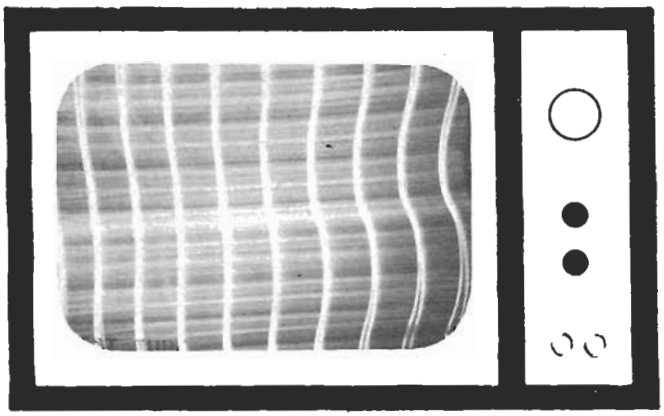
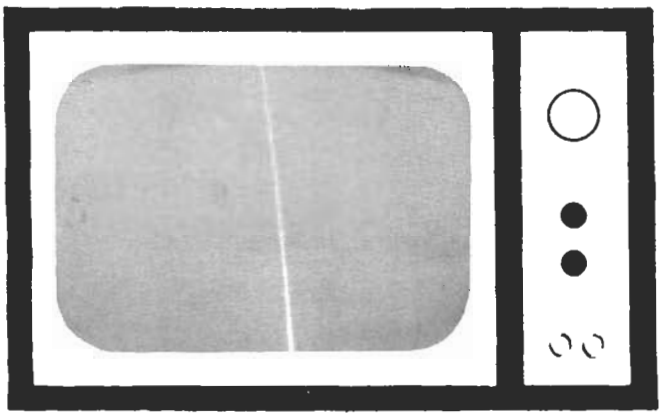


WHEN THE picture pulls and squirms as shown here, try adjusting the horizontal and vertical controls. If this does not help, try shunting the filter capacitors, one at a time, with a new capacitor with a rating of at least 100 μF and no less than the voltage at which the suspected capacitor is rated. (Do not forget the precaution noted earlier when doing this.) When the hum-bar condition disappears, you have located the faulty capacitor and can replace it with a new component. If the defective capacitor is in one can with other capacitor elements, replace the whole unit because the other elements are likely to become defective soon.

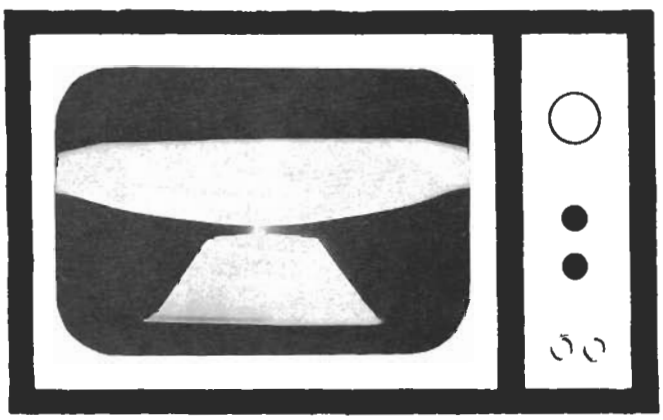


THE PICTURE illustrates what happened when a winding was open in the horizontal section of a deflection yoke. Since the line goes from top to bottom in the center of the screen, we know that high voltage and vertical height, both essential ingredients in obtaining a TV picture, are present. What is missing is horizontal sweep to spread the picture across the screen.

You can check continuity of a deflection yoke with an ohmmeter while it's on the neck of the picture tube. (Power must be "off," of course.) Most horizontal windings have a resistance between 10 and 50 ohms. Check the red, white, or orange wire going to the yoke. (Always disconnect the red wire to obtain correct continuity.) The vertical yoke wires are color-coded yellow, green, or black.

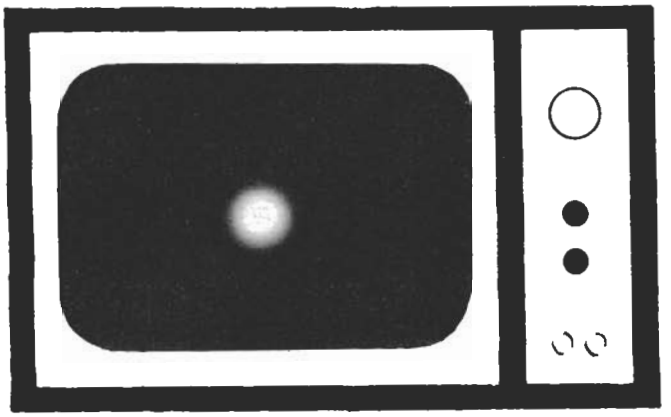
SOMETIMES when the brightness control is turned fully up, a picture may "bloom" or go out of focus. When the picture is out of focus all the time, no matter where the brightness control is set, suspect a defective picture tube, focus rectifier, or other component in the focus circuit. The first thing to do here is to locate the focus control on the rear apron and adjust for best focus. If that does not help, check for a defective component.

Look for a focus-rectifier tube near or on one side of the high-voltage cage. Typical tube numbers are 1V2 and 2AV2. If you cannot locate a rectifier tube, even after referring to the tube list on the side of the cabinet or high-voltage cage, the chassis uses a solid-state rectifier, which will be located inside or under the chassis. If you have access to a high-voltage probe, focus voltage should read 4.3 to 5.5 kV. A defective picture tube must be checked with a CRT tester.

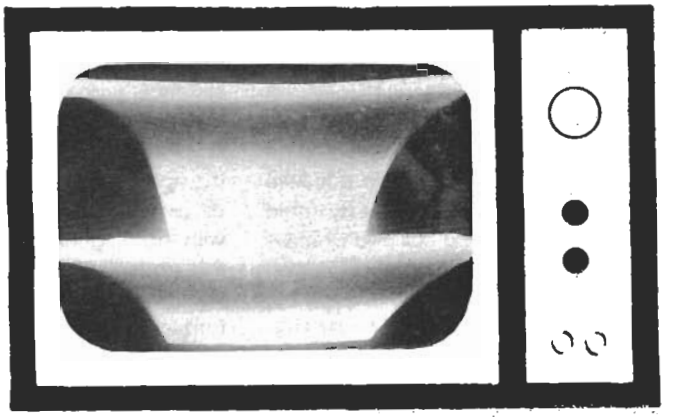


LARGE filter capacitors in a TV receiver chassis are particularly prone to breakdown. Most such problems result from drying out of the capacitors after being in service for years. Although the problem shown in this photo is capacitor related, it was not caused by drying out. It is the result of a broken trace on the printed circuit board at the base of the main filter capacitor in a Midland Model 15-023 monochrome TV receiver.

The problem was located when the capacitor was accidentally moved and the picture was restored to normal. Careful inspection revealed that the capacitor's ground lugs were torn loose from the pc board. Heavy, bare hookup wire and solder secured the capacitor into position. The partial schematic diagram shows where the filter capacitor is located in the circuit.



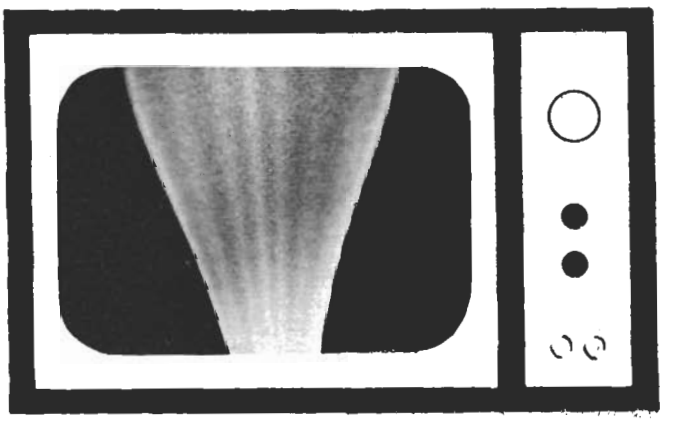
HERE IS a problem that usually crops up *after* you have performed some repairs on the chassis of a TV receiver. If you inspect the chassis, most likely you will find that you have forgotten to plug in the yoke assembly. This cannot occur on every TV chassis, because some have a low-voltage tie-in jack to prevent it from happening.



HERE WE see a video problem that occurred in a Panasonic ETA-3 portable color-TV receiver chassis. It resembles, perhaps, a double-tiered water fountain. Moreover, there was even a gurgling sound coming from the speaker. The source of the problem turned out to be filter capacitor *C853,* rated at 1200 μF and 160 volts. This tall capacitor is at the right rear of the chassis, behind the high-voltage cage.

This type of problem can be verified by shunting the suspected capacitor with a component of similar ratings. To prevent arcing and damage to transistors in the receiver, turn off the power, clip the new capacitor across the old, and turn on the power. If the filter capacitor was indeed the culprit, the picture should return to its normal condition.

PERHAPS you have seen this picture problem before, with very thin lines running across the screen. Here we find a whole section of the picture masked by noise. This is not a receiver problem. It was the result of interference from a microwave oven, but could also have been caused by any other electrical appliance or even a fluorescent-lighting fixture. Sometimes an ungrounded furnace motor will produce such picture interference. By grounding the appliance or motor and plugging it into a noise-eliminator socket, you can do away with or drastically reduce the interference.



WHENEVER you see a picture with the sides at an angle, as shown here, suspect a shorted deflection yoke. If it is the yoke, you might even see a curl of smoke coming from it, indicating arcing between windings, when power is turned on. When no telltale smoke is present, you may be able to pinpoint a shorted-yoke problem by turning on the receiver and operating it for about a half hour. Then turn off power, discharge the capacitors, and remove the picture-tube socket and yoke assembly. Feel the inside of the yoke assembly for warm or hot spots. If you locate a hot spot, you have located the point at which the yoke is shorted. Replacement of the deflection yoke is the only cure.