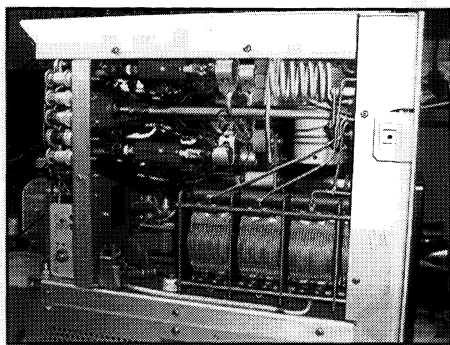


Collins 30L-1 Amplifier Band Switch Removal

by Bill Schaal K2YGF, photos by Kevin Shannon WA2ISC



30L-1 Amplifier - Figure 1

Amateur radio equipment, like any other electronic equipment, needs occasional repair. Even the vaunted Collins equipment is not exempt from the immutable laws of physics. When this eventuality does occur, it often involves partial disassembly of the equipment. Owing to the myriad mechanical wizardry of Arthur Collins' engineers, it is helpful to have advice and moral support from one who has previously done the same repair. Experience is the best teacher, and disassembly of Collins equipment often leads to the necessity to get it partially apart before understanding how the next section is to be removed.

I recently have been having problems with low and unstable output from my 30L-1. After searching the schematic for possible trouble spots, I came to suspect a problem in one section of the multi-section band switch. Figure 1 shows the 30L-1 with the covers off. Getting that band switch out is no intuitive task!

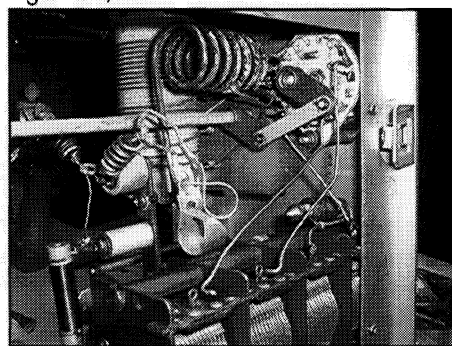
First, remove all cables and power from the unit. Also, remove the amplifier from its cabinet (four feet and one positioning screw on the bottom, and two panel screws on the top front). Remove the top cover over the finals, and the

bottom cover. Then remove the back cover.

After removing both top and bottom covers, remove the 811As and carefully set aside.

Set the band switch at 80 meters, and index the wafer position for re-assembly. Also, place both the tuning and loading capacitors to fully meshed. This will help prevent any bending of the rotor plates during subsequent operations. A piece of masking tape across the plates will further prevent damage.

Next, remove the loading capacitor connections to the switch, as shown in figure 2. Be very careful in removing these connections. The wires are quite stiff, and you don't want to risk damaging or breaking the capacitor's lugs. Also, watch out for the choke across the



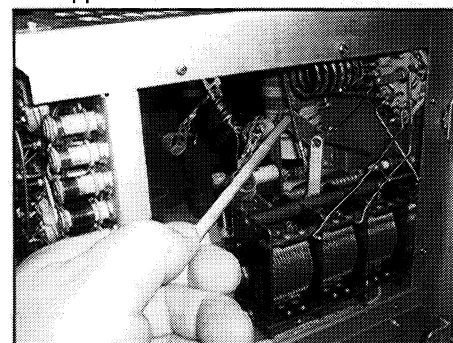
30L-1 Amplifier - Figure 2

first two sections of the loading capacitor.

Remove the screw that holds the coil to the coupling capacitor. Then remove the screws holding the switch linkage. These are, in typical Collins fashion, Bristol screws, and they are set with Glyptol. It will take some effort to break them loose. Be careful here, or you could strip out the screw heads. Bristol set screws are not that easy to come by, unless your junk box is bigger than mine. We lucked out, as one of

these screws was not tightened (I assume from the factory) so our task was lessened. See figure 3 for locations.

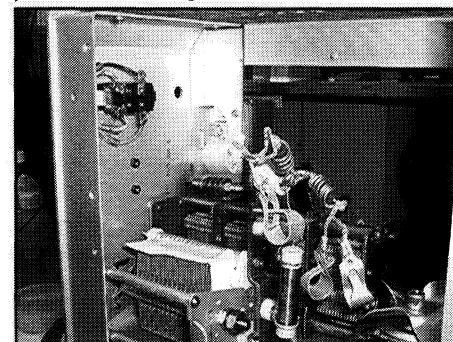
Once these screws are removed, put them in a little lacquer thinner to dissolve the Glyptol. You will find several locations where this fine GE glue product was used. While great stuff, it does make it difficult to remove these screws. I used a tap (4-40) to clean any Glyptol from the tapped holes.



30L-1 Amplifier - Figure 4

Remove the band switch knob, and the associated panel fixing nut. Then remove the two screws holding the entire switch assembly to the chassis. Finally, loosen the two Bristol set screws at the back switch section coupling, slide it back, and remove the coupling shaft, as shown in figure 4. This is the time that you should verify that the switch sections on the rear wafer are indexed! The switch linkage is a part of this assembly, so just thread it through the remaining components and remove.

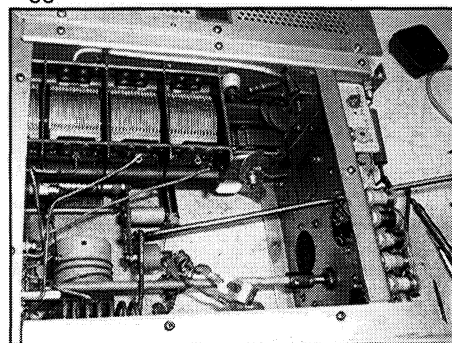
Carefully remove the entire assembly, which consists of all but the rear switch wafers, plus the two tuning coils. As a bonus, this then



30L-1 Amplifier - Figure 5

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30L-1 Amplifier - Figure 3

Collins 30L-1 Amplifier Band Switch Removal

by Bill Schaal K2YGF, Photos Kevin Shannon WA2ISC

(continued from page 1)

opens up access to another problem component, the main power switch. See figure 5.

Clean the switch contacts, as well as the coils. After 30 years, quite a bit of dirt will have built up. Since these components are all silver plated, I used Tarnex silver cleaner with great success. Wash the Tarnex off with water, as it is an etchant. Finish off the cleaning with a burnishing tool (not a file!). Before and after are shown in figure 6.

Lubricate all bushings I used DE-OX-ID, another great product! Then re-install the switch/coil assembly into place, and loosely install the two bracket mounting screws. Also loosely replace the front panel switch bushing and nut. Align the front and rear switch sections (you did index them, right?) and install the coupling shaft and tighten the set screws. Also, re-tighten the switch linkage coupling hardware.

Re-solder the connections to the loading capacitor, and re-bolt the coil to the RF bus. Install the final tubes and replace the plate caps. Replace back, top, and bottom covers. Finally, re-install the unit into the cabinet, reconnect cabling and fire it up!

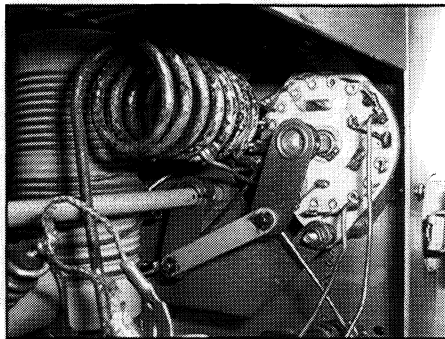


Figure 6 - Before 1

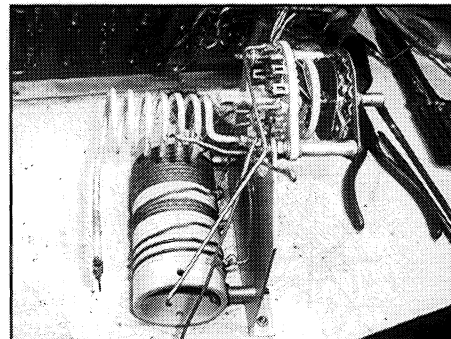


Figure 6 - After 1

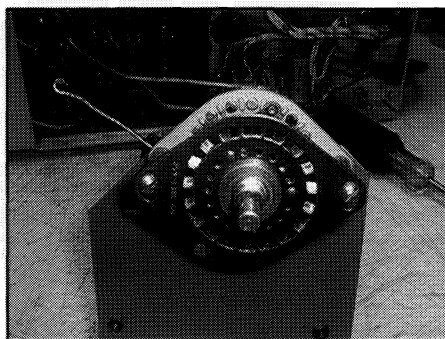


Figure 6 - Before 2

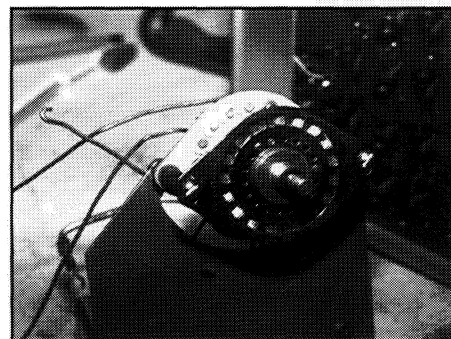


Figure 6 - After 2

Nothing Ventured Nothing Gained!

by Paul Mitchell N8QZ
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Within the past two years, I have fulfilled a boyhood dream of becoming the owner of a Collins S-line. As a novice (circa 1959), sitting in a friend's shack on Cape Cod, I can remember listening to SSB on 20 M from Saudi Arabia, India and South Africa! The mental images drove me to upgrade to General and now again to Extra Class.

Now that I've got your attention, what does a proud Collins owner/collector do about minor wear and scratches on the front panel. I checked the CCA home page for expertise and decided I needed to explore a front panel refinishing project for my 73S-3C. I had significant paint wear from 6 o'clock to 9 o'clock adjacent to the main tuning dial. There were also some other minor blemishes near the preselector tuning.

By e-mail, I contacted the vendors listed on the refinishing heading and John Bess WA5VVT replied that I could take care of the problem myself . . . just apply some of the (COL)PAINT-180 available from Surplus Sales of Nebraska <http://www.surplussales.com> with a Q-tip type swab. Not too heavy - just roll it on over the existing crinkle finish. Sounded too easy AND did I have the courage to smear

paint on my dream rig! I e-mailed John that I would try it over the next week end.

I have been involved in the specialty chemical coating industry for over thirty years and knew that preparation was the key ingredient in a successful application. If you have a similar situation, I recommend the following steps.

1. Use a very soft bristle toothbrush with a water / ivory soap solution. Go light on the soap so that you can rinse off the solution without additional contamination. Lightly scrub the area to be painted. I'd also suggest that you stand the unit on end so that the area to be painted is on a level plane.

2. Rinse the area with clear, warm water by blotting it with an absorbent paper towel. Rinse again. Rinse for the third time.

3. Follow the directions on the aerosol can. Be sure that the paint is at room temperature and continue to shake for at least two minutes after the ball bearing can be heard.

4. Carefully spray a small amount of paint into a small container lined with aluminum foil.

5. Mix the paint again with a cotton swab to insure that the pigment and solvent are fully blended.

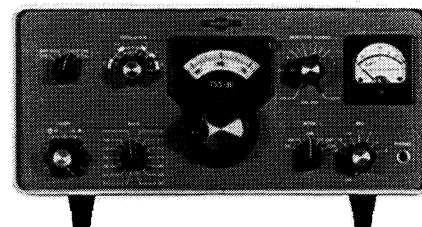
6. Take a small amount of paint on to the swab (DO NOT SATURATE!) and carefully roll it on to the area to be touched-up. Apply the paint very gingerly without creating puddles.

7. If a second coat is needed, allow the paint to air dry for at least an hour before applying.

8. Admire the work and restoration you have just accomplished!

THIS PROCESS MAY NOT BE SUCCESSFUL ON TOBACCO SMOKE CONTAMINATED SURFACES WHICH MAY REQUIRE A MORE EXTENSIVE CLEANING PROCESS.

The most important ingredient in this project was to muster up the courage to apply the paint in the first place. Get over it! My 73S-3C front panel looks like it just came from Cedar Rapids and my thanks goes to John Bess for the encouragement he gave me and to Nebraska Surplus for providing the matching paint.



Please Note: Some of the techniques and technical information discussed in the Signal are controversial and we invite you to share your knowledge and experience with us. Please send your letters and comments to the Editor.