

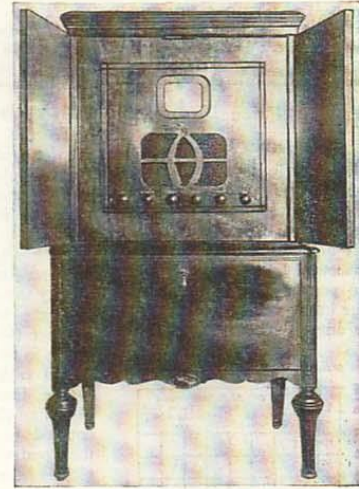
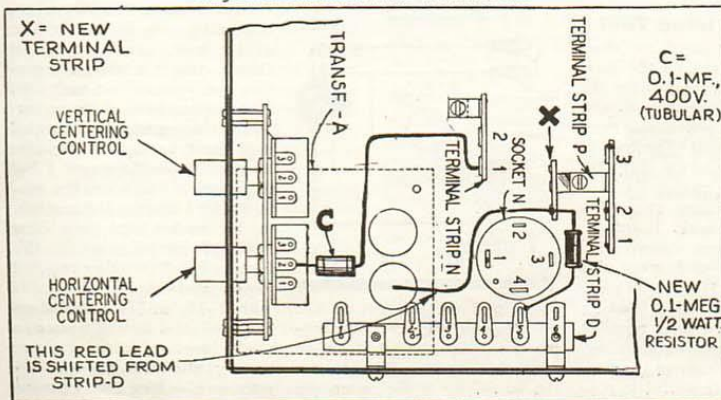
How to Get Bigger and Better TELEVISION IMAGES

Robert Eichberg

CHART INDICATING TUBE FAILURES

Tube and Function	Picture <i>Raster, no picture</i>	Sound	Miscellaneous
1852 Modulator	Picture		Tube is microphonic; gray bars appear when cabinet is tapped, or when loud audio signals are heard.
6J5 Oscillator	Distorted picture		
1852	No picture	No sound	
1st Video I.F.	No picture	Sound O.K.	
1852	No picture	Sound O.K.	
2nd Video I.F.	No picture	Sound O.K.	
6H6	No picture	Sound O.K.	
Video Detector and Clipper	Picture, but sync. slipping		
6V6G	No picture	Sound O.K.	
Video Output	Picture, but sync. slipping	Sound O.K.	
1852 Sync. Separator	Insufficient height		
6N7	Out of frame		Picture syncs, slightly down from top or up from bottom.
6F8G	Insufficient height		Picture may appear as merely a horizontal line.
Vertical Deflection Amp.	Insufficient width		Picture may appear as a vertical line.
6N7	Insufficient width		Picture may appear as a vertical line.
Horizontal Oscillator	No picture	Sound O.K.	Centering controls have no effect.
6F8G	No picture	No sound	
Horizontal Deflection Amp.	Momentary		Momentary picture, screen blooms, picture disappears.
879 or 2Y2	Spot		Yellow spot; burn, due to operation at excessive brightness.
High Voltage Rectifier	Dull		Dull picture due to long use of picture tube.
5V4G	Odd Size		Note: if faulty picture size cannot be corrected by size or hold controls, look for open connection from cable to picture tube socket.
Low Voltage Rectifier	Picture O.K.	No sound	
1805-P4	Picture O.K.	Microphonic howl	
Picture Tube	Picture O.K.	No sound	
	Picture O.K.	Distortion	
	Picture O.K.	Noise in speaker	
	Picture O.K.	No sound	
	Picture O.K.	Weak, distorted	

Diagram of alterations made in Andrea kit.



Andrea Kit installed in Console.

● AS no cabinet is provided for the kit model Andrea television set, the writer got in touch with a distributor of merchandise whose ad in *RADIO & TELEVISION* showed an old Kolster cabinet of approximately correct dimensions.

While this cabinet is not quite as deep as the assembled kit, a hole may be cut in the back to accommodate the C-R tube and bracket. A removable panel takes care of the chassis depth.

In the cabinet, as it is supplied, there is an old Kolster R.F. unit and a loud speaker baffle. These were removed. A piece of walnut veneer plywood was used to fill the panel space in the cabinet, which was considerably larger than the panel supplied in the Andrea kit. Centering this panel on the plywood necessitated raising the chassis some three inches from the bottom of the cabinet compartment. This was done by means of a small platform built out of boards—the very boards with which the cabinet was secured in its packing case.

There is another compartment, originally for batteries, below the compartment now housing the television unit. The writer uses this as a highly convenient compartment for "soft drinks."

The legs on the cabinet are cross-braced, but as it was a little too high for comfortable viewing when the observer was seated, these legs were sawed off just above the brace, lowering the cabinet about four inches.

Incidentally, this cabinet has a lid which may be tilted so that a mirror may be attached to it for mirror viewing of the C-R tube. When this is done, it is necessary to reverse the picture from left to right. This is very simple to handle, as it is only necessary to interchange the green and the green-and-white leads to the C-R tube socket. However, the writer finds it more pleasant to look directly at the end of the tube, as it is normally mounted in the Andrea kit.

Due to excessively high voltage, the image could not be expanded to fill the en-

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Bigger and Better Images

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tire mask on the cathode-ray tube. Engineers of the Andrea Company suggested putting a 100,000 ohm resistor in series with the (shielded cap) plate lead of the 2Y2 rectifier. This was done and the image could then be expanded to a size even larger than the mask opening. There was a little A.C. getting into the picture, however, manifested by a slight wave at the sides of the image. A 0.1 mf. 400 volt fixed condenser was connected from the center arm of the horizontal hold control to the juncture of the two half meg. resistors in the high voltage bleeder. This took care of the necessary filtering and the ripple disappeared.

As a further refinement, a push button switch was installed on the veneer panel so that the set is automatically turned

on when the cabinet doors are opened.

This gave the writer the idea of making a few more changes. Even though the images received were good, they were improved when the two 6N7's were interchanged. Additional interchanging had no further results.

The Andrea Company is now publishing a sheet for service men who may be called upon to do work on television receivers. The sheet explains that 95% of the troubles experienced will be due either to faulty adjustment of the set's controls or to defective tubes. Some of the information from the sheet appears in this issue of R. & T. It is applicable to other makes of television receivers, with certain modifications.

SIGHT AND SOUND CHART

SYMPTOM	REMEDY
Picture will not hold vertical sync.	Adjust vertical hold control. Do this with contrast control as low as possible. Insufficient Signal: Antenna must be oriented, moved to more favorable location, or raised in height. Ratio of signal to noise may be too low. Increase height of antenna. If lead is over 100 ft. long, coaxial cable may be required. Note: May be due to losses introduced by antenna leads to other television receivers. Remove such leads. Interference: Ratio of signal to noise may be too low. See Insufficient Signal notes above.
Picture tears	Adjust horizontal hold control. Interference: Ignition interference may cause tearing in all or part of the picture area. See Insufficient Signal notes above.
Picture shows horizontal distortion	Adjust horizontal hold control. Interference: See Insufficient Signal notes above.
Picture is broken by angular pattern	Interference: See Insufficient Signal notes above.
Picture has white retrace lines	Brightness control too high, contrast control too low. Insufficient signal: If contrast control is at maximum see Insufficient Signal notes above. Transmitter adjustment is not correct.
Picture is distorted by sound	Adjust trimmers A and E for minimum signal at 14.25 mc.
Pictures without sound	Adjust trimmers B, C, and D for maximum audio output at 8.25 mc., and check adjustment of Sound Sensitivity trimmer at the side of the chassis.
Pictures and sound weak	As a last resort, after you have checked everything else, realign R.F. plunger condensers.

for September, 1939

Please say you saw it in RADIO & TELEVISION