Farnsworth U-12A Copernicus

The circuit, as shown on page 212 through 214 of Farnsworth TV Manual Volume 1, is basically the same as shown on page 212 through 214 of Ryder TV Manual Volume 2. The main difference is that the U-12A has a vertical output transformer and the U-12B has a horizontal output transformer.

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Industrial Television TV 11R, IT-12R
Model IT-11R appears on page 5-13 and Model IT-12R on page 5-13 of Rider's TV Manual Volume 5. Due to a typographical error in the latter volume, a wrong horizontal sweep tube has been used in the final assembly of these models. The 6H6G tube has been changed to an 0.005-f. 1000-volt capacitor.

The resistance readings for the sync separator circuit for the horizontal phase diode are shown in Table 1.

Remington 1950
This model is the same as Models 80 and 90, appearing on pages 14 through 14 of Rider's Television Manual Volume 5. The listing of the changes follows.

(1) All video voltages are now specified as applied by one power transformer and a 6AG7 rectifier. Both the resistors and capacitors are wired in series with the common supply. Only one filter choke is used in the common supply, instead of two as in Models 80 and 90.

Remington 80, 130
These models appear on pages 14 through 14 of Rider's Television Manual Volume 1. In addition to the changes, the noise level is quite high in some locations; the comments have been added to minimize the problem. A 6AG7 doubler-diode tube has been added to develop the oscillator control voltage. This tube receives its signal from the plate of the 6AS7 discharge tube. See Fig. 1 for connection of the 6AG7 to the circuit.

The bias arrangement has been changed on the 6AG7 video output tube. A 150-ohm resistor bypassed by a 100-ohm 25-volt tube bleeder is connected between the cathode of the 6AG7 video output tube and ground. The grid control diode has been changed to a single diode, and the cathode resistor has been removed and replaced by a direct wire. See Fig. 2 for this change. The latter change is made in a set brought in for service, it will help to minimize the noise in locations where noise is prevalent.

6AG7 VIDEO OUT

Fig. 1. The 6AG7 doubler-diode tube has been added to give automatic frequency control

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TEST PATTERNS

Abnormalities in the patterns appearing on the scope can be classified as being caused by either:

1. Internal effects - i.e. misadjustment of one or more controls, incorrect voltages, deterioration of components, etc., or
2. External effects - i.e. interfering signals, multiple signals, too strong or too weak a signal, etc.

Many of the internal defects causing abnormalities in the test pattern can be corrected by the simple adjustment of the pre-set or front panel controls.

The following test patterns have been arranged firstly as to internal and then the external causes for abnormalities. It should be born in mind that whereas only one cause is given for each defect, it is possible to have more than one simultaneously, necessitating several adjustments.

These patterns are reproduced through the courtesy of the following companies: Radio Corporation of America, General Electric Company, Allen B. DuMont Laboratories, Inc., Capehart - Farnsworth Corporation, Motorola, Inc., and others.

FIG. 1: NORMAL PICTURE
FIG. 2: CONTRAST TOO LOW
FIG. 3: CONTRAST TOO HIGH
FIG. 4: FOCUS MISADJUSTED
FIG. 5: FOCUS COIL AND ION TRAP MISADJUSTED
FIG. 6: DEFLECTION YOKE ROTATED
FIG. 7: PICTURE TUBE ADJUSTMENT REQUIRED
FIG. 8: VERTICAL HOLD MISADJUSTED