

The following conversion is reprinted by permission of "Custom Conversions", and its author. NOTE: The first 2 pages and Fo Chart are condensed...

(1) CUSTOM CONVERSION #10
(Code Name: Wild Goose)

Chassis: Realistic TRC-431 (21-1544)

Parts Cost to modify including SAMS \$30 max...

Time to modify - INITIAL unit 4 hours, with all parts on hand!

Gain in Unit: Frequency Range - - 26.325-27.405MHz

R.F. Gain Control

High Frequency Audio Filter

Modified Noise Circuitry

"Illegal Frequency Alert"

Universal D.C. Jack

Internal Mike Gain Control (optional)

Loss in Unit: P.A. Capability

Headphone Jack use

Initial conversion performed on S/N 7320LXXX, Run 5A7.....

(2) Realistic TRC-431 (21-1544).....Code-Wild Goose, S/N: _____

This unit is extensively modified for operation between the frequency range of 26.325-27.405MHz. Total 'channel' capability is 92 AM 'channels'.

Frequency is determined by the main channel selector and the 'range selector button/jack'. In this case the P.A. push button (Code-Red), and Headphone jack (Code-Blue).

At any time the unit is capable of transmitting on an 'Illegal Fo' the lamp in RF/S meter will be out. Delta Tune is eliminated, and converted to a R.F. Gain control.

A "Universal D.C. Jack" has been installed on back for use with standard 3-pin plug, and 2Amp AGC ONLY fuse inline.

CCW adjustment to the installed variable resistor on etch side of PCB will 'pad' the unit, preventing overmodulation when using amplified microphone.

A Bandit antenna will tune over the entire range if used in mobile configuration. Do not exceed 1.5 SWR if possible.

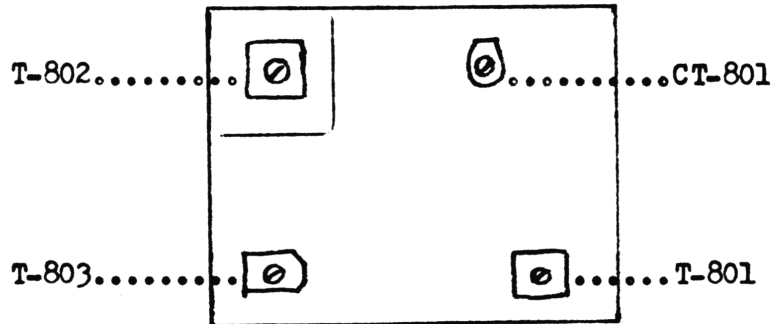
(3) For complete Wild Goose Fo Chart, see Volume 16, pg. 16.

Red Code - Selector Pos. 12-22, 24; 26.785-26.915MHz.

Blue Code - Selector Pos. 1-40, ... 26.325-26.765MHz.

The next page starts the actual conversion.....

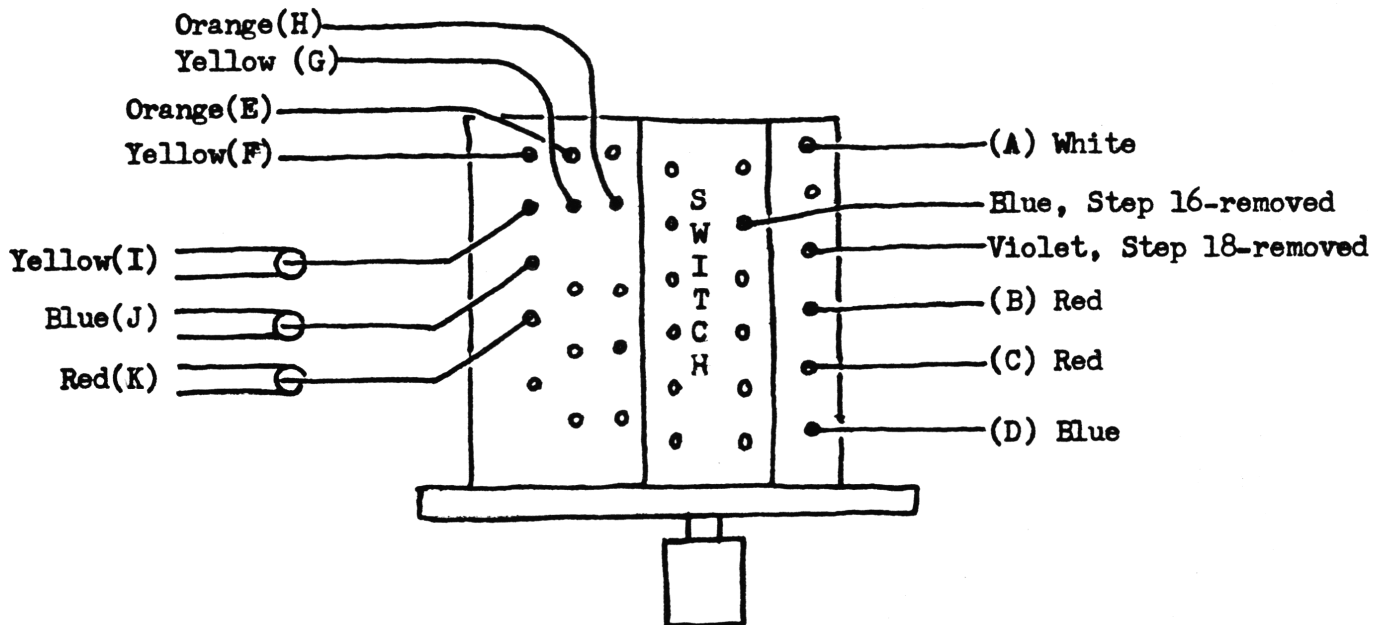
NOTE: DIAGRAM BELOW IS FOR USE WITH SAMS, AS IS NOT IN THEIR PUBLICATION.
PLL CAGE COMPONENT SIDE....



Read thru this and write down all parts you will need to perform the conversion before attempting! DO NOT ATTEMPT TO CONVERT WITHOUT THE FOLLOWING: SAMS #237, Dummy Load, Frequency Counter, and Power/Modulation Meter are the minimum needed.

1. Remove Top, Bottom covers.
2. Check all Power Transistors; make sure they have thin mica insulators; if not-CHANGE.. (Note: some production runs had them.)
3. Use built-in power supply for all of conversion process.
4. Cut all cable ties inside chassis,CAREFULLY.
5. Remove P.A. Switch Assembly from chassis, carefully (2 screws from behind front panel) pull up out of the way. Leave button in out position. Tie out of the way, so not shorting to anything.
6. Remove knob on Delta Tune Switch, carefully remove switch and pull up out of chassis.
7. Cut Blue wire off switch, trace to PCB-remove.
8. Cut Violet wire off switch, trace to PCB-remove (Note location).
9. Cut Red wire off switch; re-route to where Violet wire was removed; cut to length and re-wrap at pin.
10. Remove Front Nut on Headphone Jack carefully as not to scratch case. 'SAVE nut, as will need later.
11. If ground strap for Jack assy will not come loose in the chassis, cut it as not necessary. (Bend it back out of the way)
12. Gently pull jack up out of chassis, cut Black wire off at the board and leave hanging where it won't touch anything!

13. Cut remaining wires off board.
14. Strip $\frac{1}{2}$ " insulation off of Blue and Violet wires, twist together. Turn unit on, check for audio. Turn off...
15. Untwist wires, trace Blue wire to PCB, cut $\frac{1}{4}$ " from where it is wire-wrapped, leave hanging out of bundle.
16. Trace Violet wire to P.A. Push Button Board; on top of switch is a Blue wire-cut off and trace back to PCB (Audio Xfmr); cut Blue wire to same length as the other.
17. Strip $\frac{1}{4}$ " insulation off both Blue wires, splice/solder/sleeve. Turn unit on, check for audio. Turn off...
18. Cut the Violet wire left hanging on the P.A. board. Leave that Black wire hanging, (Step 12)!!
19. Use Diagram below for removing remainder of wires from P.A. Switch. Do exactly as written, do not deter...



A. Cut White wire, trace to PCB-remove.

B & C. Cut both Red wires off.

1. Trace one to PCB, pull out of bundle (Do NOT remove), let hang.
2. Trace other wire back to microphone conn., re-route to where other red wire was wire-wrapped in Step 9. (Standoff next to Q505) SOLDER to standoff.

D. Cut Blue wire off, trace to PCB-remove.(Note location)
Re-route Red wire left out of bundle, route to the right and wire wrap where Blue taken off.

E. Cut Orange wire off, trace to standoff coming out of PLL cage, pull out of bundle, leave hanging.

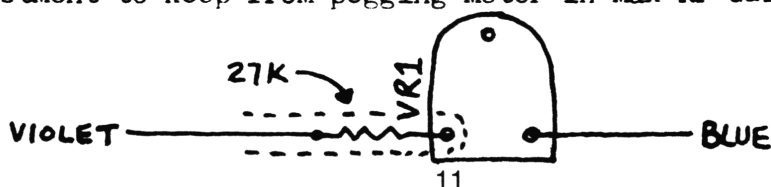
F. Cut Yellow wire off, trace to PCB-remove.(Note location)
Re-route Orange wire to that point and wirewrap.

NOTE: Some production runs have stand-off on right rear side, if Orange wire will not reach, replace with same color wire

- G & H. Cut both Yellow and Orange wires off, trace to Squelch pot.
Cut both wires off, delete.
- I. Cut Yellow Cable off, ground also-trace to ON/OFF-Volume Pot.
Cut off-delete.
- J. Cut Blue Cable off, ground also-trace to PCB, remove completely.
Note location..
- K. UNSOLDER Red Cable carefully, re-route to where Blue cable was.
Solder Ground first to rear standoff SP-, then Solder hot side
to standoff PA3. Note-make sure ground is not shorting anything.
20. Turn unit on, check audio on TX and RX.
21. Remove both PLL covers carefully.
22. Do a complete line-up per SAMS #237..
CAUTION: Slugs are glued in some sections of these units.
Trying to loosen up will only cause you to bust them-good luck!
NOTE: Original Final 2SC1909 is rated at 1.5W/3A, so don't push
it unless you want to replace it. If you want to replace use a
2SC1306. Also you might want to replace the Power Supply Filter
Capacitor with a 5,000mfd/50VDC, it is not necessary.
23. Double check the modulation using an unamplified microphone,
(This unit had a maximum adjustment of 70%, had to remove C-511
a 3.3mfd/50VDC electrolytic) If you do remove capacitor will
now overmodulate with an amplified microphone if used.
24. If an amplified microphone is going to be used-remove R-709 (1.5K).
Replace with a 50K Variable resistor (2 legged type). Solder on
etch side of PCB where you removed R-709. Bend over so it clears the
bottom cover. This is now your mike gain control...
25. Carefully remove VR-1 so as not to mess up the resistance setting.
Measure resistance at points shown below, legs down on VR-1.
Note: In this unit measured 62K, have found most to read within 13K.



26. Obtain a 50K pot for new RF Gain Control in Delta Tune position.
Make sure it is a miniature pot, and Delta Tune Knob fits, also the
shaft length might have to be cut.
27. Use a Violet and Blue wires that have been discarded (there are 2
approx. 11" long-perfect fit).
A. Solder Violet wire to center leg of pot, sleeve.
B. Solder Blue wire to left leg, sleeve (View from shaft end)
C. Double check for ohms decrease in C.W. movement.
D. Install in chassis, tighten down nut, turn pot fully C.C.W.,
put on knob.
28. Solder a 27K $\frac{1}{4}$ W 5% in following diagram, solder Violet wire to resistor.
Solder Blue wire in place also. (Sleeve resistor/wire solder joint)
All to be done on component side. Will have to back off on RF Mtr a
adjustment to keep from pegging meter in max RF Gain when checking out.



29. Obtain a 50Mfd/50V NON-POLARIZED electrolytic, sleeve both ends. Solder one end to where Blue wire is on the speaker, solder other end to Black wire (left hanging since Step 18). Turn unit on, check for audio quality. If too muffled decrease capacitance of capacitor, NOT Voltage!

*** AT THIS TIME GO BACK AND REALIGN ALL RECEIVE CIRCUITS AT 26.965MHz (CH. 1). *** DO NOT MAKE ANY ADJUSTMENTS IN THE PLL CIRCUITRY!!!

30. Completely clean the P.A. Push Button Switch Assy./Holes and pins, double check for no shorts!

31. Obtain from Radio Shack the following:

Enclosed $\frac{1}{4}$ " Stereo Phone Jack-P/N 274-277 (1)

2-Conductor $\frac{1}{4}$ " Phone Plug-P/N 274-1544 (1)

4-Conductor Ribbon Wire-P/N 278-757

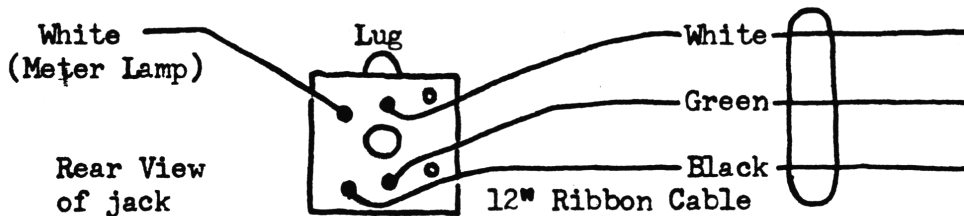
Note: Ribbon Wire, check to see the colors are Red/Black/Green/White. If not the reference to color wires will not correspond in following steps.

32. Retrieve nut from Step 10, check for fit to new Stereo jack.

33. Trace White wire from meter lamp to PCB. Unsolder carefully, (Note-two White wires in hole), clean out hole. Pull meter lamp wire up out of the way. There is a long piece of White wire deleted earlier, solder both it and other White wire back into the hole in PCB. You should have two pieces of wire hanging out now. (one to meter lamp, other long piece from PCB.)

34. Cut off 12" of ribbon cable, carefully peel the Red off.

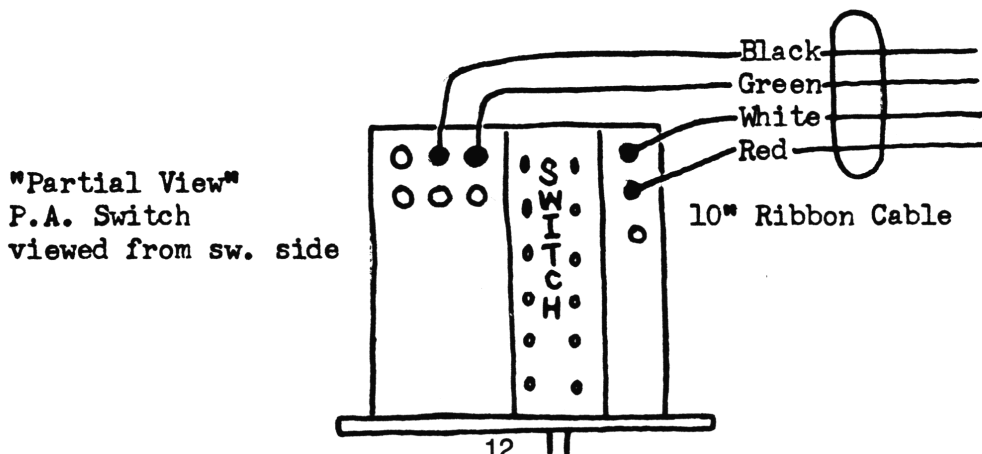
35. Wire up the Stereo jack using diagram below, solder lamp lead last.



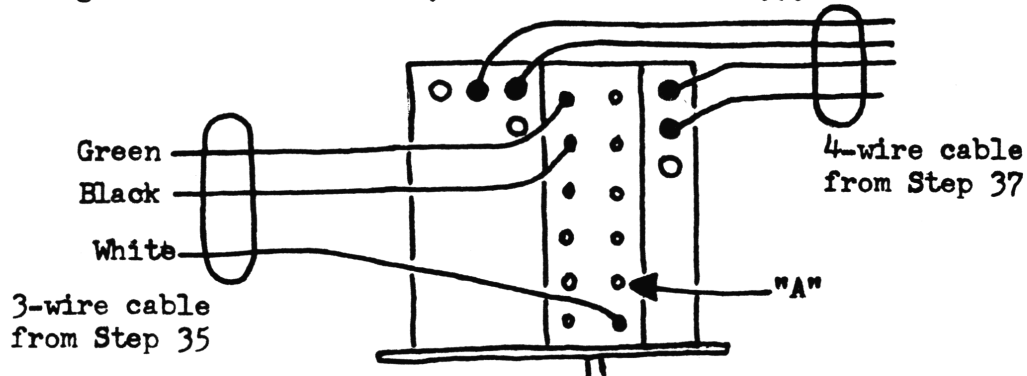
Check continuity on wire ends-Whites normally closed-open when plug in. Green and Black normally open-closed when plug in.

36. Install jack in Headphone hole, Carefully tighten down.

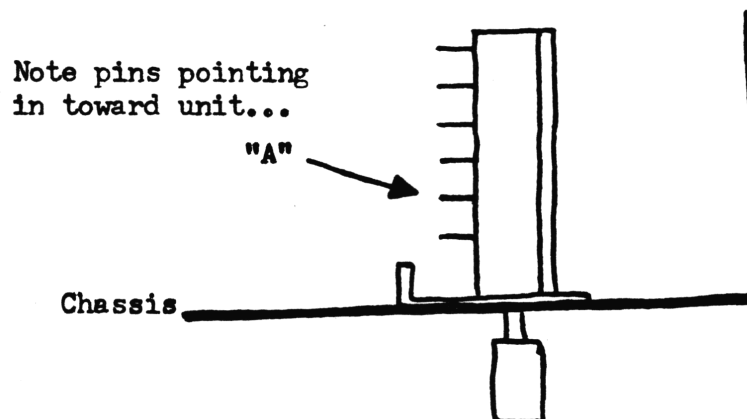
37. Wire the P.A. Switch Assy with 10" of ribbon cable per diagram below:



38. Wire cable coming from the Headphone jack to the P.A. Switch Assy. per diagram below...Note "A", next to white wire...



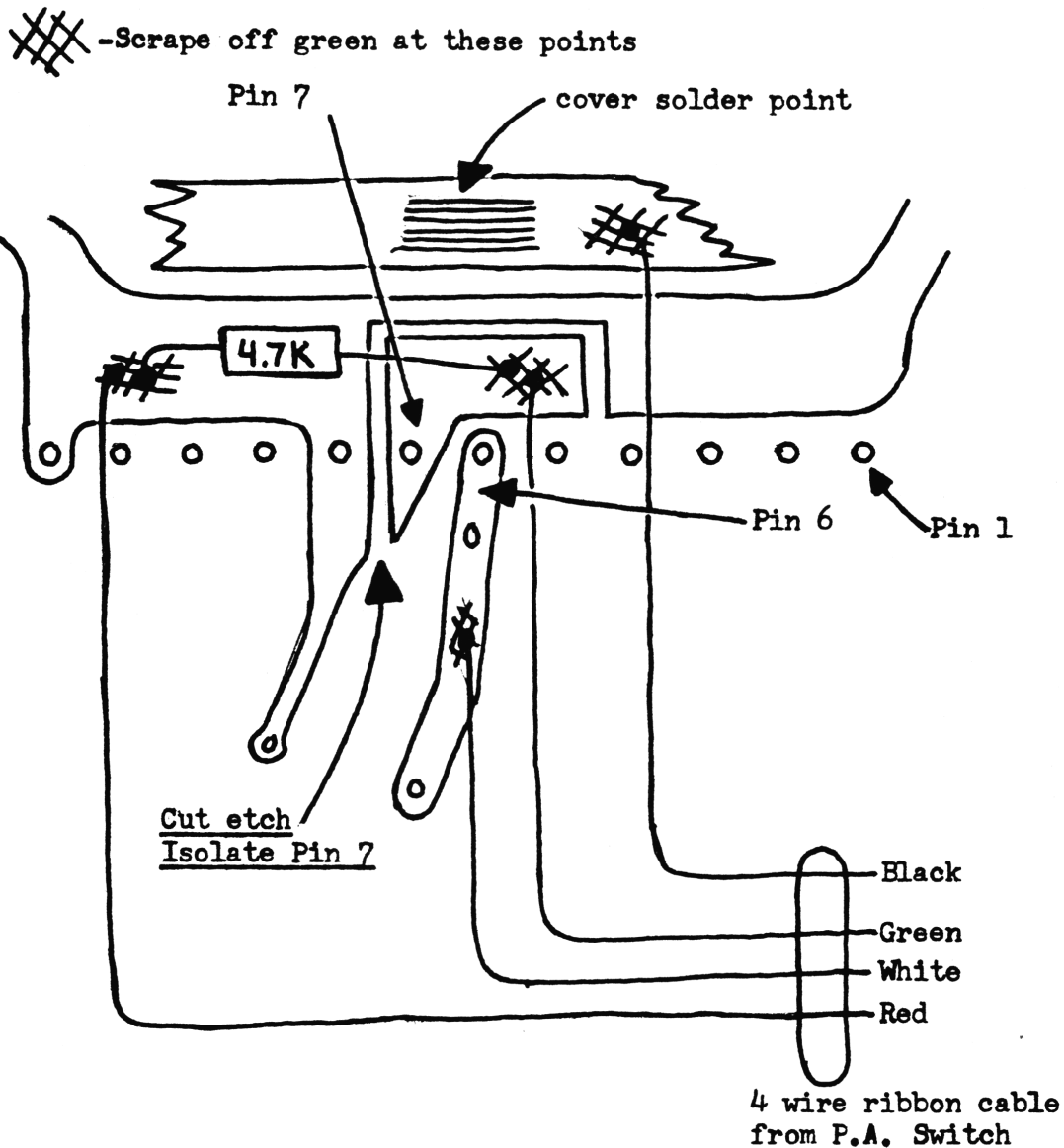
39. Install switch back into chassis exactly as shown, don't overtighten as will strip plastic!...Note "A", next to White Wire...



40. Route the long White wire soldered to board in Step 33 to P.A. Sw. - cut to length, sleeve/solder to "A" (See diagrams above)
41. Turn unit on. Push PA button in-light on meter should go out. Insert plug into Headphone jack, light should still be out. Push PA Button out-light still out; pull plug-light on..
42. Do following exactly as written - Don't deter or might possibly damage PLL Chip in further steps...
- A. Pull plug on unit..
 - B. Turn unit ON (This will bleed off all voltage)
43. Caution: Use battery operated Soldering Iron or Isolated Tip Iron when working on the PLL Chip.
44. Carefully unsolder the small metal top inside the etch side of the PLL cage - Clean up all excess solder and check for shorts.
45. Route the 4 wire ribbon cable down to the underside of the chassis to the PLL cage, leave some slack for tying up cable later.

Use diagram on next page and follow directions to the letter!

45. Diagram:



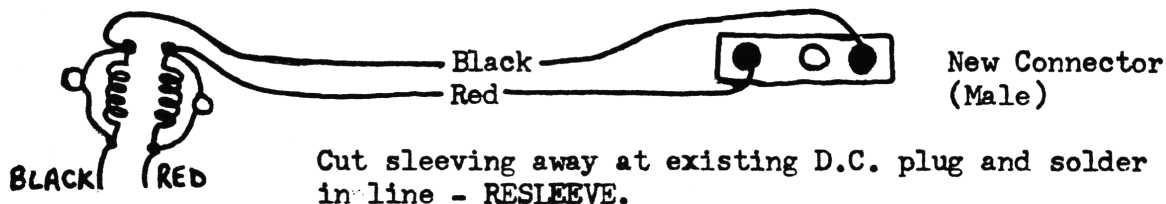
- A. Scrape off insulation at places marked with XXX.
- B. Completely isolate Pin 7 from Pin 8, make cut as shown.
- C. Bridge cut with 4.7K $\frac{1}{2}$ W as shown, bend leads so resistor is flat on board.
- D. Cut to length and solder wires of cable exactly where shown. Leave some slack for routing above and thru slot in side of case.
- E. Double check for shorts, and etch slivers.
- F. Check for Insulation on small cover, if none use elec. tape on bottom. Then solder back in place carefully.
- G. Lay all wires down and put bottom cover back on the etch side PLL case.

46. Turn unit on and using Frequency Range Selectors and Chart, check for Freq. spread.

- A. Using L-901, 902, 903, 904 ONLY, see how far it will go; with at least 2W output. (Note: This unit had L-905 and L-907 heavily glued, every unit I have seen has been the same) DO NOT ADJUST L-910.....
- B. If you can't get full range, adjust T-802 and T-803; SLIGHTLY; and try again. Using above again.
- C. If you still can't get all the frequencies up. Remove C-906, (Sams says 13pf, found 15pf)
- D. NOTE: If you haven't done so yet-adjust CT-801 for exact center frequency.
- E. Using the 6 coils in A & B steps should be able to get it up with out too much trouble, be patient. (Note: took me 20 min.)
- F. Try to get a Freq/Pwr spread of at least following:
NOTE: THIS UNIT ONLY HAD 3.5W TO START WITH.....
26.325--3.1W, 27.405---2W+; If you get this should be O.K. as the spread was 26.325--3.1W, 26.805--3.4W, 27.405--2W+.
- G. Now go to 27.405 and peak L-910, this will pull up higher end of the band about .6W
- H. Put cover back on PLL case and recheck.
- I. Note: in case you tried busting loose L-905 and L-907. They are are about \$2.00, special order from Radio Shack. And only made a difference of .2W increase in output power. The Final was not changed in this unit-IF YOU CHANGE-do it before you start the initial lineup.

47. Tie up all cables CAREFULLY..

48. If you want to use a 3 pin D.C. connector (Radio Shack too flimsy, and won't stay in place). Turn unit upside down and drill/cut so metal won't get into the circuitry. See Diagram below



49. If you want to get more noise out of the unit - obtain a .003mfd/50V disc. capac. and solder carefully across pins 4 and 6 of IR-501. Some units might require more or less. (This unit - .0047mfd.) bend capacitor over so cover will not touch it.

50. Put covers on, ENJOY.....