

# BROADCAST NEWS

## REEVES TELEVISION TAPE SERVICE CENTER



**TAPE SERVICES**—Reeves Studio in New York uses RCA Color TV Tape Recorders in its elaborately equipped tape plant. Reeves is also equipped with RCA Color Camera and Color TV Film System to put inserts in Color Tape.

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# REEVES TELEVISION TAPE SERVICE CENTER

Employs 8 RCA Recorders, 2 Film Systems, TS-40 Switching and Effects to Offer Complete Recording, Playback, Mixing and Dubbing Services to Advertisers and Agencies, Broadcasters and Producers of Programs and Commercials

by ROBERT BYLOFF  
*Manager TV Tape Recording,  
 Reeves Sound Studios, New York City*

Reeves Sound Studios located at 304 East 44th Street in New York City, one block from the United Nations, has the most complete specialized television tape installation in the world. Here are housed RCA color and monochrome tv tape recorders, mixing rooms, film and live camera chains, and audio facilities all directed toward the goal of providing the most professional and highest quality video tape transfer, copying, and mixing services available anywhere. As such the Reeves Studios act as a service organization to the entire television industry.

## Sound Recording

Reeves Sound Studios was founded in 1933 by Hazard E. Reeves, a pioneer in sound recording. Mr. Reeves also founded

Reeves-Ely Laboratories, Inc., which now represents a substantial part of the companies comprising Dynamics Corporation of America, Cinerama, Inc., Audio Devices, Inc. and Reeves Soundcraft Corp., a manufacturer of recording tape and discs.

Reeves Studios grew to be the largest independent sound studio in the world. Its sound business consists mainly of sound recording and mixing for motion pictures. In this process the many recorded sound tracks for a picture which would include dialogue, music, and effects are threaded up on sound "dubbers" and run interlocked with the picture. The sound mixer then controls the intensity and quality of each of the tracks through his mixing console and the mixed track is recorded.

## TV Tape Recording

In 1959 Mr. Reeves and Mr. Chester L. Stewart, the operating head of the studio, thought it was time to introduce these same techniques used for so long in motion pictures to the video tape field. They contracted with RCA for the largest single purchase of television tape equipment and associated apparatus up till that time. The plan was to produce finished master programs through the "mixing" of scenes edited onto several rolls of video tape and played and re-recorded simultaneously through a mixing console. Thus, dissolves and effects transitions and super-impositions could be used between tapes. At that time the copying of video tape was only experimental and the precision servos and





FIG. 1. Main Recording Room. This view shows six of the RCA television tape recorders and the camera control console.

electronic time correction equipment, such as Pix-lock and A.T.C., necessary to satisfactorily dissolve between tapes was not yet available. However, RCA demonstrated satisfactory tape copies and showed the work they were doing to permit mixing techniques to be employed, and the decision was made to go ahead.

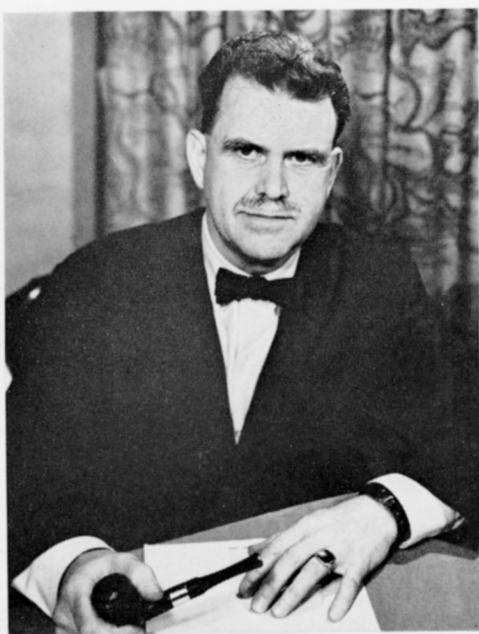


FIG. 2. Chester L. Stewart, President of Reeves Sound Studios.

### Equipment Installation

The major equipment items are as follows:

- 8—RCA TRT-1A television tape recorders
- 2—Color racks for tape recorders
- 2—TK-21 film chains
- 2—TK-26 color film chains
- 2—TP-35 35 mm projectors
- 2—TP-6C 16mm projectors
- 1—TP-7 slide projector
- 1—TK-11 live camera chain
- 1—TK-41 color live camera chain
- 3—TS-40 switching systems
- 2—GPL kinescope recorders
- 1—RCA 16mm film recorder
- 1—Filmline 16mm film processor
- 1—Bell & Howell film printer
- 3—Fairchild audio tape recorders

In addition to these major items there are synchronizing generators, distribution amplifiers, and monitors. These equipments are arranged in 9 major areas. These areas are the main recording room, telecine, 2 mixing rooms, kinescope recording room, equipment room, printing room, sound transfer room, and laboratory.

### Main Recording Room

The eight tape recorders, camera con-

trol console, and transmission racks are located in the main recording room. The tape machines were arranged in an in-line arrangement to make for best operating efficiency for mixing service. Two of the machines are colorized, but the arrangement was made to permit colorizing of all the equipment at some later date. Special color racks were built to house the color processing chassis and the color monitor for each machine.

A TS-40 switcher was installed with push button panels at each machine and also at a central point in the camera control console set-up. The switcher may be used to select audio and video input signals to the recorders or to switch signals from the recorders to any remote point.

When a machine is being used to feed a picture to a studio, the operator may switch from a test pattern or black signal to the machine output after the machine has stabilized, thus during rewind operations the remote point is not troubled by tape noise and "Donald Duck" audio. The transmission tracks contain the audio and video jack fields, monitoring facilities, test signal generators, colorplexers, distribution amplifiers, and remote control patching for tape machines and projectors. Any or all machines can be remotely controlled from either mixing room, any studio in the building or from the camera control console.





FIG. 3. Sound Transfer Console. All sound tracks going to film are equalized through this console.

### Master Control

The camera control console, which is also a master switching and control position consists of the camera control positions for the two black and white and the two color film chains as well as the camera controls for the live color and black and white cameras. Two additional console housings contain remote sync generator changeover switches, remote control push buttons for tape and film, the master switcher controls associated with the tape machines. Also contained are: stabilizing amplifier remote controls, and an extensive monitoring switcher, which allows the operator to monitor all inputs to tape machines



FIG. 5. Front entrance of Reeves Studios on East 44th Street in New York City.

and the outputs of all picture sources in the plant.

### Telecine Facilities

The telecine room contains two TP-15 multiplex arrangements each with a 16mm and 35mm projector, a slide projector and monochrome and color film chains. Each of the projectors are equipped with interlock selsyns to permit their interlocked operation with sound dubbers in the sound studios.

### Mixing Rooms

Two identical mixing rooms are used for starting and stopping all equipment in the plant, and for monitoring and switching of picture and sound sources to make composite mixes of programs. Each contains a TS-40 switcher with special effects and dissolve facility, an 18 input audio mixing console with equalization available in every

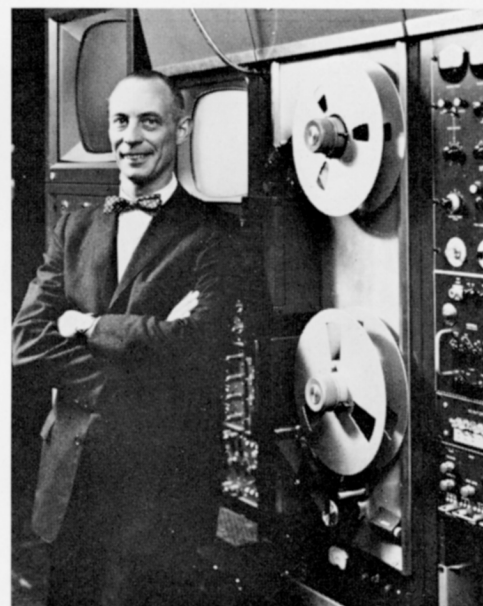


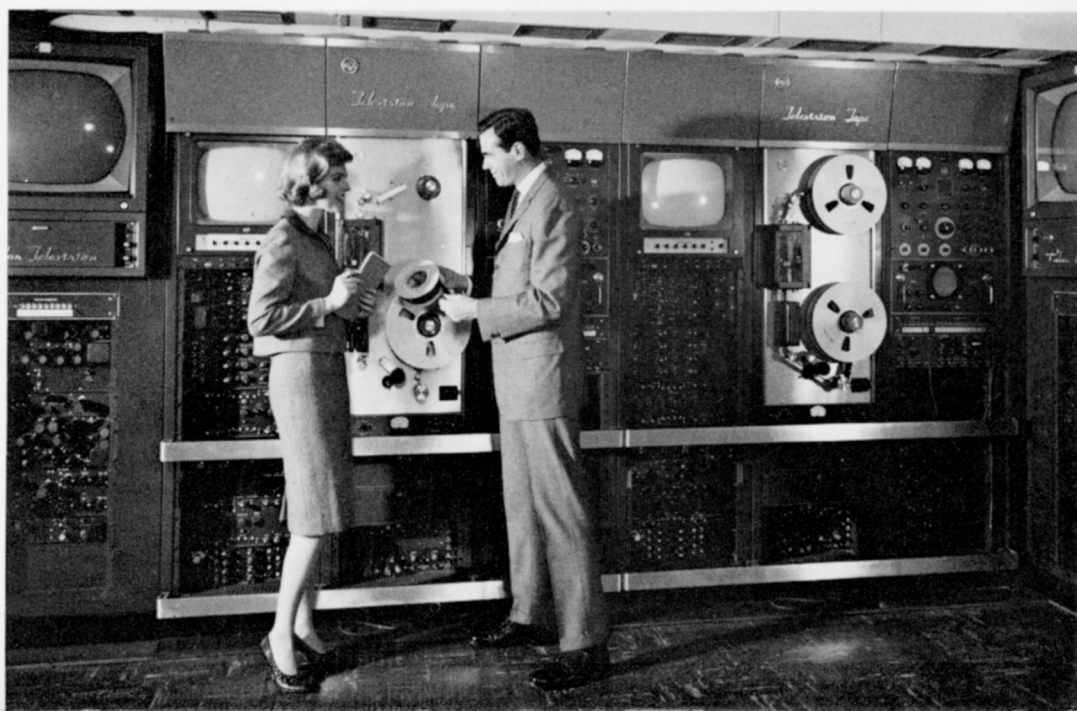
FIG. 4. The author of this article at one of the color RCA television tape recorders.

channel, picture source monitors on all video inputs, preview and program monitors, a footage clock, and an audio tape recorder. The video console also has remote stabilizing amplifier controls and remote controls for operating tape machines and projectors.

Some special controls permit the viewing and hearing of programs with limited bandwidth as would be seen and heard over an ordinary television receiver, master start buttons for simultaneously starting all equipment associated with the particular job, and footage clock resets.

The picture sources available to each mixing room are 8 tape machines, the 4 film chains, and the 2 live chains. The sound sources available are the same as the picture sources plus the outputs of 40 sound dubbers which use 16mm or 35mm sprocketed magnetic film or optical sound

FIG. 6. Reeves is equipped with two RCA color television tape recorders. The other six RCA recorders handle monochrome only but may be converted to color at any time.





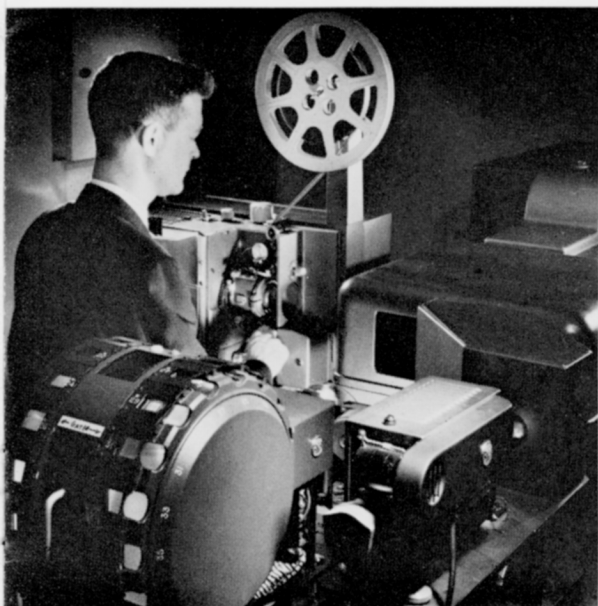


FIG. 7. Ken Foster threading 16mm TV film projector in Telecine room.

tracks. All of the equipment in the studio is so interlocked that it comes up to speed and down to a stop in positive synchronization so that complete frame-by-frame control of all sound and picture elements is maintained.

#### Kinescope Recording

This area contains the kinescope recorders, and a  $\frac{1}{4}$ -inch Fairchild sound recorder. A specially built photometer is used to guarantee accurate exposure of the film. Sound is recorded on the  $\frac{1}{4}$ -inch "pic-sync" audio recorder and later transferred to optical film in the studio's sound transfer room where proper audio monitoring is available to allow proper choice of equalization of the sound.

#### Equipment Room

The equipment room contains the sync generators, pulse distribution, TS-40



FIG. 8. Studio X—one of two mixing rooms showing input, preview and program monitors. The left side of the console is for video control, the right side for audio control. There are 9 video inputs, 18 audio channels. Dissolves and 150 RCA effects can be made here.

switchers, audio amplifiers, and power supplies. In addition it contains the maintenance shop.

#### Printing Room

The printing room contains a Bell and Howell printer for printing picture and sound kinescope negatives on the final print stock. This room as well as the kinescope recording room are humidified to the proper environmental conditions for best film handling. (Of course the entire plant is also air conditioned.)

#### Sound Transfer

This room contains all sorts of audio playback machines ( $\frac{1}{4}$ -inch tape, 35mm and 16mm magnetic and optical, and disc turntables) and an audio console and speaker to permit the playback of recordings, the proper equalization of them, and

the transfer of that sound to optical sound tracks, either 16 or 35mm. For kinescope recordings, the sound is transferred to 16mm film.

#### The Laboratory

The laboratory was installed primarily to allow Reeves to have complete control over the process. Only by having complete control can consistently good results be achieved either in sound recording or kinescope recording. Delivery of product on schedule can be controlled also. The laboratory contains a sound processing machine which will handle either 35 or 16mm sound track, a Filmline processor with both positive and negative tanks for handling either 16mm negative or print stock, a Hernfeld sensitometer, and a densitometer. These last two equipments are essential for controlling quality of the ultimate laboratory product.

FIG. 9. The camera switching and central control position in the main recording room. From this position all equipments can be started and stopped, monitored and switched.



FIG. 10. Central control position of main console. Here all equipments can be put into the record mode, monitored and switched.







FIG. 11. Reeves kinescope recorder. Ken Jordan, kine operator. A second unit is being installed.

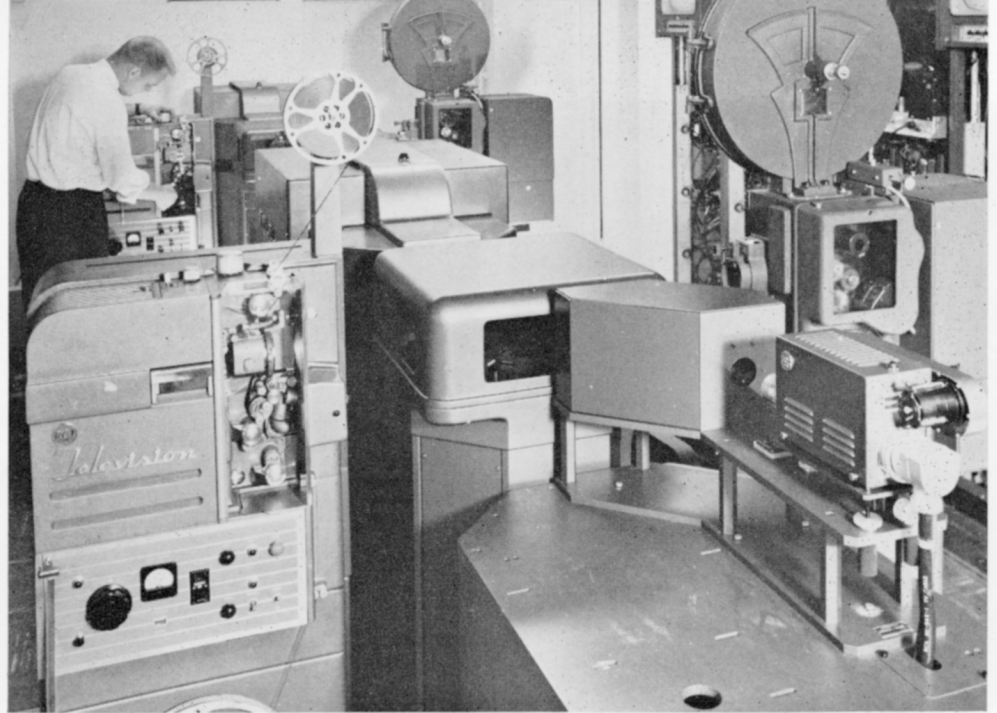


FIG. 12. Telecine room equipped with two TP-15 multiplexer nests with TK-21, TK-26 Film Cameras and TP-35, TP-16 TV Film Projector equipments.



FIG. 13. Sound dubber room, showing several of 40 sound playback machines, which use sprocketed magnetic or optical film. Richard Vorisek loading dubber.

### Connections With Sound Studio

The building, which contains the video installation also contains five sound recording studios for sound recording and mixing. All sound studios have been equipped with video monitors and controls to allow the television tape machines and projectors on the video floor to be controlled. Therefore sound recording or mixing jobs can be done utilizing the video equipment as picture sources.

### Special Devices

In addition to some of the special devices mentioned above such as interlocks, footage counters, ganged remote control and special monitoring facilities, the installation includes some other unique facilities to do a better job. Some of these are shown on the following pages.

### Telephone Company Connections

The New York Telephone Company, partly through the efforts of Reeves has established a switching center in New York. Customers, within New York City, can be interconnected through this switching center. The customers include, besides Reeves, two of the three major networks, advertisers and advertising agencies, and other independent tape producers. Reeves has installed twelve video circuits in the building. Through these circuits, video feeds in either direction can be established to the customers of the switching center or on only a few days notice to anywhere in the United States.

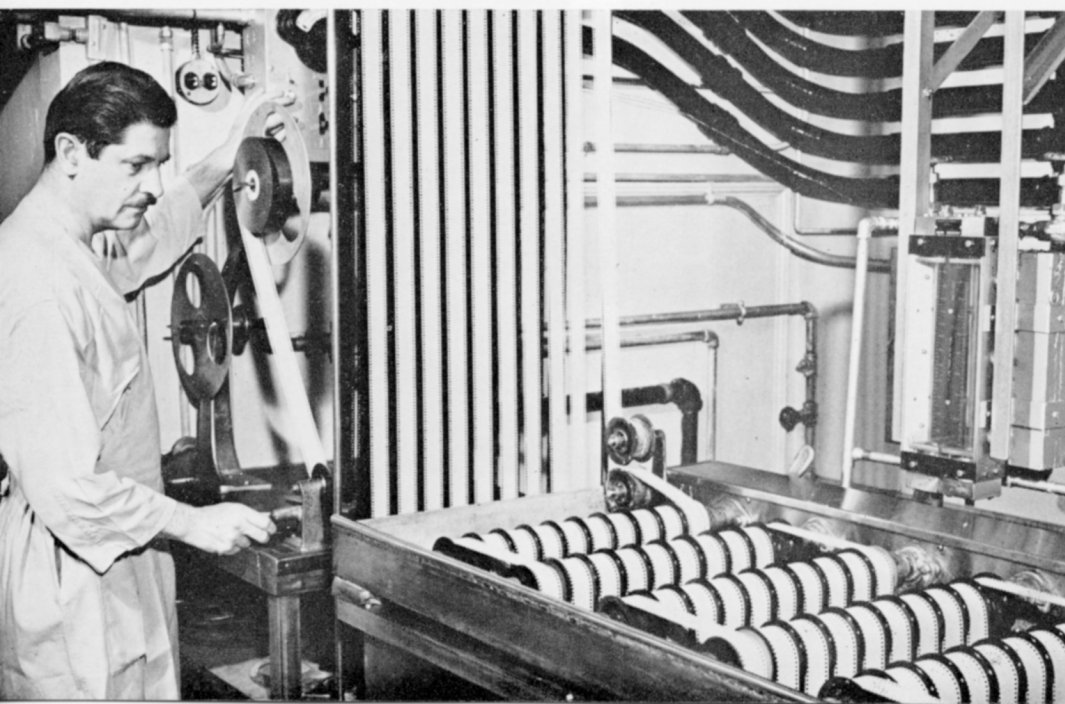


FIG. 14. Reeves exercises complete quality control of film processing. Here is a section of the film developing laboratory.



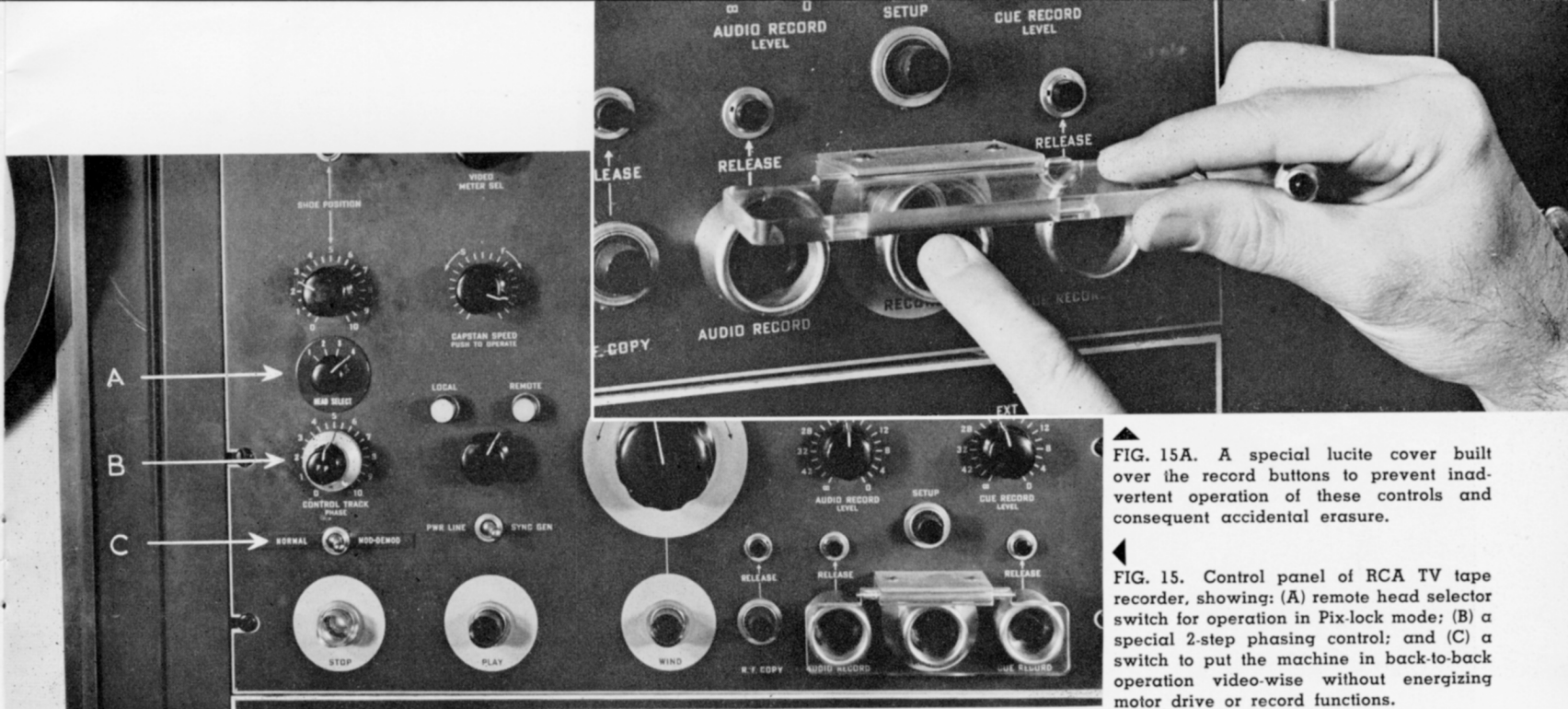


FIG. 15A. A special lucite cover built over the record buttons to prevent inadvertent operation of these controls and consequent accidental erasure.

FIG. 15. Control panel of RCA TV tape recorder, showing: (A) remote head selector switch for operation in Pix-lock mode; (B) a special 2-step phasing control; and (C) a switch to put the machine in back-to-back operation video-wise without energizing motor drive or record functions.

## Services Offered

### Tape Duplication

Through the use of eight machines, Reeves can offer a mass tape duplication service, where large numbers of copies of tapes can be made with a minimum of wear on the master tapes. The use of ATC, Pix-lock and air bearing headwheels insures the finest quality tape duplicates available anywhere.

### Playbacks

A playback service over telephone company lines to advertisers and agencies is available. This playback can be of tape or film or an integrated program either in monochrome or color.

### Recordings

Independent studios with no tape equipment or with only a few machines can

have their recordings made by Reeves through telephone company facilities.

### Transfers

Film-to-tape transfers for use in integrating film with a basic tape program can be done in either color or monochrome. For such integration, the standards of the original tape program are analyzed and the transferred material made to these stand-

FIG. 16. View of air bearing head-wheel showing Ed Welsh adjusting head for no scalloping during playback, using a special tool built at Reeves.

FIG. 16A. A close-up of head adjustment tool. This is conveniently available in a holder a few inches from the head.

