

The Galaxy

GT-550 Transceiver

Peter A. Lovelock, W6AJZ
235 Montana Avenue
Santa Monica, California 90403



A decade or so ago transceivers came into being primarily for mobile application. Almost as an afterthought manufacturers made available AC power supplies for alternate fixed station use. Subsequent trends have caused transceivers to evolve in complexity (and size) to become complete, single package stations; some with an array of controls calculated to send a computer programmer into frenzied rapture. But have you ever tried to fit one of these integrated jobs under the dash of a Mustang? Or juggle a bank of knobs never designed for compatible freeway operation?

When Galaxy Electronics introduced their model III and V transceivers, it was obvious they had the mobile ham in mind as evidenced by functionally located controls, a tuning dial on the left side for optimum driver manipulation, and dimensions ideally suited to underdash installation. And a lot of fellows discovered that, with an outstanding receiver circuit and 300 watts PEP input, the Galaxys did an excellent job in the shack. Their feather weight and easy mobile mount made dual usage a snap.

The model V Mk 2, besides increasing input to 400 watts PEP, also added features for the CW operator such as sidetone, and plug-in options for semi-break in and a 300 Hz receiver filter. The V Mk 3 incorporated final tubes capable of 500 watts PEP.

Galaxy also developed a line of accessories for full fixed station flexibility with their

transceivers, while retaining the inherent simplicity, desirable for mobiling, in the basic transceiver. This also permitted the buyer the choice of paying only for those features required for his particular mode of operation.

Having used a Galaxy V Mk 2, shared mobile and fixed, for a couple of years, I could testify to its performance, stability and rugged construction on the highway, while 108 countries and a lot of good CW work with an apartment trap vertical left little to be desired at home. With this experience, it was difficult to conceive that much room was left for improvement...that was, until at the recent SAROC convention, I witnessed the unveiling of the Galaxy GT-550.

Gone was the former, somewhat austere, front panel—to be replaced with contemporary styling guaranteed to gain living-room acceptance from the most discriminating XYL (mine). While keeping the same well-arranged controls, now with skirted knobs, a new single-scale, 500 kHz dial eliminates the second scale that formerly reversed frequency direction for tuning 20 meters. Now CW and phone segments have the same dial relationship on all bands—a pleasure for CW DX bandhoppers like me. The familiar two-speed tuning knob is supplanted by a massive, 2½" diameter, single speed knob with plastic insert finger spinner. The spinner permits traversing the entire 500 kHz range quicker, and more easily than the wrist switching action required with the old two speed control. The 72:1 ratio tuning is velvet smooth and the kingsize knob gives finger-tip precision with no discernable backlash, even when using my narrow bandwidth CW filter.

Black on white tuning and S-meter dials, indirectly lighted behind rectangular windows, make for easy reading and enhance the new styling.

A study of the schematic proved that the GT-550 is based upon the tried and true cir-

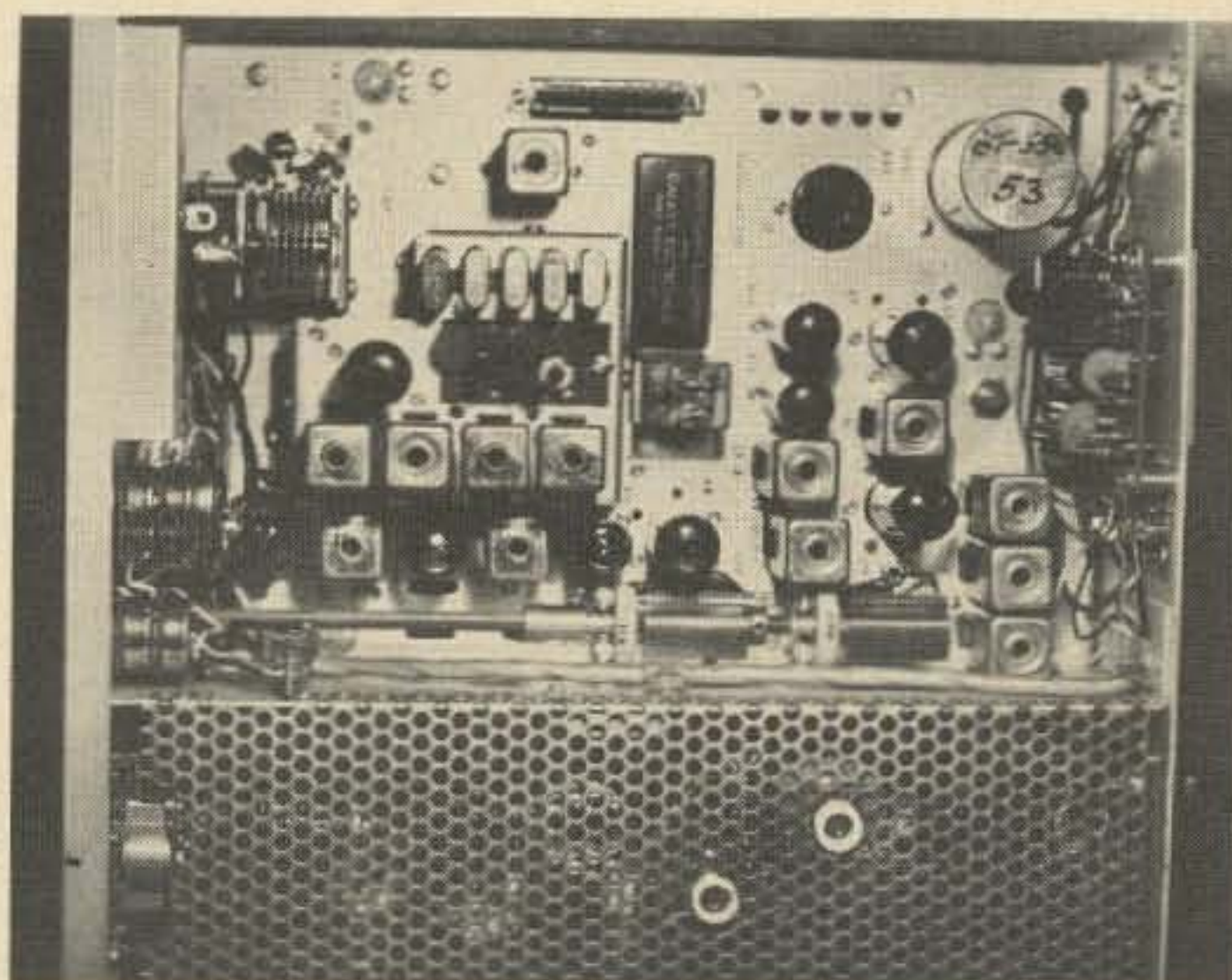
cuitry developed through the earlier Galaxy series, with numerous significant improvements. The new parallel 6LB6 finals, together with a redesigned driver stage, provide improved linearity and ALC action for 550 watts PEP input. On CW the final operates at 360 watts input with reduced screen voltage for maximum tube life. As in previous Galaxys, the TUNE mode may also be used for CW operation, with input power continuously variable by the MIC/DRIVE control, from a fraction of 1 watt up to 250 watts.

Many circuit changes noted indicate continuing effort for peak performance in both receive and transmit modes. The already sensitive receiver circuit has been made even more so on the GT-550, as is particularly apparent on the ten meter band. This is where so many receivers show a drop-off in performance, but the GT-550 S+N/N ratio is extremely good. An added crystal for vfo heterodyning has eliminated the need for that separate scale on 20 meters. Improved high and low voltage regulation includes provision for accurately adjusting the regulated 12 vdc used for the vfo, and also brought out to a rear panel jack for accessory operation. ALC control voltage is also brought to a rear jack for use with a linear amplifier, and is handy for plugging in a vtvm to observe where a/c action begins relative to plate current peaks when setting the MIC gain control. Another added jack for the external vfo accessory, obviates running coax through a rear panel hole to a chassis jack, as in earlier Galaxy models.

Those operators who periodically check alignment to maintain top performance, will be glad to know that mechanical design of the GT-550 has made all alignment procedures possible from the chassis topside. No need to remove the bottom plate and balance the unit precariously on one side. In fact, the GT-550 can be completely aligned in its normal operating position by merely removing the top cover. Even RC 'swamp' circuits required for accurate adjustment of double tuned transformers, are built in. Just shorting a chassis test point to ground with a screwdriver swamps one winding while the other is being peaked. A vtvm chassis mounted test jack aids in alignment.

The bank of five band-heterodyning crystals are mounted atop the chassis for accessibility—a convenience for operators wanting to substitute crystals for extended 10 meter or MARS frequencies.

The single piece top cover can be lifted



Interior view of the GT-550 Transceiver.

off, or slid back on the unit, for easy access by removing four screws. New design permits removing the final compartment shield without having to take off the bottom plate. The same basic dimensional configuration maintains the GT-550's adaptability to mobile or fixed installations, and the appearance is equally pleasing in both.

Like its predecessors, the GT-550 comes with an individual frequency drift calibration chart, as measured at the factory prior to shipment. Mine indicated a maximum warm-up drift of 140 Hz in the first 20 minutes, after which stability remained within a range of 10 Hz for the 40 minute balance of the test period. This degree of stability has been borne out in actual operation.

Checking the actual power output with a Waters Dummy Load Wattmeter Model 334, the following maximum readings were obtained when loaded according to instructions: TUNE mode: 160 watts, CW mode: 280 watts.

SSB mode (1 kHz sinewave to MIC input): 400 watts.

The GT-550 can be powered either by the AC-400, a new heavy duty supply with switch selection for 115-230 vac, 50-60 Hz input, and solid state rectification; or the G1000DC supply for 12 vdc mobile installations.

All in all, the GT-550 offers a lot of transceiver at moderate price. Add plug-in options for the CW man, and a line of accessories including plug-in transistorized 25 kHz calibrator (for those new band limits); complimentary styled external VFO, 2 kw PEP Linear Amp., Hybrid Phone Patch with tape recorder facilities, speaker console that accommodates the AC-400 supply, and an RF Console that switch selects up to five antennas plus dummy load—with built-in forward/re-

flected wattmeter...and you have building blocks for a home station tailored to your needs, around a state-of-the-art transceiver ideally suited for mobiling.

Technical Specifications

Frequency Coverage—3.5-4.0; 7.0-7.5; 14.0-14.5; 21.0-21.5; 28.0-28.5; and 28.5-29.0 MHz with crystals supplied. Additional ten meter and MARS frequencies with accessory crystals.

Dial Calibration—5 kHz increments. 500 kHz range, with single linear scale—over 12 inches of bandspread. 72:1 ratio vernier tuning.

Operation Modes—Selectable USB-LSB, suppressed carrier. PTT or VOX (with optional accessory). Shifted carrier CW, manual or semi-break in (with vox accessory). Built in sidetone.

Transmitter—SSB input: 550 watts PEP. CW input: 360 watts. Carrier suppression -45 db. Unwanted sideband suppression, better than -55 db. Antenna load impedance, adjustable 40-100 ohms. Hi-Z microphone input for -50/60 db level.

Receiver—Sensitivity better than $\frac{1}{2}$ μ V for 10 db S+N/N ratio. Double action, fast attack delayed release, audio derived agc. Nominal 1 watt audio output to 8 ohm external speaker.

General—Crystal lattice filter on transmit and receive provides 2.1 kHz selectivity with 1.8:1 shape factor. Audio response 300-2,400 Hz at -6 db points on receive and transmit. Dimensions approximately 7 $\frac{1}{2}$ " H x 11 $\frac{1}{4}$ " W x 13-3/4" D. Weight approximately 13 lbs.

...W6AJZ

DX QUIZ . . . Answers

Here are the answers to the quiz on page 38. Score five points for each correct answer. 75% is very good, 90% is unbelievable.

Congo		Republic of	
Republic	TN	Guinea	7G1
Republic of the		Uganda	5X5
Congo	9Q5	Rwanda	9X5
Mali	TZ	Niger	5U7
Central African		Tanzania	5H3
Republic	TL	Gabon	TR
Senegal	6W8	Spanish	
Cabindi	CR6	Guinea	EAØ
Fernando		Mauritania	5T
Poo	EAØ	Lesotho	7P8
Zanzibar	VQ1	Mozambique	ZS9
Chad	TT	Botswana	CR7

Novice Antenna

One of the problems the Novice has is the antenna. Many times it is a problem because of lack of knowledge, space or funds. Here is an 80 meter vertical which solves all the problems.

Most of the parts can be scrounged. You will need 17 feet 4 inches of $\frac{1}{2}$ " thin wall electrical conduit; a 5-foot piece of 2x2 inch lumber; a 4-foot length of tubing to use as a supporting mast; a coil, and some hardware.

Bolt the conduit to the 2x2, overlapping about 2 feet. The top of the loading coil (in this case Illumitronics #2010—#16 wire, 2 $\frac{1}{2}$ " diameter, 10 turns per inch) is bolted to the conduit and the bottom of the coil is bolted to the wood. The supporting mast is then bolted to the other end of the 2x2 and sunk into the ground. 50 ohm coax is used to feed this antenna. The shield of the coax is connected to the mast, and the center conductor is temporarily fitted with an alligator clip for ease in tapping the coil.

Using an swr indicator, tap the coil at the point where the lowest swr is found. In my case, this was about 23 turns. The swr was still about 2:1. To bring it down, cut two radials $\frac{1}{4}$ wavelength long and connect to the point where the coax shield is connected to the mast. The radials can be buried. Pruning the coax length will also help bring down the swr at the transmitter.

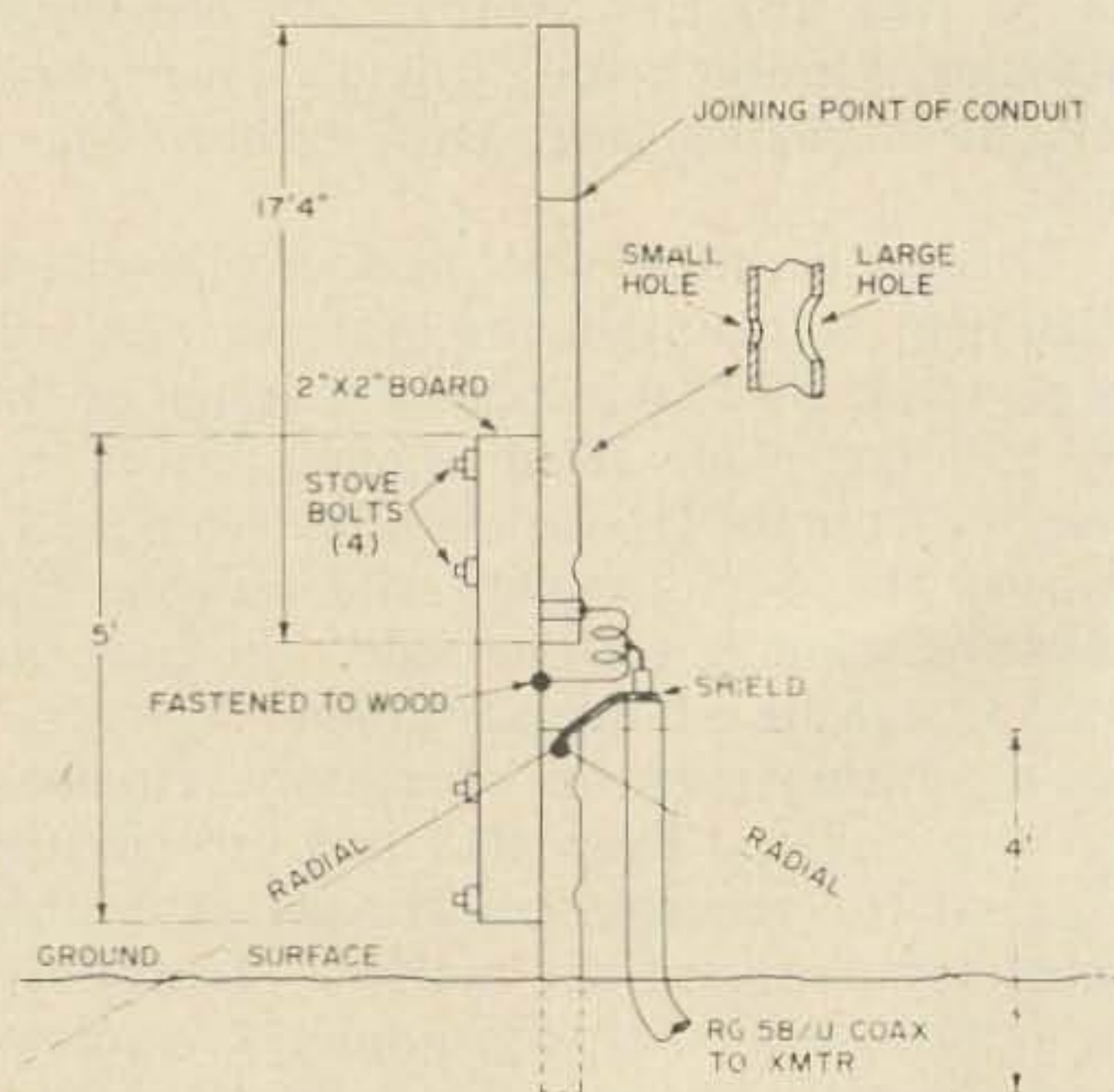


Fig. 1. Variable is mounted on the 1 $\frac{1}{4}$ " TV mast.

Now that you are thoroughly confused, look at Fig. 1 and you will see the arrangement.

Wayne Jinske, WA9SSH