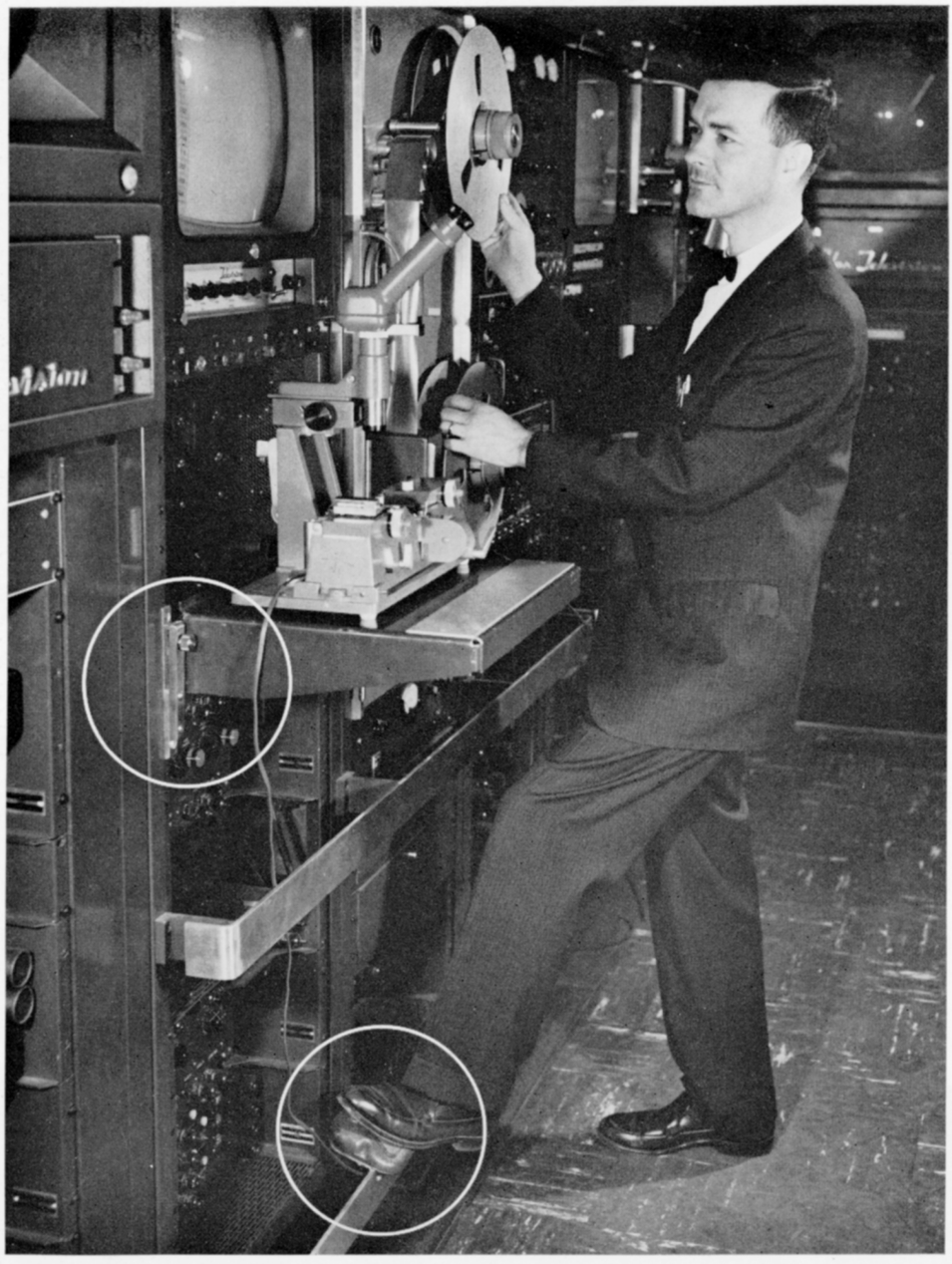


FIG. 17. Note (in upper circle) special brackets built at Reeves for supporting the RCA editing table. Each machine is equipped with these brackets. They facilitate moving the editor from one machine to another. . . . Note (in lower circle) special fixed mounting of the brake release switch.

ards to permit smooth integration. Transfers from tape to film, essential to the syndication market and to the commercial producer, are made using the tape machines, the kinescope recorder, the sound transfer room, the printing room, and the laboratory. Only double system recordings are made to insure that sound quality will be excellent.

Mixing

The installation at Reeves Studios is one of the most complete, most professional and best quality mixing set-ups anywhere. Mixes between several video tapes, video tape and film or live, and between audio sources are done using pre-planned techniques. As much as possible the on-the-fly or live television techniques are avoided, and the need for take after take to come up with an accurate job is eliminated. Quality of sound and picture transitions can be attended to, instead of sweating through the mechanics of performing the basic tasks. The combination of talents of television and motion picture people are utilized to produce a method of approach to each problem, which insures best final product. Wherever possible pre-planning is substituted for on-air panic and the expense of long hours of equipment usage.

Editing

Reeves uses the RCA Television Tape Splicer. This device produces accurately made splices consistently, and excellent results are produced quickly.

Many programs are cut to remove "fluffs," and to make the program come out to the proper length.

Editing skill, more than being a technical process, requires people who can work well with television producers, and who have a good sense of timing. Several of the staff have developed into excellent tape editors.

FIG. 18. A small noose, permanently mounted on each machine, allows holding of the tape tension switch during rewind of tapes, leaving operator's hands free.

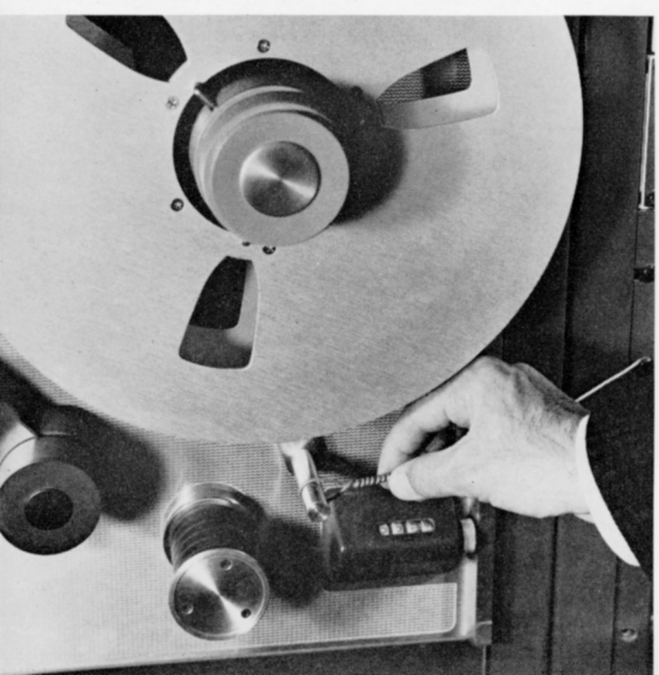
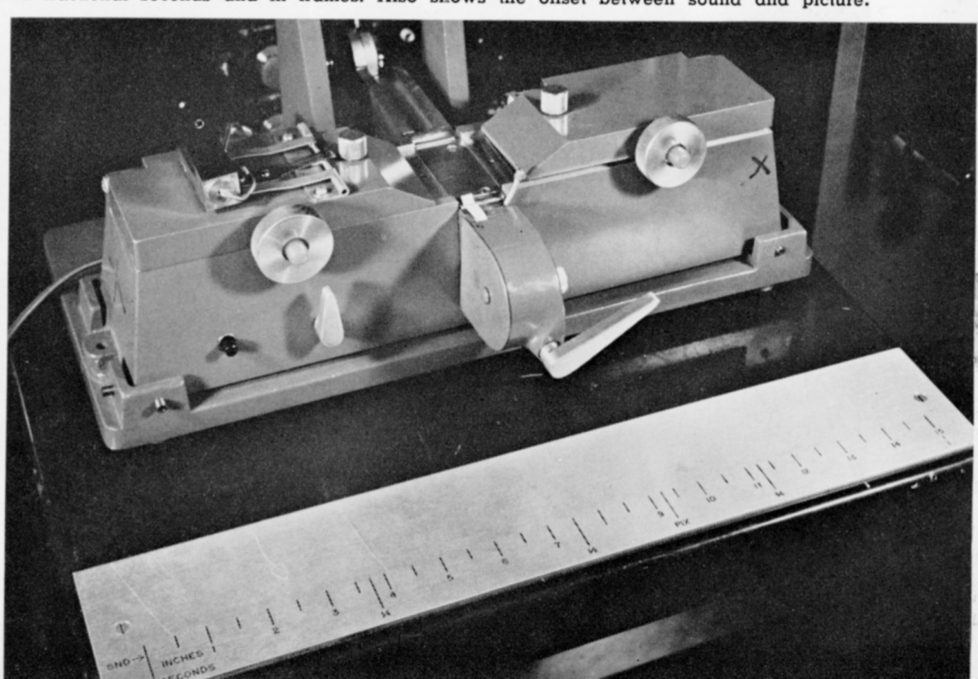


FIG. 19. A special scale on each editing table permits measurement of tapes for editing in fractional seconds and in frames. Also shows the offset between sound and picture.



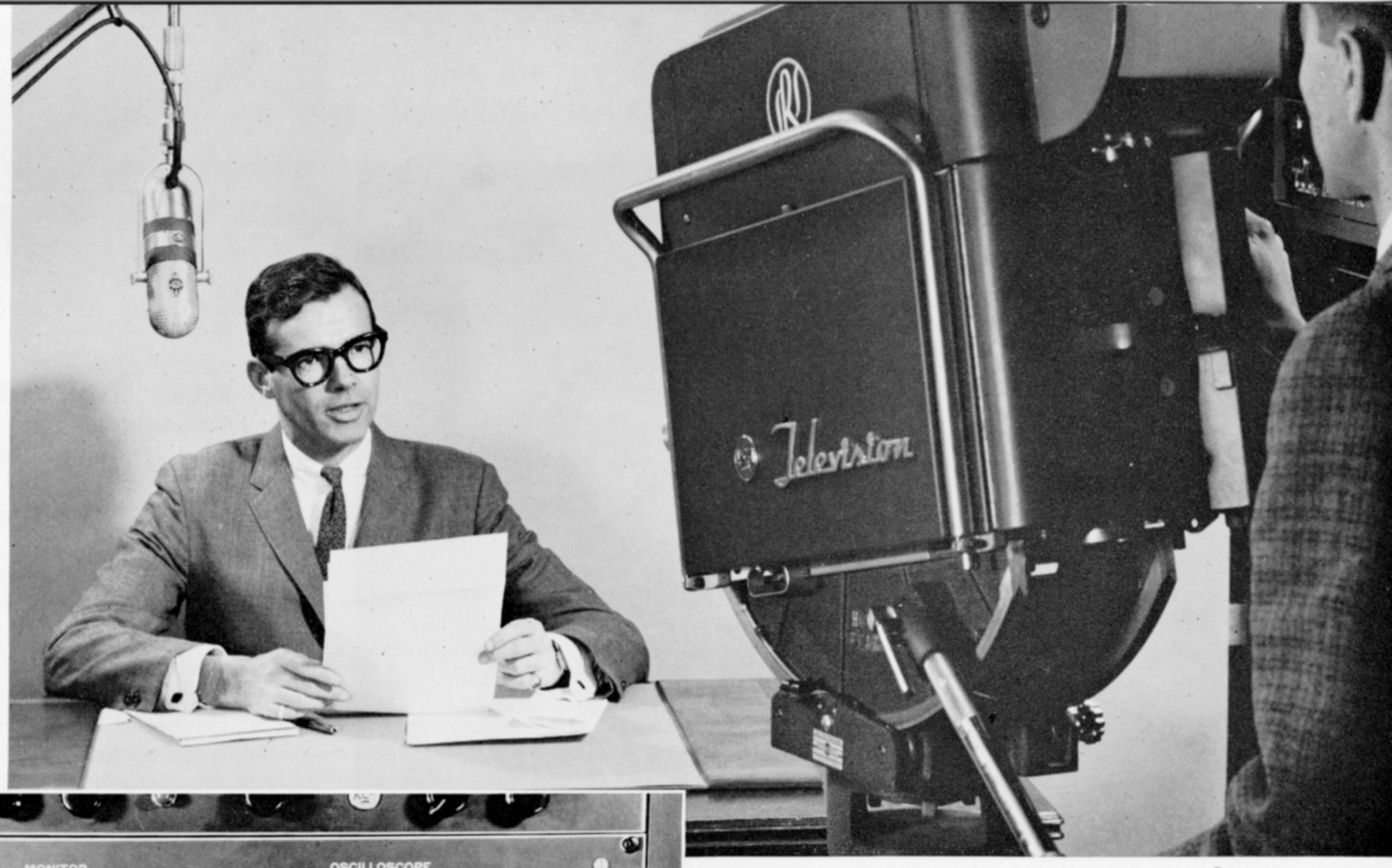


FIG. 20. Type TK-11 monochrome live camera at Reeves Studios is used for simple shots or commentary recordings in conjunction with location or studio recordings.

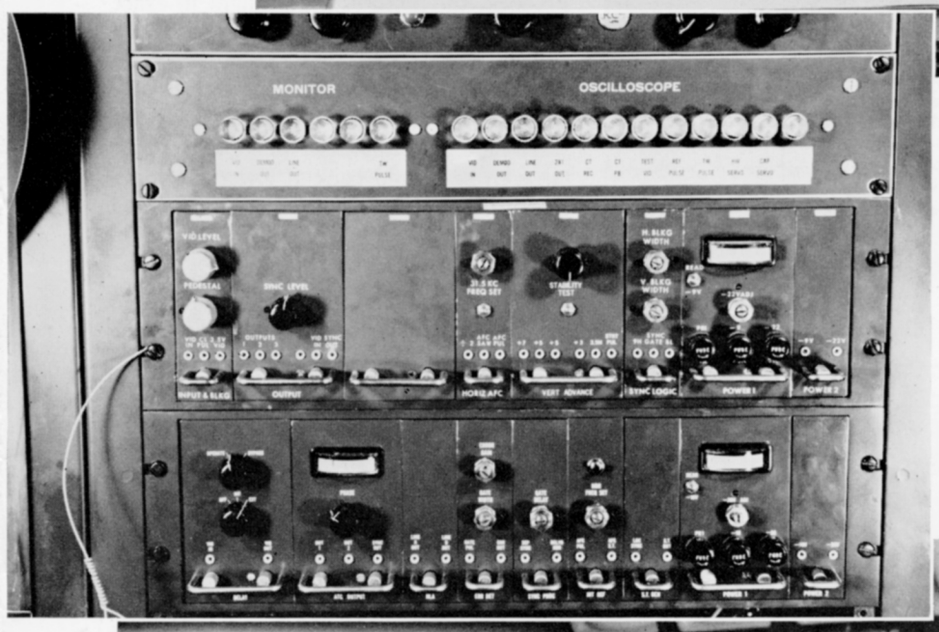


FIG. 21. Signal processing amplifier and A.T.C. unit of one of the RCA television tape recorders at Reeves.

FIG. 22. Audio console (right) and video (left) of mixing studio Y, which is equipped identically to Studio X. Charles Power, maintenance engineer, is shown at TS-40 Transistorized Switcher panel.

FIG. 23. Photograph of a tape playback taken from the recorder monitor with tip penetration mis-set. The picture exhibits excessive skewing.

FIG. 23A. The same monitor photograph as in Figure 23 after processing by the ATC unit. All geometric errors have been removed.

Special Sound Services

The present nature of most video tape programs is that of a single system recording where composite picture and sound exist on the tape. This sometimes produces problems when alteration of picture or sound tracks is wanted. Through the use of the interlocked picture and sound equipment at Reeves, sound can simply be stripped from a tape, altered, and put back without any problems of synchronization, whatever. In addition music scoring against video tape playbacks are made and subsequently mixed with other sound sources to produce final tracks. The matching of non-synchronous tracks to video tapes has often been done. Whenever sound problems exist, solutions can be found for them through the use of the studio facilities. In some cases special equipment has been designed and built overnight to solve problems.

Quality Control

Service and quality are the major efforts at Reeves. Quality is stressed to the highest possible degree. This is implemented by having the finest equipment obtainable, the proper measuring tools for quality control, a system of control in all departments, and an attitude of the management and personnel to insist that no job, which does not measure up to standard leaves the premises. Some of the devices used to produce high quality results are as follows:

ATC Device

The Automatic Time Correction equipment recently produced by RCA is being used at Reeves in all playback services. These include kinescope recording, straight playbacks, and mixes. Any geometry problems which exist in the original recordings are eliminated by the ATC. Coupled with Pix-lock, the pictures are brought in exact synchronism with local timing signals so that picture transitions from one tape to another can be performed perfectly. ATC puts a new standard of performance on video tape. In many cases the device allows tapes to be played back at lower tip penetration than at which they were made thus saving wear on tape and heads.

Pix-lock

Reeves was the first to have Pix-lock which goes a major part of the way toward stabilizing playback of video tape. In addition, the Pix-lock unit also produces a much more stable recording than the older headwheel servos were capable of, and it handles playbacks of splices much better than the older units.

Tape Test Equipment

Careful maintenance of video tape equipment is necessary to obtain the best results. Such equipment as a test set to check demodulator limiting, signal-to-noise measuring equipment, and equipment for accurately measuring video track recordings have been built and are used in routine maintenance of the equipment.

Calibrated Demodulator De-emphasis

A special selector switch to give specific amounts of de-emphasis in the demodulator has been installed. Any degree of de-emphasis from 0 to 10 db is available.

Air-bearing Heads

The use of air bearing headwheels produces much more stable recordings when combined with Pix-lock than the older ball bearing types. By substituting a thin layer of air under pressure for standard ball bearings the motor shaft of the headwheel literally rides on a cushion of air. Many advantages accrue, chief being near perfect rotational concentricity.

Test Probes

Test probes have been installed on all machine oscilloscopes to make measurement of test points simple and as rapid and convenient as possible. This makes it unnecessary to get out and hook up special test leads each time a check must be made. It saves time and contributes to overall efficiency of operation.

Special Photometer

The production of high quality kinescope recordings from video tape requires the highest degree of quality control throughout the process. The first step is to produce consistent exposure. To accomplish this a special photometer, whose calibration accuracy can be checked by built-in facilities has been built. Consistent densities within .02 are readily obtained using this device.

Control Personnel

Besides equipment, methods and people are of extreme importance in obtaining quality results. In the important areas such as head evaluation, kinescope recordings and tape recordings quality control personnel are assigned to pass on each item. This produces two desirable results: (1) Personnel are acutely conscious at all times of quality, and (2) Customers are aware of the unusual and uniformly high quality results.

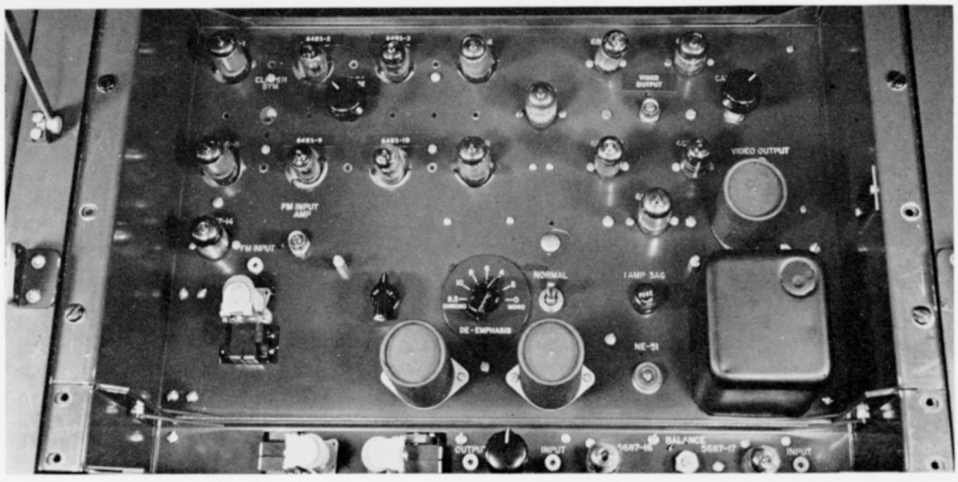


FIG. 24. One of the demodulators of the tape machines showing "calibrated" de-emphasis switch.

Systems and Records

To obtain long range consistency and to be able to check back, a system of records is very important. Tubes are marked with the date of installation, control cards showing parameters used and results obtained for each step of the process are used in kinescope recording, plots of densities of each job are made on a graph to show any trends. Records of head life and wear are kept and graphs are plotted to estimate head life.

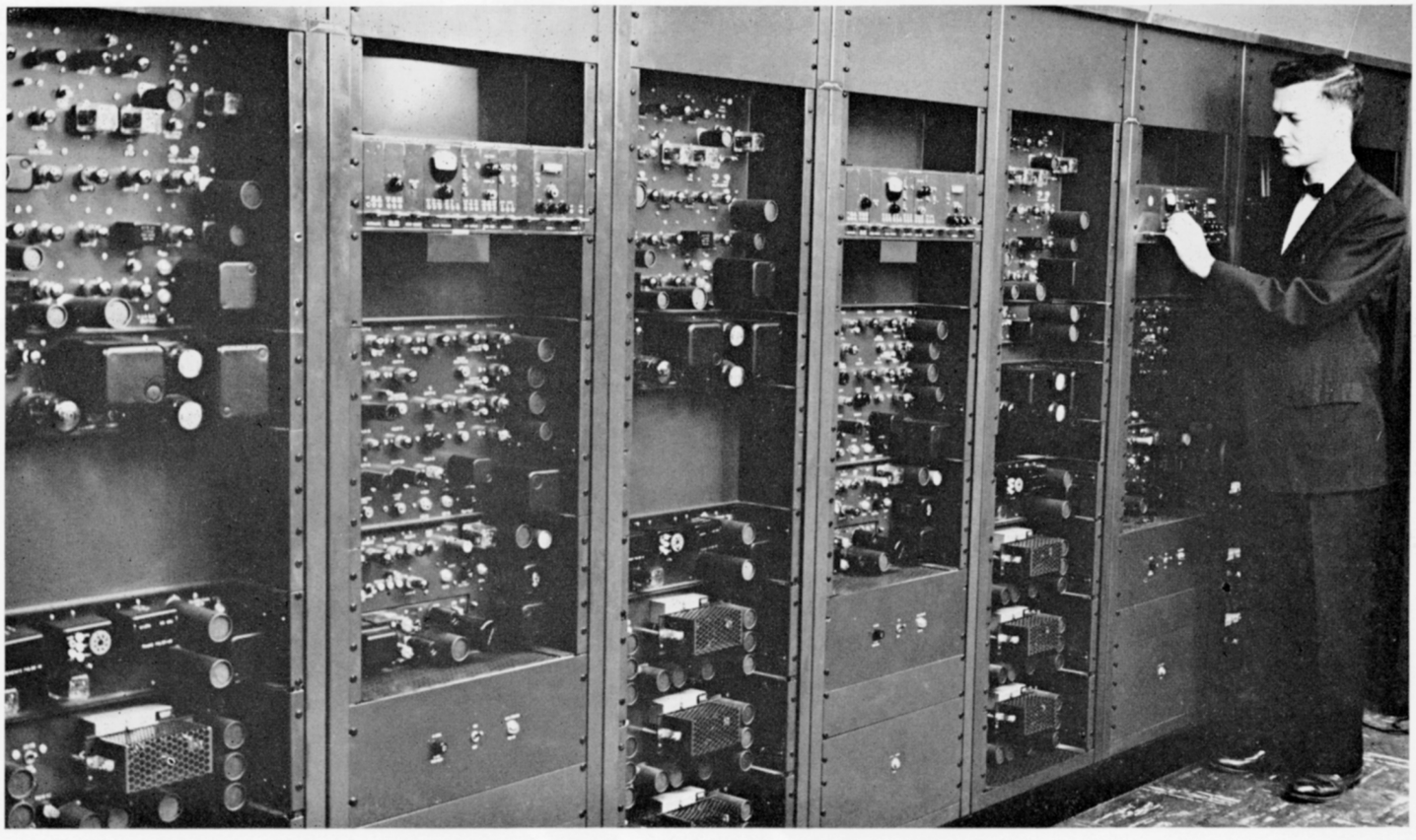
Routine Maintenance

A complete routine of every machine is made every three months. This routine is essential for producing quality tapes. Results prove the effectiveness of this system for preventive maintenance. Consistently over-average performance is attained.

Tape Evaluation

Because video recording tape is far from perfect a system of tape evaluation is used, whereby every foot of tape used is recorded

FIG. 25. The servo racks of several RCA TV tape recorders showing the Pix-lock units on each.



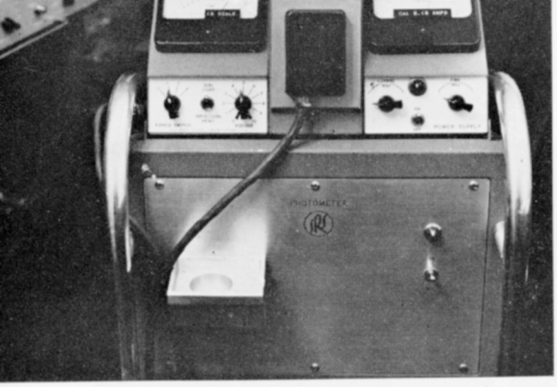
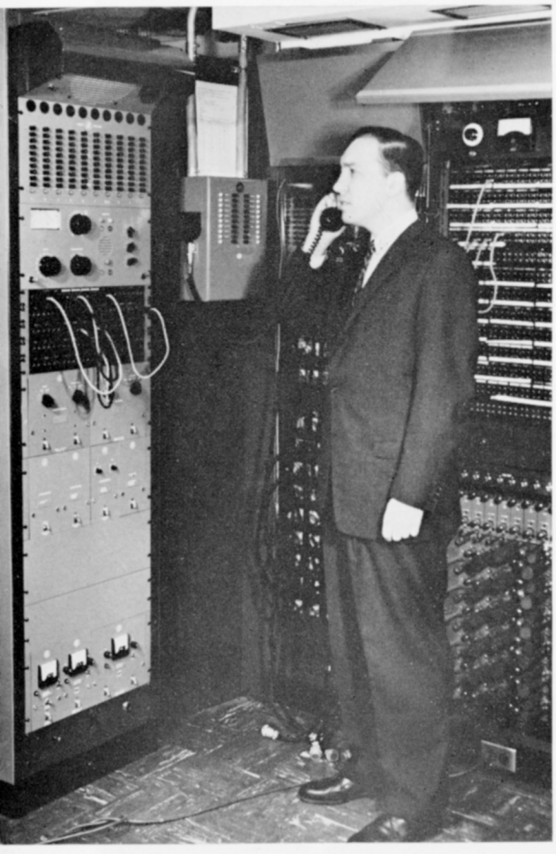


FIG. 26. A specially constructed Reeves Photometer for accurately setting exposures on the kinescope recorder.

FIG. 27. A special rack of audio equipment is used for receiving line audio feeds, processing them, and making them ready for recording . . . Dick Kloss at Reeves intercom system which connects all operating positions and studios.



with sync and video set-up, then played back entirely. A drop out count is taken minute by minute, and any tape not meeting standards is rejected.

Audio Equalization

Every audio track which is recorded is properly equalized to assure best quality.

In addition to these procedures and equipment Reeves maintains a complete machine shop and an electrical construction shop to provide mechanical maintenance on equipment and to allow the quick design and construction of special equipment.

Examples of Jobs Performed

Recording

A series of one hundred twenty-eight programs was recorded for the Midwest Program on Airborne Television Instruction. The tape evaluation standards of this group are the highest in the country. Not a single tape was rejected.

Playbacks

Many commercials are played back to the larger advertising agencies for their evaluation. All the major advertising agencies use Reeves playbacks. Consistently satisfactory results have been obtained.

Mixes

In a recent mix job for an electrical manufacturer, five tape playback machines, a live camera, and a film chain were used as picture sources. Sound came from the picture source machines and three sound dubbers. The job was done in three takes. All elements were edited in advance so that all equipment units were started simultaneously at the beginning of a take and so the mix was done almost automatically.

Sound Sync Jobs

In a recent case a video tape with wavering sound and a quarter inch tape, which would not stay in sync with the video tape was delivered to Reeves. A sprocketed copy of the quarter inch tape was made and a sprocketed copy of the unsatisfactory sound from the video tape was made. The good sound was then edited sentence by sentence to match the poor sound in length. The corrected good sound was then re-recorded on the video tape, and a completely satisfactory program was obtained.

Kinescope Transfers

Most of the commercials made on tape by independent tape producers are transferred to film by Reeves. Additionally hundreds of syndicated programs have been transferred. The reputation of Reeves Sound Studios in kinescope recording is the best in the United States. This has been possible mainly through quality control techniques and because Reeves has its own laboratory.

Post Audio Syncing

Several times, a section of video tape with an unsatisfactory reading by a performer has been post-sound recorded by the actor and the new audio substituted for the old. This allowed the recording to be used without the expense of having to re-shoot the scene. In most cases sound editing was required of even the best take to establish close synchronization of all the words.

FIG. 28. The RCA special effects control panel in operation at Studio X. Note effects produced as shown on monitors.

FIG. 29. Color recordings of simple commentary can be made by using the TK-41 live color camera.

Editing TV Tape

An excellent example of this occured when the first astronaut was orbited by the United States. The pictures were recorded, a twenty five minute show edited, a composite sound track with announcer, location sound, and a few effects sounds was mixed and recorded on the video tape. Then the tape was sent on a 7 p.m. plane same day to London to be aired by the BBC.

Special Operational Methods

In engaging in such a specialty as this there have been developed several special methods of accomplishing desirable results. These "tricks of the trade" have been developed because of the special nature of our business and can be classed generally as methods that take the guesswork out of the business. Reeves avoids almost entirely "on the fly" techniques. Even the syncing-up of tapes is done by measurement. It is possible, therefore, to accomplish very simply and quickly seemingly complex jobs. The best of motion picture and television techniques have been combined to produce a highly efficient operational procedure. The use of the RCA tape recorders with their superior picture performance allows Reeves to bring quality and professionalism into the television tape field.

FIG. 30. The control room of Studio B, the band stage, where many video tapes are scored. Jack Higgins at console.

FIG. 31. An operator loads one of the TP-6 projectors in preparation for a mixing job.

Reeves Sound Studios

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