automation for TV stations

improves efficiency • avoids errors • increases profits

RADIO CORPORATION OF AMERICA
RCA automation equipment can do for the broadcaster

Increase efficiency of operating personnel

TV Automation makes the control room operation more productive because it evens out the work load. It does this by eliminating the periods of frenzied switching activity normally associated with station breaks, commercial inserts and spot announcements. Complex, split-second switching sequences are set up ahead of time—then run off automatically. Productivity of control operators is increased; tension and pressure are greatly relieved by letting the Automatic Programming Equipment do the remembering and the actual switching.

Avoid switching errors

Bisty program schedules frequently lead to operating “fluffs”... due to the multitude of complex functions which must be carried out at precisely the right time. Even the most skilled operators make mistakes—even after careful rehearsal of switching routines. TV Automation Equipment makes it possible to avoid errors by correcting them before they occur.

Increase profits

Fewer operating errors mean fewer rebates due to lost commercials... and leads to more satisfied sponsors. Increased efficiency of operating personnel through TV Automation means higher output per man—and a better return on the TV station’s investment in manpower. Furthermore, the growing station can handle an even busier program schedule without higher operating costs.
RCA automation will perform many operating functions

Operates video switcher
This RCA TV Automation Equipment will handle all of the switching operations in either of the networks—simultaneously—and any desired sequence. Video switchers are also used in television broadcasting equipment. RCA Automation Equipment can be operated by RCA TV Automation Equipment.

Operates audio switcher
RCA TV Automation Equipment will select the proper audio track from the network, public address, or other audio source. The system will switch the audio source, completely with the picture source... RCA Automation Equipment can be operated independently—or in any desired sequence. RCA Automation Equipment can be operated by RCA TV Automation Equipment.

Starts and stops film projectors
RCA Automation Equipment will automatically operate the film projectors. It will automatically stop the film projector at the end of a film. It will also control the advance-rewind function of the film projector at this time. The complete stop and start time is required to bring the projector to sound before switching the film picture and sound on the air.

Operates slide projector
RCA Automation Equipment will operate the slide projector. It will stop the slide projector at the end of the slide. It will also control the advance-rewind function of the slide projector at this time. The complete stop and start time is required to bring the projector to sound before switching the film picture and sound on the air.

Positions multiplexer mirrors
RCA Automation Equipment will operate the multiplexer mirrors. It will control the multiplexer mirrors from the sound board. It will also control the advance-rewind function of the multiplexer at this time. The complete stop and start time is required to bring the multiplexer to sound before switching the film picture and sound on the air.

Automatically times program events (optional)
RCA Automation Equipment can be used to automatically time program events. It can be used to automatically stop, start, and time the operation of the multiplexer mirrors—by simply pulling a single handle for each successive event.
How RCA automation improves efficiency of operations

Without automation

An inherent problem in the operation of any television station room is the extreme variation in work load between periods of peak activity and periods of slow activity. During station breaks and commercial inserts, the operator is called in to perform a multitude of complex duties. Within a period of time which may last from thirty seconds to several minutes, he must select and operate the proper pushbuttons on a video switcher, operate an audio switcher, start and stop a film and slide projector, turntable and tape recorder, and change the position of the television multiplexer - all in proper sequence. Moreover, each operation must be performed at the precise instant required by the program schedule.

With automation

The operator in a television station equipped with RCA TV Automation Equipment avoids periods of peak activity - by setting up in advance all of the switching operations required over a predetermined period of time. Presetting of the automation equipment may be done at any convenient time. When the station break occurs, all of the switching operations required for the break are "run off" by merely pushing a single button. As many as 28 program events, each involving a change in sound and picture source, may be set up in advance and programmed automatically.
How RCA automation equipment avoids switching errors

**Preset**

Program switching sequences are set up ahead of time by feeding information from the program schedule into a "memory" circuit: Picture source, Sound source, and Number of event are preset. With automation system including automatic timing duration of the event is also preset into the Automation system.

**Precheck**

After the program information has been fed into the memory circuit, it may be prechecked before the program goes on air. The information pertaining to any preset program event may be reviewed by means of a visual display at the control position. Changes for any event may be made at any time—until the event goes on air. Any errors may thus be corrected before program time.

**Present**

The effort required to put the program on the air is the least of all. When the time arrives for the first event to go on the air, the operator merely pushes the OPERATE button. Each preset event follows automatically—in the proper sequence precisely timed. In a semi-automatic system (without automatic timing) each succeeding event is placed on air by pushing the OPERATE button.
TV automation equipment

Type TSA-1

Packaged system for television stations

The TSA-1 Television Automation Equipment is designed for easy integration into existing television facilities. It consists of a console mounted control panel and a rack mounted information storage and processing system. The TSA-1 equipment is available with or without timing. As an initial step, the system may be installed without automatic timing; timing may be added at a later date.

Readily adapted to station requirements

A series of standard TSA-1 TV Automation Equipment packages are available with a range of memory storage capacity from 30 to 50 program events. A program event is defined as any item in the program schedule calling for a change in picture or sound source. Modular design of the TSA-1 system permits easy adaptation to the needs of individual television stations.

Control panel

This panel contains the pushbuttons and selector switches used in operating the TSA-1 TV Automation Equipment. Pushbuttons recording those of conventional video switches are used for the selection of the picture source and sound source for each program event. Rotary selector switches are used to time the duration of each event in minutes and seconds. The program source and time information is placed into strings by merely pressing the "put" button. Automatic operation of the system is initiated by pressing the "operate" button. If desired, the control panel may be used at any time on a manual switching control panel—by-passing the Automation System. Control panels are supplied on a custom basis, in order to accommodate the exact requirements of the individual television station.

Program read-out panel

This panel is mounted immediately above the control panel at the TSA-1 TV Automation control position. It contains two horizontal rows of "windows" which provide a visual display of the information which has been preset into the memory circuits of the Automation System. The display is in the form of numbers and lettered abbreviations. These indicate the number of the event. The upper row of windows displays the information pertaining to the program event which is on air. The lower row of windows displays the information pertaining to the next event to be shown on air. It may also be used to preview the information stored in the memory circuit for any upcoming event which the operator chooses to check. The operator is thus provided with an easily read display of any of the information which has been preset into the Automation System.
RCA equipments designed for TV automation

Automatic light control

The RCA Automatic Light Control is a video level sensing device which produces a control signal to operate automatically the neutral density light control unit in a monochrome or color television film system. Upon detection of a change in video level, the amplifier will amplify the change to a level sufficient to energize the power relay, thus closing the relay contacts which are required to produce an automatic signal. Designed for use with either a color or monochrome signal, the Automatic Light Control unit is a basic component for an automated television system.

TA-21 automatic gain control amplifier

Designed to provide automatic gain control over an input level range of plus or minus 32 db, the TA-21 Video Automatic Gain Control amplifier offers the same basic operation. Under normal conditions the unit will remain in a "neutral" condition. A change in signal level will cause the amplifier to respond, either increasing or decreasing gain until the signal is restored to its normal level. This stability of the amplifier unit and its large change capacity makes it ideal for the automated television studio.

TP-7 television slide projector

The TP-7 Television Slide Projector is designed to accommodate 35 mm transparency in two storage magazines. A single manual operation or 3 manual operation by a TV Automation Unit is provided. The variable speed, film or slide projector automatically selects the correct speed for each slide speed within one second after the projector start button is pressed. Another feature for the automated television studio is automatic cue. If stops the projector automatically at any predetermined point on a film, and cues the next slide on the disc to the correct speed. The unique large capacity of the TP-7 projector is important to TV Automation; 4000 feet of film may be accommodated on one reel.

TP-6 professional film projector

The TP-6 is a 16 mm film projector incorporating a number of design features for automated control. For example, automatic lens change or the main of projectors lense failure ensures continuous operation. The extremely rapid declination time velocity eliminates the time interval in which the scene is not shown. High speed windup of the entire movie to 2000 feet per minute is standard. A feature which provides safe, smooth operation is the ability to stop the projector in any position. Another feature for the automated television studio is automatic cue. It stops the projector automatically at any predetermined point on a film, and cues the next slide on the disc to the correct speed. The unique large capacity of the TP-6 projector is important to TV Automation; 4000 feet of film may be accommodated on one reel.

TP-15 universal multiplexer

Through six series of remotely controlled, motor driven motors, the TP-15 Multiplexer will handle the output of four projector input sources (two film and two slide projectors) to two output film cameras. Each projector projector is automatically controlled by electrical signals for a high degree of program flexibility. The TP-15 Multiplexer units are remotely controlled by the Type TAA-1 TV Automation Equipment.
PLANNING THE AUTOMATION OF TV STATIONS

In order to obtain maximum benefits from TV automation, each installation should be planned on the basis of a careful analysis of existing facilities. The type and number of film and slide projectors required will depend on the type of programming, the number of slides shown and the amount of film footage handled per day. In any event the film projectors and multiplexers should be capable of remote control and have adequate capacity to permit programming for reasonably long periods of time without re-loading.

OTHER EQUIPMENT CONSIDERATIONS

Film cameras should be of the vidicon type to permit the use of automatic gain control or automatic light control—for best results over a wide range of film density. A remotely controllable video switching system of either the relay or transistorized type should be used. A relay type audio switcher should be employed.

TYPES OF AUTOMATION EQUIPMENT

Careful consideration should be given to the event storage capacity required to meet the needs of the individual station. The TSA-1 TV Automation equipment is available in four basic packages: To handle 10, 15, 20 or 25 preset events. A choice is also available between systems with and without automatic timing.

AUTOMATION FOR CONTINUOUS PROGRAMMING

In addition to the TSA-1 TV Automation equipment, RCA supplies punched-tape controlled systems for "all-day" automation. This equipment, which permits an entire day's operation to be set up in advance and run off automatically, is manufactured on a custom basis. Detailed system recommendations are available upon request.

For more information see your RCA Broadcast Representative

ATLANTA 3, GA.
1121 Rhodes-Haverty Bldg.
Jackson 4-7703

BOSTON 16, MASS.
200 Berkeley Street
Hubbard 2-1700

CAMDEN 2, N. J.
Front & Cooper Streets
Woodlawn 3-8000

CHICAGO 54, ILL.
1186 Merchandise Mart Plaza
Delaware 7-0700

CLEVELAND 15, OHIO
1600 Keith Bldg.
Cherry 1-3450

DALLAS 35, TEXAS
7901 Empire Freeway
Fleetwood 2-3911

HOLLYWOOD 28, CALIF.
1560 N. Vine Street
Hollywood 9-2154

KANSAS CITY 6, MO.
1006 Grand Avenue
Harrison 1-6480

NEW YORK 20, N. Y.
36 W. 49th Street
Judson 6-3800

SAN FRANCISCO 2, CALIF.
420 Taylor Street
Ordway 3-8027

SEATTLE 4, WASH.
2250 First Avenue, South
Main 2-8350

WASHINGTON 6, D. C.
1625 K Street, N. W.
District 7-1260