

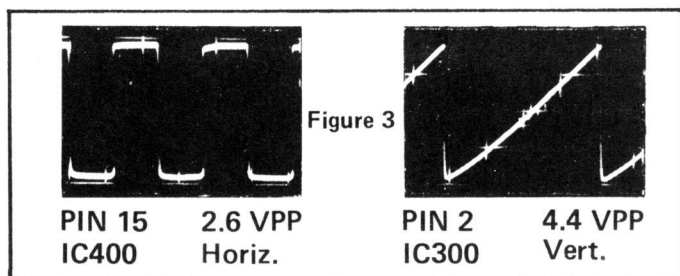
cuits. This buss line has 3 sections connected by two staples. When the set is normal, the 24V buss resistance to ground is 200 ohm. Should this resistance read less than 200 ohm, check the 27/29V buss. Normally, its resistance should be 200 ohm plus R530 (15 ohm, E06) (24 ohm, E08).

It is obvious that should there be no horizontal drive, or a defect in the driver or output stages the result would be the same.

With perhaps a slightly better insight into the whys and wherefores of the shutdown circuit, let's look at some troubleshooting techniques.

Obviously, in approaching the servicing of a "dead" set, the first item to check is whether or not the set is dead or merely shut down. A reading of approximately 130 volts at the collector of Q502, the B+ regulator, checks the On/Off switch, the circuit breaker and the 140 volt rectifier circuit. Following this the active devices, horizontal driver, horizontal output, regulator driver, and B+ regulator should be checked; for these are the most likely suspects and the easiest to check.

The horizontal oscillator itself can best be checked by a 'scope reading'. A pulse should be present at pin 15 of IC400, and at pin 2 of IC300. (Figure 3.) A lack of this waveform is indicative of either a defective chip or a component associated with the chip.



Should all of the above items check out the shutdown circuit should be checked. An ohms reading from the 24/27 volt line will read about 175-200 ohms, from the 107 volt line about 2K, and from the 170 volt line about 35K.

If all of the above appear to be OK, and the shutdown circuit still seems to be the cause, it must be determined whether the shutdown was triggered by a problem in the 24/27 volt line or in the horizontal circuit. One way of determining this is to remove Q504, the 27 volt current limiter. If high voltage returns the trouble is in the 24/27 volt line, and troubleshooting should proceed along these lines. Remember, since the SCR shutdown continues to conduct even after the gating voltage is removed, Q504 must be removed before the set is turned on. If high voltage and other voltages are not restored by this method the problem is most likely in the horizontal circuit. Removing the SCR itself will eliminate the shutdown circuit, and servicing of the horizontal and high voltage can proceed along conventional lines.

CAUTION... Both Q504, the current limiter, and SCR SC430, the shutdown circuit, are safety devices... included to protect both the set and the owner. Care should be taken not to operate the set for any length of time without them. Care should also be taken not to alter or eliminate either circuit.

These service procedures can be used as a guide. Undoubtedly, you will soon establish your own methods, once familiar with the circuitry.

IN THANKSGIVING

The richest man, if poor in spirit, sits down to a feast on a silver plate and rises after dining poorly.

The poorest man, if rich in spirit, sits down to a barren table for his crust of bread and cheese and rises with a grateful heart for his feast.

CORRECTION TO E11-1,-3,-4 BULLETIN, PAGE 4.

BRIGHTNESS RANGE

1. Tune to a normal broadcast signal.
2. Set CONTRAST Control to mid-range.
3. Set User BRIGHTNESS Control (R905) to minimum.
4. Adjust BRIGHTNESS RANGE Control (R949) so that picture highlights are just visible.
5. Restore user CONTRAST and BRIGHTNESS Controls for a normal picture on a good quality broadcast.

Notes from the Field

B10-12 CHASSIS. NO VERTICAL SYNC AFTER APPROXIMATELY ONE HOUR OF OPERATION.
C314 shorted.

B10-12 CHASSIS. NO HIGH VOLTAGE.
C416 shorted.

B10-12 CHASSIS. SLOW VIDEO AND SOUND BUT SCREEN LIGHTS UP NORMALLY; ALSO INTERMITTENT HORIZONTAL SYNC.
C430 leaky.

D16 CHASSIS. NO CHROMA.
R658 decreased in value - reads about 50 ohms to ground.

D16 CHASSIS. NO COLOR SYNC.
C670 open.

D18 CHASSIS. INTERMITTENT VIDEO AND SOUND.
Foil broken between R316 and R322, 20 volt source.

D19 CHASSIS. INTERMITTENT SOUND.
LI04 sound detector coil leads were not soldered to terminal posts.

E03 CHASSIS. NO VIDEO, NO CONTROL OF BRIGHTNESS, SOUND OK.
Junction of R508 and Section "A" of C508 shorted to R987 and R984 on terminal strip.

E03 CHASSIS. NO VIDEO, NO SNOW, SOUND OK, HEAVY RETRACE LINES.
Emitter/Base Q210 open.

Fred Miller, Service Mgr., Mitchell-Powers Hardware Co., Inc., Bristol, Tennessee.

D14-14 CHASSIS. PICTURE LOST COLOR GREENS AT RANDOM, REDS TURNED PINK - NO LOSS OF COLOR INTENSITY.

C688 intermittently open, problem could last two minutes to two hours, might not occur in days (capacitor across secondary T606). Got clue when Q606 and Q608 voltage went from a normal of 27 volts at collector, to 36 volts.

H. Weldin, Weldin, Brown and Dale, Inc., Wilmington, Del.

D16 CHASSIS. OSCILLATION IN SET CAUSES INTERFERENCE IN OTHER SETS. DISABLING DEFLECTION CIRCUITS, TUNER, AND I.F. DOES NOT HELP. "TOUGH DOG".

R682 (47K, 2W) had decreased to 10K.

McLain & Son, Columbus, Ohio.

E06 CHASSIS. CRT APPEARS BAD (VIDEO PROBLEM). Service switch is extremely sensitive and can easily be jarred out of position. Check switch carefully.

Ed's TV, Milton, Delaware.

E03/04/05 CHASSIS. CIRCUIT BREAKER KICKS OUT. Q406 short and T400.

R. Lopez, TV Service Center, Las Cruces, New Mexico.

A120101 CHASSIS. VERTICAL ROLL UNABLE TO STOP. R312 changed value from 10K to 30K.

E080103 CHASSIS. SNOW WITH NO ANTENNA. CLEAR RASTER AND SOUND WITH ANTENNA. Q202 leaking E - C.

D161567 CHASSIS. DRIVE LINE IN LEFT CENTER OF PICTURE. (PICTURE SEEMS TO BE PINCHED TOGETHER IN THIS LINE.)

Open capacitor C422, 470PF, going to pin 2 of horizontal oscillator tube (6BL8) and L400 frequency coil.

E05 CHASSIS. RETRACE LINK ABOUT 1 1/2" WIDE JUST BELOW CENTER SCREEN JUST TO LEFT OF CENTER SCREEN.

Bottom vertical output - Q310.

E09 CHASSIS. ABOUT 1" VERTICAL DEFLECTION WITH NORM/SERV SWITCH IN SERVICE POSITION.

Negative lead of C346 broken off at body of capacitor.

E10 CHASSIS. CIRCUIT BREAKER TRIPS EVEN WITH SET TURNED OFF.

SC524 shorts on IF panel.

E100100 CHASSIS. TRIPS BREAKER. SC530 shorted.

E110100 CHASSIS. NO SCREENS. Shorted SC445.

Empire State Wholesalers, Inc., Latham, New York.

ZENER DIODE REFERENCE

Syl. Spec.	Part No.	ECG Spec.	EGC No.
3.6V	13-33187-14		
4.3V	13-33187-19		
5V	13-33187-12		
7.5V	13-14879-4	7.5V, 1W	138
10V	13-33179-4	10V, 1W	140
10V	13-33187-6	10V, 1W	140
10V	13-33187-7	10V, 1W	140
12V	13-33179-6	12V, 1W	142
12V	13-33187-11		
15V	13-14879-1	15V, 1W	145
15V	13-33179-2	15V, 1W	145
16V	13-14879-5	16V, 1W	5075
20V	13-14879-6	20V, 1W	5079
20V	13-14879-7	20V, 1W	5079
20V	13-33179-5	20V, 1W	5079
20V	13-33187-3	20V, 1W	5079
21V	13-33187-9	22V, 1/2W	5030
24V	13-33187-4	24V, 1W	5081
25V	13-33179-8		
27V	13-33187-16		
28V	1N3182		
33V	13-33186-1	33V, 1W	147
33V	13-37905-1		
45V	13-29777-1		
45V	13-33177-1		
50V	13-29777-2		
87V	13-33187-5	87V, 1W	5094
100V	13-33187-2	100V, 1W	5096
120V	13-33187-13		
120V, 5%, 1W	13-33179-7		
135V	13-33187-8	130V, 1/2W	5053
135V	13-33179-3	130V, 1W	5098
135V	13-33179-1	140V, 1W	5099
150V	13-33187-10	150V, 1/2W	5055

Harlan Lippincott, FSDM, Columbus, Ohio.

A12-2 CHASSIS. NO PICTURE, VERTICAL LINE IN CENTER OF CRT.

Foil broken at diode end of terminal 9 of flyback.

B10 CHASSIS. VERTICAL JITTER.

Change neon I300 to No. 30-33062-3 neon lamp.

B10-3 CHASSIS. PICTURE NARROW 3 INCHES ON EACH SIDE.

Check R437 for change of value - should be 18K.

B10-9 CHASSIS. PICTURE GOES NEGATIVE.

R248 (7K, 7W) open.

D12 CHASSIS. BURNED RESISTORS IN COLOR DEMOD. CIRCUITS. ALSO 20 VOLT FILTER TRANSISTOR, IF'S, CHROMA, DEMOD. TRANSISTORS SHORTED.

Replace 68K, 2W resistors R690 and R726 before replacing transistors. (B+ gets into 20V line.)

D14, D15, D16 CHASSIS. INTERMITTENT LOSS OF VERT. RED-GREEN CONVERGENCE.

Check C800 for short, located on board (6.8MFD, elec. cap.).

AVOID MISTAKES - ORDER PARTS BY PART NUMBERS

D14, D15, D16 CHASSIS. INTERMITTENT VIDEO AND BRIGHTNESS LEVEL CHANGES.

Check video output transistor by replacement.

D15, D16 CHASSIS. VERY INTERMITTENT LOSS OF COLOR.

Replace capacitor C688, 270PF with part no. 40-10285-34.

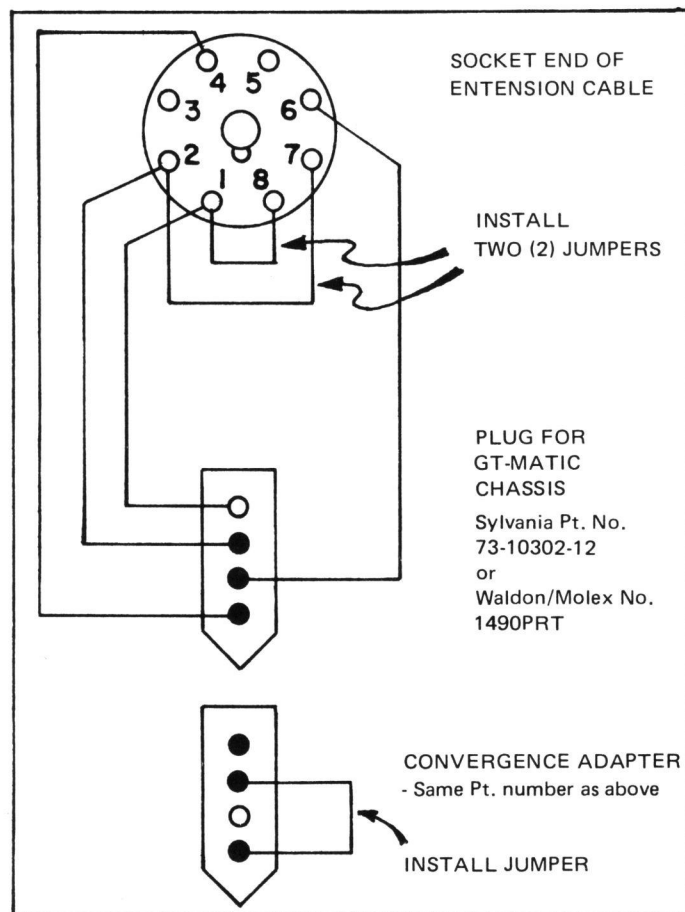
D15, D16 CHASSIS. SOME OF THESE CHASSIS HAVE A RESISTOR IN PARALLEL WITH SCREEN RESISTOR, R444.

Not listed in schematic and parts list. Value is 27K, 3W.

Ray Newhard, FSDM, Walnutport, Pennsylvania.

YOKE ADAPTER EXTENSION FOR GT-MATIC CHASSIS E03/04/05.

For Test Jigs using Sylvania's Yokes Part Numbers 51-15949-3 or 51-29986-2 or equivalent, A PK6 YOKE ADAPTER IS TO BE USED BETWEEN YOKE AND THIS ADAPTER EXTENSION CABLE. The Hi-Voltage on a GT-Matic Chassis will measure approximately 20KV with this adapter connected.



Ennis Williams, FSDM, Omaha, Nebraska.

**WORK AS THOUGH YOU OWNED THE PLACE;
YOU DO!**

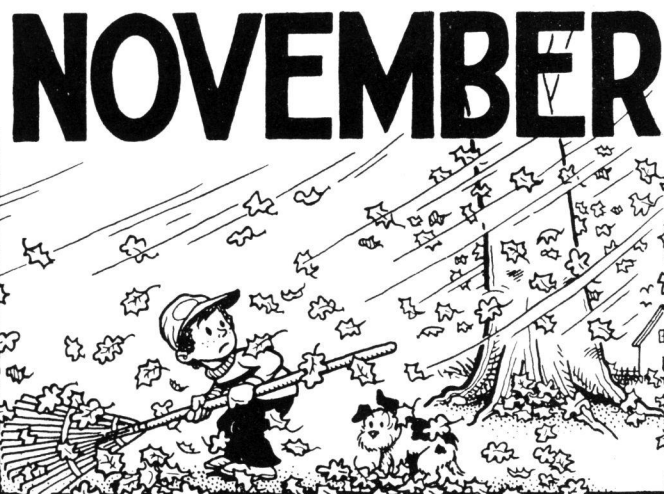
Someone asked a successful man the secret of his success. "I'll tell you," he replied. "It was a small trick I always played on myself. *I pretended that I owned the business.* No matter where I worked, I pretended I owned the place - lock, stock and barrel."

Isn't it strange? At home we worry if we leave one little basement light on all night or if we waste food or if our property gets run down or if we hire someone who does a sloppy job. But at work we will waste light and power and equipment and material and time and workmanship that costs hundreds of dollars a day and never bat an eye.

Why? Because we have no *Proprietary Interest* in the business. We think of the business as "it", any profit or loss as "theirs." At home if I waste, I am wasting my money. I don't seem to understand that when I waste at the job, I am wasting *my time, my job security, my opportunity for advancement, my share of the profits, my future.*

Proprietary Interest means that you take the same interest in your company as though you were the proprietor. Well, in a very real sense, you are! It means working at your job as though you had a stake in the business. Well, you do!

We have a slang expression, "Just walk as though you owned the place." What a change we could bring about if every morning we would walk in and go to work as though we owned the place!



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