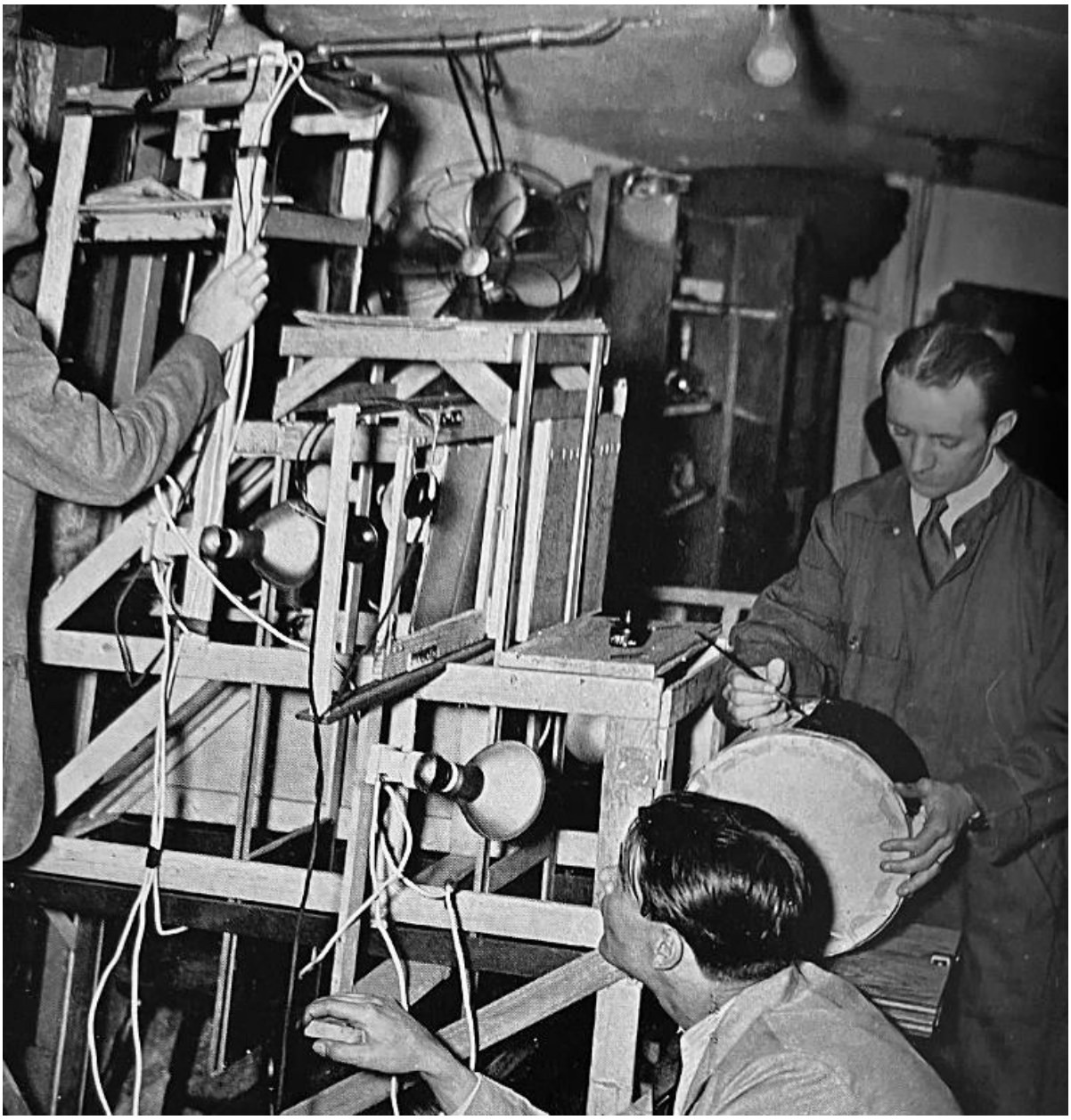
LIVE TELEVISION GRAPHICS
1945 through 1953

Compiled by the folks at The Museum of Broadcast Technology



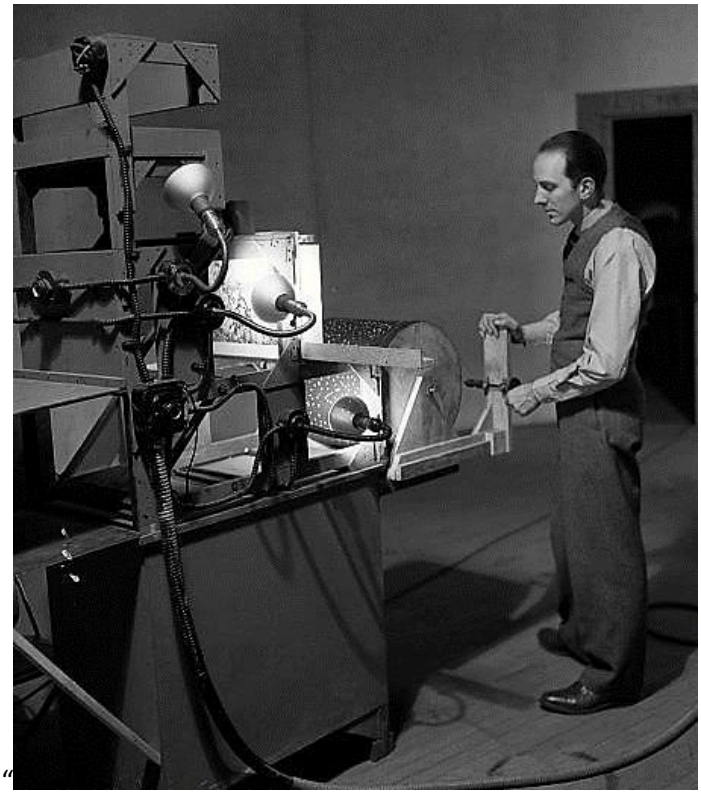
In the early days of **LIVE** Television in 1945, Video Pioneers **Rudolf Bretz, James Leaman** and **Marshall Diskin** created visual special effects and graphics capability for live TV that heretofore had only been possible with optical printing on motion picture film.

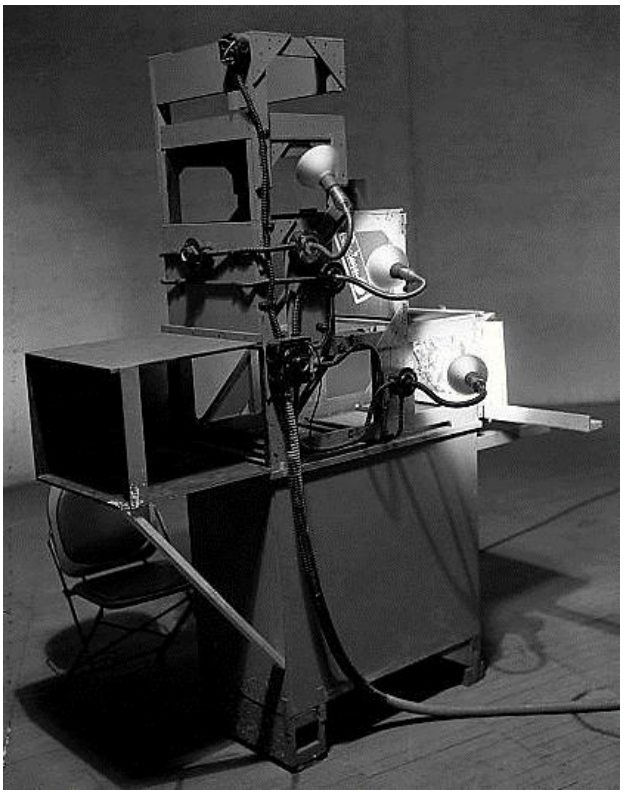
With the advent of "**LIVE**" image origination and the need for instant manipulation with the highest visual quality possible in those early days of 441 line television, it took a lot of creativity and ingenuity to create the on-screen images needed for integration with live actors performing in the same or adjacent studios.

Long before Chroma Key and Still Store systems were even thought of, creative solutions were being developed at CBS and other broadcast facilities in North America.

NECESSITY really ***WAS*** the "**MOTHER OF INVENTION."**

The devices seen in these photos were constructed so that the large studio cameras could dolly up to the unit and with the use of special two-way mirrors and dimmers to control various lamps, graphic images, backdrop scenes and title cards. These could be optically “blended” in such a way that the studio camera would capture a combined composite image that was controlled by the graphic operators, providing some pretty amazing and dynamic motion images which were integrated with live actors on-stage.



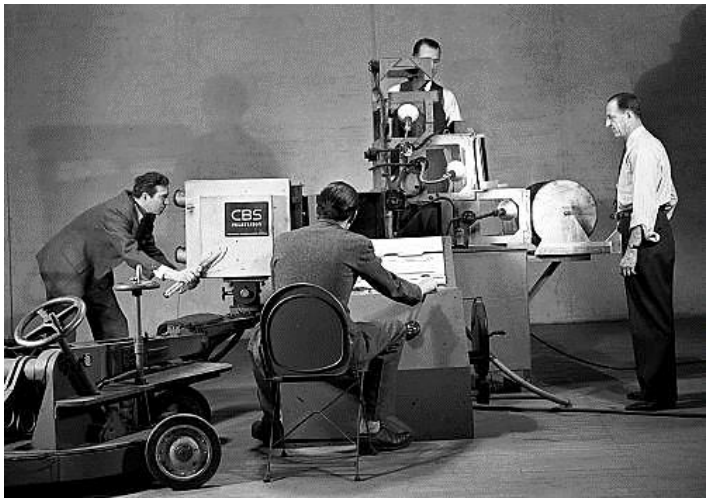


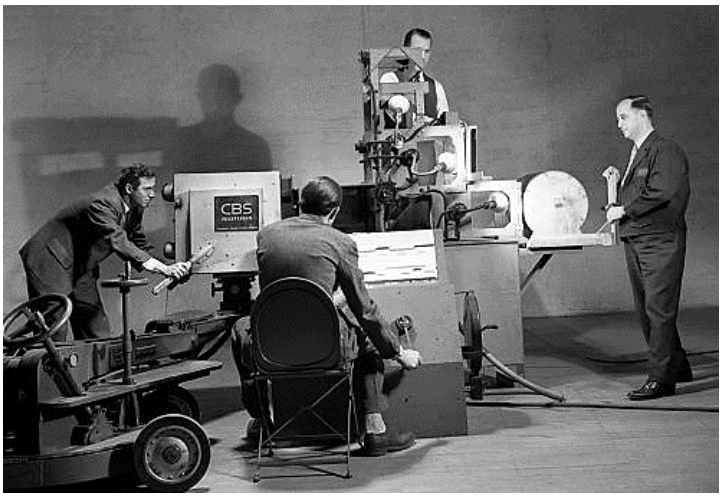
Carefully prepared still images could be presented and “revealed” with multiple mirrors and dimming specific lamps. “Layered” or composite images could be televised by a single camera, shooting from one end of the instrument. Note the white dots on the right photo which were likely moving slowly in a downward direction, simulating gentle falling snow. Very clever !

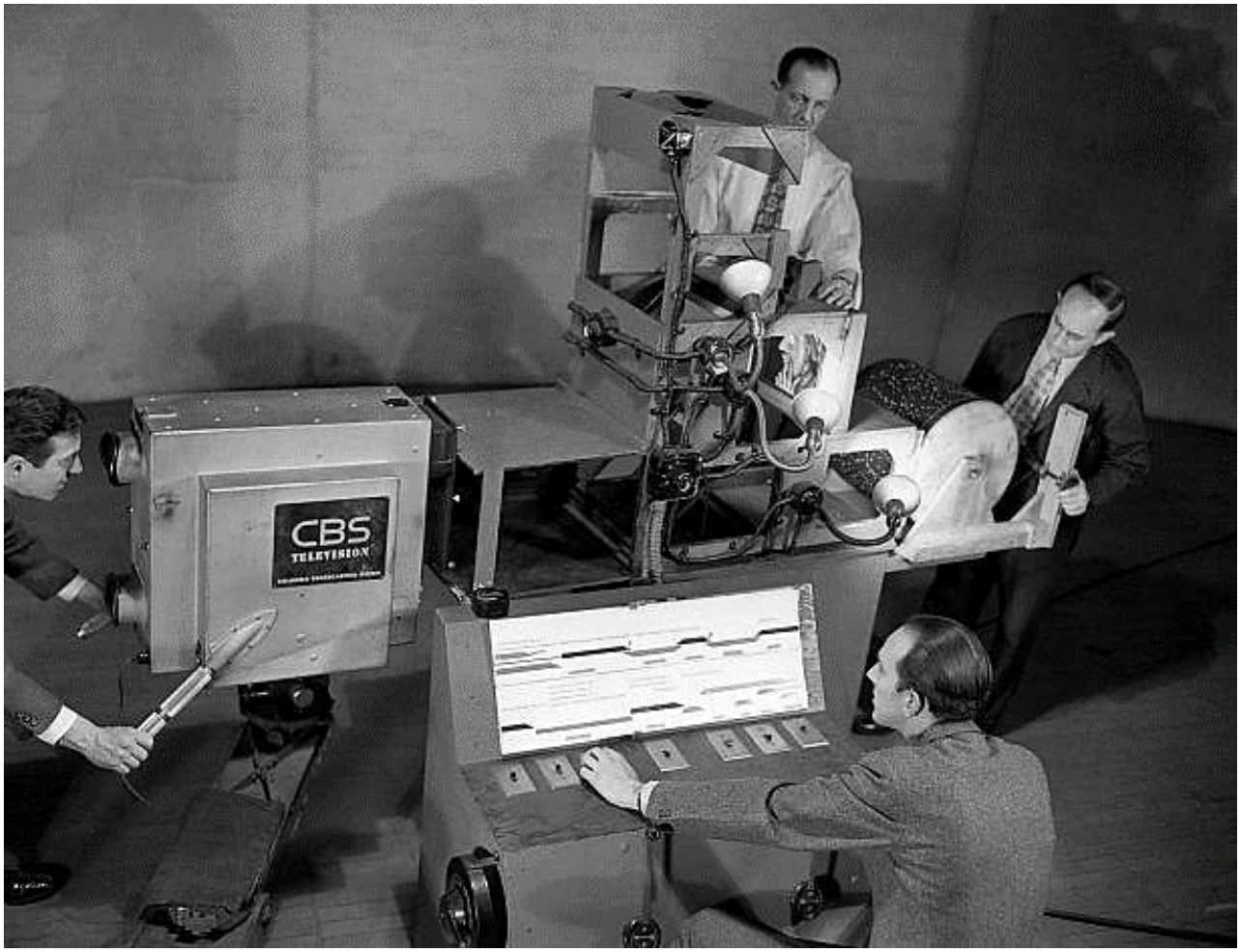
The location of these scenes is at the CBS Studio at Grand Central Station in 1945. The process of trial and error is going on here, as one can imagine the complexity of positioning the huge Iconoscope camera at just the right height and right angle looking into the device. It took a bit of experimentation.

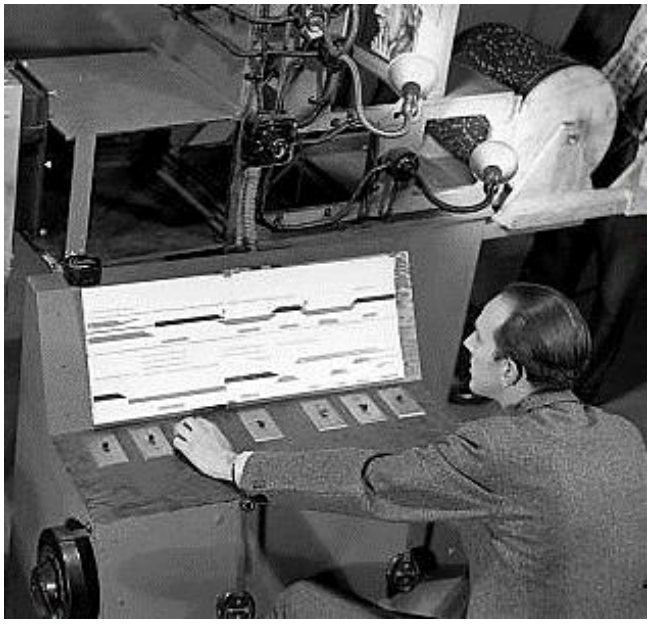
The operator on the far right is controlling a rotating drum which could have any number of creative images such as clouds, waves, a moving star field for simulating “Space Travel.” More likely however, this application is actually for a “Falling Snow” illusion over a stationary image used as a backdrop.

Other typical uses would have been for simple white letters on a black background which could be made to appear to roll up or down for the reveal of credits or subtitles. A far cry from our modern computer-generated text units. The CBS folks called this marvelous system a **“SHADOW BOX.”**

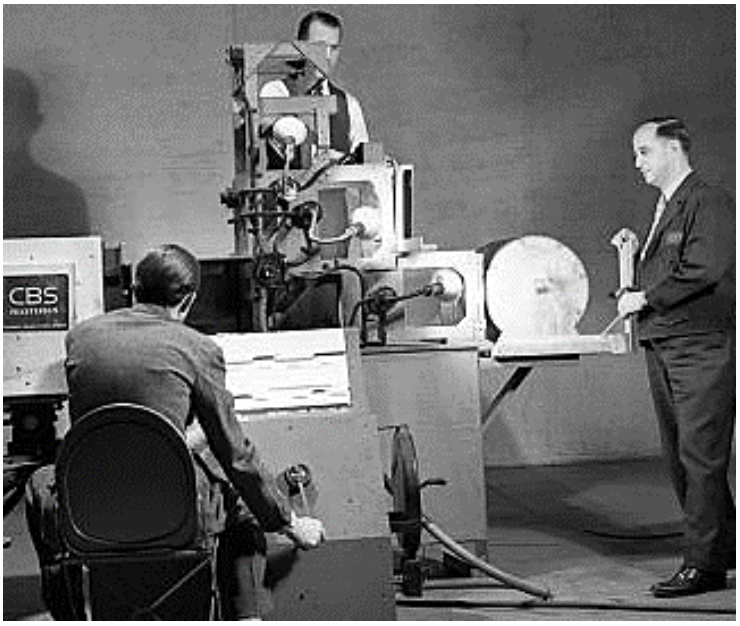








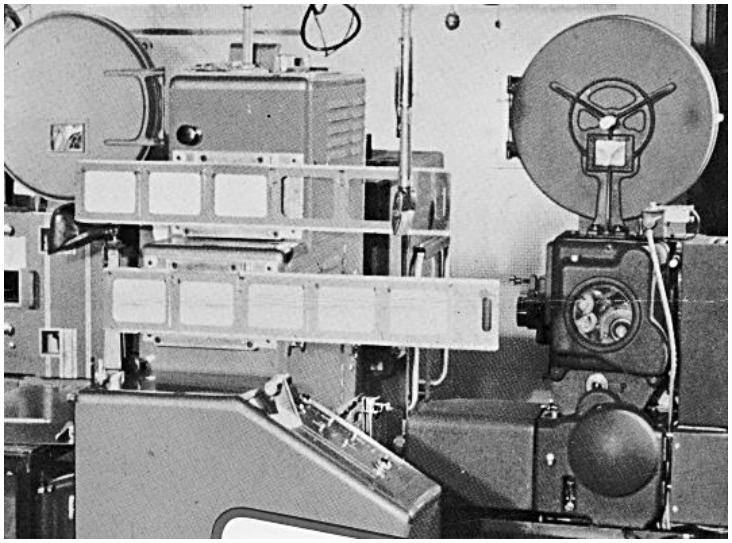
The Control Console with a neat script holder with the power switches for the lamps. The script itself looks remarkably like a non-linear display for a modern edit list for A-B Roll.

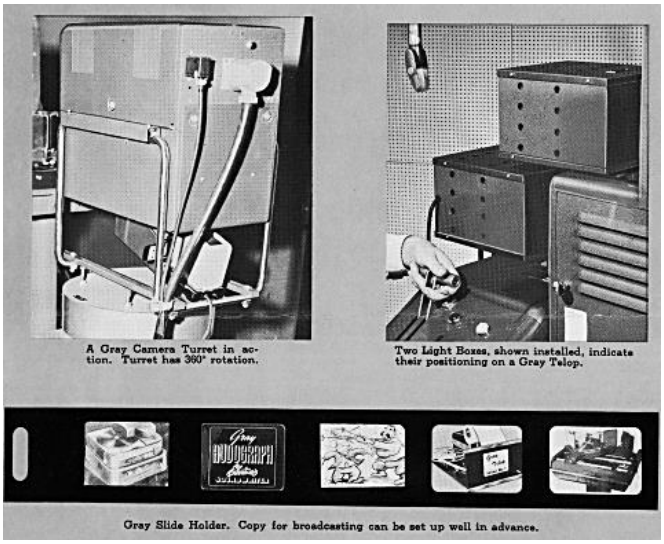


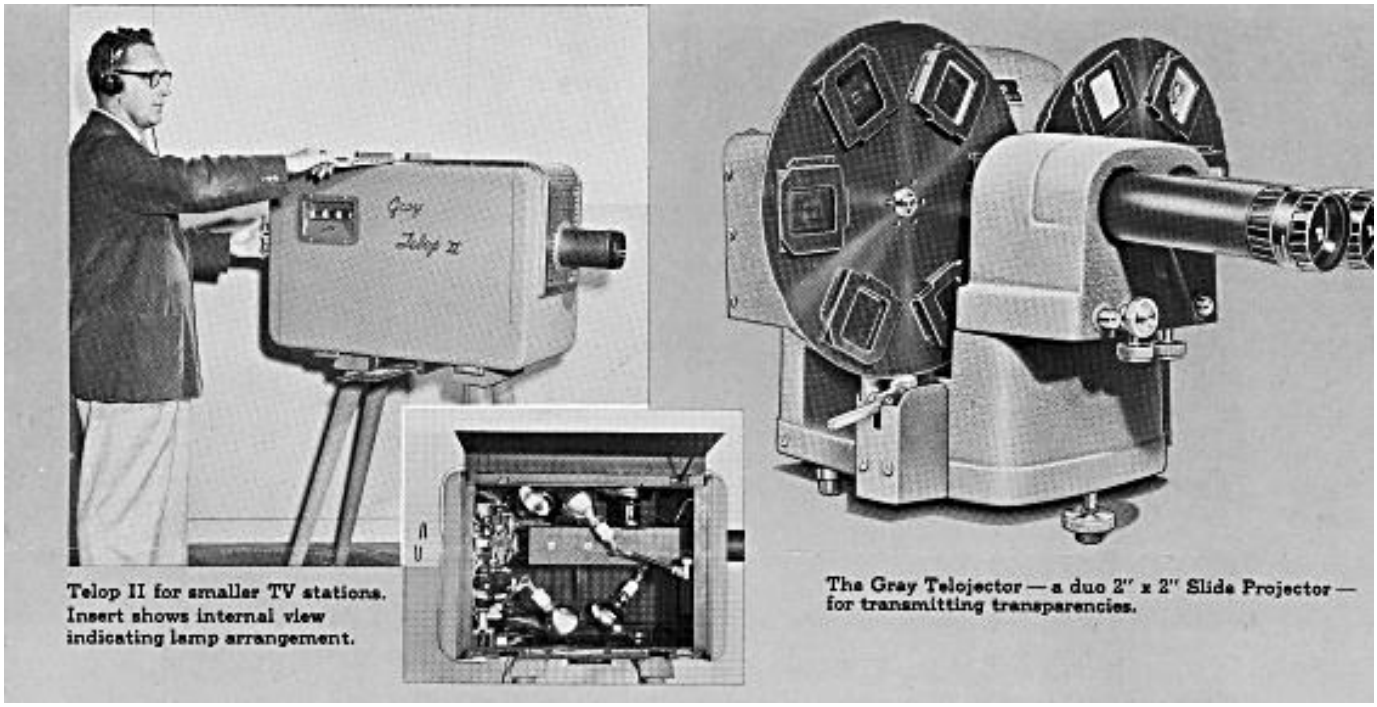
The Control Console fitted with electrical dimmers to effect fades and dissolves using the optical images televised with the large live Iconoscope studio camera.

1953 HERALDS A MORE MODERN APPROACH TO CAMERA GRAPHICS

GRAY RESEARCH and DEVELOPMENT out of Manchester, Connecticut developed a more elegant method of televising camera graphic images with their series of **TELOP** units. Their cleverly designed system was integrated with a Telecine (Film Chain) system where a single fixed position camera is mounted with a mirrored multiplexer system shared with 16mm and 35mm motion picture projectors. The photo below shows the very common RCA TK-20 Iconoscope camera mounted on movable rails which also allowed it to shift position between several types of film projectors, and the **GRAY TELOP.**

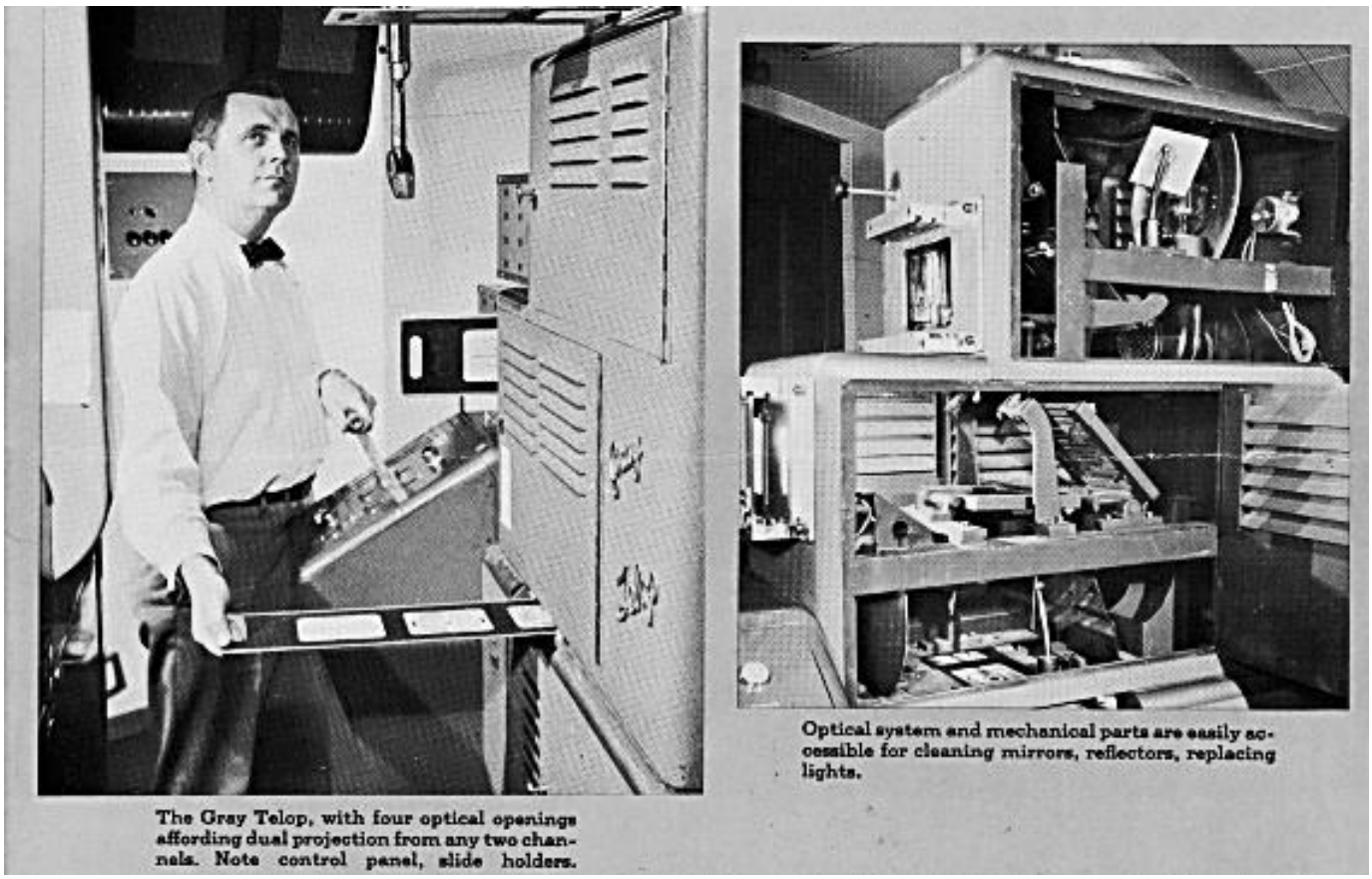






Telop II for smaller TV stations. Insert shows internal view indicating lamp arrangement.

The Gray Telojector — a duo 2" x 2" Slide Projector — for transmitting transparencies.



The Gray Telop, with four optical openings affording dual projection from any two channels. Note control panel, slide holders.

Optical system and mechanical parts are easily accessible for cleaning mirrors, reflectors, replacing lights.

GRAY RESEARCH

and Development Company, Inc.

HILLIARD STREET, MANCHESTER, CONNECTICUT

Division of the Gray Manufacturing Company—Makers of the Audograph and Originators of the Telephone Pay Station.

So, the next time you hit the space bar or some other function on your graphics computer keyboard, recognize that it was not always ***that easy*** to create and use graphics for Live TV. Thank folks like **RUDY BRETZ** at **CBS** and **GRAY RESEARCH** who paved the way for us all during those Paleolithic days in the 1940s.

God Bless 'em !