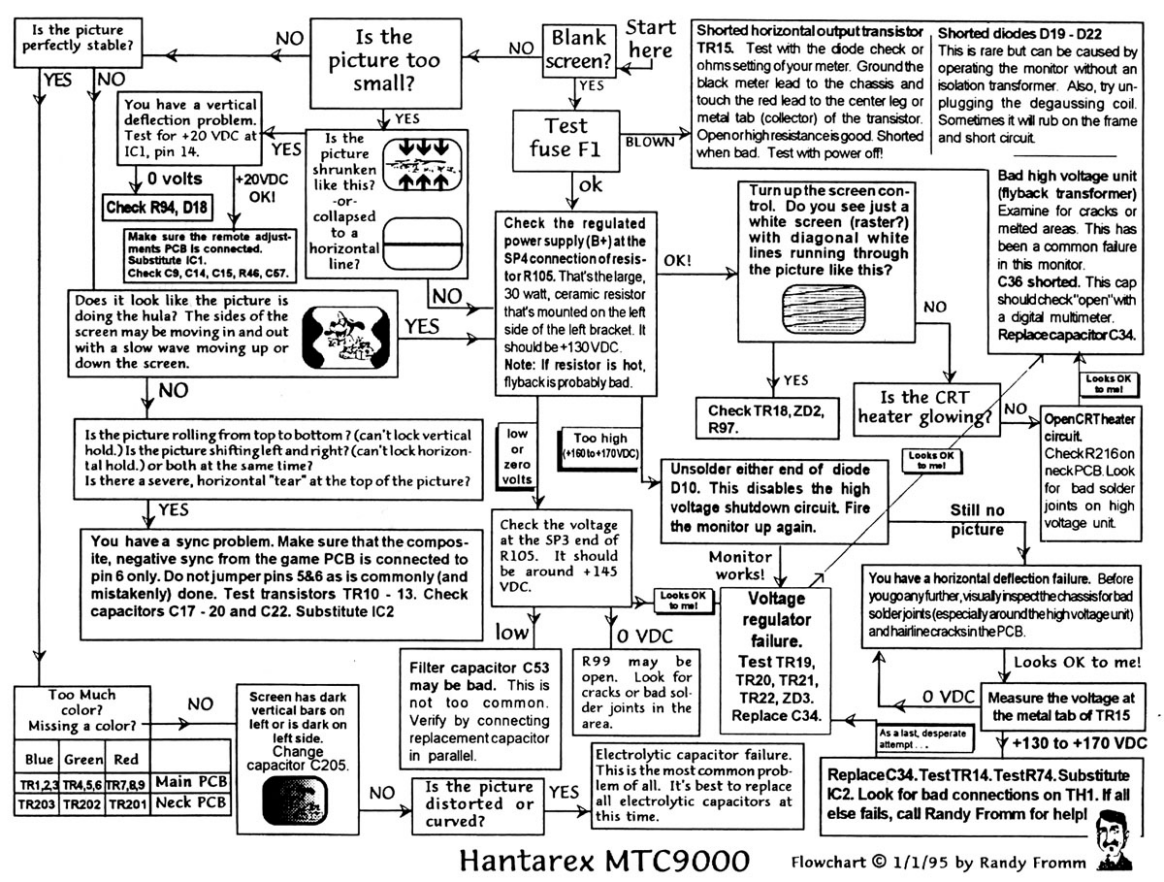
Start here
Blank screen?
NO
YES
Is the picture too small?
NO
YES
Is the picture perfectly stable?
YES
NO
Test fuse F1
BLOWN
ok
Shorted horizontal output transistor TR15. Test with the diode check or ohms setting of your meter. Ground the black meter lead to the chassis and touch the red lead to the center leg or metal tab (collector) of the transistor. Open or high resistance is good. Shorted when bad. Test with power off!
Shorted diodes D19 - D22
This is rare but can be caused by operating the monitor without an isolation transformer. Also, try unplugging the degaussing coil. Sometimes it will rub on the frame and short circuit.
You have a vertical deflection problem. Test for +20 VDC at IC1, pin 14.
0 volts
+20VDC OK!
Check R94, D18
Make sure the remote adjustments PCB is connected. Substitute IC1. Check C9, C14, C15, R46, C57.
Is the picture shrunken like this? -or- collapsed to a horizontal line?
Check the regulated power supply (B+) at the SP4 connection of resistor R105. That's the large, 30 watt, ceramic resistor that's mounted on the left side of the left bracket. It should be +130 VDC. Note: If resistor is hot, flyback is probably bad.
OK!
Turn up the screen control. Do you see just a white screen (raster?) with diagonal white lines running through the picture like this?
NO
YES
Check TR18, ZD2, R97.
Is the CRT heater glowing?
NO
Open CRT heater circuit. Check R216 on neck PCB. Look for bad solder joints on high voltage unit.
Looks OK to me!
Bad high voltage unit (flyback transformer) Examine for cracks or melted areas. This has been a common failure in this monitor.
C36 shorted. This cap should check "open" with a digital multimeter. Replace capacitor C34.
Does it look like the picture is doing the hula? The sides of the screen may be moving in and out with a slow wave moving up or down the screen.
NO
YES
Is the picture rolling from top to bottom? (can't lock vertical hold.) Is the picture shifting left and right? (can't lock horizontal hold.) or both at the same time?
Is there a severe, horizontal "tear" at the top of the picture?
YES
You have a sync problem. Make sure that the composite, negative sync from the game PCB is connected to pin 6 only. Do not jumper pins 5&6 as is commonly (and mistakenly) done. Test transistors TR10 - 13. Check capacitors C17 - 20 and C22. Substitute IC2
low or zero volts
Too high (+160 to +170 VDC)
Unsolder either end of diode D10. This disables the high voltage shutdown circuit. Fire the monitor up again.
Looks OK to me!
Still no picture
Check the voltage at the SP3 end of R105. It should be around +145 VDC.
low
0 VDC
Looks OK to me!
Monitor works!
Voltage regulator failure. Test TR19, TR20, TR21, TR22, ZD3. Replace C34.
You have a horizontal deflection failure. Before you go any further, visually inspect the chassis for bad solder joints (especially around the high voltage unit) and hairline cracks in the PCB.
Looks OK to me!
Filter capacitor C53 may be bad. This is not too common. Verify by connecting replacement capacitor in parallel.
R99 may be open. Look for cracks or bad solder joints in the area.
0 VDC
Measure the voltage at the metal tab of TR15
+130 to +170 VDC
As a last, desperate attempt...
Replace C34. Test TR14. Test R74. Substitute IC2. Look for bad connections on TH1. If all else fails, call Randy Fromm for help!
Too Much color? Missing a color?
NO
Blue | Green | Red
TR1,2,3 | TR4,5,6 | TR7,8,9 | Main PCB
TR203 | TR202 | TR201 | Neck PCB
Screen has dark vertical bars on left or is dark on left side. Change capacitor C205.
NO
Is the picture distorted or curved?
YES
Electrolytic capacitor failure. This is the most common problem of all. It's best to replace all electrolytic capacitors at this time.
Hantarex MTC9000
Flowchart © 1/1/95 by Randy Fromm