

Results of Testing STARC Collins 30S-1 Linear, SN 10601

First, the unit exterior was cleaned with 409 cleaner (it was very dirty), vacuumed inside and out and then waxed the cabinet. The unit cosmetically is in very good shape, probably a 9.5 out of 10, with only a couple of smudges on the front panel where the most used switches are. There are no dings, only a slight rub on the left and top sides on the edge of the cabinet

After examining the unit physically, I opted to change two electrolytic capacitors, one 150 uf and one 40 uf in the soft start circuit. These were oozing wax and I changed them for new 450 vdc electrolytic types

The unit is missing a tube in the ALC circuit, a 12AL5 dual diode that rectifies the ALC signal from the driver. I did not have one to replace it. However, Collins changed the ALC circuit to use diodes instead of a tube. This unit is an early one, which has not had this mod, installed. It is a fairly simple mod, but I did not install it because the unit can be tested without ALC. Whoever buys the unit can either do nothing, buy a 12AL5 or install the diode mod, which is better circuit wise and a lot cheaper, but more work. I left it as is also because some "purists" want the units 100% original.

I put a heat lamp inside the cabinet, near the power transformer, and left it for two weeks to dry out any moisture that may have formed in the unit from having set up for so long.

I removed the 4CX1000A final tube and inspected it and then reinstalled it.

I set up to test using my Kenwood TS440S transceiver with an Astron 20A power supply. I made a connecting cable to key the linear from the Kenwood AUX socket, with an intermediate 12vdc relay to isolate the linear from the Kenwood internal relay, in case there was a higher voltage than the Kenwood could handle. I used an interconnecting coax with a PL-259 connector on one end and a phone plug on the other which plugged into the linear driver input. Collins recommends a 20.5 ft interconnecting coax when operating with a KWM-2 and I suppose also the 32-S1. This is for "optimum" performance, but I didn't think it made much difference just for testing. I connected the Antenna Out to a 1000 watt dummy load with an SWR meter in the line. The linear has an "N" coax connector on the output so I had to make a coax adaptor for the PL-259 type connectors on SWR meter and dummy load.

I rewired the unit to 115 vac temporarily as I didn't have 220 vac available in the garage. I lubricated the blower motor. The blower on this model has oil holes. Newer unit blowers use lubrication-free bearings.

I then proceeded to the "smoke test". Fortunately it did not smoke!! First I turned on the power switch that energizes the filaments to the final tube and also energizes the soft start circuit. I adjusted the filament voltage to exactly 6 vac as outlined in the manual (both with front panel meter and also a digital VOM. I then left it for 3-4 hours before applying high voltage. .

I placed the unit in the 40 meter position, with voltage selected for CW, and the meter in the plate voltage position then applied voltage by pressing the HV pushbutton. The red ON light came on and the meter indicated about 1800 VDC. The voltage is a little bit low, but I attribute this to the 115 vac hookup. At this time there was no plate idling current. I finally figured out that to get idling current, you had to key the linear w/o any load. So I keyed the linear with the Kenwood, got idling current and adjusted the bias voltage until I got 200 ma idling current. This is done with a small pot on the inside of the lower cabinet and you have to shut down the HV each time you adjust it, as the cabinet door has an interlock. . I had to make about four adjustments to get it right, no big deal. I was then ready to load the linear.

I loaded and adjusted the linear on 40 meters to about 400 ma (CW) into the dummy load. This required little drive from the Kenwood. Adjusting consisted of putting the meter to "Loading and Tuning" and dipping the plate, then adjusting the load control to zero. Pretty simple. I modulated the unit (SSB) with the Kenwood and it responded well, with no grid current indication on peaks. On SSB the HV is about 2500 vdc. I then connected the linear to my 80/40/20 trap dipole and tried it on it on the air. I contacted the 7290 net control on 40 meters, but conditions were very lousy (about 1:30 PM). They could copy me but I could barely hear them, so I did not get a good report. However, as far as I am concerned the unit is in fine shape.

I downloaded the complete manual (40-50 pages) from the Collins Collector's reflector and can put it on a CD for whomever buys the unit.

As far as I am concerned, we can put the unit up for sale.

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