Central Electronics 100V Engineering Prototype

The Most Technically Advanced HF-SSB Transmitter of the Amateur Radio Golden Age

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How it All Started

Central Electronics grew out of the basement of Wes Schum's home on Giddings Street- Chicago in 1948. Initially, the company's work supported the J. L. Warren Company, a firm who manufactured audio equipment for the profoundly deaf.

Central's first product, the Model 10A, was released in 1952. But others soon followed.

By the end of 1954, the Model 20A was released and shortly after in mid-1955 the design for the revolutionary 600L Broadband Amplifier and its companion transmitter/exciter was underway.

How it All Started

CE's Broadband Technology was the result of a chance meeting with a bright, but eccentric, young engineer-Ham who hailed from rural Georgia.

Joe saw Wes and Central as the young but aggressive company that had the needed manufacturing connections in Chicago to make his wild ideas of no-tune PA networks and self-compensating VFOs a Reality in advanced communications equipment.

Work began in earnest after the 20A was released in 1954, with the 600L yielding to market first as an amplifier is far simpler to construct than a full transmitter. Plus, those 10/20As needed a pair of "shoes"!

And Now – The 100V Prototype

In 1985, I found the one-and-only prototype languishing in a dilapidated school house in very rural Jersey, Georgia – along with its co-inventor, Joe Batchelor.

Joe had always planned to restore his prized achievement once he hit it big again with his research technology called: "No-Sideband". But, that didn't happen.

K5EF became the custodian of this important artifact in 1991. It has not been restored, but simply stabilized so further deterioration would not occur.

100V Prototype – Circa 1956

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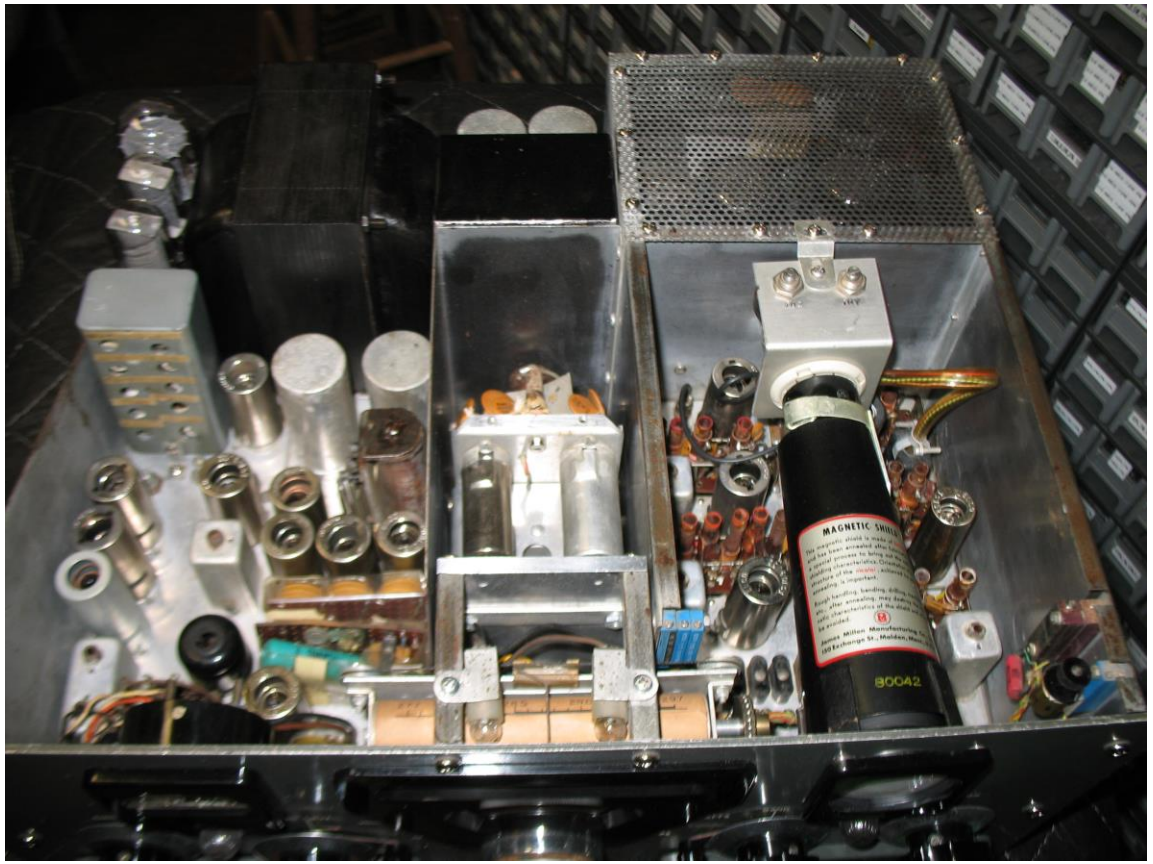
At first glance, this radio looks like any other Central Electronics 100V doesn't it??

Look more closely….it is smaller than a production 100V! Notice there are no mounting screws for rack use as the 100V was to be a direct companion to the 600L. That means same size cabinet and back-flow cooling for the PA compartment.

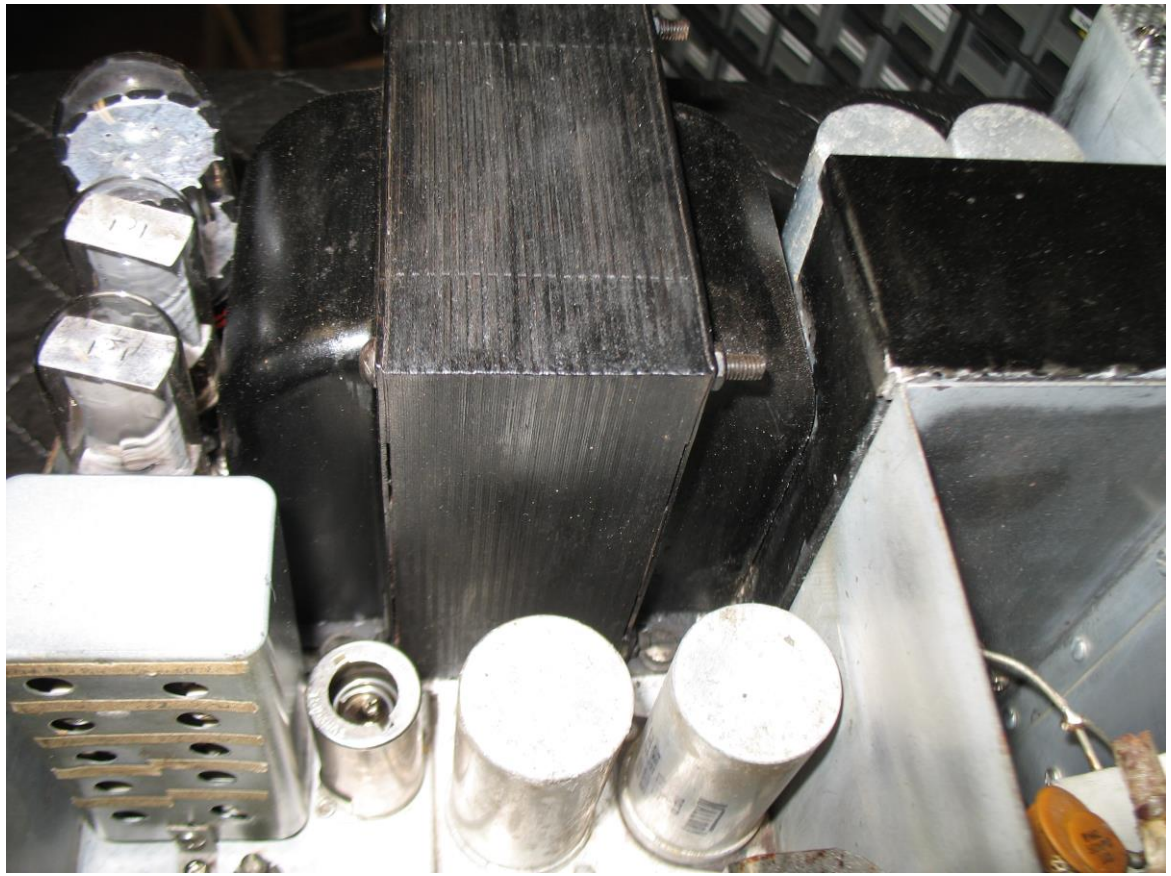
Other neat items? A hand-lettered meter face and hand-made hinges for the door compartments.

100V Prototype – Circa 1956



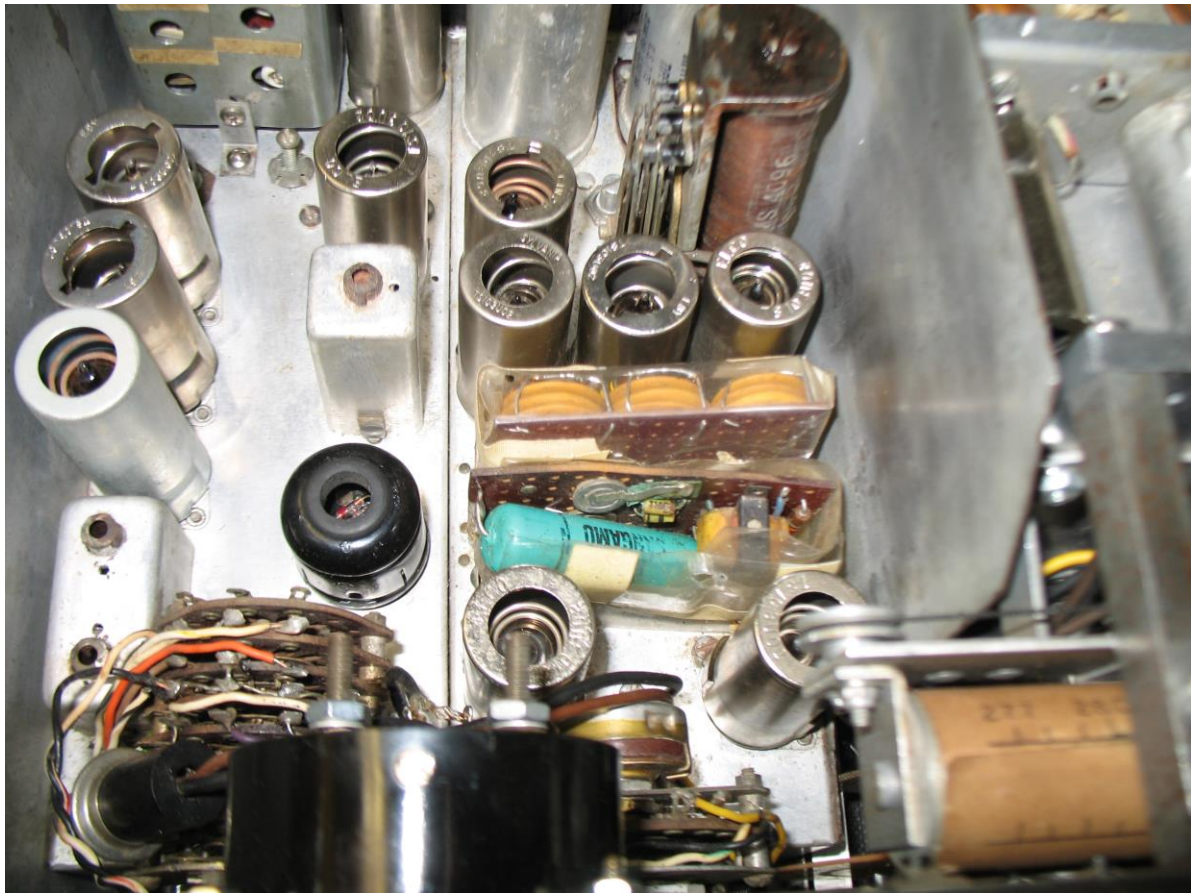
- Differing Power Supply with only HV choke. Rectifiers on far left edge.
- AF Limiter and Filter are build-on and not plug-ins.
- Bifilar Balanced Modulator plug-in but no Mod Caps..it is under the chassis.
- Note all the trim pots…used to optimize mixer stages.

100V Prototype – Circa 1956



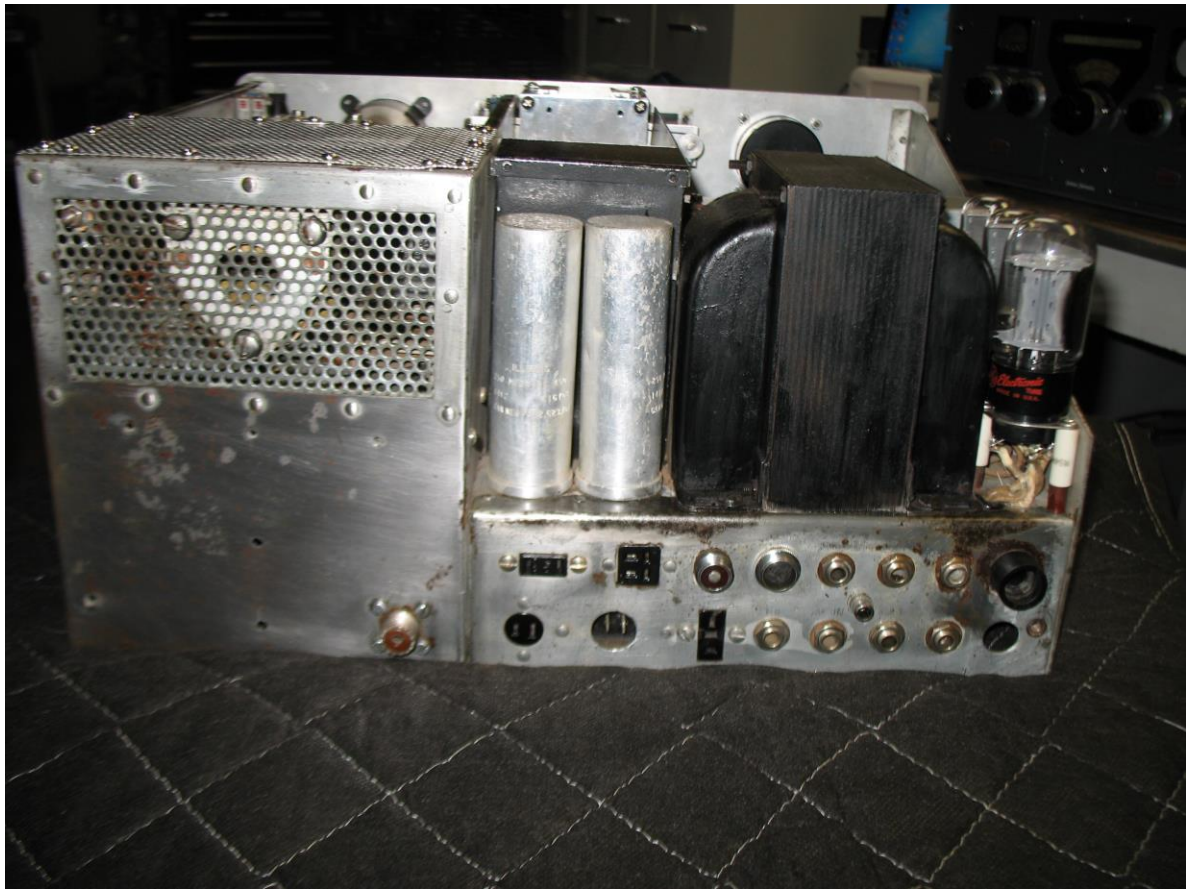
- Observe the location of the rectifiers versus filter caps.
- No cooling fan in this area.
- PS-2 has trimmer capacitors whereas production PS-2 used fixed-value components that were hand selected for tight tolerance.

100V Prototype – Circa 1956



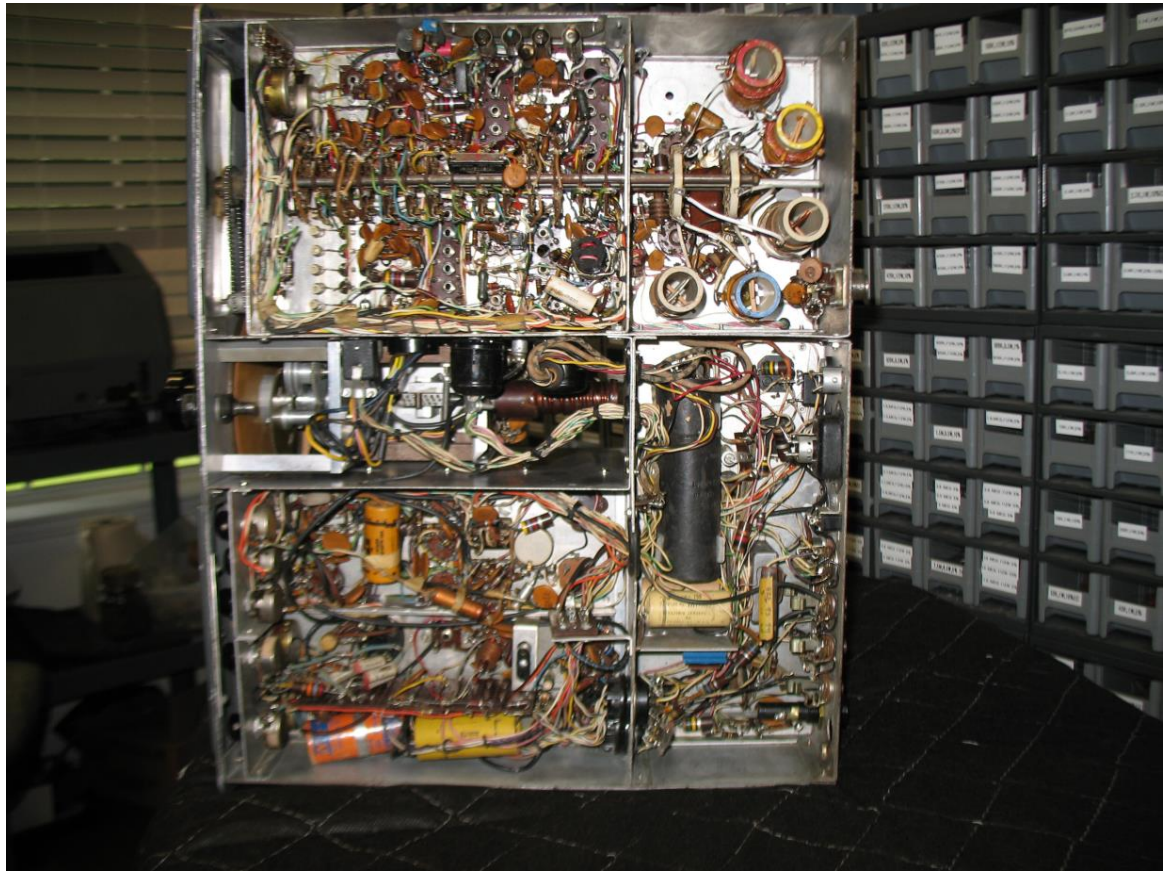
- Covers removed from AF Filter and Limiter Modules…not leaky mercury batteries…
- AF Limiter used tube diodes. Solid-state germanium diodes added in production unit.
- In 1956, the use of disc-ceramic capacitors was relatively new.
- The AF Modulator Stage (2-12AT7/ 1-12BH7) visible on left.

100V Prototype – Circa 1956



- Rear view PA cage is similar to 600L design with rear blower and perforated rear panel.
- HV rectifiers elevated on pillars for improved air circulation.
- Note added rear connectors – used for planned VHF transverter that was never released. (Remember, those early QST ads talked about one..here's why!)

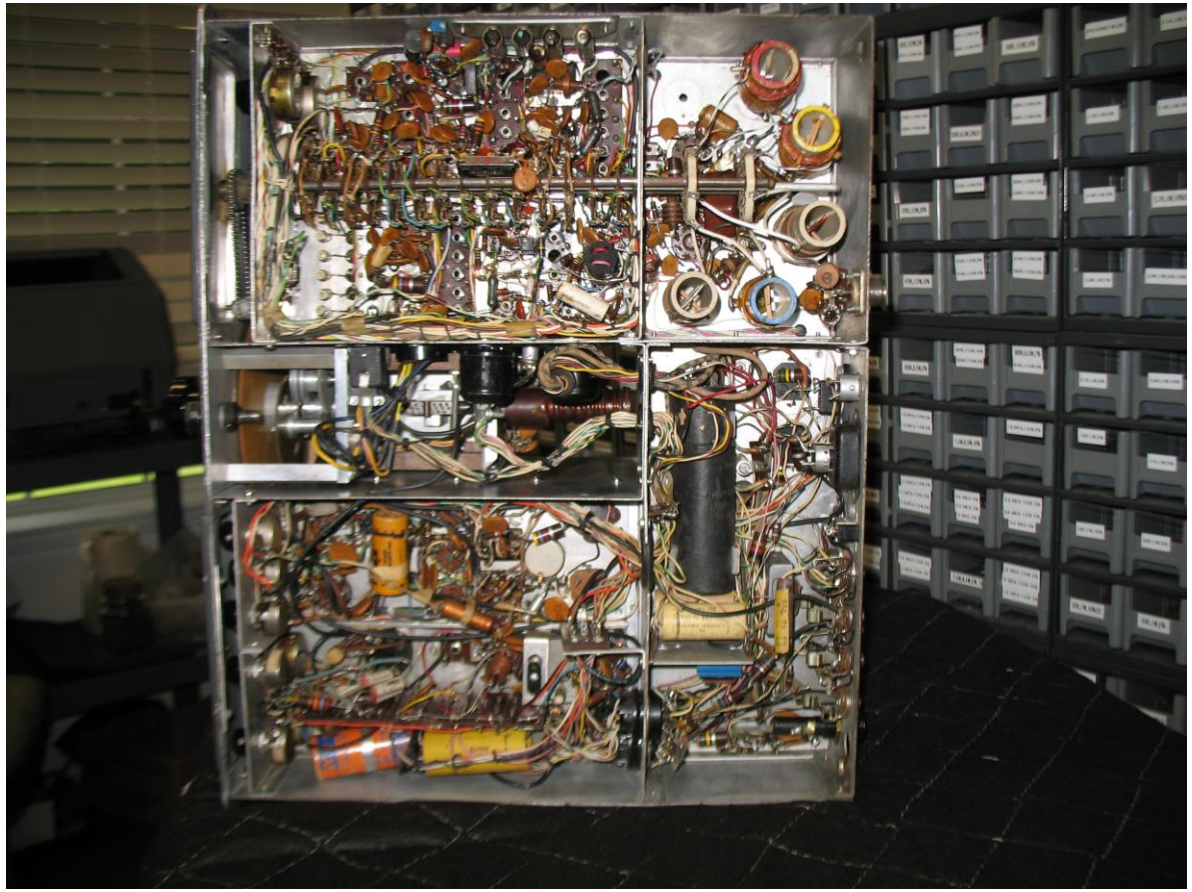
100V Prototype – Circa 1956



- Joe often boasted that he designed the 16-section bandswitch in a single weekend.
- Wes added the important part prior to production: bias off stages while rotating the switch – one can have the 100V producing 100 watts and turn the bandswitch for hours on end without blowing anything up.

Try doing that on any other rig!!

100V Prototype – Circa 1956



Yes, its messy…it's a *prototype*! They tried many things before finalizing the design.

Look closely and you'll see subminiature tubes! There were added DC amplifiers and voltage regulators in key spots. Not in the production version.

What Makes the CE 100V so Important?

In 1955-56, the Central Electronics 100V was revolutionary technology.

This was the ONLY transmitter that required zero stage-tuning by the Owner. Just point the VFO to the right frequency and talk. Its various RF stages were tuned with no motors, relays or servos.

It had the cleanest SSB signal of any radio at that time.

First amateur SSB rig with built-in speech processing.

Its VFO design was years ahead of others. It could be calibrated every 50KHz in the set and had excellent end-to-end linearity.

The 100V Prototype Saved Central Electronics

By mid-1956, Central had two wonderful products: the 600L amplifier and 100V Prototype, but no working capital to produce either!

It took all of the revenue derived from 10B/20A sales to pay for these development projects, which was okay except the dealers were “stiffing” Wes and were s-l-o-w to pay.

In final desperation and in the waning months of 1956, Wes was introduced to Karl Hassel who founded Zenith Radio. Wes and Joe put Karl’s QTH on 40M with the 100V Prototype and he immediately made an offer to buy Central Electronics!

Thanks for Listening and for Maintaining the History of SSB Development