OPERATING INSTRUCTIONS FOR COLORAMA SIGNAL GENERATOR

The three photomultiplier tubes, Red, Blue, and Green are located in the lid of unit A for transporting the equipment. Identification of the photomultiplier tubes can be made by observing the color of the knob on top of each phototube socket. The recepticles for the phototubes for operation are located toward the left side of unit A and can be identified by the color of the wratten filter at the bottom of each recepticle. The recepticle for the red tube is located near the lens, the green behind the red and the blue behing the green. The phototubes should be handled with extreme care while inserting them in their respective recepticles. Turn the red, blue, and green knobs on the tops of the phototubes to minimum gain, counter clockwise position.

Insert cables nos. 1 and 2 into their respective sockets. (CAUTION: ~~Don't~~ Do not connect cable no. 4 before connecting cables 1 and 2).

Remove the RF distribution block from the lid of unit B. Connect cable no. 3 from J_1 to the center connector on the distribution block. Remove the same number of terminations from the block as it is desired to connect TV receivers to the block. Connect cable 5 from distribution block to the receiver antenna terminals. The output and distribution system have 75 ohms impedances. If the TV receivers to be used have 300 ohm antenna inputs, a matching transformer between the receiver terminals and distribution block is recommended.

The power cord (cable no. 4) should be plugged into a power source supplying 115 to 120 volts 60 cycles. If the power source available is more or less than the suggested voltages (115 to 120), the use of a power line control or regulator is recommended for best operation of the Colorama Signal Generator.

Before turning on the unit, be sure to have cables nos. 1 and 2 connected to both units (A & B). Also have a color TV receiver RF connected to the unit, turned on and tuned to the channel indicated on unit B.

Having completed all the above instructions turn the unit on with the power switch (S1). Switch S2 to manual and the timer switch (S4) to "off" position.

Turn "Dot-Bar Gen." switch (S5) to the "color bars" position. Adjust the color receiver to observe the color bar test pattern.

Turn "Dot-Bar Gen." switch (S5) to "Slide" position.
Turn the "B&W-Color Mode" (S6) to the "split" position.
Turn R4 to maximum counter clockwise position.

Set the "color" control on the receiver to about 1/3 from the maximum counter clockwise position.

Observe the split raster on the color receiver. If the "split" is not in the center of the raster, adjust R3 to center the split. The portion of the raster on the right side of the screen is the black and white side. The portion on the left, is the color side for this test. If R1 and R2 ~~screwdriver adjustments in unit B~~ are properly adjusted the color on the left side of the screen will be the same or nearly the same shade as the color on the right side. If R1 and R2 need adjustment, start by adjusting R1, then R2 and continue to alternate between R1 and R2 until a "match" is achieved. When a "match" is achieved the color subcarrier in the colorplexer is in balance.

To further check proper adjustment of R1 and R2, rotate the "tint" control on the receiver from one extreme to the other. A very small or preferrbly no tint change should be observed on the left side of the screen. Return the tint control to about mid range.

Pull back slide-access door located above lens in unit A and insert test slide #1 (Slide with cloud in center ~~the wratten #96 N.D. 0.70 neutral density filters~~), close access door and press slide change button (S3) five times. Depress for about 1 second each time.

(If pushbutton is held down the slide carrier will continue to rotate). The test slide is now in position behind the lens.

Turn R4 (unit A) maximum clockwise.

Turn R5 (red knob on red phototube) clockwise until the left side of the screen is a saturated red color without "blooming" the receiver. Adjust R5 to the brightest point without losing detail in the cloud located near the center of the slide.

Adjust the "tint" control on the receiver to achieve a well saturated red color on the left side of the screen.

If the raster on the receiver is not stationary adjust R8(vertical hold on flying spot) and/or R9 (horizontal hold on flying spot) until the raster is stationary.

Adjust R6, and R7 to approximately match the color of the cloud on the left side of the split to the right side of the split screen of the receiver. Maintain detail in the white cloud.

Turn S6 to "color".

Reduce brightness on the receiver to almost cutoff level and adjust "electrical focus" (unit A) to show a dark shaded area near the center of the raster. Return receiver brightness to normal. Insert a slide with a large area of skin tone such as test slide #2. Advance slide changer 5 times as described for test slide #1. Adjust the color receiver in the normal manner for a good color picture.

If the picture has too much or not enough contrast which cannot be compensated for by the controls on the receiver, R5, R6 and R7 may require readjustment to achieve a good overall color balance.

Adjust "optical focus" (unit A) for the sharpest picture.

Set S2 (changer switch) to "automatic" position and S4 (timer switch) to "on" position. The slides will change automatically at the rate of approximately one every 15 seconds.

To get a wiping effect from black and white to color with the change of each slide, set S6 to the "sequence" position.

If a split screen, color on the left and black and white on the right, is desired turn S6 to "split" position. If the timer is left on when S6 is in the "split" position the picture will appear split, and in a few seconds will wipe to full color.

The remaining position of S6 "B&W" (black and white) is self explanatory. If it is desirable to allow the timer to automatically cycle any of the functions of S6 without changing slides, turn S2 (slide changer switch) to "off" position.

Covered in Service Manual

After the unit has been operating for about one half hour it may be desirable to adjust C10. The purpose of this capacitor is to reduce the effect of the 3.58mc beat pattern. C10 is connected across the 3.58mc subcarrier crystal and is located in about the center of the colorplexer chassis in unit B.

Test pattern generator (s5):

Test signals are available to setup color receivers, if so desired, by turning S5 to the appropriate pattern, "color bars", "crosshatch" or "dots". The same connection is used to the TV receiver as is used for slide presentation.

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Operating Instructions
(For Locations of Controls Refer to Fig. 1)

1. Insert connecting cable no. 1.

2. Connect the output cable no. 3 from one of the output connectors on the generator to the antenna terminals of a color receiver. Four receivers may be operated directly from the generator by connecting a receiver to each output connector. If it is desired to operate more than four receivers, an additional distribution pad no._____ may be connected to one of the output connectors. The output impedance of the generator is 75 ohms. Four matching transformers (75 ohms to 300 ohms) are supplied with the unit. If more than four receivers are to be used additional transformers will be needed and can be ordered by no. RM T30075.

3. The power cable should be plugged into a power source supplying 115 to 120 volts 60 cycles. If the power source available is more or less than the suggested voltages (115 to 120), the use of a power line control or regulator is recommended for best operation.

4. Turn the Red, Blue and Green knobs (phototube gain controls) in unit B to their maximum counterclockwise positions.

5. Set S4 to "Off" position. (Timer switch)

6. Set S2 to "Manual" position.

7. Turn on the unit with the power switch (S1). Also turn on the receiver and set it for the channel (3 or 4) as marked on the generator. Allow a 15 minute warmup.

8. Set the "Dot-Bar Gen." switch (S5) to the "Color Bars" position. Adjust the color receiver to observe the color bar test pattern.

9. Ten color bars should be observed on the receiver. Adjust the "Tint" control on the receiver so that the bars are in the following order reading from left to right: 1. yellow-orange; 2. orange; 3. red; 4. magneta; 5. reddish blue; 6. blue; 7. greenish blue; 8. cyan; 9. bluish green; 10. green.

3.58 mc Subcarrier Balance

10. Set the "Dot-Bar Gen." switch (S5) to the "slide" position.

11. Set the "B&W-Color Mode" switch (S6) to the "Split" position.

12. Turn "F.S. Brightness" (R4) control to minimum or counterclockwise position.

13. Set the "color" control on the receiver to approximately mid position. The left side of the screen may contain some color and the right side will be gray. Preferably the split should be in the center of the raster, however the split may be moved by adjusting R3.

14. Adjust the "Subcarrier Balance" controls (R1 and R2) alternately until a "gray match" is obtained on the right and left sides of the receiver screen. To further check the proper adjustment of R1 and R2, rotate the "tint" control on the receiver from one extreme to the other. A very small or preferably no color change should be observed on the left side of the screen. Return the "tint" control to mid range.

15. Set the "B&W-Color Mode" switch (S6) to the "Sequence" position.

16. Turn the "F.S. Brightness" (R4) to the maximum clockwise position.

17. Insert the colorbar test slide (to show vertical bars) and press the "slide change" button 5 times to position the slide behind the lens.

18. Turn the "red" phototube gain control clockwise until a reasonable picture level is observed on the receiver. Do not overload the receiver. If the picture is not stationary, adjust the flying spot vertical or horizontal hold controls R8, R9. Refer to Figure 1.

19. Adjust the "Tint" control on the receiver until two red bars are observed. If pink bars are observed, increase the "color" control to get red.

20. Turn the "green" and "blue" phototube gain controls clockwise until a reasonable picture level is observed on the receiver. Do not overload the receiver.

21. Insert the color bar slide so that the color bars are horizontal on the receiver.

22. Set the "B&W-Color Mode" switch (S6) to the "split" position.

23. Adjust the "blue" and "green" phototube gain controls so that the right and left sides of the white bar are the same shade.

24. Set the "B&W-Color Mode" switch (S6) to sequence.

25. Advance the slide changer to a picture slide.

26. Adjust optical focus. Refer to Figure 1. for the location of the control.

27. Adjust electrical focus of the flying spot kinescope. See Figure 1. for location of the "Electrical Focus" control.

28. The unit is now ready to operate. Select the mode of operation and set the switches as described below.

For automatic slide change set the "changer switch" (S2) to "auto" position and the timer switch (S4) to "on" position. The slides will change at the rate of approximately one every 15 seconds. For manual slide change set slide changer switch (S2) "Manual" position.

For split screen operation, i.e., color on the left and black and white on the right, set the "B&W-Color Mode" switch (S6) to "split" position. With the timer switch (S4) in the "on" position, the picture will appear "split" and in a few seconds will wipe to full color.

In the sequence position of (S6) with the timer switch "on" the picture will appear black and white and then will wipe to full color.

In the color position of (S6) the picture appears in full color and will remain in full for the duration of the cycle.

In the Black and White position of (S6) the pictures will never appear in color for any portion of the cycle.

If it is desirable to allow the timer to automatically cycle any of the functions of (S6) without changing slides, turn the slide changer switch (S2) to the "manual" position.

Test Pattern Generator

Test signals are available to setup color receivers by turning the "Dot-Bar Gen." switch (S5) to the appropriate pattern, "color bars", "crosshatch" or "dots".

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Fig. 1