving registration, gamma tracking, and shading, using the green channel for reference.

Unlike conventional cameras, it is not necessary to mis-adjust the TK-47B to bring it back to optimum settings. The “Automatics” only make adjustments when they are required.

This check takes seconds to complete. For total system flexibility, “check” can be initiated from the Remote Control Unit or Set-Up Terminal. It performs this function consistently and unerringly, and instantly confirms optimum performance, thus eliminating the dependence on highly skilled technical personnel.



File and Recall

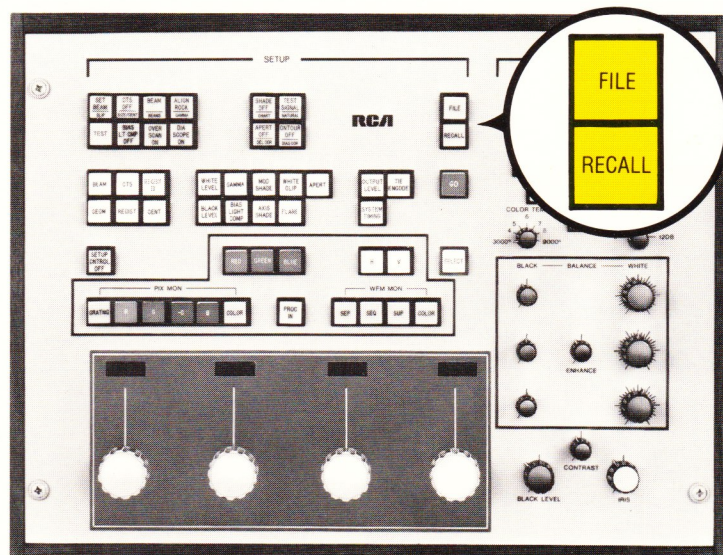
There are, of course, optimum camera settings for a variety of operating conditions. With the pushbutton-activated “File” and “Recall” capability of the TK-47B, all adjustments, whether made manually or automatically can be stored in a memory bank. These adjustments are retained until such time as they are intentionally changed.

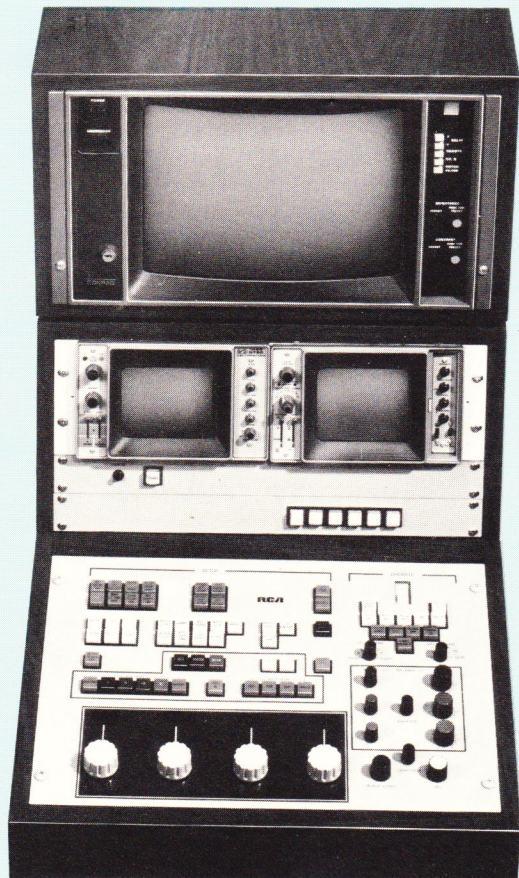
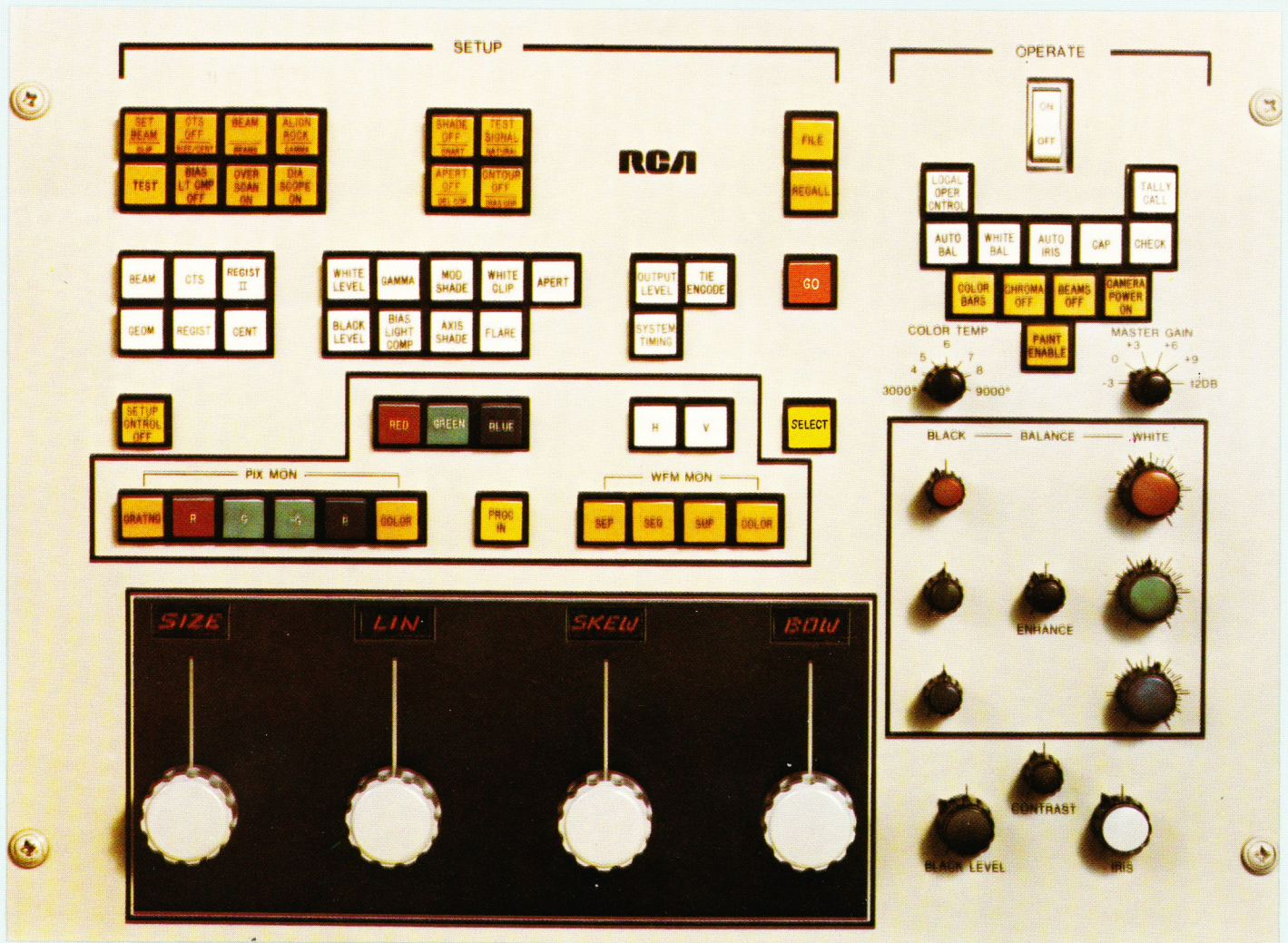
The unique File and Recall facility of the TK-47B permits storing six different set-ups in each camera. Three of these set-ups are stored automatically:

- Indoor
- Outdoor
- Last set-up prior to full automatic adjustment

In addition, three more set-up files can be stored in the memory—for example, “film look” lighting; low-light operation; special effect; “disco” or others of the user’s choice. In each case, the optimized setting is filed in the CPU memory, ready for instant recall. The filed settings can be updated at any time. For added flexibility, the Recall capability is available from the Remote Control Unit as well as from the Set-Up Terminal.

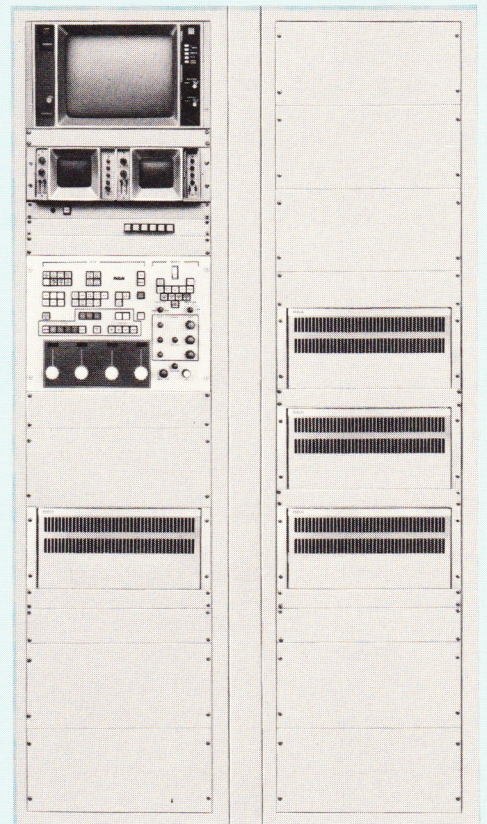
As a further capability, six additional files are available for storage and recall of the following encoder parameters: Luminance level; Chrominance level; I and Q balance; Sync level; Pedestal level; H Phase and Subcarrier Phase.

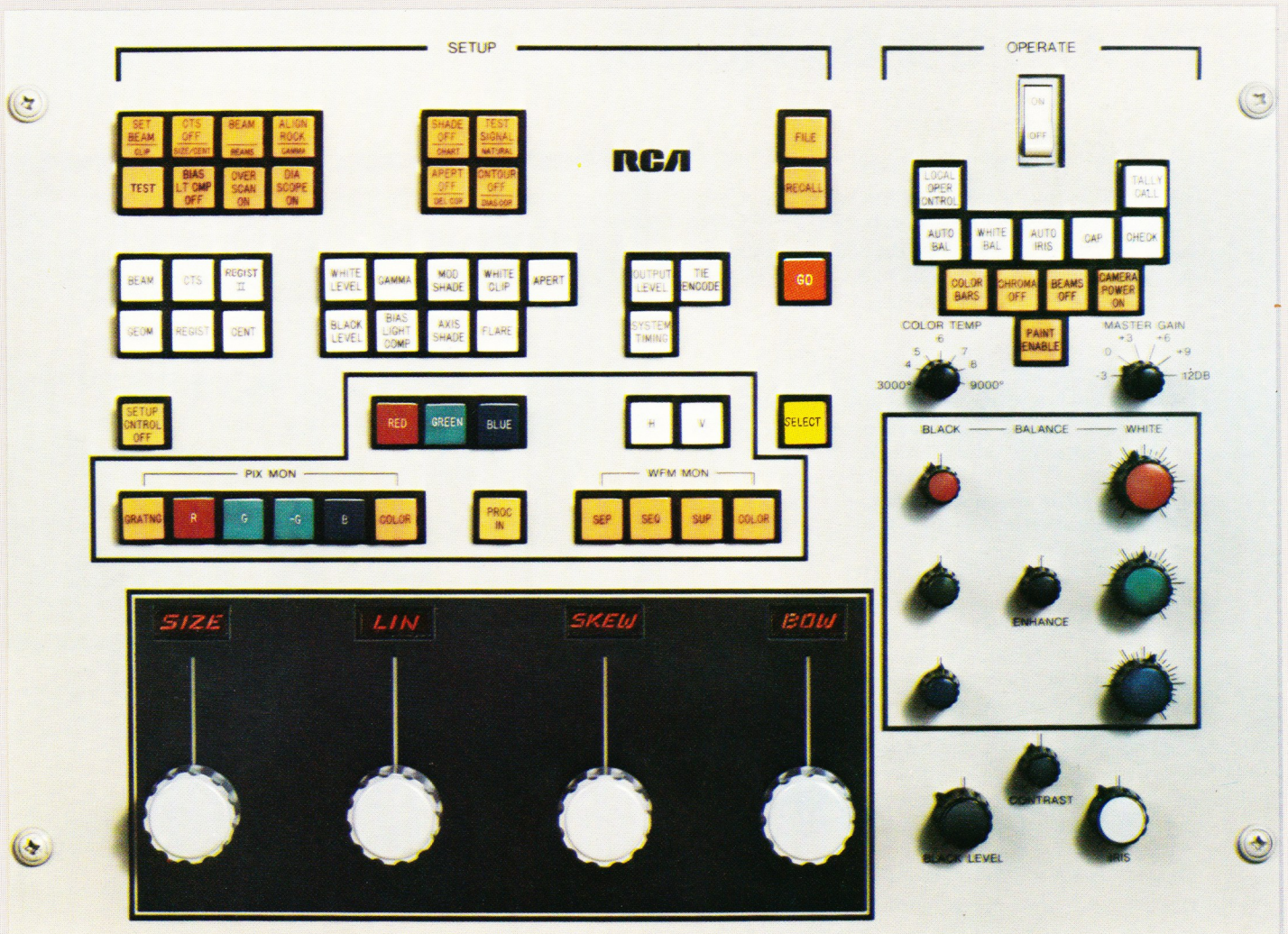




Set-Up Terminal

Set-Up Terminal (SUT) can be console or rack-mounted, located in the technical center or elsewhere to suit user operating preferences.





Set-Up And Operating Controls

The TK-47B Set-Up Terminal is divided into two sections, with the Camera Operating Controls grouped on the right, and Set-Up Controls on the left.

Line-Up Control Functions

All of the line-up control functions for the TK-47B camera system are delegated to the four knobs at the bottom of the panel. An LED display above each control knob provides an alpha-numeric display of the function being controlled at any particular time. Additionally, a diagnostic feature provides a numeric (percentage) display of the value of each of the controlled functions.

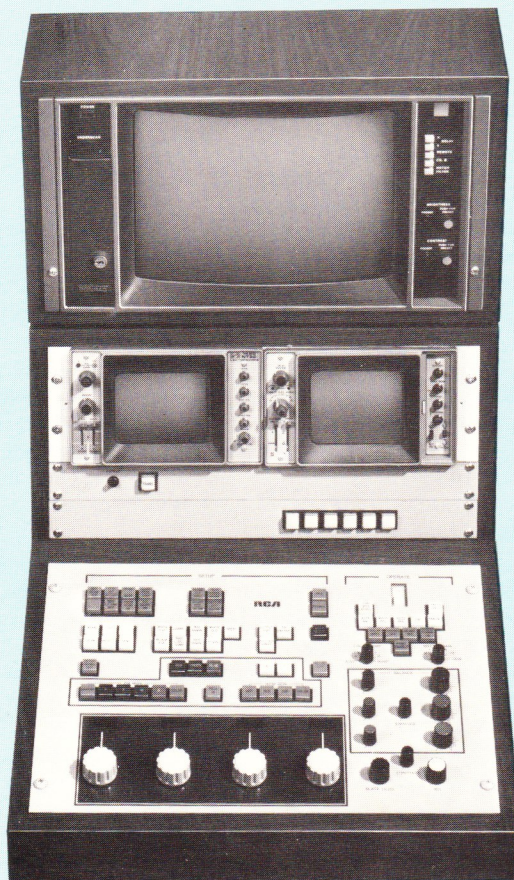
Each of the knobs is a digital signal generator. Movement of the knob generates a digital signal which controls the circuit to which it is delegated.

Conventional cameras typically have more than 100 set-up controls on the CCU, some with knobs, and others screwdriver-adjusted. On the TK-47B, the four knobs on the SUT are delegated to control more than one-hundred different functions for camera set-up.

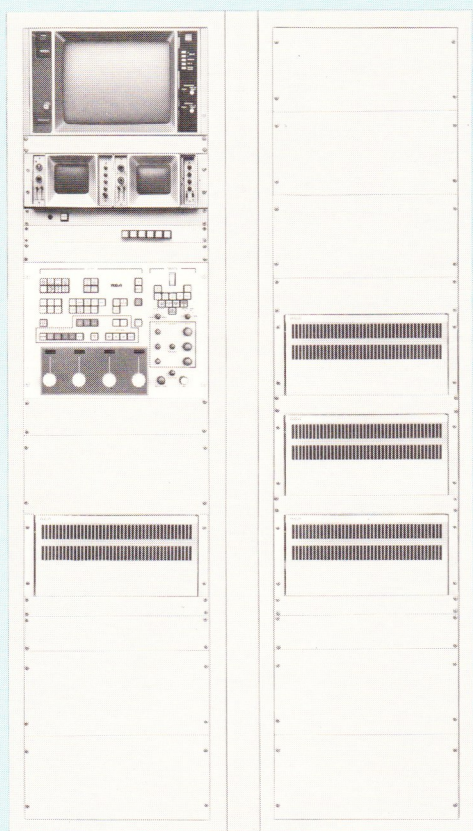
Set-Up Modes

Four modes of camera set-up are available from the Set-Up Terminal:

1. Manual Function Select. This mode involves using the individual function pushbuttons on the left side of the SUT to check settings and make desired adjustments.
2. Semi-Automatic. Sequential step-by-step set-up, instruction-book style, via a single pushbutton.
3. Automatic (Optional). Completely automated camera set-up at the touch of a single pushbutton on the SUT panel.
4. Auto-Select. Automatic set-up of selected functional groups.



Set-Up Terminal (SUT) can be console or rack-mounted, located in the technical center or elsewhere to suit user operating preferences.



Set-Up Terminal

The Set-Up Terminal (SUT) functions as the technical control center, accessing all adjustments relating to the Camera Head and the Camera Processing Unit. It is connected to the CPU by a cable with twisted pairs. After set-up has been completed, the SUT may be disconnected from the camera chain, since all set-up data is stored in the CPU memories.

A single SUT can provide central control for an entire system of as many as twelve TK-47B cameras, using a Delegate Switching Unit (DSU) and a Transfer Switching Unit (TSU).

The DSU assigns any of six camera systems to an SUT at the touch of a button. The TSU is for larger camera systems. With the TSU and two Set-Up Terminals, up to 24 cameras can be handled, providing flexibility, redundancy and economy.

System Versatility

Among the unique advantages of the TK-47B camera design concept is the flexibility it provides for varying operational needs. The key to this flexibility is the camera's digital, micro-processor-controlled design.

Both of the Remote Control Units and the Set-Up Terminal employ digital coding and multiplexing to permit operation of all controls over twisted pair cabling. The Camera Processor Unit transmits to the Camera Head those control signals which need to access circuits in the head, and it decodes the control signals pertinent to the circuits in the CPU itself.

A single data bus is used, looped through each of the CPU's, with a single cable feed to the SUT. Coaxial cables for the picture monitor and waveform monitor are also looped through the CPU's, simplifying the system and reducing cabling requirements.

TK-47B

Preliminary Specifications

Scan Standards

EIA525/60 Fields
CCIR625/50 Fields

Color Standards

Types available for NTSC, PAL, PAL-M or SECAM.

Power Requirements

Input VoltageSwitchable: 100/120/200/220/240 Volts
± 10%
Frequency45 to 66 Hz
Power Consumption390 watts max.

Inputs (Loop-through, Bridging)

Reference Video1.0V composite across 75 ohm
Viewfinder External Video1.0V composite across 75 ohm
Grating0.7V non-composite across 75 ohm

Outputs

Encoded Program Video
(2 Outputs)1.0V composite across 75 ohm
OR0.7V non-composite across 75 ohm
RGB Program Video0.7V non-composite across 75 ohm
RGB Chroma Key Video0.7V non-composite
across 75 ohm

Aperture Correction

Horizontal combed aperture correction is derived from the green signal and is added to R, G and B prior to gamma correction. This can set response of luminance to provide a depth of modulation of 100% at 400 TV lines (relative to 50 TV lines) with an in-band ripple < 1 dB. Coring is employed to remove noise.

Contour Enhancement

Horizontal and vertical combed correction derived from green is added to the red, green and blue video signals after gamma. A horizontal contour derived from the red signal is automatically switched in whenever the green video drops below a predetermined level. The level of these contour signals is considered an operational control and is continuously adjustable from the RCU or the SUT. Coring is employed to remove noise.

Shading Correction

H/V sawtooth and parabolic modulation shading for each video channel. H/V sawtooth and parabolic axis shading for each video channel.

Gamma

0.4 adjustable ±0.05
0.5 adjustable ±0.05
0.6 adjustable ±0.05
1.0 fixed

Registration

Zone 1 (circle = 0.8V)< 0.05%
Zone 2 (circle = 1.0H)< 0.05%
Zone 3 (all other)< 0.10%

Geometry

Zone 1< 0.5%
Zone 2< 1.0%
Zone 3< 1.5%

Interphone

Will accommodate dynamic, carbon, and amplifier, microphones. Can be connected for 4-wire, 2-wire balanced or 2-wire unbalanced operation. Requires Interphone Unit at control position and 24V dc. Interphone is operational with camera power off. Compatible with RTS system.

Viewfinder

CRT Size7 in. (178 mm) 6.2 diagonal (157 mm)
Resolution800 lines
Brightness150 footlamberts

Camera Cable Length

BIW 30 Core Cable2,000 ft. (610m) maximum
with 0.66 in. (16.8mm) diameter
Belden Triax Cable6,500 ft. (2,000m) maximum
with 0.51 in. (13mm) diameter (no repeater)
F&G Triax Cable11,000 ft. (3,400m) maximum
with 0.64 in. (16.2mm) (no repeater)

Control Cable Length

RCU to CPU> 1,000 ft. (305m)
SUT to CPU> 1,000 ft. (305m)
DSU to CPU> 1,000 ft. (305m)

Sensitivity and Signal/Noise

NTSC125 footcandles at f/4.0, luminance S/N 55 dB
(measured on 14% reflectance chip, 3,200°K illumination,
100 IRE white, unweighted bandwidth 10 kHz to 4.2 MHz,
chroma, contour and aperture off)
PAL1,250 lux at f/4.0, luminance S/N 52 dB
(measured on 14% reflectance chip, 3,200°K illumination,
100 IRE white, unweighted bandwidth 10 kHz to 5.5 MHz,
chroma, contour and aperture off)

Ambient Temperature (Without Solar Radiation)

Camera Head (not including tubes)-20°C to +50°C
(-4°F to +122°F)
CPU, SCU, RCU0°C to +50°C (+32°F to 122°F)
Storage Temperature (not including tubes) ...-40°C to +70°C
(-40°C to +158°F)

Relative Humidity

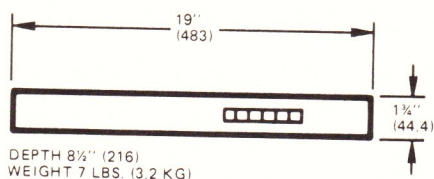
0 to 95%, non-condensing.

Operating Altitude

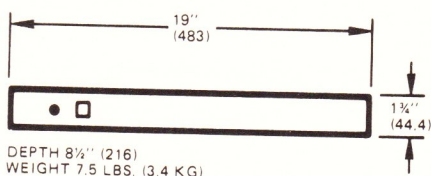
Up to 10,000 ft. (3050m) ASL.

Specifications subject to change without notice.

DELEGATE SWITCHER UNIT



TRANSFER SWITCHER UNIT



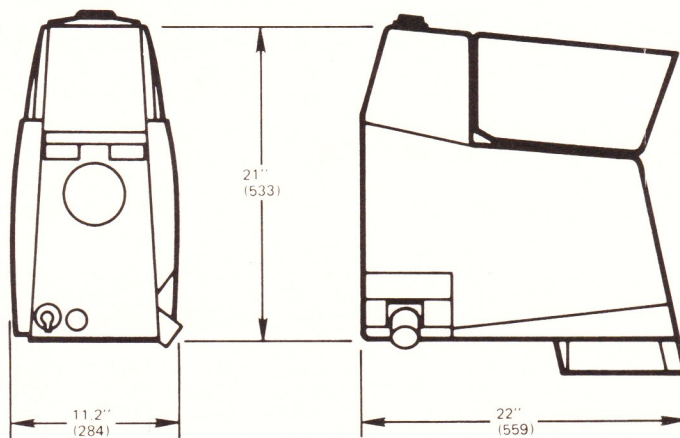
DIMENSIONS AND WEIGHT

	Height	Width	Length/Depth	Weight
Camera Head (less lens)	21 in. (533 mm)	11.2 in. (284 mm)	22 in. (559 mm)	88 lbs. (39.9 kg)
Triax Camera Head (less lens)	21 in. (533 mm)	11.9 in. (302 mm)	22 in. (559 mm)	100 lbs. (45.5 kg)
Camera Processor Unit	8¾ in. (222 mm)	19 in. (483 mm)	22.4 in. (569 mm)	88 lbs. (39.9 kg)
Remote Control Unit (Full Function)	14 in. (356 mm)	4¼ in. (108 mm)	5 in. (127 mm)	5.5 lbs. (2.5 kg)
Remote Control Unit ("Smart")*	14 in. (356 mm)	5.4 in. (137 mm)	4.5 in. (114 mm)	5.5 lbs. (2.5 kg)
Set-Up Terminal	14 in. (356 mm)	19 in. (483 mm)	6¾ in. (171 mm)	26 lbs. (11.7 kg)
Delegate Switcher Unit	1¾ in. (44.4 mm)	19 in. (483 mm)	8½ in. (216 mm)	7 lbs. (3.2 kg)
Transfer Switcher Unit	1¾ in. (44.4 mm)	19 in. (483 mm)	8½ in. (216 mm)	7.5 lbs. (3.4 kg)

*"Smart" RCU's are supplied as dual panels. Dimensions shown are for two panels.

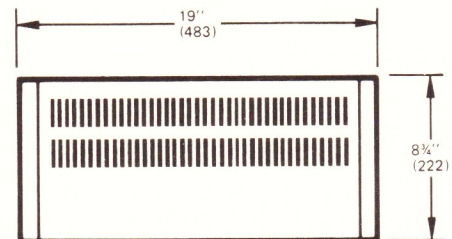
ALL DIMENSIONS SHOWN IN PARENTHESES ARE IN MILLIMETERS

CAMERA HEAD
(Shown Without Lens)



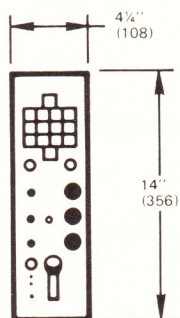
WEIGHT 88 LBS. (39.9 KG)

CAMERA PROCESSOR UNIT



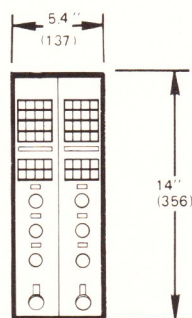
DEPTH 22.4"
WEIGHT 88 LBS. (39.9 KG)

REMOTE CONTROL UNIT



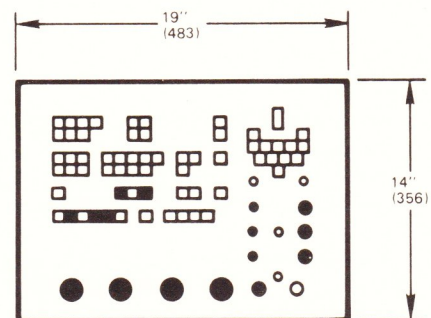
DEPTH 5" (127)
WEIGHT 5.5 LBS. (2.5 KG)

DELUXE FUNCTION "SMART" REMOTE CONTROL



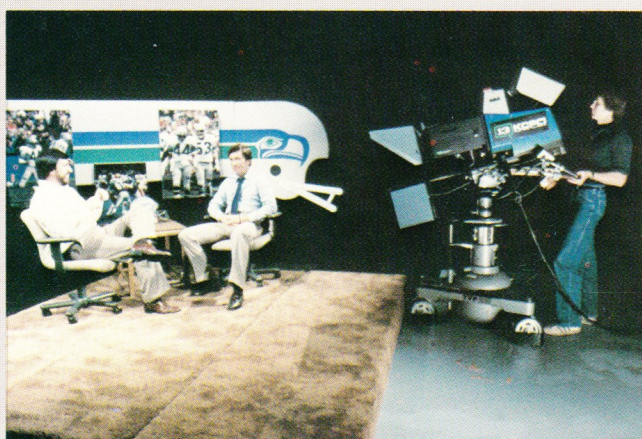
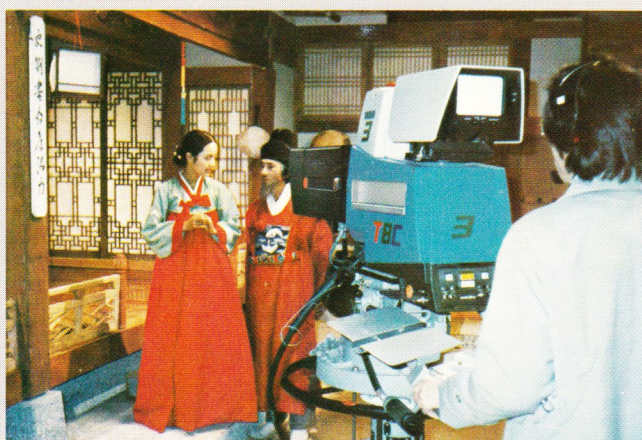
DEPTH 5" (127)
WEIGHT 5.5 LBS. (2.5 KG)

SET-UP CONTROL UNIT



DEPTH 6¾" (171)
WEIGHT 26 LBS. (11.7 KG)

Around the World . . . Around the Clock



In installations around the world, TK-47 cameras are achieving recognition for superior performance; setting new standards for picture quality, stability, reliability and simplicity of operation. Such performance earns acceptance—and more than 500 TK-47's have been sold.

The camera is being used in a variety of environments, and has proved itself capable of meeting the most demanding operating conditions. For critical production assignments as well as day-to-day studio operations, the TK-47 delivers outstanding picture quality consistently.

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