Restoration of a Central Electronics 600L Amplifier

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One of the neatest amplifiers ever built was the Central Electronics (CE) 600L. Its claim to fame was, like the "matching" CE 100V and 200V transmitters, that is was broad-banded – no tuning necessary. Just select the band and you're ready to go. No big deal today but this amplifier was made in the late 50's! The amplifier utilizes a single 813 positioned horizontally. As you might expect it is a very heavy boat anchor.

These amplifiers are hard to find – not many were made. I was lucky to find one and even luckier to talk my good friend, W7AL, into driving 2000+ miles to pick it up and deliver it to me at Dayton. The amplifier looked okay but as is always the case with this old stuff, a close inspection revealed some problems – the cabinet had been repainted the incorrect color, the entire unit was filthy, some of the silk screening was worn off, and most distressing of all, circuit changes had been made and it looked as if a few items were missing!

The article will chronicle the restora-

This oblique view of my completed 600L amplifier shows how nice the refinished cabinet came out, and the polished front panel.

tion of this amplifier and lay out some of my favorite techniques.

Since I noted early on that some changes had been made to the amplifier I decided not to power it up prior to restoration. The last thing I wanted to see was fireworks! I was lucky enough to get a manual with the amplifier. I made a "bench" copy to work with so that the original would not be damaged.

My first step was to disassemble the amplifier as much as practical in order to clean and inspect.

HINT #1: Use a digital camera to take close-up photos of everything prior to any disassembly. Contrary to what you might think you WILL forget what goes where!

The unit was removed from its cabinet (which was set aside for later painting). Knobs and tubes were removed, followed by the front panel, meter, the large oil filter capacitor, both toggle switches (that had been replaced with improper styles), fans. The amplifier is fairly "open" so at this point I could pretty much see everything. Next step was cleaning.

HINT #2: I cleaned just about everything with a 50-50 mixture of 409 and household ammonia and/or alcohol.

At this point I did resistance checks on the transformers. If one was bad, I wanted to know early so that it could be rewound or replaced. If you have a megger or hipot tester use it on the transformers to confirm there are no insulation problems.

After removing the front panel it was carefully cleaned so as not to disturb any of the silk screening. Some of the bandswitch markings had been rubbed off by the knob rubbing against the panel. These were repaired with dry transfers and burnished into place. The panel was then given a light coat of furniture oil which gives it a "new" look.

The large multimeter and knobs were cleaned and polished using a light polishing compound and set aside for later assembly. They now looked like new.

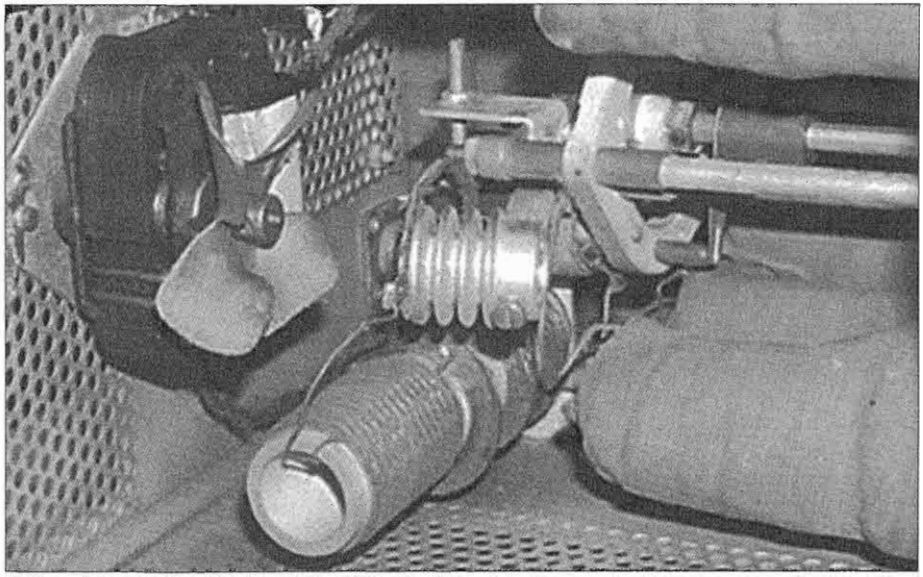
The chassis was cleaned using rags and cotton swabs (get the ones with the 6" wooden extension). This is a time-consuming but very rewarding process. Be prepared to spend hours. Clean everything! Metal, components, wire harnesses, sockets, connectors.

HINT #3: If you have an air compressor, use it. I set mine at about 60 pounds pressure and prior to cleaning. Carefully blow loose dirt and dust from everything.

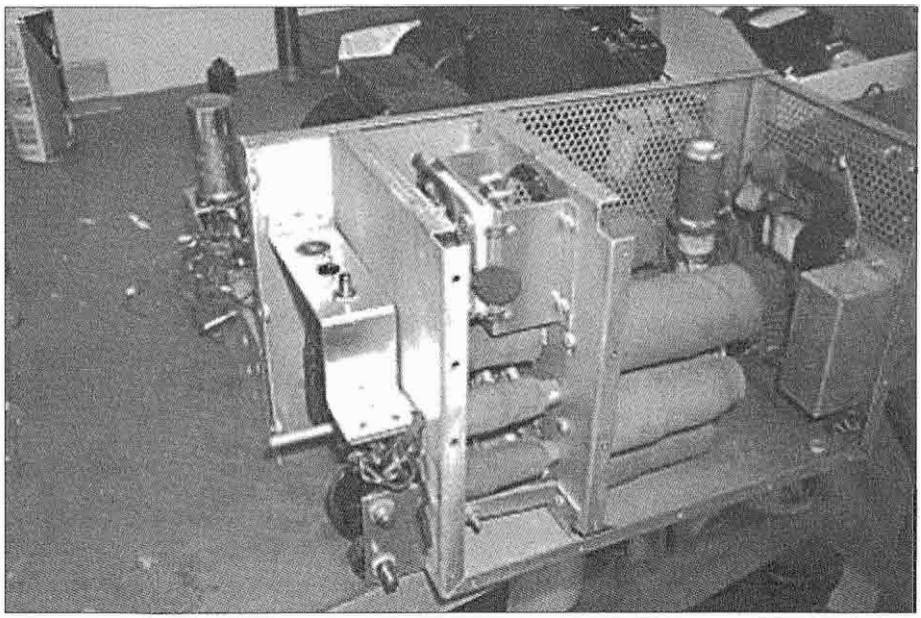
After everything is cleaned up it was time to start looking at the circuitry and components themselves.

Relay contacts were burnished, switches were cleaned with DeOxit.

I found, to my dismay, that someone had removed all the circuitry associated with the "high SWR" protection including a hard to find telephone-type

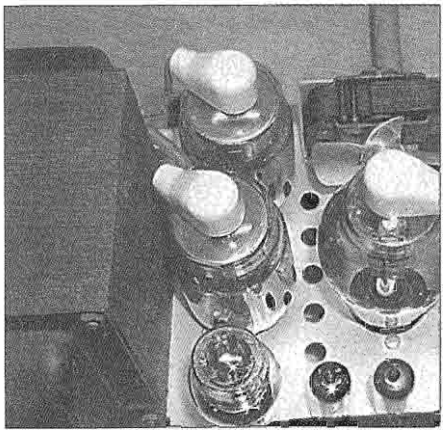


The photo above is how the PA compartment looked before restoration was started. Compare with the photo below to see how nice the metalwork and components came out after the cleanup was done.



relay. Fortunately for me Tusa Consulting had a replacement (Thanks, Nick!). Following the schematic, this circuitry was restored to original along with a few other "changes" that – for some unknown reason – had been made along the way.

A couple of selenium rectifiers are used – these were replaced with 1N4005's (and the original selenium



The restored power supply area looks like new!

unit kept place to make it "look right." (not that anyone would ever see it).

The bias supply uses a couple of small electrolytics – these were also replaced.

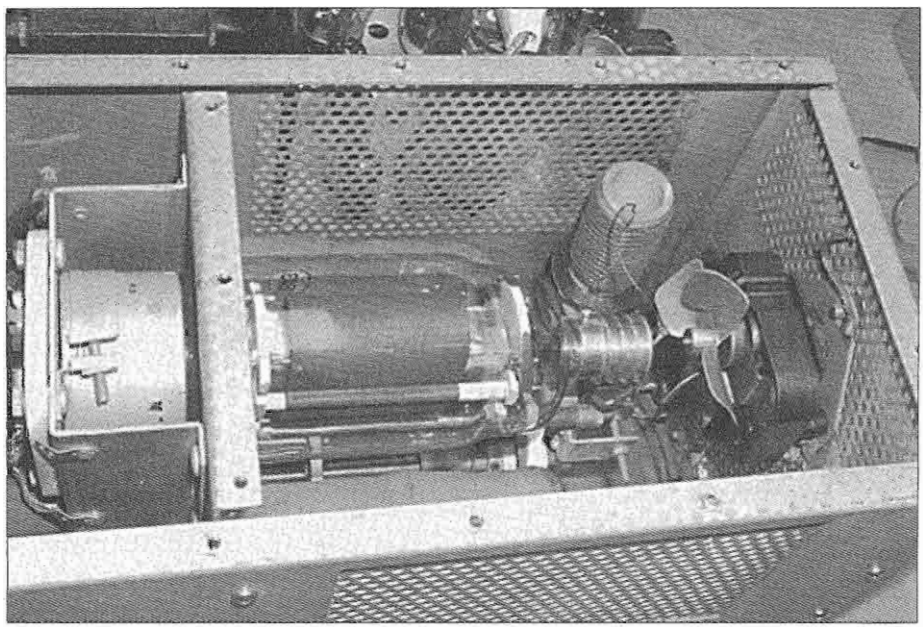
Finally, a new line cord was installed replacing the original with no guard ground.

I carefully checked ALL wiring against the schematic and made corrections as necessary. It was not clear to me why some of the changes were made but I assumed "original" was best.

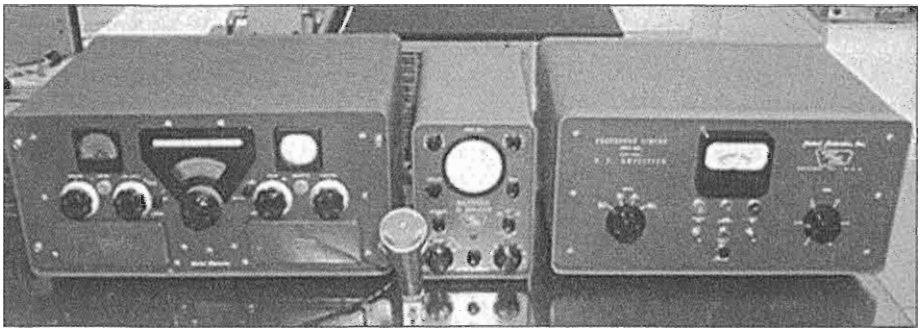
I did some testing before reassembling the panel and side plates since these cover up a lot of wiring access. After carefully dressing loose leads out of the way and performing a few resistance checks to ensure no surprises, I applied power but without any tubes in place. No fireworks – so far, so good. I then installed the voltage regulator tubes and HV rectifiers (but no 813 just yet). HV and bias voltages were checked okay. The trip circuitry for high SWR was also checked.

At this point reassembly was completed. Side panels, front panel, knobs, meter, etc. Reassembly was easy thanks to the photos I took during disassembly. Lastly, the 813 was installed.

Time to see if the 600L would make RF. I used an FT-1000MP as an exciter and carefully applied drive on each



A shiny 813 is reinstalled in the PA cage, and waits for its voltages to be applied.



This is how my restored Central Electronics station looks. Left to right, 200V transmitter, MM1 station monitor, and the 600L linear. An Electro-Voice 667 microphone completes the station. View below is underneath the chassis.

band. Everything worked perfectly – a few hundred watts on all bands 160 through 10. This was a very satisfying moment.

During the restoration process I had the cabinet sent out to be blasted and repainted. Boy, did it look good – the original CE grey paint and texture is easy to match. Many custom auto-body shops can help you out with this.

The 600L now sits beside by my restored Central Electronics 200V – they make a good looking pair. Operating them is enhanced by the fact that I lovingly "brought them back to life" myself.

I strongly recommend you think about restoring something yourself. The process is very enjoyable. Obviously the more tools and equipment at your disposal the easier and more complete the process can be but even with basic tools you can do a fairly good job. Pick something that is consistent with your own abilities.

73, Bob, WØYVA **ER**