

RCA SERVICE COMPANY, INC.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

CAMDEN 2, NEW JERSEY



November 22, 1955

Mr. K. W. Hanson
Hanson Television
223 South Second Street
Leesburg, Florida

Dear Mr. Hanson:

Thank you for taking the time to write to us about your experiences with the 21CT661U and 21CT662U color receivers.

Your description of the failure of the focus control seems to be reasonable, although it has been found that, in most instances, momentary internal arcing within the kinescope has caused this condition to occur.

Replacement of the two 470K resistors, which are in series with the focus anode, with 1 meg. resistors of the same wattage rating will, by limiting the current through the focus control, prevent reoccurrences of this condition.

Very truly yours,

A handwritten signature in blue ink that reads "J. A. May".

J. A. May
Commercial Service Section
Television Service Clinic

JAM:ja

*Plugs for Cables.
How Convey - Fault or Back.*

Woodlawn 3-8000

RCA Pioneered and Developed Compatible Color Television

RADIO • TELEVISION • TUBES • "VICTROLAS" • RECORDS • ELECTRONICS

* VICTROLA TRADE-MARK REG. U. S. PAT. OFF.



HANSON TELEVISION

223 SOUTH SECOND STREET

LEESBURG, FLORIDA

Phone 223

P. O. Box 552

2/3/56

MR. J. A. MAY
COMMERCIAL SERVICE SECTION
RCA SERVICE COMPANY, INC.
CAMDEN 2, N. J.

DEAR MR. MAY:

WITH REGARD TO YOUR LETTER OF NOVEMBER 22
LAST YEAR.

WE HAVE HAD A 21CT662U IN WHICH THE FOCUS
ANODE RESISTORS WERE FACTORY INSTALLED AS 1 MEG AND STILL
THE FOCUS CONTROL BURNED A SPOT ON IT. WE REPLACED THE
CONTROL AND HAVE HAD NO FURTHER TROUBLE NOR HAVE WE HAD
FURTHER TROUBLE WITH OTHER SETS WE MODIFIED, BUT IT DOES
CAUSE US TO WONDER.

THE ABOVE SET HAS A CONDITION THAT WE HAVE NOT
YET INVESTIGATED BECAUSE IT IS INTERMITTANT AND NOT OBJECTIONABLE,
POSSIBLY YOU CAN GIVE US A CLUE. WITH BRIGHTNESS SET AT
NORMAL AND RUNNING O.K. YOU REALIZE SUDDENLY THE SCENE IS NOT
QUITE AS BRIGHT AS IT SHOULD BE (JUST ENOUGH DROP TO NOTICE
BUT NOT ENOUGH TO ATTRACT ATTENTION). JUST AS SUDDENLY AND
AFTER THE LAPSE OF JUST SECONDS BRIGHTNESS IS NORMAL AGAIN.
IF BRIGHTNESS IS INCREASED DURING THE DROP, THE PICTURE WILL
RETURN TO A TOO BRIGHT CONDITION. WE HAVE NOT EVEN CHANGED TUBES
YET BECAUSE IT HAS NO EVERY APPEARANCE OF BEING ONE OF THOSE LITTLE
STINKERS THAT CAN TAKE UP A LOT OF TIME. IF YOU CAN CLUE US ON
THIS, WE WILL APPRECIATE IT AND THEN TRY TO WHIP IT.

ONE OF OUR MOST SERIOUS PROBLEMS IS THAT WE HAVE
NO CABLES TO BENCH A SET AND WE HAVE TO CUT OFF THE BRACKET ON
EVERY SET TO GET AN INTERLOCK PLUG. IF WE COULD OBTAIN PLUGS
AND AN INTERLOCK FROM YOU WE COULD MAKE UP OUR OWN EXTENSIONS
AND WOULD BE GLAD TO MAIL YOU A CHECK IN ADVANCE IF YOU WOULD
ADVISE THE PRICE.

VERY TRULY YOURS,

K. W. HANSON



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DUE TO THE VARIOUS SUBJECTS, I AM WRITING THIS LETTER IN THREE SECTIONS.

WE HAVE FOUND ON SEVERAL OCCASIONS THAT IF THE SHIELD ON V101 DOES NOT CONTACT ITS GROUND SPRING PROPERLY THE RESULT IS ONE OR MORE POSITIONS OF THE FINE TUNING KNOB AT WHICH THERE WILL BE FUZZY SOUND. IT IS SUCH A PECULIAR THING TO SUDDENLY FIND TUNING TROUBLE IN A SET THAT TUNED NORMALLY BEFORE YOU CHANGED A TUBE OR TWO THAT HAD NOTHING TO DO WITH THE TUNER. JUST WHAT OR WHY, WE DO NOT KNOW BUT WE HAVE FOUND THAT THE PROPER GROUNDING OF THAT TUBE SHIELD IS ESSENTIAL.

WE HAVE A PROBLEM OF A WAVERING PATTERN BEAT, VERY LARGE AND NOTICABLE, ON CHANNEL 8 WHICH IS ABOUT 70 MILES AWAY. IT APPEARS ON BLACK & WHITE BUT IS MORE NOTICABLE ON A COLORCAST. WE TOOK A COLOR SET ON WHICH THE PATTERN WAS VERY BAD TO RCA SERVICE CO. IN TAMPA AND HOOKED UP DOWN THERE, ^{IN PIX} THERE WAS NO BEAT. BUT BY ATTENUATING THE SIGNAL THE BEAT APPEARED. AFTER INVESTIGATION THEY TOLD US IT WAS DUE TO THE CARRIER OF THEIR ^{CHAN. 8} MICRO WAVE RELAY SYSTEM WHICH WAS ON ALL THE TIME BUT NOT USED WHEN THEY WERE TRANSMITTING CABLEPROGRAMS. OF COURSE EVERYTIME WE HAVE A GOOD COLORCAST FROM TAMPA THE BEAT IS THERE TO RUIN WHAT WOULD BE A GOOD PROGRAM.

IN WORKING WITH THIS PROBLEM WE HAVE FOUND THAT TUNING THE LEADIN WIRE WITH FOIL HAS A DEFINITE EFFECT. SEEMINGLY THE STANDING WAVES AMPLIFY THE EFFECT ON THE SCREEN. THIS IN TURN LEADS US TO BELIEVE THAT IF WE COULD MATCH THE ANTENNA TO THE SET PROPERLY WITH A LOW SW RATIO, WE COULD REDUCE THIS BEAT PATTERN TO A MINIMUM. THE TROUBLE IS WE DO NOT KNOW HOW TO DO THIS SO THAT IT WOULD BE AS ACCURATE AS POSSIBLE. AGAIN WE WOULD APPRECIATE ANY SUGGESTION THAT WOULD HELP US GET A GOOD MATCH OF THE LEADIN WIRE TO THE SET. WE USE A DOUBLE STACK JFD YAGI-HELIX FOR TAMPA WITH A CONICAL FOR ORLANDO (CHAN 6) AND A JFD HI-LO COUPLER WITH 1 LEADIN WIRE OF 300 OHM 80 MILL POLY.



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2/3/56

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LET ME HASTEN TO EXPLAIN THAT I KNOW YOU HAVE OTHER THINGS TO DO BESIDES READ LONG LETTERS FROM COUNTRY SERVICE MEN, BUT WE COUNTRY BOYS THIRST FOR KNOWLEDGE AND HAVE LITTLE MEANS OF GETTING IT EXCEPT TO IMPOSE ON YOU.

AFTER MANY HOURS (YOU KNOW) OF CONVERGING, I HAVE FOUND IT NECESSARY TO RACK MY BRAIN FOR WAYS TO EASE THE PAIN. I AM QUITE PROUD OF MY FIRST EFFORT AND HEREWITH PASS THE INFORMATION ON TO YOU, TO USE IN ANY WAY YOU WISH. I WILL GLADLY ASSIGN ANY RIGHTS TO YOU IN ACCORDANCE WITH YOUR COMPANY PROCEEDURE, IF YOU WISH. I FIND THE ITEM A REAL AID.

DRILL 3 HOLES IN THE COVER OF A "MINIBOX" AND MOUNT IN EACH HOLE A SPST TOGGLE SWITCH. CONNECT A 100K RESISTOR TO ONE SIDE OF EACH SWITCH AND THE OTHER SIDE TO A COMMON GROUND. A RED, BLUE AND GREEN WIRE WITH ALLIGATOR CLIP TERMINATION IS SOLDERED TO EACH RESISTOR (1 WIRE TO EACH) AND A BLACK WIRE WITH CLIP TO THE COMMON GROUND. WITH THE SWITCHES ARRANGED LEFT TO RIGHT TO BE RED, GREEN & BLUE AND PUSHED FORWARD THE OFF POSITION.

THE BOX FITS IN THE BACK RIGHT CORNER OF THE CABINET AND CAN BE SECURED WITH A RUBBER BAND. FOR THE BACK & FORTH, BACK & FORTH, BACK & FORTH SETTING OF THE GUNS, IT IS A TIME SAVER AND A PAIN RELIEVER OF FIRST ORDER. TRY ONE.

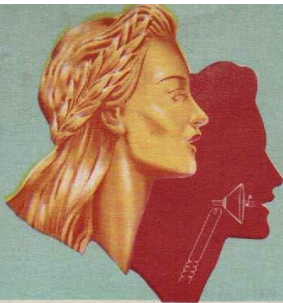
SINCERELY,

K. W. HANSON



Leads the way... IN RADIO... TELEVISION... TUBES... PHONOGRAPHS... RECORDS... ELECTRONICS





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P. O. Box 552

6/14/56

MR. J. A. MAY
RCA SERVICE CO., INC.
CAMDEN, N. J.

DEAR MR. MAY:

REGARDING YOUR LETTER OF FEBRUARY 7TH AND THE LATEST TELEVISION SERVICE CLINIC LECTURE WHICH WE RECEIVED AND FOR WHICH I THANK YOU VERY MUCH. IT IS AMAZING THE AMOUNT OF INFORMATION THAT IS CONTAINED IN THIS BOOKLET AND I HAVE ABOUT WORN IT OUT TRYING TO DIGEST IT ALL.

WE HAVE FIVE OF THE EARLY PRODUCTION COLOR SETS IN OPERATION AND HAVE MODIFIED THEM WITH REGARD TO CHANNEL 8 BEAT INTERFERENCE AND ALSO AS TO CHANGING THE 470K RESISTORS IN THE FOCUS CIRCUIT TO 1 MEG. WITH THIS IN MIND:

QUESTION #1: OF THE MODIFICATIONS SHOWN ON PAGES 77 TO 80, HOW MANY AND WHICH ONES WOULD YOU SUGGEST WE CHANGE AS THESE SETS COME INTO THE SHOP TO MAKE THEIR OPERATION BETTER.

WE HAVE AN EARLY PRODUCTION SET 21CT662U THAT HAS IN IT TRI-COLOR TUBE WITH CODE DATE OF 5-35. USING A MIDWEST CATHODE BEAMER INSTRUMENT TO CHECK EMISSION WE FIND THAT THE RED GUN OF A TUBE IN USE 1 MONTH READS 320 MICROAMPS. THE RED GUN OF THE TUBE WITH CODE 5-35 READS 220 MICROAMPS (THE TUBE HAS 6 ACTUAL MONTHS USE ON IT). ON THE SAME TUBE THE GREEN READS 260 AND THE BLUE 280.

QUESTION #2: IS THE DROP OF ABOUT 1/3 IN EMISSION BAD. HOW MUCH DIFFERENCE IN READINGS OF THE GUNS WOULD BE NORMAL. SHOULD WE REPLACE THE TUBE 5-35 AS FAILING IN WARRANTY (WHICH IT STILL IS).

WE ARE CONSTANTLY WORKING TO BUILD UP OUR SHOP FOR COLOR WORK AND HAVE A WIDE BAND SCOPE, WR36A AND WR61A DOT & COLOR GENERATORS DEGAUSSING COIL, BIAS JIG ETC. BUT OUR SUPPLIERS CANNOT GET US THE MALE AND FEMALE PLUGS FOR THE EXTENSION CABLES. WE WOULD ALSO LIKE TO BUILD THE KINE TEST JIG AND WONDER IF IT IS POSSIBLE TO GET A FACTORY REJECT TRI-COLOR TUBE FOR USE IN THE JIG AT A REDUCED PRICE.

QUESTION #3:



Leads the way... IN RADIO... TELEVISION... TUBES... PHONOGRAPHS... RECORDS... ELECTRONICS





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QUESTION #3: WHERE CAN WE GET A SET OF PLUGS SO WE CAN MAKE UP THE EXTENSION CABLES. CAN YOU GIVE US ANY DOPE AS TO GETTING A TRI-COLOR TUBE FOR TEST JUG USE.

WE STOCK ALL THE SMALL TUBES AND IN ADDITION THE 3.58 CRYSTAL, FOCUS CONTROL, HORIZ CENTER CONTROL.

QUESTION #4: WHAT OTHER PARTS WOULD YOU SUGGEST WE STOCK FOR THE 21CT660 SERIES TO PROVIDE PROMPT SERVICE.

THANK YOU FOR YOUR TIME.

SINCERELY,



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RCA SERVICE COMPANY, INC.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

CAMDEN 2, NEW JERSEY



February 7, 1956

Mr. K. W. Hanson
Hanson Television
223 South Second St.
Leesburg, Florida

Dear Mr. Hanson:

Thank you for writing again for color television service information. Let me assure you that it is my pleasure and not a burden to provide answers, where I can, for the problems you meet.

Also, I want to thank you for your suggestion about the switch-box for switching the kinescope grids on and off. We have been using such a box since last July and as you found, it is a very convenient little gadget. A full description of the unit is included in our latest Television Service Clinic Lecture which is now being printed and will be available shortly. I'll see that you receive a copy. Also included is data for making extension cables and an interlock plug.

Now, with regard to the specific problems you mention.

The intermittent brightness condition has in some cases been caused by a defective damper tube (6AU4). Another place to check for this condition is in any of the high value resistances such as the 100 meg. and 10 meg. resistors in the regulator and focus circuits. It could be, of course, a defective or intermittent brightness control or the red screen control.

The fuzzy sound condition probably is the result of radiation from the Sound I-F Amplifier when it is not completely shielded, although we find this condition will also result from a faulty ratio detector transformer.

The interference on channel 8 is caused by the 4th harmonic of the picture IF carrier generated in the picture detector circuit, and is picked up by the 300 ohm lead associated with the UHF/VHF switch. The frequency of the interference is approximately 183 mc., depending on the position of the fine tuning control.

To suppress the interference, install a 22 mmf. capacitor between Terminals B and C of T107 the 4th Picture I-F Transformer. If this change does not reduce the interference sufficiently, re-route the Tuner Unit supply leads as follows:

1. Remove the brown heater lead from PCL01-Terminal "BB", re-route through hole in chassis side apron between V121 and T113, and connect to V121-4.

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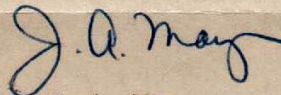
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Mr. K.W. Hanson

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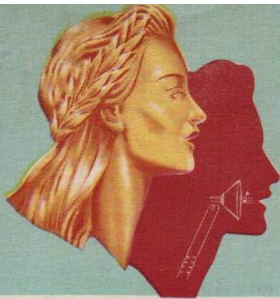
2. Remove the black lead which connects the AGC terminal board with Terminal "LL", PC101, from the Terminal "LL" end. Route it through same hole specified above, and connect to tuner AGC terminal.
3. Remove tuner end of black lead connecting Terminal "LL", PC101, and tuner AGC terminal. Route through hole in chassis side apron nearest to Terminal "LL", and reconnect to tuner AGC terminal.
4. Remove the terminal board end of red-white lead which connects PC102-Terminal "D" to #280. Re-route the lead through the hole in the chassis lip nearest to Terminal "D". An orange wire runs through this hole from PC101 to PC102. Then route the red-white lead on the sound IF side of the chassis lip, between V121 and T108. Connect to #280 buss at the same terminal to which R231 is connected.

Very truly yours,



J. A. May
Commercial Service
Television Service Clinic

JAM:vr



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