

BROADCAST NEWS

KTSM-TV
Ranger Peak
El Paso, Texas

VOL. NO. 109 SEPTEMBER 1960



RCA's NEW 1 KW FM Transmitter

ideal choice for
truly economical
FM operation!

SINGLE TUBE POWER AMPLIFIER keeps operating costs low. Actually there are only three basic elements in this new 1 KW transmitter: the standard RCA FM exciter, the power supply, and the single PA stage. Combined with RCA's complete line of FM antennas, the BTF-1D should be your first choice for truly economical FM operation.

STEREO MULTIPLEXING or dual subchannel operations are economically obtained by adding RCA subcarrier generators. The BTF-1D always produces a full fidelity signal with low distortion and noise for both conventional and multiplex operation.

A BUILDING BLOCK UNIT, this new 1 KW transmitter can easily be expanded to 5, 10, or 20 KW just by adding higher power amplifiers.

YOUR NEAREST RCA BROADCAST REPRESENTATIVE will gladly help you select the best equipment for your installation. See him for the details, or write to RCA, Dept. KC-22, Broadcast and Television Equipment, Building 15-1, Camden, New Jersey.

EASY TO SERVICE: Easy access to all components from front and rear. The exciter unit tilts out as shown from the front to expose all components. All tuning controls are on the right front panel.



The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

Vol. No. 109

September, 1960

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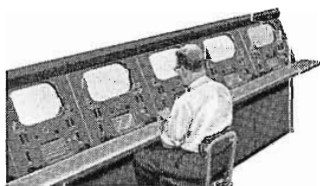
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NEW Look! NEW Picture Quality! NEW 4½ inch I.O.
... the First All-New TV Studio Camera in 8 Years!



RCA's new monochrome television camera Type TK-12 is new in every sense of the word . . . including startling new improvements in picture quality, significant new savings in operating costs and manpower, new features that help you sell!

4½ INCH IMAGE ORTHICON. This new camera uses a larger image orthicon picture tube—4½ inches in diameter. The 50 per cent greater tube size makes it possible to obtain far better picture detail than has been possible before.

FUNCTIONAL STYLING. A "new look" to identify this camera with the "new picture" has been given the TK-12, in the form of a distinguishing keystone shape. Functional in advantage, too, it provides space for an 8½ inch view finder instead of the usual 5 or 7 inch.

NEW SAVINGS IN OPERATION. High stability and reliability coupled with a brand new control concept, permit a single video operator to handle as many as six cameras. For the normal run he need be concerned with only two operating controls per camera.

ONE MINUTE WARM-UP. Camera set-up is the easiest ever! Turn it on and in one minute the picture is there. Quality pictures "snap in" each time you turn on camera.

THE BEST PICTURE IN TOWN! The extremely sharp picture, the beautiful rendition of gray scale and freedom from halo effect make this camera ideal for both "live" broadcast and TV tape recording.

Ask your RCA Representative for complete information. Or write to RCA, Broadcast and Television Equipment Division, Dept. H-264, Building 15-1, Camden, N.J.



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MICROPHONES

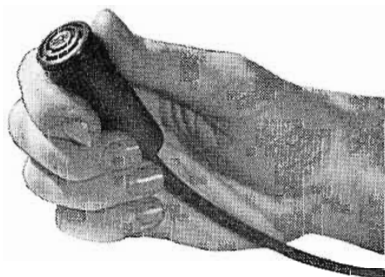
— a type for every requirement

Check your microphone requirements, today. Do you have one for each purpose — remotes, announce, interviews, boom, general purpose? Use the handy order coupon to order any microphones you need.



FINEST QUALITY MICROPHONE

Standard microphone of the industry, the RCA 77-DX offers full range frequency response with a choice of three pickup patterns. Available in a satin chrome finish for radio and a low gloss gray for TV, it will offer years of rugged dependable service. **\$180**



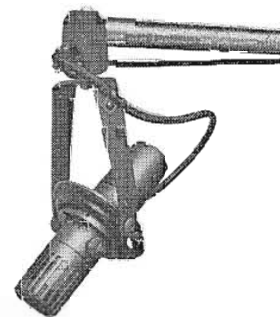
PERSONAL MICROPHONE Ideal for Remotes

Wherever a small inconspicuous microphone is needed the BK-6B can be used. This 2.3 ounce unit offers excellent reproduction for every speech application both in the studio and in the field. **\$82.50**



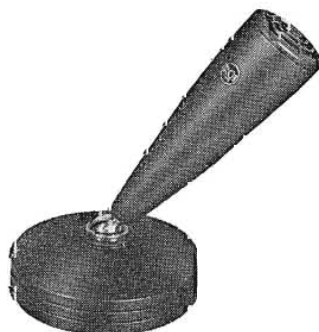
HIGH-FIDELITY UTILITY MICROPHONES

General purpose BK-11A microphone is the modern version of the very famous 44-BX. It is ideal for every studio use, especially live music pickup. The BK-11A is an economical high performance unit designed for years of rugged service. **\$125**



NOISE-REDUCING BOOM MICROPHONE

Here is the highly directional BK-5A microphone for TV boom use. Its pickup pattern effectively reduces noise while offering full range highest quality pickup of the desired source. The BK-5A is also an excellent choice for control room use. **\$165**



COMMENTATOR MICROPHONE

The BK-1A is a fine microphone for interviews, panel shows, and all general announce work. Its rugged construction and insensitivity to wind and mechanical vibration make the BK-1A ideal for outdoor remotes. **\$75**

ORDER NOW BY MAIL!

Order any of these five microphones for prompt delivery. Send check or money order with your order and microphones will be shipped prepaid. Mail your order to RCA, Audio Sales, Broadcast and Television Equipment Division, Building 15-6, Camden, N.J. Use coupon below.



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Building 15-6, Camden, N.J.

Please send the units checked. Check enclosed

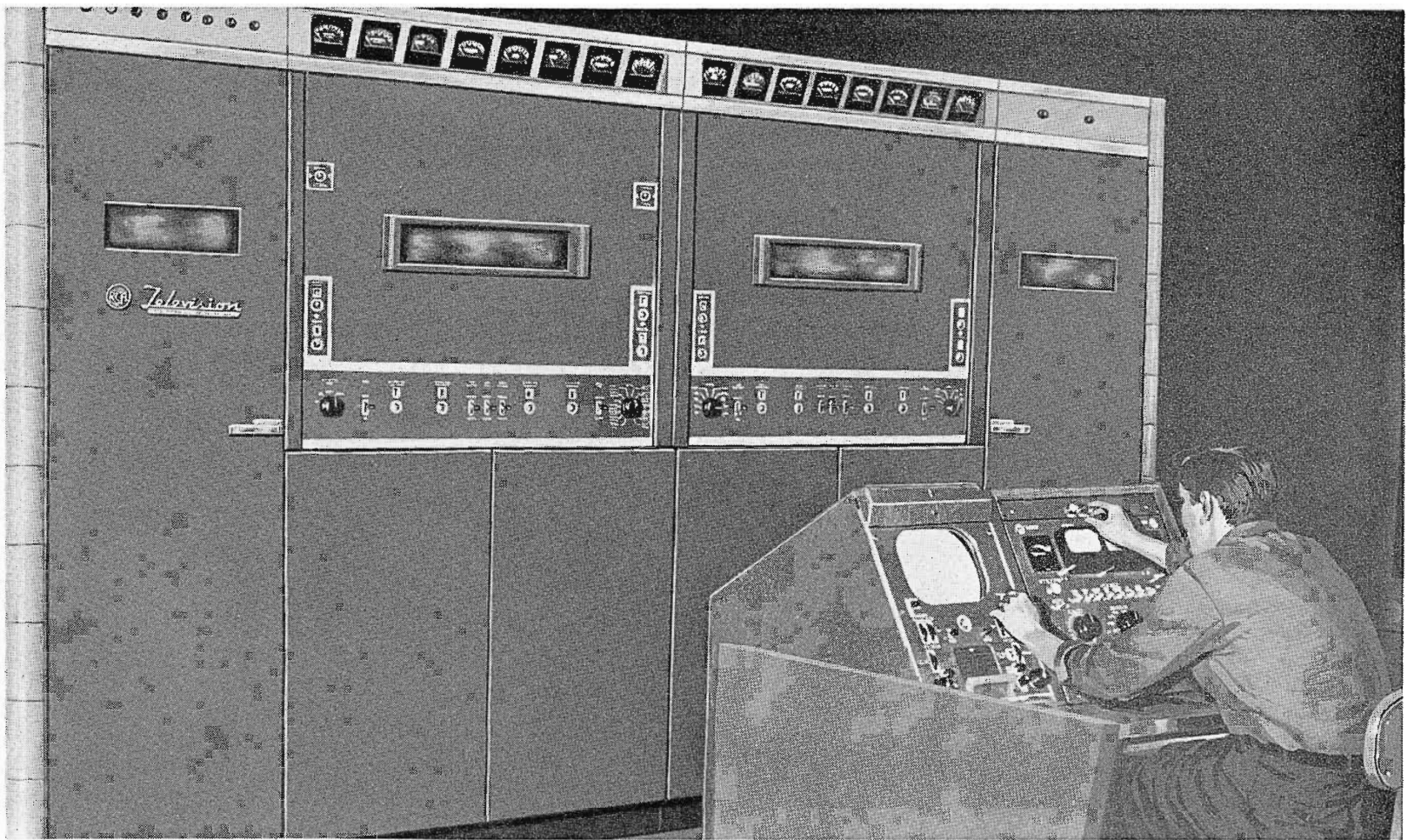
77-DX BK-6B BK-11A BK-1A BK-5A

Send to _____

Address _____

City _____ Zone _____ State _____

Enclose remittance with order and save shipping charges.



COMPACT TT-11AH TRANSMITTER

Features of the RCA 11 KW VHF Transmitter that have clicked with engineers and managers

(features that make it easy to operate and improve performance)

1. **UP TO 180,000 WATTS E.R.P.**—when combined with an RCA high-gain antenna. Channels 7-13. Or can be used as a driver to obtain higher power.
2. **WALK-IN DESIGN ACCESSIBILITY**—Improved walk-in design, introduced with the TT-2BL and TT-6AL Transmitters, is an invaluable feature of the TT-11AH. A wide aisle is provided inside the enclosure between the front-line racks and power supply components to the rear. All components are readily accessible from this aisle.
3. **TUNING SIMPLICITY**—All tuning adjustments can be made from the front of the transmitter with power applied. Power amplifier cavity has been greatly simplified, and no change in frequency-determining components is required to tune to any high-band VHF channel.
4. **WIDE AMBIENT TEMPERATURE RANGE**—Operation over a wide ambient temperature range is provided by thermostatically controlled cooling of all mercury-vapor rectifier tubes.
5. **QUIET OPERATION**—All tubes and components, other than the mercury-vapor rectifier tubes, are cooled by one main blower in a sound-insulated enclosure.
6. **OVERLOAD PROTECTION** prevents extensive damage in case of circuit fault. If overload is momentary, operation is immediately restored while light remains on to indicate point of overload.
7. **DESIGNED FOR REMOTE CONTROL**—Provisions have been made for remote metering and control of all necessary functions from a remote point. These facilities may also be used to control the transmitter from a central point in the transmitter building.
8. **FEWER TUBES AND COMPONENTS TO STOCK**—Fewer spare tubes and components need be stocked since the same tube types are used in both aural and visual rf chains.
9. **ILLUMINATED METERS**—A row of large illuminated meters, mounted on a sloping-front panel for ease of reading, shows all important currents and voltages.
10. **IMPROVED COLOR PERFORMANCE**—Built-in linearity correction, accurate intercarrier frequency control, and dc on power amplifier filaments are features included for outstanding color performance.

Get the complete story from your RCA Broadcast representative; or write for descriptive literature to RCA, Dept. MD-22, Building 15-1, Camden, N. J. In Canada: RCA VICTOR Company Limited, Montreal

RCA Broadcast and Television Equipment, Camden, N. J.



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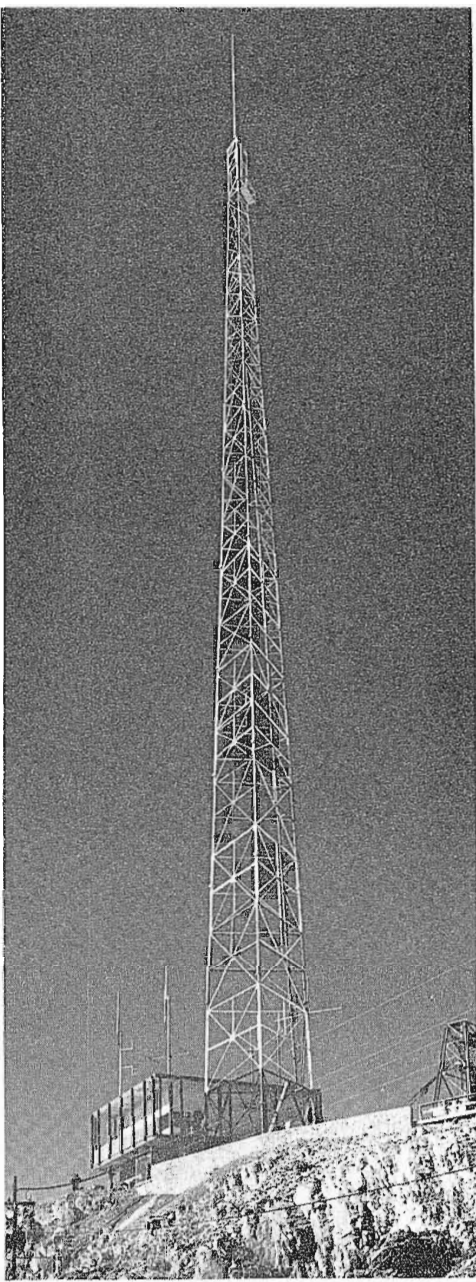


FIG. 1. Transmitter building and tower of KTSM-TV, atop Ranger Peak, El Paso, Texas.

KTSM-TV MOUNTAIN-TOP TRANSMITTER AT EL PASO

by DEAN SPIRES

Transmitter Plant Supervisor, Tri-State Broadcasting Company

RANGER PEAK! North latitude 31 degrees, 48 minutes, 18 seconds; West longitude 106 degrees, 28 minutes, 57 seconds. One mile northwest of El Paso, Texas and three miles north of Juarez, Old Mexico. A rough, rocky pinnacle of the Franklin Mountains, elevation 5630 feet above sea level, approximately 1900 feet above average terrain. To reach the top you climb—wearing good heavy shoes.

The above statistics were well known to the staff of KTSM-TV, Channel 9, El Paso and caused many hours of discussion concerning "How are we going to build our new transmitter building and erect a tower?" Yet, we knew we were going to do it, and we did.

It would be difficult to find a place that could impose more natural obstructions in the path of normal construction of any type of building. The peak rose at the apex of three rock "hog-back" ridges, with almost sheer fall away on all sides. On this point the C.A.A. had installed a small triangular steel house approximately ten feet

on each side, which supported an air-ways beacon, with little room left over.

For almost two years we had been drawing plans for the new transmitter building, trying to incorporate every possible convenience and necessity, taking advantage of our experience in the old location. We were determined that we would allow no dirt or dust to enter the building, that noises from blowers and exhaust fans would be cut to the minimum, that ample heating and cooling equipment would be on hand, so that we could install, at any time, any type of amplifier we might decide on without moving any of the equipment in use. This we can do.

The engineers have been provided with every comfort and convenience. Sleeping facilities in case of a bad storm, kitchen with oven and grill, freezer compartment, hot water and survival ration in case one has to spend a few days and nights by himself and if this were not enough, he can enjoy the companionship of "Buford," a young black tom cat who has moved in with us and lives high on Ranger Peak.

Mr. Karl O. Wyler, Sr., President and Owner of Tri-State Broadcasting Company, KTSM Radio, 1380 KC and KTSM-TV, Channel 9, asked for our plans early this year and we were ready for him. After the smoke cleared away and after a few minor concessions on our part, we came to an agreement and our rough drafts were submitted to the architect.

Briefly, the building was to be two stories, steel girder construction, stressed

to allow the addition of a third story, 32 feet wide, 36 feet in length, overhead clearance in the first floor minimum of 8 feet, overhead clearance of 12½ feet on the second floor. An overhanging observation walkway extends around three sides of the building and affords a breath-taking view of El Paso, Juarez, surrounding smaller cities and almost a hundred miles in all directions, encompassing New Mexico, Texas, Arizona and Old Mexico.

Now we were getting somewhere, well almost, we needed room to erect a 300 foot Ideco self-supporting tower, base spread of 24 feet, 11 inches, three legged. It didn't require the services of a mathematical wizard for us to see that there was no room on Ranger Peak for such an installation as this but we were already committed so nothing to do but dig and gouge and blast off the top of the mountain, without benefit of heavy equipment and we could not use too much dynamite at a time because of one part of our project which was almost completed.

Most amazing and gratifying was the achievement of the Herron Engineering Company of Denver, Colorado, that designed and installed the aerial tramway. This was and is our sole means of transportation to the top of Ranger Peak. When we stop to realize that the pay load of the original work car was somewhere around 1800 pounds, it can be readily seen that construction of the building with the additional factor of transporting workmen took lots of time, so we set no speed records.



FIG. 2. Author Dean Spires, transmitter supervisor in control room of TT-10AH TV Transmitter, note official station mascot, "Buford."

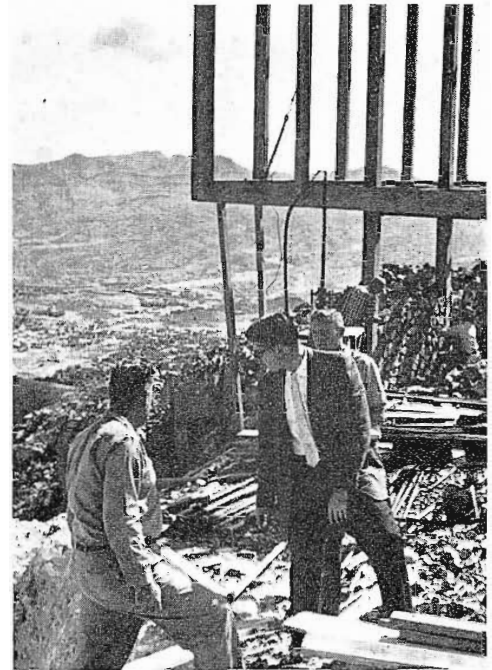


FIG. 4. Typical construction scene while transmitter building was being constructed.

There is no water on Ranger Peak, except that which is hauled up in 55 gallon drums and dumped into a 1000 gallon storage tank. A pressure pump system feeds the plumbing and toilet facilities for both engineering and visiting personnel.

Another item which consumed time was the digging, by hand (with an occasional half stick of dynamite to help) the holes in solid rock for the tower footings. So easy to write, so heartbreaking to watch, the

slow, laborious gouging out of rock as the men work in these holes—heat and rock dust their ever present companions. However, as Horatio Alger said "Where there is a will there is a way," and the Ideco stands true and beautiful with its crowning glory, the RCA Traveling Wave Antenna, Type TW-9A9.

With the building almost finished and tower footings ready and cured, we awaited the arrival of Paul Tiner and crew from

the Seago Construction Company, who were to erect the tower. These gentlemen were delayed somewhat, by a previous engagement and the intervening time was well put to use in finishing the building and installing our RCA Microwave link between the studio and Ranger Peak, a nice clear shot, all down hill.

Paul Tiner and crew arrived and found a couple of small problems to overcome. The tower and antenna were 3000 feet away

FIG. 3. The peak of the mountain was blasted off to provide room for the building and tower.



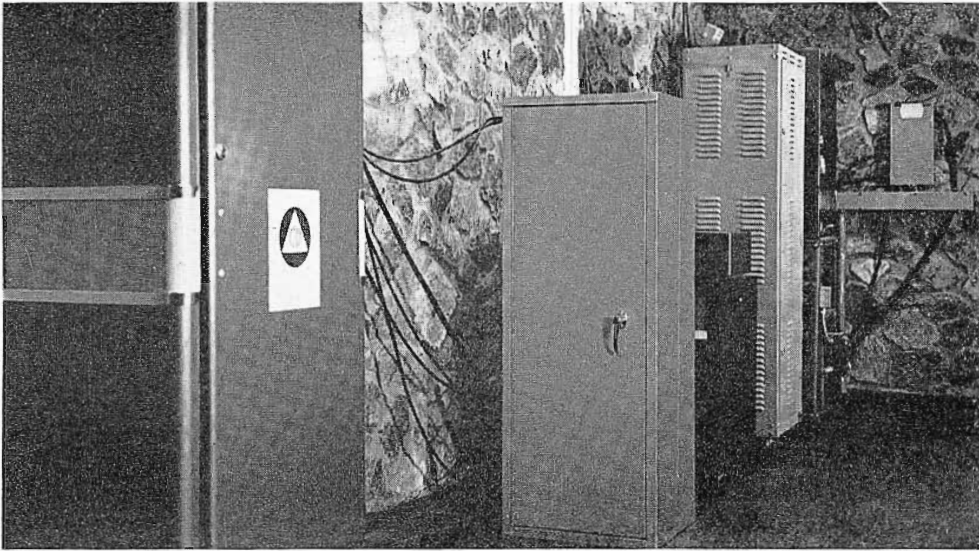


FIG. 5. Radio services area of KTSM.

from the tower footings, down the side of the mountain. There was no way of getting a hoist on top of the mountain due to excessive weight and no place to put it if you could have managed to get it there. Again we witnessed the almost uncanny skill and ingenuity of men of such caliber as these.

The big winch was positioned alongside the tramway tower base station and a half inch line was pulled to the top, looped through the gin pole and associated gear and back down to the bottom. Additional pulleys were installed on the tramway run

cable to equalize weight, and tower sections were pulled to the top and erected by the use of the bottom winch and an intercom.

Considering the fact that these cables were at times in free space and at other times dragging through rock and sage brush down the side of the mountain it speaks well for the skill of men who can raise or drop a few thousand pounds to position them with only a "whoop-whoop" as their guide—they were unable to see the crew on top. Cold and high winds throughout erection did not help.

FIG. 6. Riding through the sky to the KTSM transmitter. This tramway is the sole means of transportation for water and other supplies, station personnel and visitors.



The antenna sections were hoisted separately, assembled at the tower base and hoisted as one section to the top of the tower and set in place, just as easy as pie, mind you, and from 3000 feet away, downhill almost out of sight. What great credit Tiner and his crew deserve.

We were all set with an interim Transmitter, a TT-500B, our microwave working, program line ready to go and a new 50-kw filterplexer waiting for the $6\frac{1}{8}$ -inch transmission line and on December 13, 1959 we went on the air with programming from Ranger Peak.

Two days after regular programming with the TT-500B we started to dismantle the TT-10AH and by the combined efforts of all the engineering staff of KTSM we moved it up on the mountain, assembled it and went on the air with regular programming December 29, 1959.

Our coverage is exceeding expectations and we are proud that we can bring NBC to many areas within 200 miles of El Paso that have not had this service previously.

Mr. Karl O. Wyler, Sr., President and Mr. Karl O. "Bucko" Wyler, Jr., Vice President, who was the ramrod of "Project Ranger Peak," and the staff of KTSM-TV wish to thank all those who helped us in our planning and building of this new facility. RCA Personnel who have been most courteous and helpful are Jim Barclay, Bob Martin, Gene Clark, Cliff Ellis and many others.

AUTOMATIC FILM SELECTOR

ENABLES STATION TO
PRE-SELECT SPOTS
ON CONTINUOUS LOOP
PROJECTOR

by AL SALT *Engineering Staff, WKRC-TV, Taft Broadcasting Company, Cincinnati, Ohio*

The Automatic Film Selector is designed to operate with an RCA TP-6C Film Projector modified with the "Auto Cue" system and the continuous film loop attachment, see Fig. 1. The primary function of the selector is to count the number of film spots or events on the loop and by pre-selection determine the event to be stopped at the film gate. A total of nine spots can be accommodated by the system.

Description

The "Auto Film Selector" is comprised of three separate units (see Fig. 2):

1. A buffer relay unit (K-1),
2. A remote control panel, and
3. A ten position stepper relay (K-2).

The buffer relay unit consists of a slow-release relay, a manual-auto switch and a suitable terminal strip for external wiring.

The remote control unit has three controls plus the digital readout unit, see Fig.

4. Reading from left to right; Item 3, S2 film selector, Item 2 digital readout, Item 10, S3 zero set, and Item 4, S4 the total film selector.

The ten position stepper relay, Item 1, see Fig. 5, was chosen to go with the digital readout unit and after months of operation this choice has proved satisfactory. A bridge type rectifier was built (using Items 8 and 9) to supply voltage to energize the solenoid, and was mounted on dust cover of relay. This separate supply isolated the automatic control unit from the control circuits of the TP-6.

Installation

The buffer relay unit is located to the right of the pre-amp power supply in the base of the TP-6 Projector. (The slow release type of relay was chosen as the buffer relay to eliminate any chance of chattering due to faulty cue tape or cue sensing roller contacts and to further isolate this automatic system.)

The remote control panel is located near the master control console. It provides complete control of the film selector.

The stepper relay is installed within several feet of the remote control unit. This nearness cuts down loss in the multiple wire cable between these two units.

Operation

The film for the continuous loop attachment is prepared in the normal manner, having a metallic cue tape several frames in front of the start of each separate film event. An additional cue tape is placed in the interval between the end of the last film and the first cue tape. This additional tape advances the stepper relay to the zero position after a full rotation of the loop.

As each metallic cue tape makes contact with the cue sensing roller, the buffer relay (K-1) is energized and thru its contacts 1 and 2 applies 24 volts dc to the rotor contacts of decks A and B of the stepper relay (K-2), see Fig. 2. Contacts 3 and 4 of K-1 complete the circuit of the K-2 solenoid putting the stepper relay in cocked position. The auto/manual switch also receives this pulse of energy from the cue

FIG. 1. Author, Al Salt, at Continuous Loop attachment of TP-6 Film Projector. The Continuous Loop of Film consists of a number of spots spliced together. Each spot can be called for separately by the system.

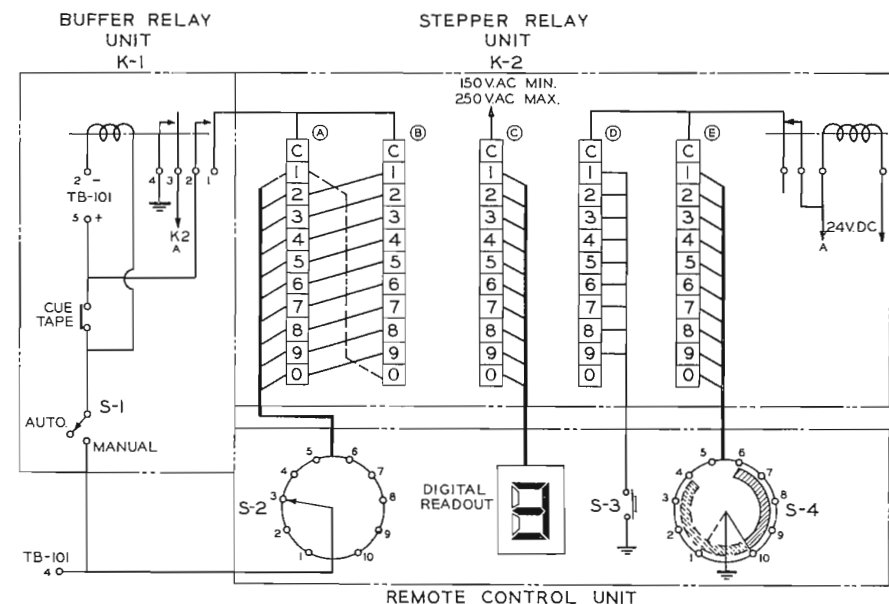


FIG. 2. Schematic diagram of the Automatic Continuous Loop Film Selector System.



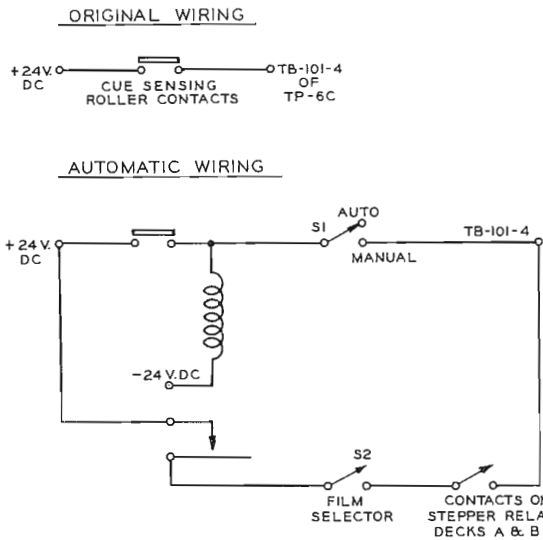


FIG. 3. Simplified drawing of wiring changes to accommodate Automatic Selector in the Continuous Loop System.

sensing roller and can either return the circuit to normal (the on or closed position manual) or automatic (the off or opened position).

As the tape leaves the sensing roller assembly, K-1 and K-2 are deenergized, causing K-2 to step (or rotate) to next position. As each step is made the proper number appears on the digital readout through contacts on deck "C" of stepper relay.

When coincidence, between the number of the film event selected and number of steps K-2 has taken, arrives once again the circuit is complete to operate the brake system of the projector.

Note on Fig. 2 that the rotor or common contact of decks D and E return to the self-interruptor contacts of K-2. Thus, when S3 is pressed the stepper rotates until the circuit is broken at the tenth or zero position of the stepper relay.

The film selector limit switch S4 works in the same manner as above. S4, however, selects the number of events or steps to be by-passed to bring the counter back to zero.

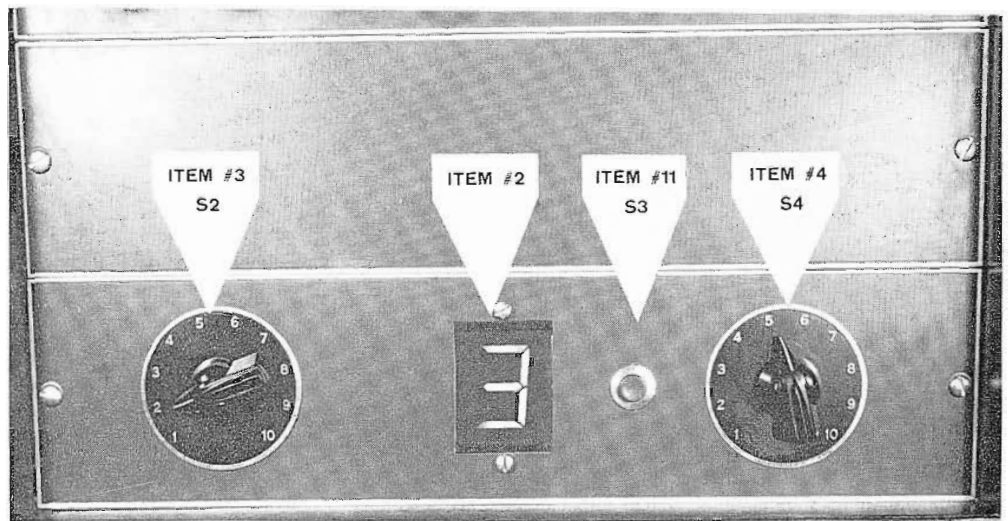


FIG. 4. Remote Control Unit for the Automatic Film Selector. This remote panel is installed in master control console.

Set-Up Procedure

The complete procedure for setting up the TP-6 Projector with Continuous Loop attachment for Automatic Film Selection is as follows:

1. Load projector normally, seeing that the stop tape of film No. 1 is outside the contacts of the Cue Sensing Roller Assembly. Add an extra stop tape after the last film on the loop.
2. "Zero Set" by pressing S2 on Remote Control Panel. Zero will show on digital readout.

3. Set the Film Selector Limit (S4) on Control Panel for total number of events on loop (maximum of nine).
4. Select the event to be shown first (1 thru 9) by rotating Film Selector Control (S2) to proper number.
5. Manually roll projector. It will stop on proper film and the number of this film will show on readout.
6. As first selected film comes to a stop, the next event should be selected. If the next spot is not selected at this time the projector will stop automati-

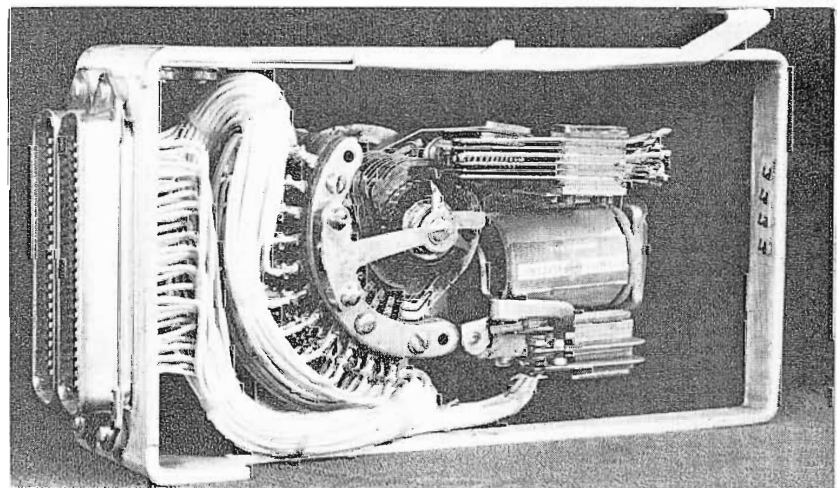


FIG. 5. Ten position stepper relay employed with digital readout unit of Automatic Film Selector. This relay is installed near the remote control unit.

EQUIPMENT LIST

Item	Description
1 - - - - -	Ten position spring loaded stepper relay (Automatic #PW-56400-1)
2 - - - - -	Digital Readout Model SGS-101 made by I.D.E.A., Inc.
3 - - - - -	Single Pole—Ten Position Rotary Switch (CentraLab)
4 - - - - -	Ten Position Progressively Shorting Rotary Switch (CentraLab)
5 - - - - -	Isolation Transformer (Stancor) 115V. Pri.—250V. Sec.
6 - - - - -	Buffer Relay—Slow Release Type (Automatic Relay #PE-116-B31)
7 - - - - -	Single Pole Single Throw Toggle Switch
8 - - - - -	Transformer 115V. Pri.—30V. Sec.
9 - - - - -	Bridge Rectifier (Selenium)
10 - - - - -	Single Pole Momentary Switch

cally with next stop tape. This is a safety feature, for if the unit is not supplied each time with new or different information the projector would run for a full revolution needlessly.

Saves Time and Film

The Automatic Film Selector has now been in operation at WKRC-TV for several months. Results have proved the effectiveness of the installation. It enables the Continuous Loop System to handle as many as nine commercials, requiring only one print of each for repeat showings. Thus, it saves film prints as well as a great deal of time and effort on behalf of station personnel.

NEW 16-INCH TURNTABLE

FEATURES IMPROVED IDLER ARM ASSEMBLY FOR SMOOTHER AND FASTER STARTING

by ROBERT REYNOLDS

Broadcast Audio Marketing

The BQ-2C Transcription Turntable, newest in the RCA series is a three-speed, rim-drive type mechanism. It meets all the requirements of the broadcaster for a dependable, quiet operating, professional turntable. It will handle all types of disc recordings— $33\frac{1}{3}$, 45, and 78 rpm—up to 16 inches in diameter. Fast starting and speed switching make the BQ-2C ideal for fast-paced radio programming—where highest quality reproduction is demanded.

Improved Performance

Many new performance features put the BQ-2C far ahead of most similar turntable units. Only two controls are used; a three-position speed selection switch, which

may be changed to any of the three speeds even with the turntable running, and an "On-Off" selector switch which controls the motor and engages or disengages the idler wheels. Extensive adjustments of idler arm tension springs and idler wheel alignments are not required. A snap-up spindle is located at the center of the sturdy 14-pound turntable platter for 45 rpm operation, thus assuring ease of record handling and proper centering. Custom installations are easy, since the entire mechanism is contained on a single metal plate, 18 inches square. A mounting template for this purpose is provided with each unit.

Distinctive Feature

The new model while retaining all the desirable features of its predecessors, has an improved idler arm assembly which assures extremely smooth starts, so necessary when playing microgroove records. The new idler arms have stop adjustments fastened to them, that permit the idler puck arms to be aligned individually, with the capstan shaft. In addition, the puck arms have tension applied at all times by springs.

Rugged Mechanism

The heart of the BQ-2C is the heavy-duty hysteresis-synchronous motor with its one piece, three-step diameter motor capstan shaft. This method of capstan construction practically eliminates all possibility of flutter, usually associated with multi-piece capstan shafts. Large size idler wheels, made of a special compound for trouble-free life, engage the capstan shaft and the platter rim in the play position. In the off position, the idlers are disengaged thus avoiding "flats". Since turntable speed

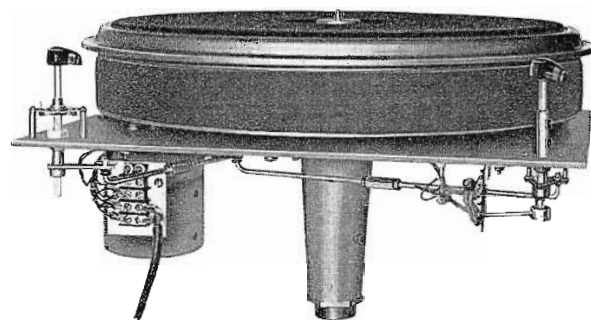


FIG. 1. Heavy cast aluminum platter of the BQ-2C is supported by this mounting plate that also supports the drive motor.

FIG. 2. The BQ-2C housed in its rugged fabrioid covered cabinet. All operating controls of the BQ-2C are conveniently mounted for easy operation. Space is provided for mounting a BA-26A Transistor Preamplifier and its control can be seen just below the pickup.



FIG. 3. Typical installation of several BQ-2C's gives a custom look to the studio.

is determined only by the ratio of diameter between the motor capstan and the platter rim, speed will not vary in this turntable even when continuous wear reduces the size of the idler wheels. Full speed is reached within one-half turn at $33\frac{1}{3}$ and 45 rpm, and within three-quarters of a turn at 78 rpm.

Accessible Cabinet

An attractive modern cabinet is provided to house the BQ-2C. This wooden console

has a durable, two-tone umber gray fabri-koid covering on the sides and a cigarette-proof linoleum top. Any type of standard broadcast tone arms may be easily mounted on the cabinet and adequate space is available for mounting two tone arms for various types of pickups. The BA-26A transistorized, equalizer-preamplifier is also readily accommodated in this cabinet.

Updating Previous Models

A modification kit, MI-11440, containing

three of the new "C" idler arm assemblies plus the necessary instructions is available to those who wish to update earlier models. Owners of previous models may obtain these kits on a no-charge basis, F.O.B. Camden, New Jersey by simply sending the serial number of each BQ-2A or BQ-2B turntable and mailing it to the nearest RCA Broadcast Equipment Representative. Or the information may be sent directly to RCA, Broadcast Audio Sales, Building 15-6, Camden, New Jersey.

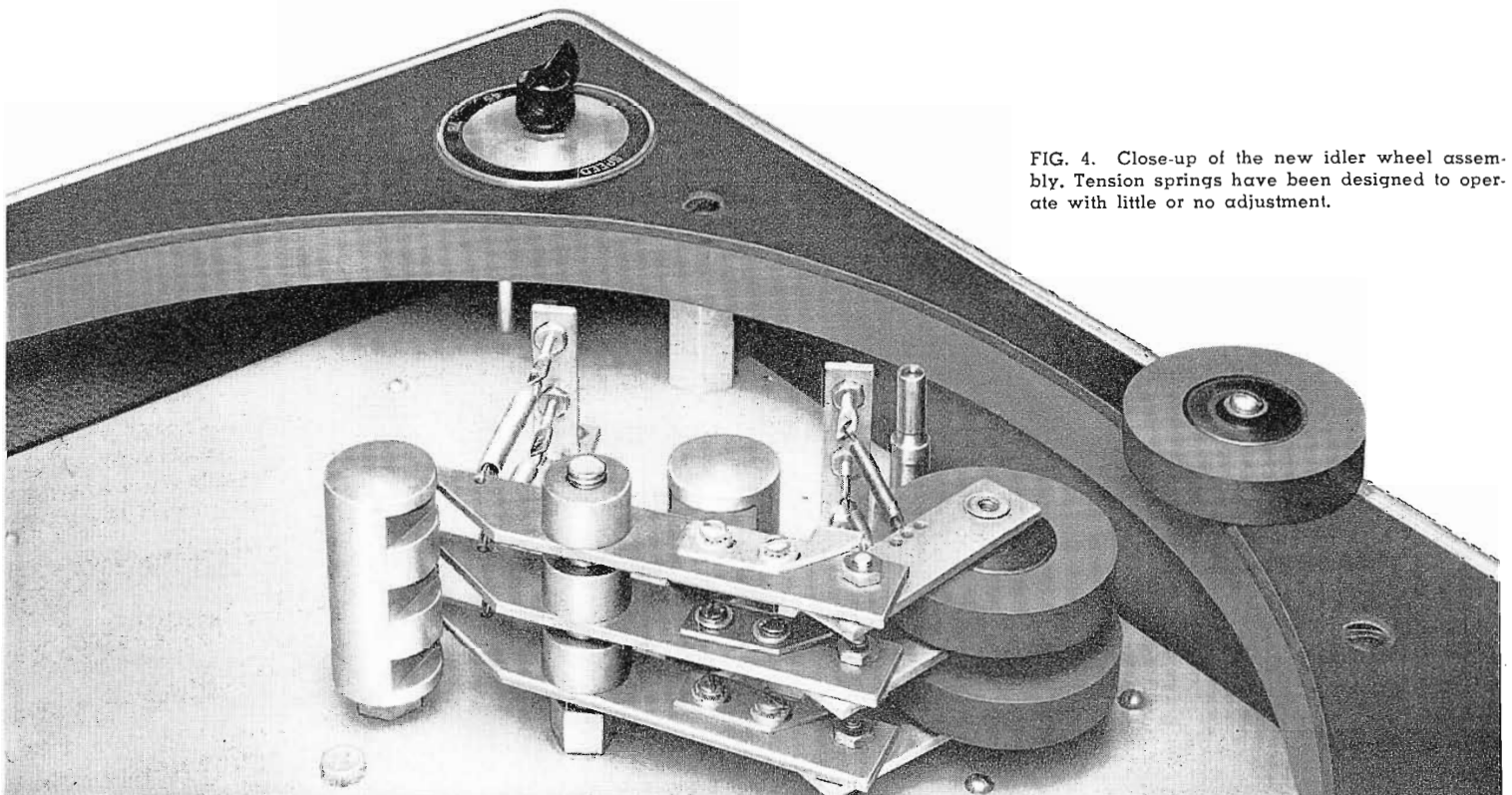


FIG. 4. Close-up of the new idler wheel assembly. Tension springs have been designed to operate with little or no adjustment.

NEW SEMICONDUCTOR POWER SUPPLY IS SPACE AND POWER SAVER

Significant reductions in space, power and heat dissipation are now possible in a new Semiconductor Power Supply, Type WP-16. The chassis occupies only seven inches of rack space, so that eleven power supplies can be mounted in a standard cabinet rack. No blower is included in the power supply; the small amount of heat generated being carried away by convection cooling in a large heat sink. The equipment is rated at 1600 milliamperes and serves as a power source for almost any equipment requiring regulated 280 volt d-c power.

Single Unit Powers Complete Monochrome Camera Chain

The WP-16 can be used as a direct replacement for existing power supplies with a substantial saving in space, weight, power consumption and heat dissipation. Current requirements of an entire monochrome

Complete short circuit protection is also provided. If a short circuit occurs in the load, both voltage and current drop to zero and remain thus until the short is cleared, at which time the current and voltage are automatically restored to normal. A fuse in the primary of the power transformer is provided to protect the power supply from internal shorts.

Voltage-Regulating Power Transformer

The heavy duty power transformer is of the regulating type so that the voltage input to the rectifier is constant for a range of line voltage from 95 to 130 volts. An auxiliary winding which may be connected in series with the primary of the transformer permits operation over a line voltage range of 190 to 260 volts. The frequency tolerance is 60 cycles plus or minus 1 cycle per second.

Plug-In Units for Centering and Unregulated Voltage Outputs

Centering current and unregulated voltage are supplied by means of plug-in sub-chassis units which are powered by separate, non-regulating secondary windings of the power transformer. These units are normally required only when the WP-16 is used with a camera chain and need not be purchased when the supply is to be used for applications requiring only the regulated voltage output.

The Centering Current Plug-in Unit is used for supplying centering current for film and live cameras and master monitors. 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 Plug-in Unit is used for those applications requiring a higher voltage than that provided by the regulated voltage output, i.e., the deflection circuits of cameras and some types of master monitors. The plug-in unit and basic power supply are 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 unregulated output voltages of 360, 380, 420 and 460 volts.

Power Supply of Many Uses

The WP-16 is a rugged, high efficiency, lightweight source of precisely regulated voltage capable of supplying current loads up to 1600 milliamperes. It weighs only 47 pounds, is 7 inches high, 19 inches wide, and 13½ inches deep. When used in television stations and closed-circuit installations to replace existing power supplies, substantial savings in space, weight, power consumption and heat dissipation results.

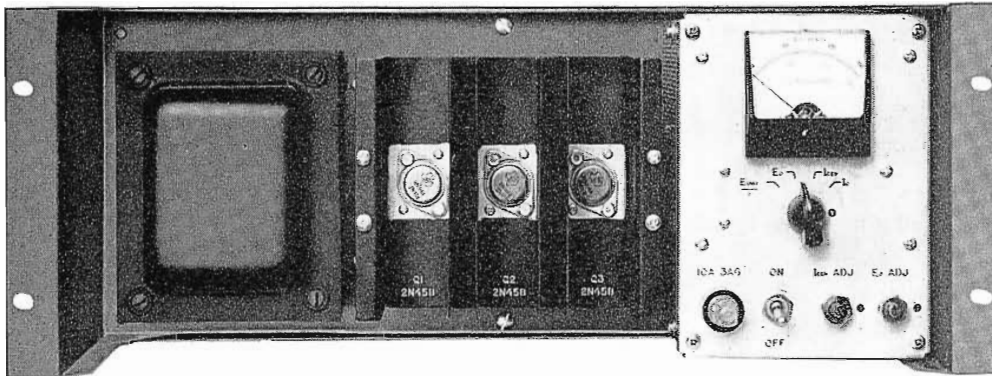


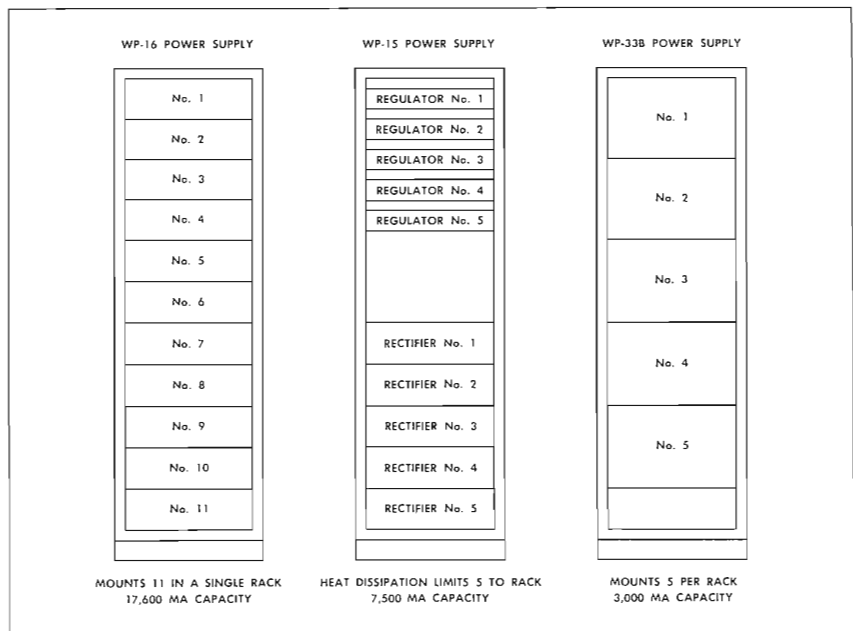
FIG. 1. Compact new semiconductor power supply, type WP-16, occupies only 7 inches of rack space, provides 1600 milliamps. regulated 280 volt d-c output.

FIG. 2. Chart showing current capacity and mounting arrangement of WP-16 power supply as compared with earlier model WP-15 and WP-33B supplies.

camera chain, live or film, including the master monitor are accommodated by one WP-16 power supply. Two supplies perform similar functions for color studio or color film camera chains.

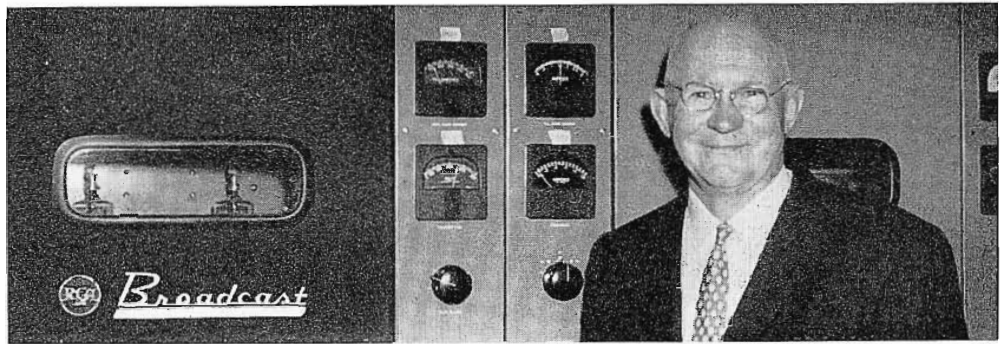
Protection Circuits

Since a semiconductor power supply would normally make output voltage available the instant the a-c power switch was thrown, a time delay relay is provided in the WP-16 to prevent the application of the plate voltage until the filaments of the powered equipment reach operating temperature. Should momentary power failure occur, the relay does not recycle; however, it will recycle and reintroduce time delay for failures of more than several seconds.

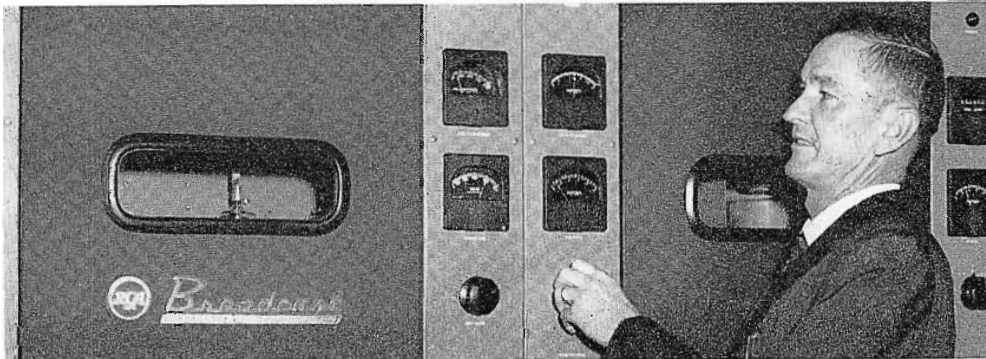


3 NEW 5KW TRANSMITTERS FOR THOMS RADIO GROUP

Three stations owned by Thoms Radio-TV Enterprises, Inc., are now on the air with new type BTA-5R Transmitters. WCOG in Greensboro, N. C., is operating its BTA-5R under the supervision of chief engineer Ansel Atkins. WAYS, Charlotte, N. C. went on the air under the direction of L. I. Dekle, chief engineer. All installations were controlled by the skilled hands of John Randolph, technical director of Thoms Enterprises and chief engineer of WISE in Asheville, North Carolina.



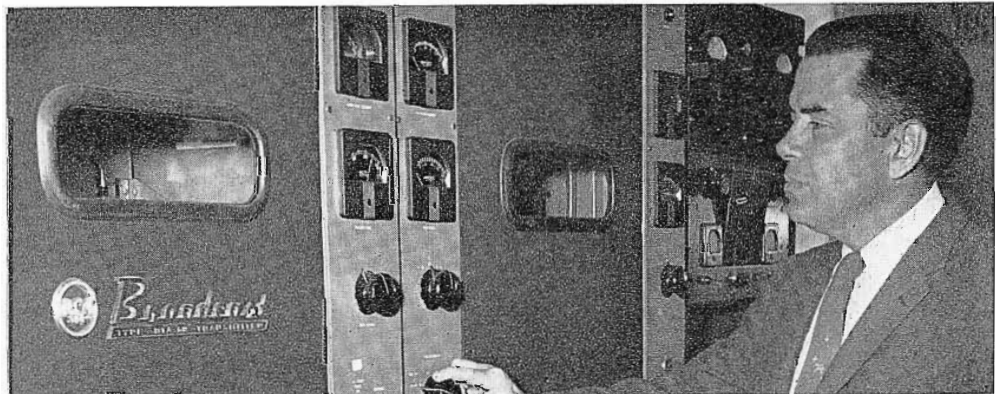
▲ Chief Engineer L. I. Dekle of WAYS, Charlotte.



◀ Chief Engineer Ansel Atkins of WCOG, Greensboro.

John Randolph, Chief Engineer of WISE, Asheville is also Technical Director for the Thoms Radio-TV Enterprises.

Thoms Enterprises also owns WEAM, Arlington, Va., WMSJ, Sylva, N. C.; WKLM, Wilmington, N. C.; and WISE-TV in Asheville, N. C. Harold H. Thoms, president of the organization has recognized the need for transmission of the highest possible quality to the millions of listeners served by his stations. For most dependable operation BTA-5R transmitters were selected. This choice was supported by all three chief engineers, each of whom has over 15 years of service with his station.

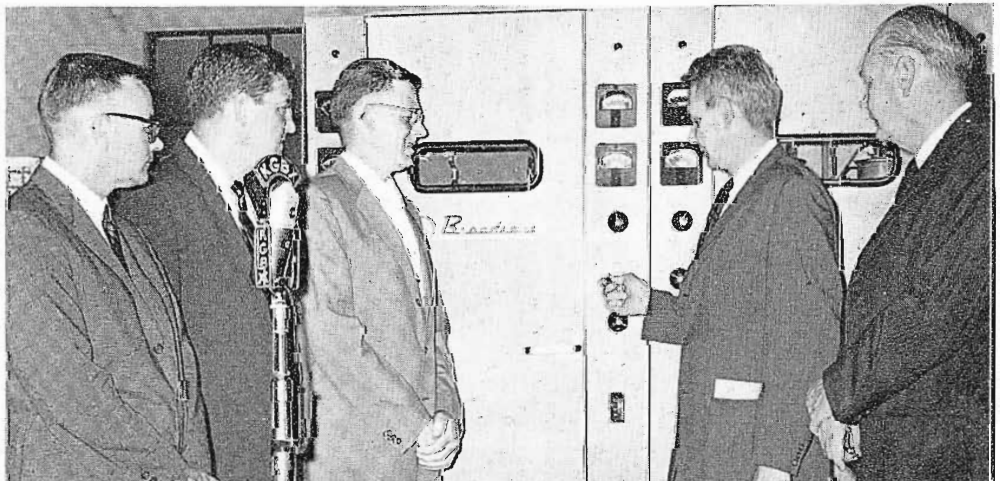


NEW HIGH FIDELITY VOICE FOR THE OZARKS

KGBX Installs a New 5 KW Transmitter

On June 22 power was applied to a new BTA-5R Transmitter by Mayor David Scott of Springfield, Missouri. Don C. Dailey, General Manager of KGBX, dedicated the transmitter to community service.

With the new transmitter KGBX expects to add many new listeners in Springfield and the surrounding Ozarks. Like most modern stations KGBX provides strong high fidelity signal to every listener. KGBX now has a modern transmitter that is an ideal combination with the modern program format of the station.



Present at the KGBX Dedication were left to right: KGBX Program Director Jerry Higley, Chamber of Commerce Manager Ralph Powell, Chief Engineer Richard Bowman, Mayor David Scott and Springfield's City Manager Tom Chenoweth.

KSTP-TV LAUNCHES COMPREHENSIVE MODERNIZATION PROGRAM

Most Advanced Television Equipment, Including Full Color Facilities, Installed at Central Location, Promises New Era of Efficiency and Effectiveness

KSTP-TV, television broadcasting pioneer and a recognized leader in the industry, has launched a broad range program to give the Minneapolis-St. Paul station a full array of the latest technical equipment housed in expanded quarters.

Stanley E. Hubbard, KSTP President, has announced that KSTP-TV plans call for an RCA "package" of the most advanced television broadcasting equipment. This includes a station break automation system, TV tape recorders, complete color facilities, transistorized switching equipment and mobile production facilities capable of handling both color or black-and-white remote programs.

Centralization of Equipment for Operations Efficiency

Working closely with the KSTP-TV engineering staff, RCA engineers helped draw up plans for an integrated layout which features the centralization of all equipment, including master control, studio, film and transmitter, in one area for greater operating efficiency.

KSTP-TV was one of the first major television stations on the air, serving the Twin City area since 1948. Since then, the expansion of broadcasting activities was accompanied by the same sort of technical growing pains experienced by many stations. As new equipment was needed and

acquired, it had to be placed where space was available. The end result was a loose-knit operation with master control in one room, film handling equipment in another and so on.

RCA system specialists were asked to work with the KSTP engineering staff to develop a master plan for overcoming the obvious inefficiencies of the previous setup. It was determined that, by centralization of technical equipment in an expanded facility, the station would be able to operate at a far higher level of efficiency. Details of this centralized technical operation should prove of interest to other broadcasters, who may face a similar situation.



Equipment Central and Studios

The KSTP-TV "equipment central" will be a 60 by 80-foot room in a new addition to the present station building. Ground has been broken for this addition which also will house a 40 by 60-foot color studio. This is designed for a live audience, with air conditioning to take care of 200 people and 100,000 watts of lighting.

The studio is of sufficient height and equipped with catwalks for flying scenery, handling spots and so forth. It contains special acoustic paneling which serves the additional purpose of housing color monitors and high fidelity speakers.

The floor is of a new composition terrazzo with acoustical concrete base. It will be noiseless and present no problems in cleaning. Underneath the studio floor is special steel trenching for carrying camera cables to various parts of the studio to avoid camera cables across the floor.

The new addition is to be equipped with electronic air filters to keep the operating area dust free and to reduce maintenance. The transmitter area will be on a closed air cycle with 32 tons of refrigeration so as to provide uniform temperature throughout the year. From preliminary tests it was determined that tube life could be extended 50 per cent by completely air conditioning the transmitter. The air conditioning will have a 100 per cent spare in case of failure of one unit.

The station modernization plan also calls for re-equipping the existing 50 by 60-foot "Studio F." Special studio facilities to stage closed circuit TV presentations for audiences up to 300 persons will be included. Strategically located monitors will bring each individual within easy viewing range.

Station-Break Automation System

KSTP-TV will use an RCA Type TSA-2 automation system for handling up to a dozen events during a station break period. Activated by push button control, the automation unit calls cameras, projectors, TV tape recorders and other equipment into play at the proper instant, according to a pre-determined sequence. This system takes pressure off studio personnel during the high-activity station break period, and assures the sponsor of dependable service.

The automation equipment will control a TS-40 transistor video switcher and an audio relay switcher which are located in master control. Two additional TS-40 switching systems will be installed in control rooms for the individual studios.

Move to Live Color

Addition of two TK-41 live color cameras will implement KSTP-TV's film and network color schedule. The cameras will be equipped with new high-sensitivity image orthicons. These make possible fine color pictures with less studio lighting than heretofore possible.

Already equipped with film and slide units plus facilities to relay network colorcasts, KSTP-TV will use the new cameras to engage in all forms of color TV programming. In addition, TV Tape Recorders at the station are equipped to handle color.

Color TV Mobile Units

Two KSTP-TV color cruisers are the latest design in mobile units. Equipped to accommodate four monochrome and two color cameras, the units are 35 feet long, 8 feet wide with full 7-foot 2-inch head room inside. Built-in microwave facilities, for color or monochrome, will relay remote pickups back to the station.

KSTP engineers have employed a unique cooling system in their mobile units. A chilled water system makes possible 72-degree inside temperature when the air outside is 100 degrees and when five camera units and their attendant equipment is in operation. The use of chilled water eliminates the necessity for bulky air ducts, saving considerable space. The cooling and heating is taken care of by three convector units installed out of the way in the ceiling. The heat transfer is accomplished by the use of three Trane convector units installed in the ceiling. The mobile cruisers are fully insulated and the same convector units are used for heating in the winter time with below zero weather.

The mobile unit to house these facilities has already been completed, see Fig. 1. An accompanying mobile unit will contain the power plant and a battery of search-lights to illuminate disaster scenes or the sites of spot news developments. This contains 5 kw Kohler emergency generators which will take care of air conditioning and warming of equipment and lighting the cruiser. Thus equipped, KSTP-TV will be able to further pursue their vigorous news, documentary, and special events coverage of the Minneapolis-St. Paul scene.

New Monochrome Cameras

KSTP-TV also plans to use new RCA TK-12 monochrome cameras, with 4½-inch image orthicon pickup tubes to produce pictures of increased resolution and better gray scale rendition. Capable of producing high quality multiple generation tape copies, these new cameras will substantially improve TV tape production facilities.

Latest Design Transmitting Equipment

The KSTP-TV transmitter will be modernized by installing a new TT-6 driver unit for the RCA 25 kilowatt amplifier.

Measures have been taken to circumvent all possibilities of broadcast service interruption. For example, the tower is equipped with two antennas and spare coaxial feedlines so in case of an antenna failure an automatic transfer switch switches antennas in less than one second. Also, an RCA TT-2AL 2 kilowatt transmitter is maintained in standby readiness at all times and will be automatically switched into service within two seconds should the main transmitter fail. Electrical service is received from two independent sources. Automatic power transfer switches will transfer the KSTP-TV load between the sources in 2/10 of a second.

Finest Service to Viewing Audience

The KSTP-TV engineering program represents an investment of \$1,700,000. With this extensive equipment package installed under the master plan prepared by station engineers and RCA, KSTP-TV will be in a position to provide finest tv broadcasting service to its viewing audience.

FILM AVAILABLE ON RCA TV TAPE RECORDER

Just released is a 16mm color movie showing the RCA TV Tape Recorder in action. This 1000 foot film describes RCA's conclusive features and explains the resulting owner benefits. Moreover, it demonstrates exactly how the Tape Recorder should be operated.

Much of the film was shot in the RCA TV Tape demonstration area, Camden, N. J. Engineers who designed the recorder have also collaborated to explain the design advantages and demonstrate the proper use of the machine.

The art of making precision magnetic heads for tape recorders is given considerable treatment. In addition, assembly and test procedures are shown. TV Tape splicing is graphically described in a sequence that reveals the techniques employed. Representative mobile and station installations are portrayed in action.

The film is available for showing by RCA representatives to broadcasters, tv program and commercial producers, agencies, educational, and other potential users of TV Tape.

MOBILE TV TAPE UNIT OPENS UP NEW SALES WORLD FOR KRGV-TV

by HANK PAGE

Sales Promotion Manager, KRGV-TV

For Television Station KRGV-TV, Rio Grande Valley, Weslaco, Texas . . . TV Tape has come through with an increasing number of answers to local television's production and sales problems.

By combining one of electronic's newest marvels with one of the world's first inventions . . . the wheel . . . KRGV-TV has become the first station in the Southwest to have a mobile tape unit and in doing so has created a vital force that is stimulating sales, improving production and adding an entire new dimension to local commercials and special event coverage.

Located in a 100,000 set, two station market, KRGV-TV has made its one RCA TV Tape Recorder do the job of two units.

Mobility A Must

From the time KRGV-TV started thinking about tape, mobility seemed to be the only answer to the maze of problems spawned in the sprawling market of four counties and eighty communities comprised of some 400,000 people. After much research and study it was decided to put the RCA TV Tape Recorder in a trailer that could roll swiftly over the Valley's 1,700 miles of paved highways right to the client's door and to the far-flung sights of the area's many parades, celebrations and special events.

Custom Designed Trailer Unit

The specially designed and custom built trailer meets the requirements of allowing operators enough room to work and at the same time compacting equipment so that the trailer might be parked in a part of the station prop room where it can serve as a TV Tape room adjacent to the studio projection room.

The trailer is of steel construction mounted on two aircraft wheels and axles. Each wheel is rated at a maximum of 5000 pounds; so no overweight problem is encountered. The unit measures 10 feet long by 8 feet wide by 7 feet high. Three and one-half tons of air-conditioning are installed and aided by two fans for effective air circulation. The equipment racks of the RCA recorder are located so that only 250 pounds loading is actually pushing down on the trailer hitch. When not in use, the mobile unit is jacked up on four corners in order to lighten the load on the wheels.

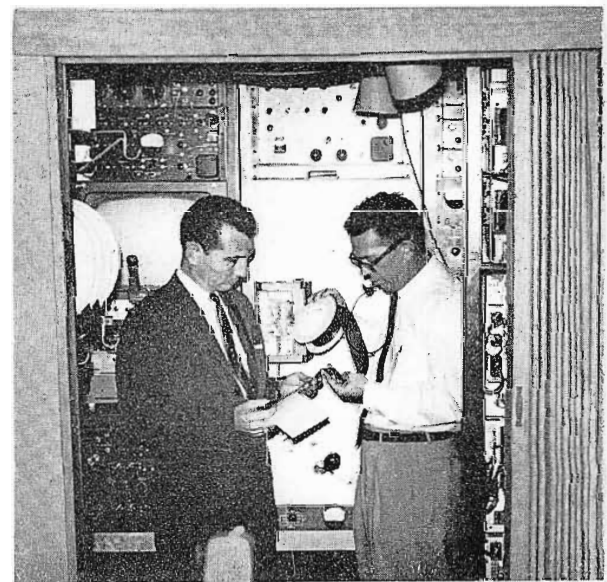
Saves Time and Expense on Remotes

Time, demanding monster that it is in broadcasting, is a key factor in setting up a remote taping session. Experience has proven that the actual set-up time is fantastically short. After arrival on the remote location, the tape unit is operative and recording in only 15 minutes. To anyone who ever worked on a remote microwave crew, building towers, making equipment alignments, etc.—this new method merits praise.

The quality is outstanding and the overall cost of mobile taping is less than a remote because of the elimination of the microwave hook-up.

The remote bus and cameras are "hot" and the first commercial rehearsed before the tape trailer arrives on location. This, of course, saves time, effort and MONEY.

FIG. 2. New tape spot business has resulted from installation of RCA TV Tape. Here the mobile unit is serving in its dual roll, pulled up outside the station projection room.



On-The-Spot Commercials Are Practical and Profitable

Judicious planning has made Mobile Tape location shooting of "on-the-spot" commercials . . . both practical and profitable. By planning ahead and leaving the studio at 5:00 a.m., KRGV-TV has thus far prevented themselves from being caught "with their tape pants down." The station is always ready to go live should the emergency arise; and since television managed to make it on a "live" basis for several years before Tape, the chance of doing it again is certainly anything but hazardous.

The spread-out geographical nature of the Rio Grande Valley, comprising the four southern-most counties of Texas has always made it difficult and expensive for remote pick-ups because of the necessity of a microwave tower. KRGV-TV's Mobile Tape unit has now made frequent remotes possible.



FIG. 1. The mobile TV tape unit, center, complements KRGV-TV's mobile television facilities making possible on the spot commercials throughout the station's service area. This point of sale convenience has attracted many new advertising accounts for the station.

Tape Commercials On-Location Bring in New Clients

The advantages of the Mobile Tape concept are many-fold and amazing. The station's account list has already grown because the new clients saw the first remote spots on the air and liked them. The key factor in the superiority of on-location commercials is . . . "PRESENCE" . . . the feeling of being right in the store, right at the moment the spot is airing. Then there is the added impact of the fact that a local station can do this at a cost the local merchant can afford.

KRGV-TV believes their location commercials have an increased believability, viewer acceptance and buyer association; and therefore do a better selling job for Valley business-men. Clients are impressed with the "authentic" nature of their commercials. Most important, the viewer-customer notices the commercials and goes out of his way to mention that he saw it.

It is pleasing to see the client reactions (especially the numerous employees who never participate in the buy) when the crews swarm over the place of business for

3 to 4 hours literally taking over the place. They always . . . without exception . . . gain a healthier respect for TV people, the cost of TV recording and the complexities that are involved in putting together what they had regarded as a simple announcement. Clients are also impressed by the instantaneous play-back, especially when they take part in the commercial themselves. Clients who have used Mobile Tape commercials have an understanding and appreciation of television that has never been possible before. They also have a desire to spend more.

TWO COLOR TV TAPE RECORDERS INCREASE WFBM-TV COLORCASTS

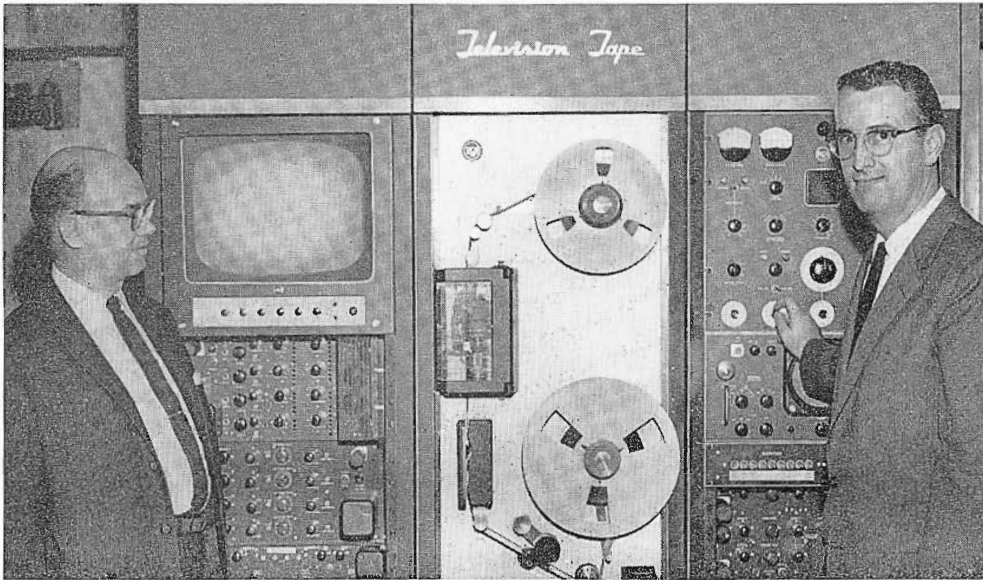


FIG. 1. Director of Engineering, Robert Flanders, punches the start button on one of WFBM-TV's two new RCA Color Television Tape Machines. Bob Brockway, Chief Engineer-Technical, who supervised the installation of the machines, looks on.

With the addition of two new RCA Color TV Tape Recorders, WFBM-TV, Indianapolis, has been able to step up its color-casting schedule by 30 per cent during the first six months of 1960.

Color highlights of this period included daily "Trackside" telecasts from the Indianapolis Motor Speedway during the entire month of May. More than a dozen 15-minute color shows were taped at the track for playback later in the evening. Also colorcast were highlights of the \$50,000 Golf Tournament edited from complete color tape coverage of the three-day event.

The addition of color TV Tape completes the full color facilities of Indiana's pioneer color station—including live and film origination and TV Tape Recording. WFBM-TV is the second TV station, exclusive of networks, to have in service two RCA Color TV Tape Recorders.

According to Eldon Campbell, General Manager and Vice President: "TV Tape has allowed us to increase our color programs. Color taping has become routine. Reproduction is 'live' quality."

TvB TO INSTALL TAPE IN NEW OFFICES

As a service to its members, advertisers, and agencies, the Television Bureau of Advertising will install an RCA Color TV Tape Recorder at its new offices at One Rockefeller Plaza in New York.

Highlighted among the new facilities which give TvB double the space it formerly occupied is a TV Tape room soon to be completed. This room will be available for member use in screening hometown programs, commercials, and market pre-

sentations for admen in New York. It will also be used by TvB's own salesmen for making sales presentations to advertisers and agencies.

The TV Tape Recorder will feed a closed-circuit system with color receivers placed at various points throughout the offices. The main presentation area is a 13 by 18 foot conference room which accommodates up to 30 people and may be divided into two rooms when desired.



FIG. 1. Charles H. Colledge, Vice President, Broadcast and Television Equipment Division, and Norman E. Cash, President, Television Bureau of Advertising sign contracts for TvB's acquisition of Color TV Tape.



FIG. 1. Three Skelton RED-EO-TAPE Mobile Units. Control room bus is at left foreground, and the recording unit directly behind. The power and equipment storage bus is at right.

SKELTON RED-EO-TAPE MOBILE TV SYSTEM

Employs RCA Color and Monochrome TV Cameras
Color Film Chain with 35 and 16mm Projectors
Transistorized Switching and Special Effects System

Built at a cost of \$1,000,000, the most advanced mobile television units in existence were displayed August 18 by Red Skelton, the genial comedian, at his Studios in Hollywood, Calif. The units comprise a complete and large-scale television studio on wheels, employing color, as well as monochrome, tape and film. Conceived by Skelton and engineered by Robert Cobler, Chief Engineer, and Rupert Goodspeed, Studio Director of Technical Operations, the units will not only serve Skelton Studios, but can travel virtually anywhere for location shooting.

The RED-EO-TAPE system consists of three units, each constructed in a 40-foot

bus chassis custom built by Crown Coach Corporation of Los Angeles. The first unit is like the master control room in a television station. It is here that video and audio control, switching, special effects, and remote control are performed.

Facilities of the first unit include controls for three TK-41 live color cameras and three TK-11 monochrome cameras, and one TK-26 color film camera. There are also three color monitors and four monochrome monitors. In this unit, the switching between cameras and insertion of film and tape sequences are accomplished. Also, special effects can be added to the show. Well over 100 effects can be created, in-

cluding fades, lap dissolves, wipes and color mattes.

The second mobile unit contains two tape recorders together with editing and splicing facilities. A complete film system is installed for insertion of films and slides in the program. Included are 16 and 35mm film projectors, and a slide projector. They are remotely operated from the control room (Unit No. 1).

The third unit completes the RED-EO-TAPE system. In it are two 85,000 watt generators to supply all necessary power. In addition, there is storage space for color and monochrome cameras, cables, microphones, tripods, etc. A complete shop is



located in this unit to handle repairs when on location.

The three buses, constructed of aluminum, are 40 feet long, 8 feet wide and 11 feet high. Each weighs, fully equipped, from 38,600 to 42,000 pounds. Featured in the buses are 12-speed transmissions with special Crown air controls, and power steering. The units are completely air-conditioned both for personnel and electronic equipment.

With the RED-EO-TAPE units, a complete television production can be recorded on tape from any location, without dependence on external equipment or personnel. This "completeness" extends to such details as editing, sound dubbing, integration of film portions and titles.

FIG. 2. Ribbon cutting ceremony at Skelton Studios as RED-EO-TAPE units were put on display for first time. Left to right: Ed Hilley, studio manager; Valentina Skelton; Mrs. Georgia Skelton; Charles Luftig, executive vice-president; and the genial comedian, Red Skelton.

FIG. 3. Red Skelton receives congratulations from Warren Charles, RCA representative in Hollywood. Between them is the TK-41 Color TV Camera installed in Skelton's mobile tape units. Three of these famous cameras make it possible for Skelton to tape color programs.



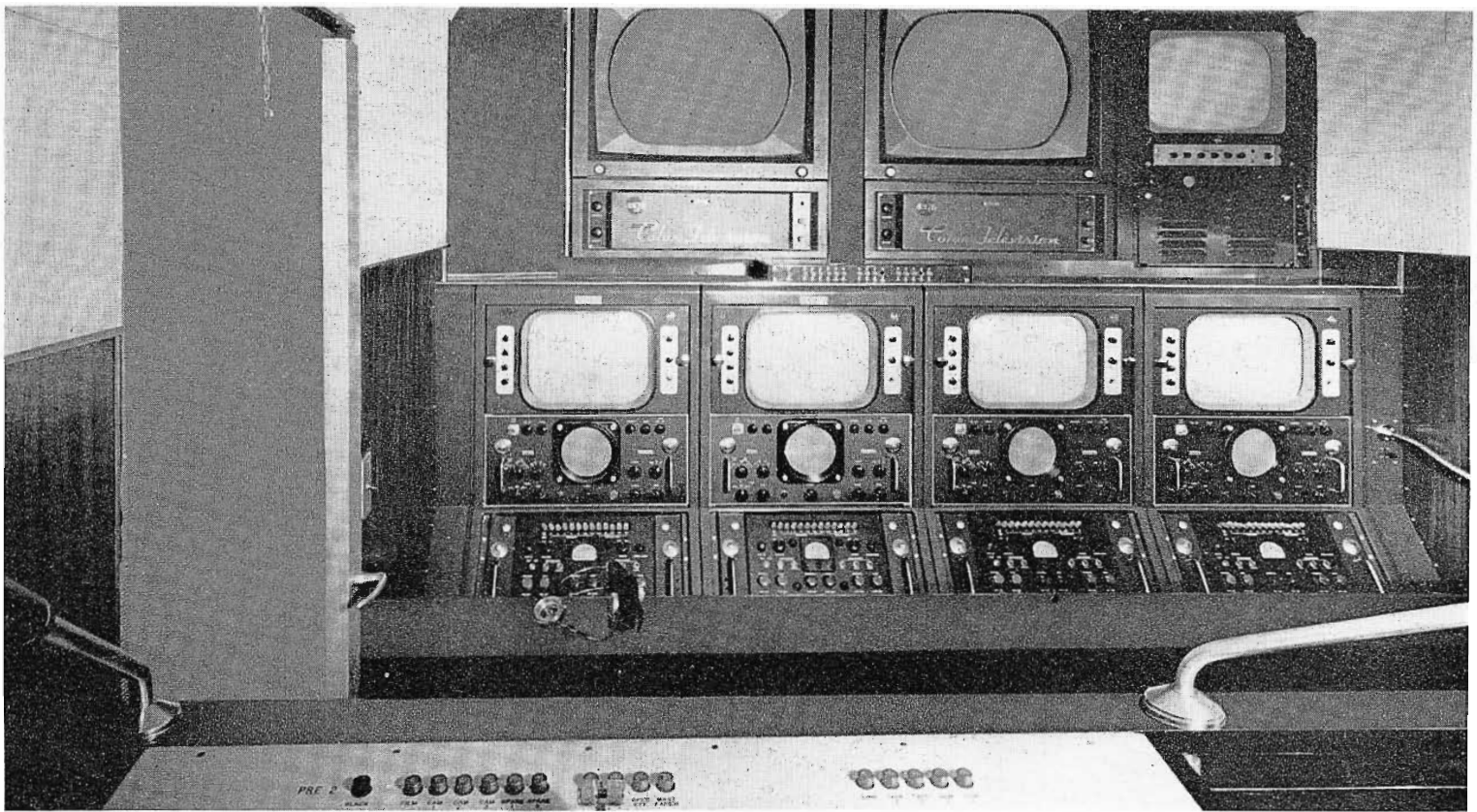


FIG. 4. Video section of control room as seen from technical director's chair. Color and monochrome monitors are in background. Switching and special effects panel appears in foreground.

FIG. 5. Audio mixing and recording position in control bus. Uses standard BC-6 Audio Control Console for finest in sound. Note two small monitors for visual cueing.

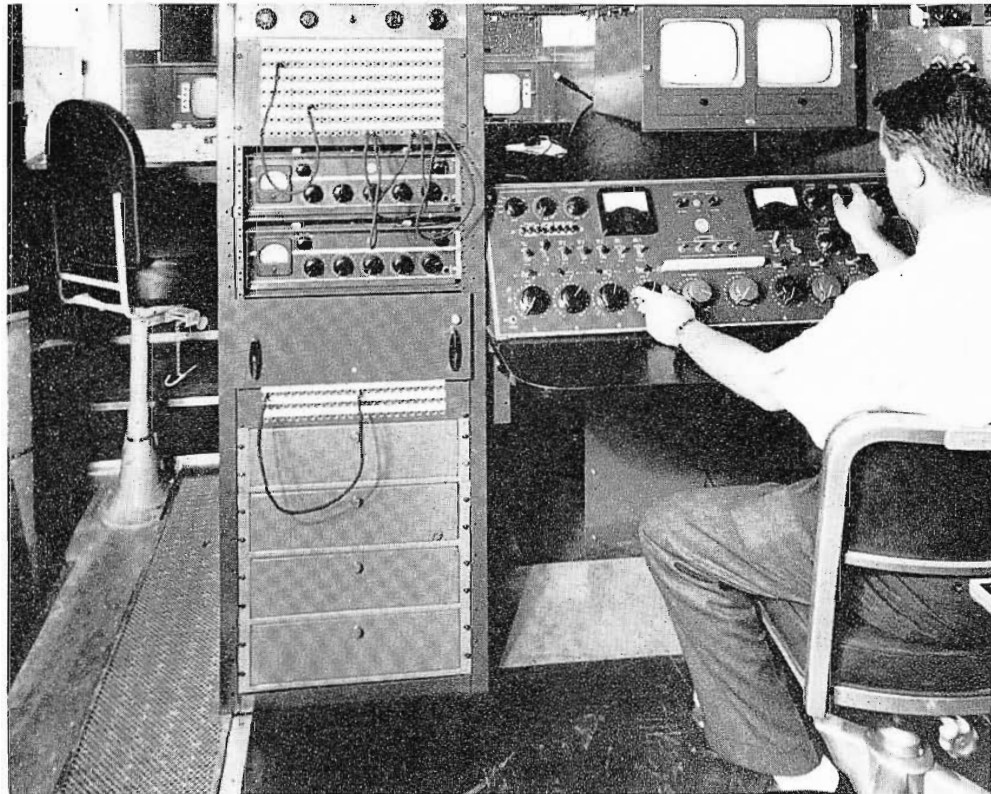


FIG. 6. Mr. Charles Schmidt, video engineer, Skelton Studios, at production control desk. This transistorized switching system and effects control panel was custom designed. It handles 10 inputs from color and monochrome cameras, slide and film projectors, and tv tape machines. The system affords a choice of more than 150 RCA special effects.

On distant trips, the three buses will be supplemented with seven smaller trucks. Five will contain wardrobe, makeup, carpenter shop, camera equipment, and supplies. Two trucks will open into bleachers with overhanging microphones to get audience reaction.

In short, the RED-EO-TAPE system can produce a show that is ready to go on the air upon returning from any remote location.



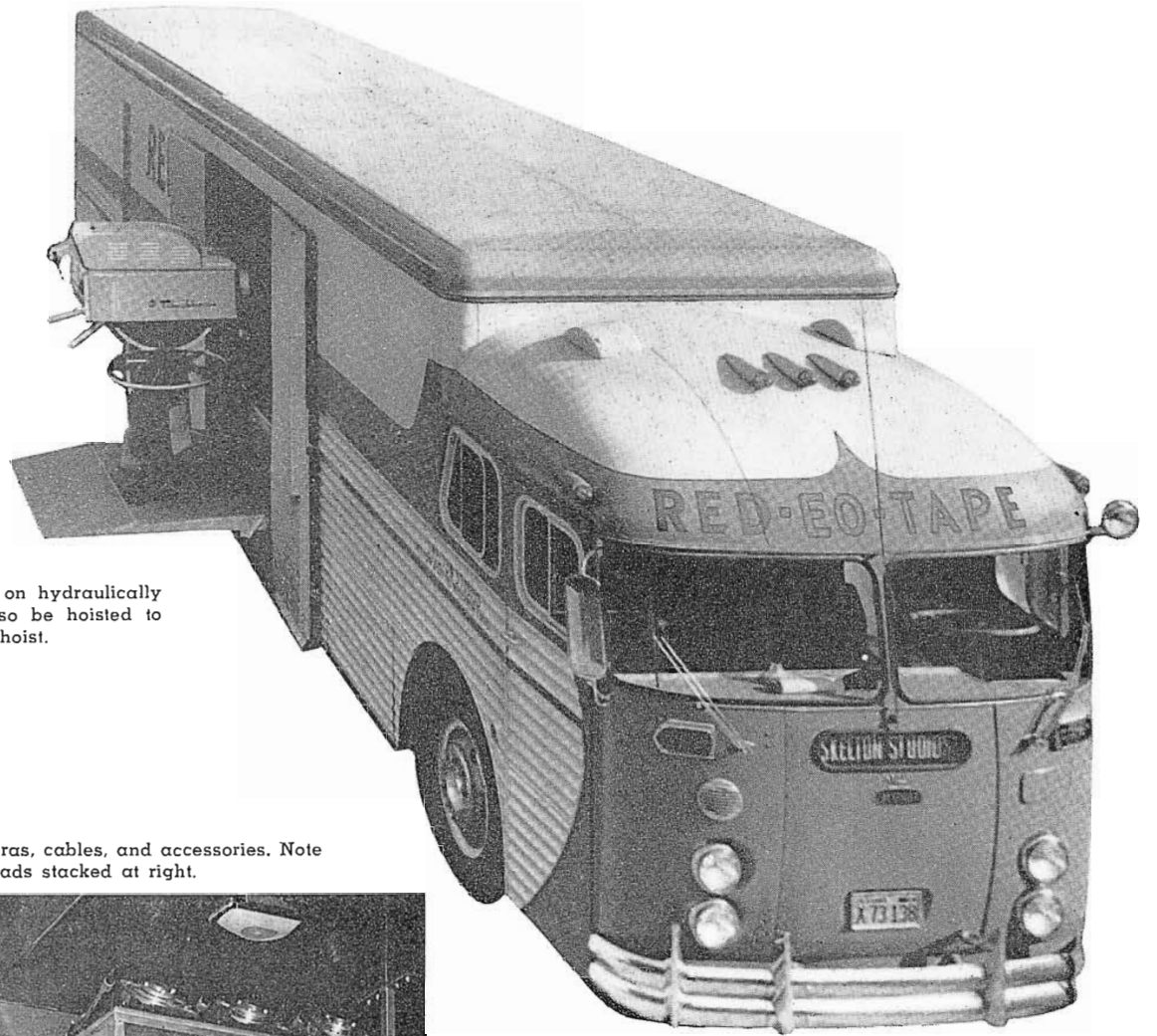


FIG. 7. Note TK-41 Color Camera on hydraulically operated lift-gate. Cameras can also be hoisted to roof by means of built-in hydraulic hoist.

FIG. 8. Storage for television cameras, cables, and accessories. Note three TK-11 monochrome camera heads stacked at right.

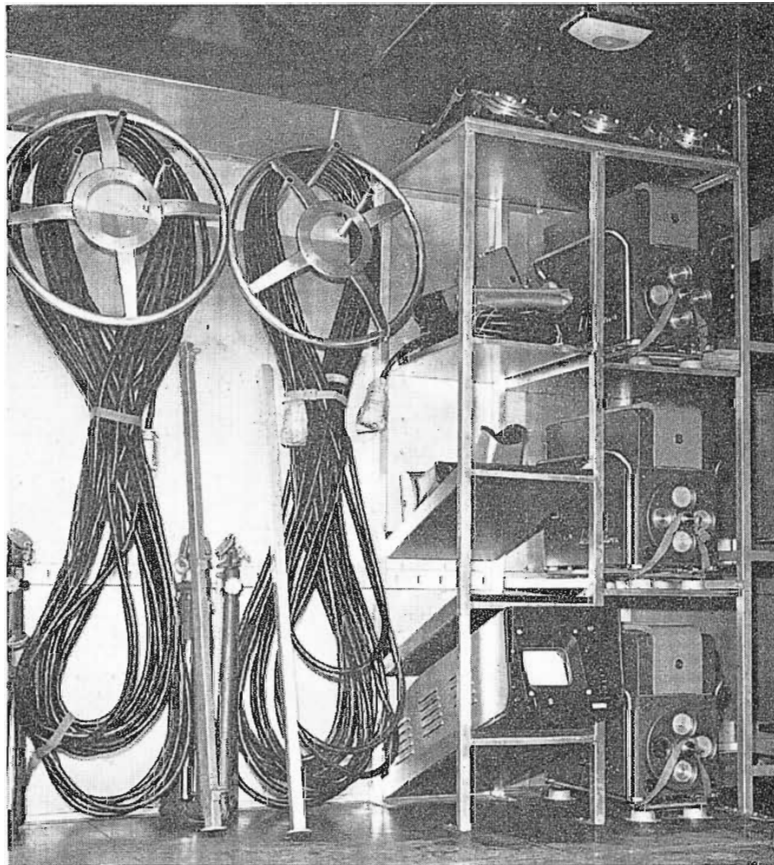
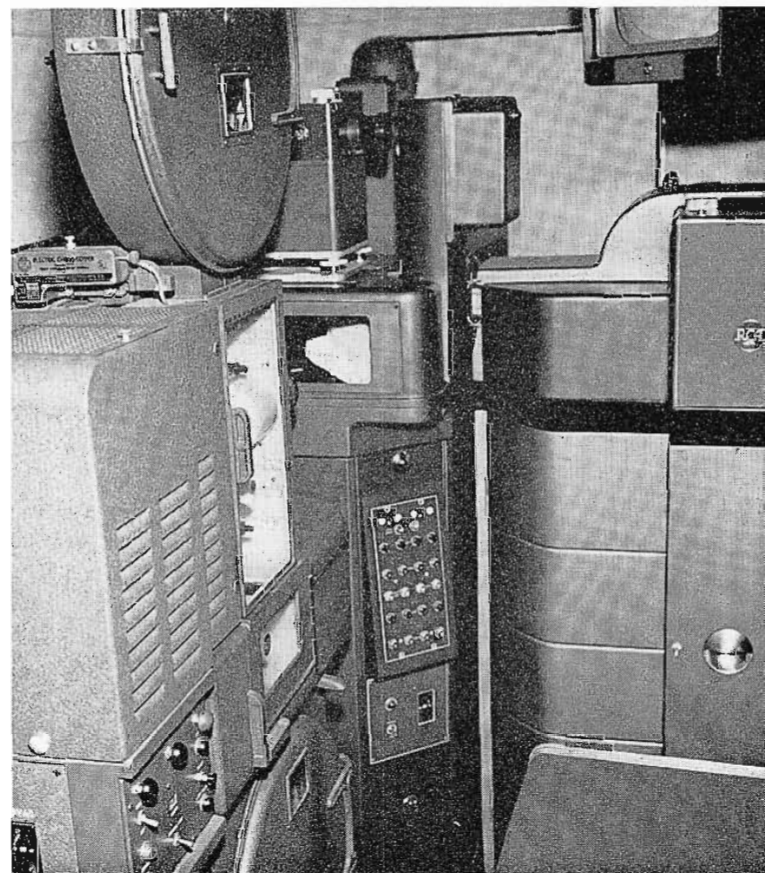


FIG. 9. Complete color and monochrome film system is installed. This includes 35mm film projector, 16mm film projector, and a slide projector. Thus, stock footages and special film shots can be inserted into tv tapes. Equipment is remotely operated from control room.



Things are happening on the color television front. Receiver sales are well ahead of last year. Color programming is on the increase. Research data are showing the measure of color superiority, providing opportunities for many more advertisers. Development of the new high-sensitivity I.O. tube makes possible night telecasts in color.

NBC Expands Color Schedule

When 1960 comes to a close, NBC television will have carried well over 1000 hours of color programming, an increase of about 50 per cent over the previous year. NBC's Fall 1960 schedule will show even greater color expansion. There will be 32 hours of color programming weekly—compared to 18 hours in 1959—an increase of 78 per cent.

New programs, or newly-colored programs, will, of course, account for these increased hours. The weekly color schedule for Fall 1960 follows:

DAYTIME

Monday through Friday

- Continental Classroom
- Play Your Hunch*
- Price Is Right
- It Could Be You
- The Jan Murray Show*

Saturday

- Howdy Doody
- King Leonardo*

EVENING

Monday

- Jack Paar*

Tuesday

- Specials
- Jack Paar*

Wednesday

- Price Is Right
- Perry Como
- Jack Paar*

Thursday

- Tennessee Ernie Ford
- Jack Paar*

Friday

- AT&T Music Specials* alternating weekly with other specials

Saturday

- Bonanza

Sunday

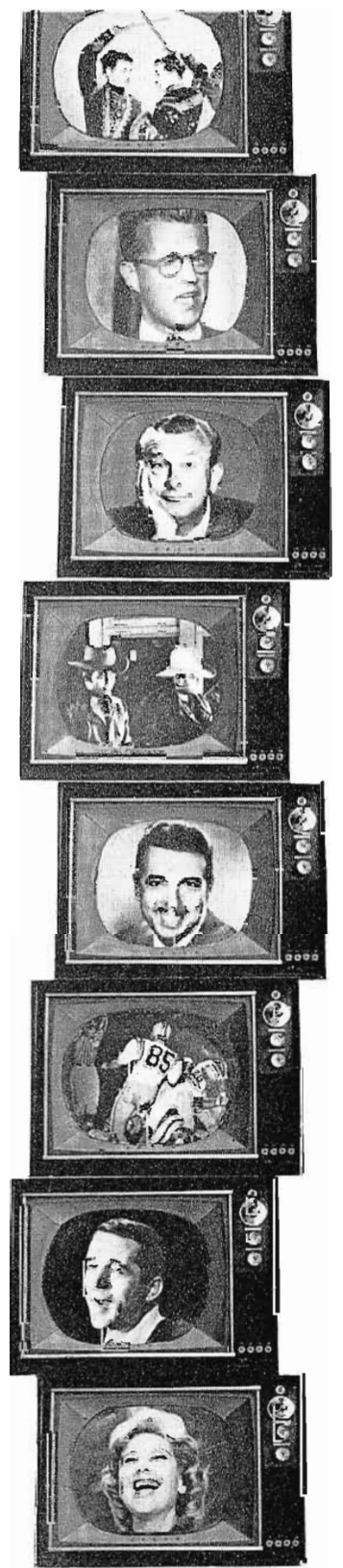
- Meet The Press*
- Shirley Temple Show*
- Dinah Shore Show

The extensive increase in NBC-TV network color is being paralleled on the local level. Locally originated color programs will be seen this Fall in Cincinnati, Charlotte, Philadelphia, Indianapolis, Fort

* New color program.

COLOR TV MOVES FORWARD ON ALL FRONTS

FIG. 1. Increase in network color programming. NBC Fall color schedule expands to 32 hours weekly. This is a 78 per cent increase over the previous year.



Worth, New Orleans, Miami, Washington, Oklahoma City, Chicago, Omaha, Boston, Jacksonville, and San Francisco. Together with the NBC color programs, this will give the viewers in major markets a wide choice of color programs.

TV Receiver Sales Spurt

Television dealers are jumping on the Color TV bandwagon these days in increasing numbers.

For example, the number of "key" color dealers increased by nearly four times in a single month. "Key" dealers are those who

display four or more color sets on their sales floors.

This trend to color has resulted in a nationwide increase of 300 per cent in dealer orders for the 1961 line as compared to a year ago. In some markets, the increase is more amazing. Take the Boston area for example. Nearly 100 new dealers signed up for color, and orders zoomed 528 per cent over June 1959. In Los Angeles, orders were up 1000 per cent. Furthermore, major department stores are joining the color ranks.

An expanded line of color receivers has helped to spur the color sales. Other reasons are: Excellent sales successes of dealers promoting color, increased color schedules, and evidence of a growing advertiser and consumer interest in color.

The exceptional increase in orders and rapid use in number of color retailers should augur well for the entire TV industry.

Color Equipments Pace Color Surge

Broadcasters are encouraged to move into color at an accelerated pace because the kind of equipments developed tend to stabilize the technique of color telecasting. A complete color TV package has evolved over the past few years with each of the equipments matched to work in a system. Moreover, all the elements of the system—from cameras and tape recorders, through switching and special effects, to transmitters—have a history of successful operation.

The TV broadcaster can enter the field of color programming on a full scale or he can move ahead in three successive stages. First, relay network color; second,

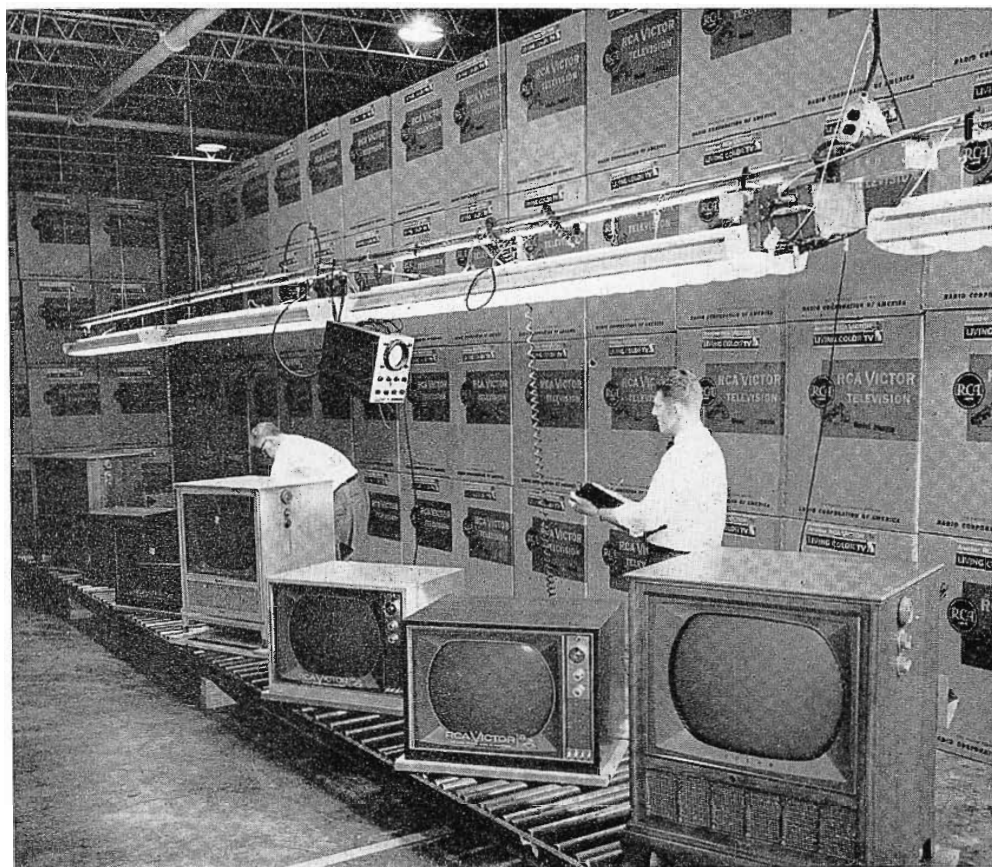


FIG. 2. Color set sales show sensational spurt. Dealer orders for 1961 color receivers have increased 300 per cent over a year ago. Dealer floor demonstrations are multiplying at a rapid rate.

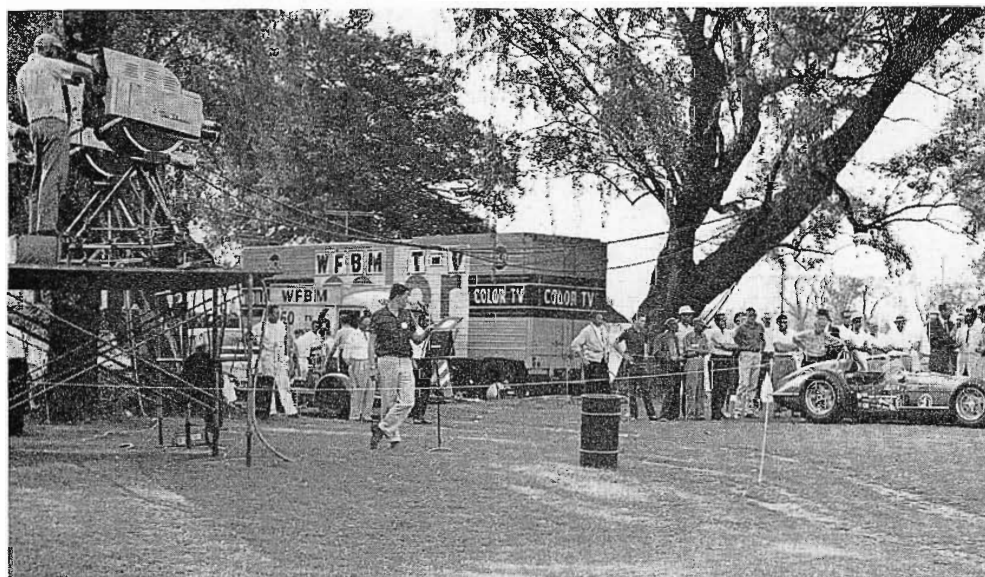


FIG. 3. Local colorcasts are on the up. Here, for example, station WFBM-TV telecasts Indianapolis speedway activities in color. An RCA Color TV mobile unit was used for 20 colorcasts from the capital of motor racing.

add color film and slide units; and third, procure live color equipment for local programs and commercials. In either case, he can go ahead with the assurance that his equipment will be fully compatible and will constitute a matched color system.

New TV Tube Evokes Color Programming

Newest development for Color TV is the high-sensitivity RCA-4401 I.O. Camera tube. It is directly interchangeable with types 5820, 6474 and 7513 in existing cameras. This tube makes possible operations

under low-level light and makes possible night telecasts of sporting and other events. In the studio it means that color programs can be put on with normal monochrome lighting. Hence, the new tube will substantially reduce power requirements for lighting and air conditioning.

Under extremely adverse lighting conditions, the 4401 can be operated below the knee of the characteristic curve. Tests have indicated that 40 footcandles can be used with a lens stop of $f/5.6$. Features of the 4401 are: High-gain multiplier, high-sensi-

tivity photocathode, and dynodes which permit higher voltage operation.

Perfection of the RCA 4401 led directly to the decision by NBC to present "The Jack Paar Show" in color. Tests indicate that Paar will be able to continue broadcasting from his present studio, using the same light intensity.

Cameras equipped with the new tube were used to originate the WHDH coverage in color of a night game at Fenway Park between the Red Sox and the White Sox. WGN has a camera equipped with the tube for colorcasting baseball games in Chicago. NBC has ordered 4401's for night sports programming in color, including baseball, football and trotting races.

The high-sensitivity I.O. has been under development for nearly a year by a team of engineers at RCA's plant in Lancaster, Pa. It is another of the significant developments that encourage broadcasters to enter the color area.

REPLACEMENT PARTS HELP KEEP STATIONS ON-AIR

Fast 24-Hour Service and Undiminished Stock
Keep RCA Equipment in Operation

by A. PETTIT

RCA Parts and Accessories Department



FIG. 1. Fast air shipments are made in emergencies. Here a transformer for a 50 kw transmitter is being loaded on a United Airlines cargo plane.

Protection of equipment after the sale is an important function, and at RCA an entire Parts and Accessories Department provides exact replacement parts for all types of equipment now in use. To keep stations on the air a 24-hour emergency service is also available.

The Parts Department is a business in itself, employing approximately 200 people and occupying 140,000 square feet of floor space. Today, the parts and accessories line encompasses over 45,000 different stock numbers, covering 6,000,000 units ranging in size from a $\frac{1}{4}$ watt resistor to a 50 kw modulation transformer. Shelf quantities vary from one to 30,000 units per stock number. This extensive stock protects virtually all RCA equipment now in use.

Fast Processing

Customers can wire orders directly to RCA Parts and Accessories via TWX and Western Union Telegraph. Incoming mail facilities include a special post office box, at which mail orders are picked up many times each day to assure prompt processing.

Punched cards are used for the preparation of shipping papers and invoices. This mechanical processing of paper work in filling orders results in faster service and less chance for error. As an order is received it is given an RCA internal identification number, and this number should be used by the customer in all correspondence regarding the order.

Exact Replacements

If a part has been superseded by a superior replacement, this will be indicated on the customer's invoice. Only exact replacements are ever substituted. Substitutions are only made when the original item is no longer available or when one part will take the place of many others.

Prompt Shipping

Parts are packaged in containers which identify them as genuine replacements for RCA products. The inventory of the 45,000 cataloged items are stored in numerical sequence to expedite the filling of orders. Orders which require special handling are so marked and preference is given to orders of this type. Orders are shipped in accordance with the routings recommended by RCA traffic department unless specified instructions are received from the customer.

Emergency Service

A 24-hour, 365-day standby service is maintained to satisfy customer requirements of an emergency nature—particularly broadcast stations that require parts to maintain their operations. Orders of this

WEMP
5000 WATTS ON 1250 KC

Milwaukee Broadcasting Company
1701 W. WISCONSIN AVENUE • MILWAUKEE 3, WISCONSIN
DIVISION # 4042

June 17, 1960

Mr. Alan B. Jester
RCA
Merchandise Mart
Chicago 54, Illinois

Dear Alan:

Occasionally something happens in this broadcasting business that make such an impression that a letter such as this seems to be a natural reaction.

I'm referring to the fast delivery of transmitter parts. Recently, while at our St. Louis station, KWK, we ordered a spare modulation transformer, and because we thought it advisable to get it without delay, we called your office and requested emergency handling of the order.

We phoned the order to your Chicago office approximately five o'clock in the afternoon, and the transformer was delivered from Camden before we got to the office the next morning. This is real service.

This is one of the reasons we're glad we bought from RCA.

Yours truly,

"The Station with a PERSONALITY"

Rolland E. Paske

Rolland E. Paske,
Chief Engineer

REP/lk

FIG. 2. Typical of emergency service is this letter from WEMP.

nature take precedence over all orders in the house and are specially carried through the various operations. If a part is not in inventory, the emergency service men pull out all stops in an effort to obtain the needed part. At times equipment in produc-

tion has been disassembled in order to take care of emergency requirements.

Upon placing an emergency order the customer usually indicates when delivery is required, as well as how it should be shipped. If requested, the Parts Department will call the customer after the order has been shipped to give the name of the carrier, waybill number, and time of arrival. This service eliminates the possibility of losing the urgently needed items.

Maintaining Stocks

One of the problems of the Parts and Accessories business is maintaining a comprehensive stock of parts. Thousands of relatively inactive items are kept on the shelves in order to satisfy customer requirements. Parts must be kept on hand for the life expectancy of the equipment. While inventories are under constant scrutiny to find ways to either eliminate or reduce them, work is performed under one basic principle; no saving can be considered a saving unless it results in a net improvement to the customer in both service and parts.

Improved Service

In the last three years, expenditures were made for systems studies and improved product handling techniques in an effort to provide maximum service with minimum cost. Complete rearrangements were made to expedite customers orders; conveyors,

standard trays for conveyor operations, improved storage facilities. The latest methods of product packing were reviewed and changes made to improve service. The shipping cycle for regular orders has been reduced 50 per cent over this period from an average of 3.2 days in 1957 to a current average of 1.6 days. Emergency orders, of course, receive same day service.

These improvements were made so that the ultimate in service could be given to the RCA customer. The Parts and Accessories Department has geared itself to this objective and will continue to aggressively exploit opportunities for even better service in the future.

TO ORDER RCA REPLACEMENT PARTS

REGULAR ORDERS

Send to RCA Service Parts, P.O. Box 654
Camden 1, N. J.

WARRANTY ORDERS

Send to—Your RCA Broadcast Salesman

EMERGENCY ORDERS

*Telephone—Camden, N. J., WOodlawn 3-8000
Day, Ext. PF-634 — Night, Ext. PF-567

*Telegraph—RCA Emergency Service, Bldg. 60
Camden, N. J.

*TWX—Camden, N. J.—442

*Specify if under warranty.

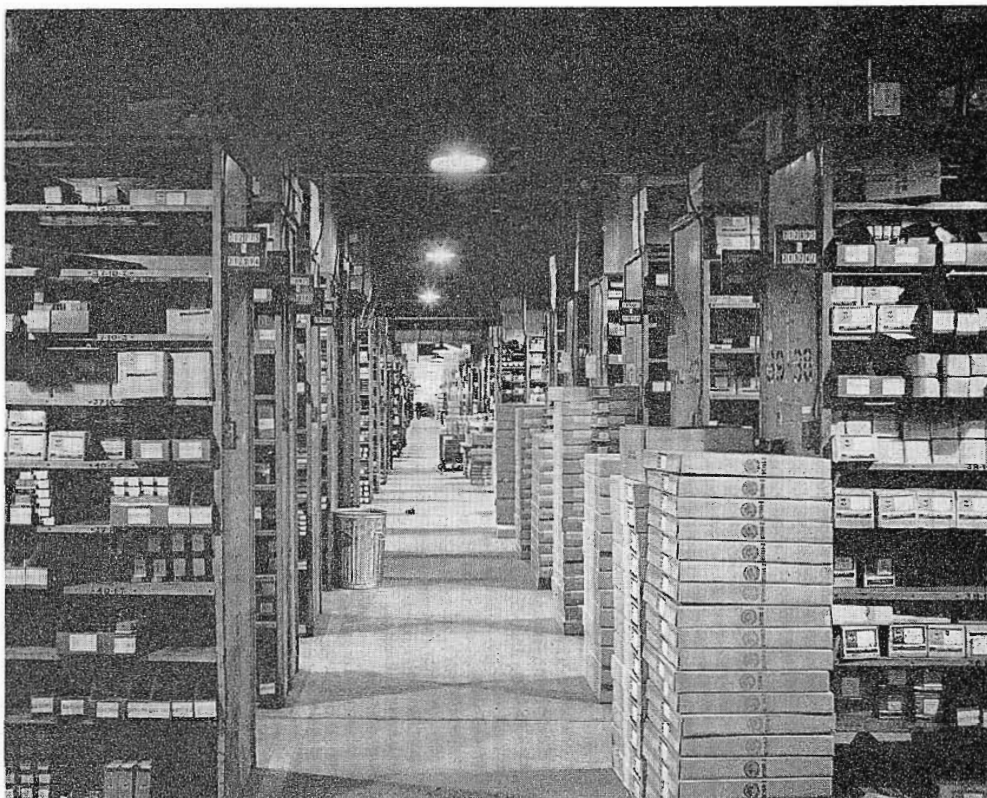


FIG. 3. All 45,000 replacement parts are stored in row of bins in numerical order to expedite shipping.

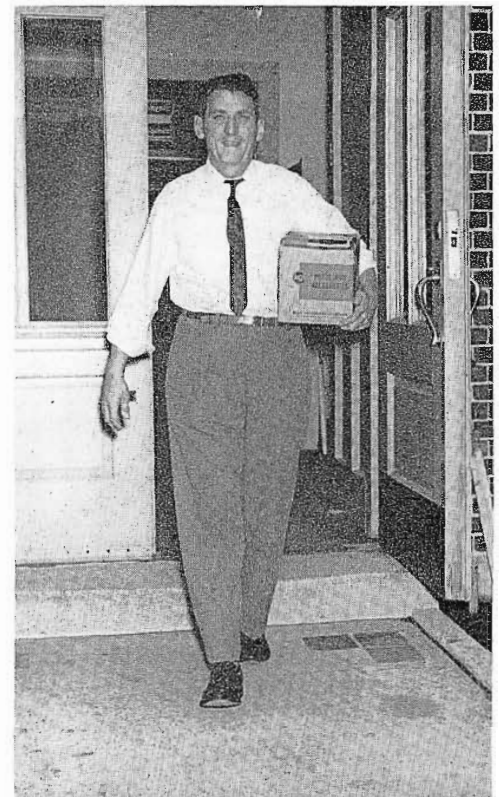


FIG. 4. Here an emergency service man makes a special delivery of urgently needed parts.

for peak broadcasting performance...

Use RCA's Quarter-Century of BROADCAST SERVICE EXPERIENCE

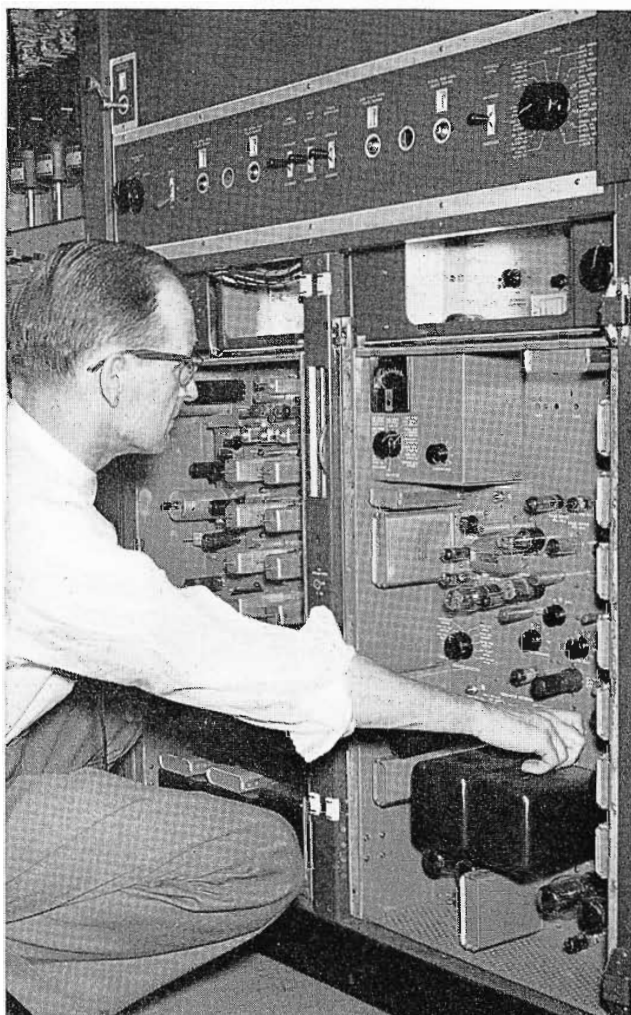
With RCA Broadcast Service you'll control your maintenance costs and be assured of...

COMPLETE MAINTENANCE SERVICE

from microphone to antenna!

HERE'S A PARTIAL LIST OF RCA SERVICES:

- **TRANSMITTER PERFORMANCE MEASUREMENTS**
Test and tabulation of performance data for mono-chrome or color, visual and aural transmitters.
- **ANTENNA SYSTEM MEASUREMENTS**
Impedance or VSWR and resistance measurements for evaluating performance.
- **COMPLETE ANTENNA INSPECTION**
Mechanical inspection plus impedance, resistance and high voltage measurements.
- **MICROWAVE SERVICE**
Signal to noise, frequency response, phase shift measurements and path alignment.
- **INSTALLATION SUPERVISION**
Transmitters, studio equipment and antennas.
- **EQUIPMENT REPAIR SERVICE**
TV cameras, microphones, pick-ups, consoles and related broadcast equipment.
- **TV PROJECTOR SERVICE**
Scheduled preventive maintenance contract service.
- **GENERAL SERVICE**
Adjustment and repair of studio and transmitting equipment.



*FOR THIS COMPLETE BROADCAST SERVICE,
CONTACT ANY OF THE RCA SERVICE
COMPANY OFFICES:*

Pennsauken 8, New Jersey
6710 Westfield Avenue
Telephone: NOrmandy 3-8101

Hollywood 38, California
909 N. Orange Drive
Telephone: OLdfield 4-0880

Atlanta 13, Georgia
160 14th Street, N.W.
Telephone: TRinity 4-4543

Cherry Hill, Camden 8, New Jersey
Telephone: WOODlawn 3-8000
Extension PY-5101

Chicago 5, Illinois
1322 S. Wabash Avenue
Telephone: WEBster 9-6117



BROADCAST SERVICE
RCA SERVICE COMPANY

A Division of Radio Corporation of America
Camden 8, New Jersey

Tmk(s) ®

Power Savings of 15,000 KW Hours Yearly... with New 5 KW High-Performance AM Transmitter!



NEW BTA-5T

This new transmitter incorporates the only significant development in Class "C" power amplifier design in 20 years. A new circuit provides a plate efficiency of approximately 90%.

With continuous operation, savings of approximately 15,000 kilowatt hours per year are realized. Only 1 PA tube is needed.

Other improvements, including all silicon rectifiers and improved protection circuits, enhance performance and extend operating life.

Functional styling provides a choice of red or grey doors to suit station decor and add a harmonious note.

Your RCA Broadcast Representative will gladly provide further particulars about this new transmitter. Or write to RCA, Dept. M-22, Building 15-1, Camden, N.J. In Canada: RCA VICTOR Company Limited, Montreal.

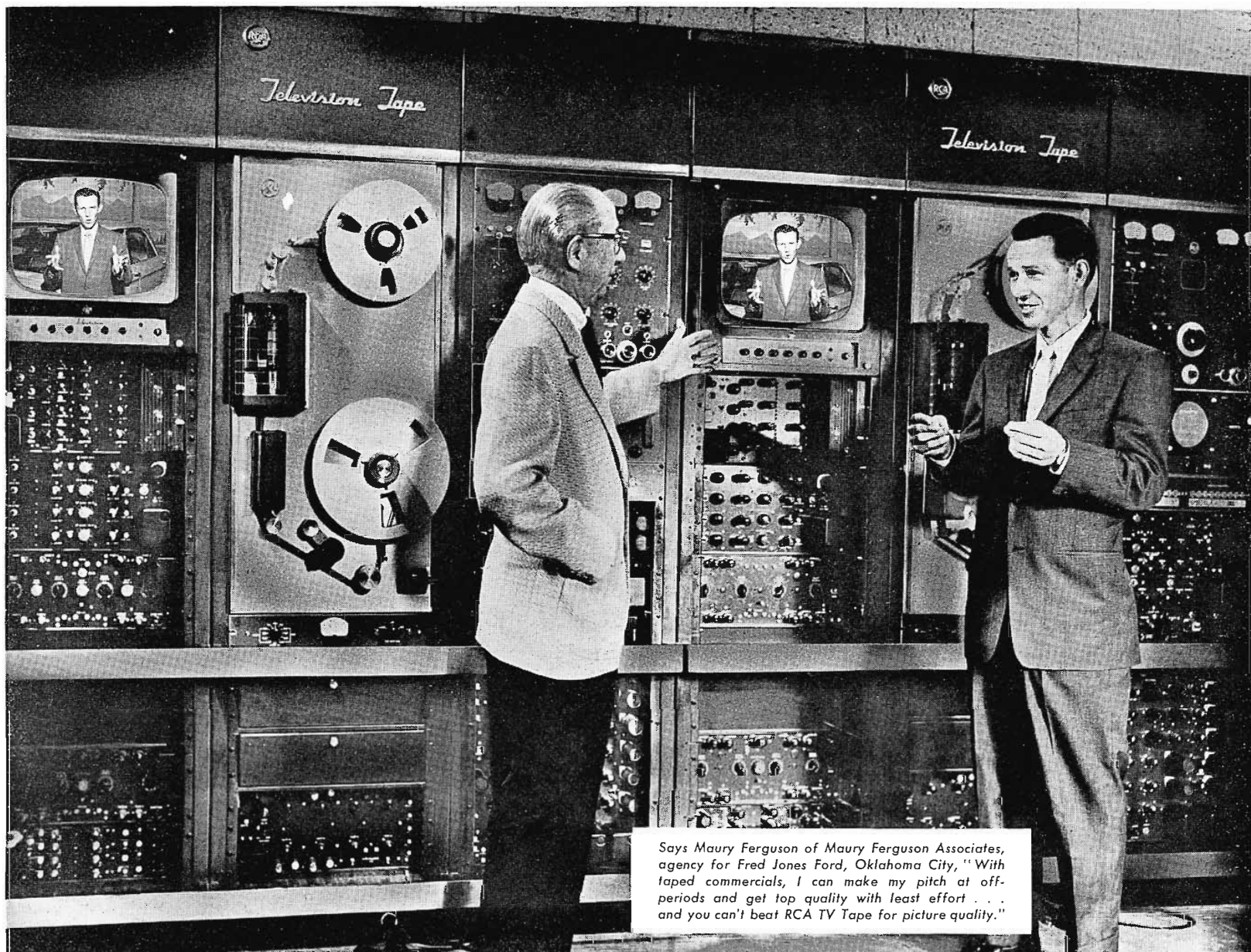
Some of the fine features of the NEW BTA-5T

- 1. FEWER TUBES**—a total of twelve—save on replacement cost. Only one 5762 PA Tube for lower operating cost.
- 2. QUIET-OPERATING BLOWER**—Very low plate dissipation in the output stages reduces heat within the transmitter, and also permits use of a slow-speed blower for quiet operation.
- 3. SILICON RECTIFIERS**—All silicon hermetically sealed rectifiers of proven reliability are ideal for remote control.
- 4. OVERLOAD PROTECTION**—Complete overload protection is provided for all circuits. All line breakers carry an instantaneous over-current protection, while main breakers retain instantaneous and thermal protection. Remaining circuits are protected by fast-acting overload relays with provision for external indicators.
- 5. REMOTE CONTROL PROVISION**—Built-in provision is made for remote control and conversion to Conelrad, power cut-back and a carrier off monitor.
- 6. FCC OK**—Meets all new FCC Spurious Emission requirements.
- 7. SPACE SAVING**—New style cabinets offer excellent accessibility to all components and allow a great saving in floor space.

RCA BROADCAST AND TELEVISION EQUIPMENT—CAMDEN, N.J.



The Most Trusted Name in Radio
RADIO CORPORATION OF AMERICA



Says Maury Ferguson of Maury Ferguson Associates, agency for Fred Jones Ford, Oklahoma City, "With taped commercials, I can make my pitch at off-periods and get top quality with least effort . . . and you can't beat RCA TV Tape for picture quality."

SALES ARE UP AT KWTV...

since they installed RCA TV Tape Equipment

"We're glad we waited for RCA," says Edgar T. Bell, General Manager of KWTV, and well-known pioneer in the Broadcast Industry. "The use of RCA TV Tape has up-graded our station's entire production because it affords the best opportunity for talent and crew to view their work critically and to improve it. Sales are up . . . the equipment is booked solid . . . and advertisers are pleased with the superb quality they are getting in their Tape commercials."

Says Mr. Bell: "In tape recording, the quality of the picture is all important . . . and we wanted to make sure that KWTV taping facilities provided all the clarity, sharpness and realism of 'live' production. Being fully RCA-equipped, we felt confident that

RCA would offer superior features in its machine . . . and we weren't disappointed. In fact, our first RCA Recorder proved so popular with advertisers that we have had to install a second."

This is the kind of acclaim RCA TV Tape has been getting in the ever-growing number of stations where it has been installed. Station managers find that once advertisers have seen results, they become enthusiastic Tape users. They find a convenience in operation that is unparalleled, and service after the sale of a kind that only RCA with its broad background in television can perform.

RCA Broadcast and Television Equipment • Camden, N. J.

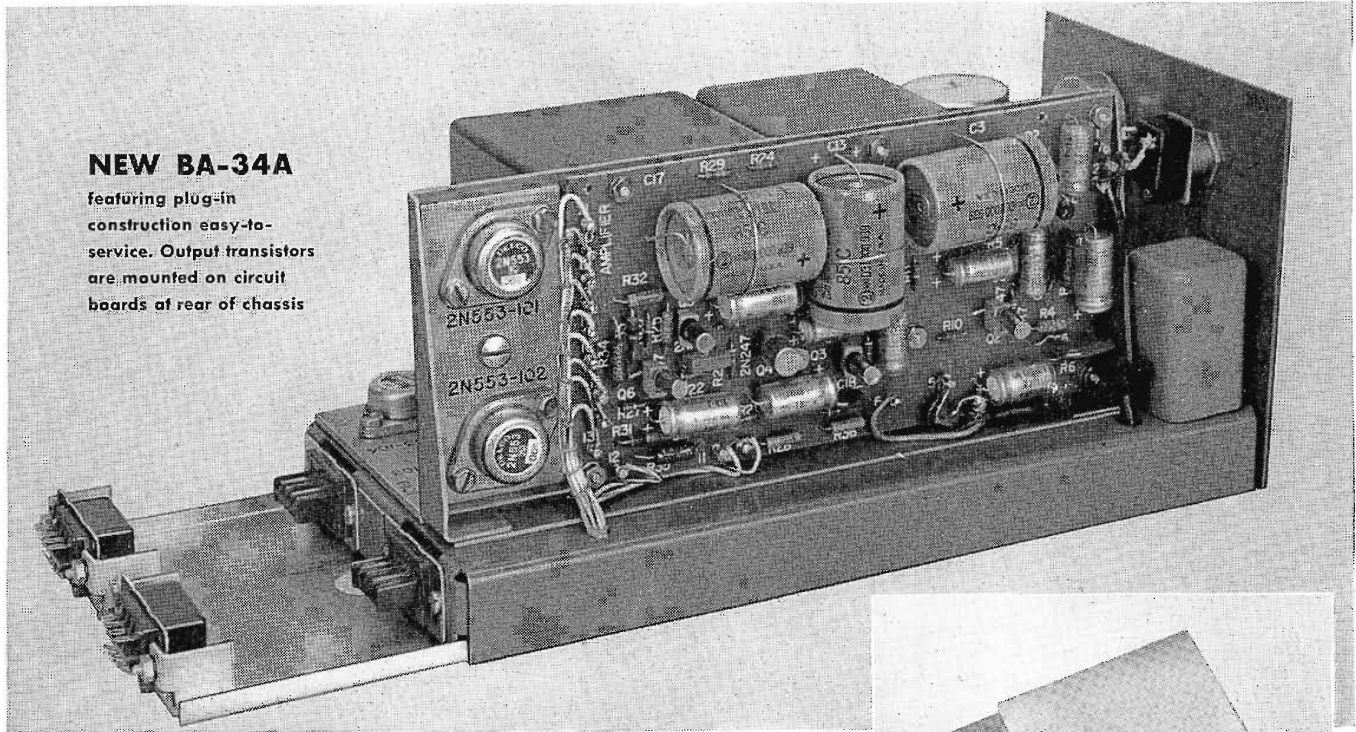
Get the facts on TV Tape! Check with Edgar Bell and other proud new owners . . . see your RCA representative. He can show you how to profit most with this advanced new equipment.



The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

Newest in a Complete Line of RCA Transistorized Amplifiers



NEW BA-34A

featuring plug-in construction easy-to-service. Output transistors are mounted on circuit boards at rear of chassis

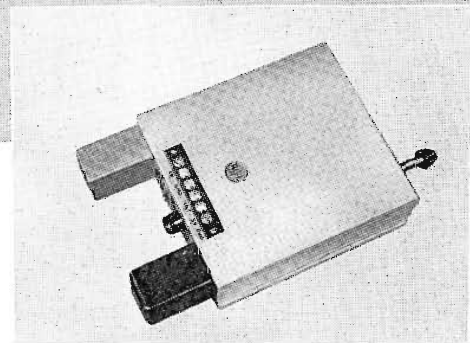
NEW RCA 10 WATT TRANSISTORIZED MONITOR AMPLIFIER needs only half the space and 30% of power of earlier models!

Here's the newest in RCA's complete new line of transistorized audio amplifiers. The BA-34A is the latest in a large and famous line of RCA Monitor Amplifiers. It provides all the quality, reliability and convenience of earlier models but takes only half the shelf space and uses far less power. (Reduces heating as well as power consumption.)

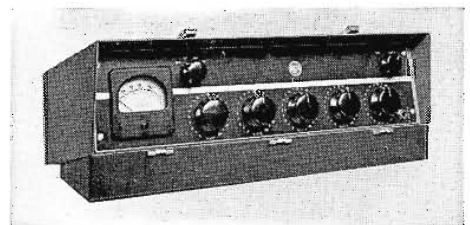
Provides power output of 10 watts with excellent frequency response and very low distortion. Has bridging input and "high-gain" input for operation from low-level microphones. Standard RCA plug-in type shelf mounting—proved best and most convenient in hundreds of AM, FM and TV installations.

The BA-34A is completely compatible with other RCA audio and video units. With the BA-31 Preamplifier and BA-33 Program Amplifier it makes possible a completely transistorized custom audio installation.

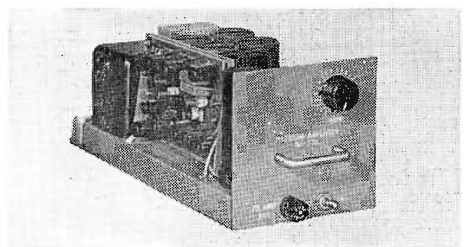
Ask your RCA Broadcast Representative about the complete line of transistor amplifiers. Or write to RCA, Dept. KD-22, Building 15-1, Camden, N.J. In Canada: RCA VICTOR Company Limited, Montreal. Another fine new product from the Broadcast and Television Equipment Division of RCA!



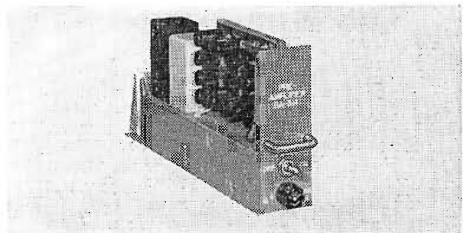
BA-26A Turntable Preamplifier
(Available for immediate delivery)



BN-6B Remote Amplifier
(Available for immediate delivery)



Coming: BA-33 Program Amplifier



Coming: BA-31 Preamplifier



The Most Trusted Name in Electronics
RADIO CORPORATION OF AMERICA



To add "atmosphere" to the sales pitch...

RCA Special Effects!



French chef sprite is electronically . . .



fitted into a backyard scene

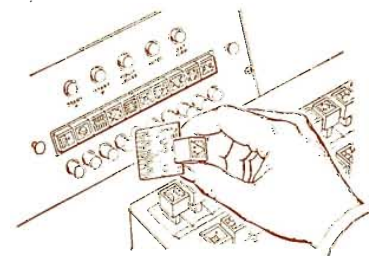
One of a series on
"HOW ADVERTISERS
ARE SOLD"

Products of your local sponsors can be given that "distinctive" appeal with intriguing traveling matte effects. Using RCA Special Effects equipment, exciting slide or film backdrops can easily be inserted into commercials. You can place an animated figure into a moving background or add "atmosphere" details that give results, very simply. The system will accept signals from several sources to produce a variety of effects.

In addition to traveling matte backgrounds, RCA can provide modules for 154 special effects, including wipes, split screens, block, wedge, circular and multiple frequency patterns. Any ten effects may be preselected—simply plug ten modules into the control panel. You get the right effect to add that extra sell to your programs and commercials every time!

Your RCA Special Effects will sell itself to advertisers and give your station a competitive edge. See your RCA Representative. Or write to RCA, Broadcast and Television Equipment, Dept. JD-278, Building 15-1, Camden, N. J. for descriptive booklet. In Canada: RCA VICTOR Company Limited, Montreal.

RCA Broadcast and Television Equipment • Camden, N. J.



RCA Special Effects Panel



The Most Trusted Name in Electronics
RADIO CORPORATION OF AMERICA