

something was amok in his set. Not so – tuning is done in the AM mode, using a 5-watt carrier on the operating frequency.

10) Adjust ANT TUNE2 for minimum meter indication. The final meter reading should be well within the green TUNE area.

11) If the meter reading following 10) is not in the green TUNE area, move ANT TUNE1 to one side then the other of the setting obtained in 9) while adjusting ANT TUNE2 to get the lowest possible reading.

This procedure reads a lot more complicated than it is in practice. Failure to tune satisfactorily usually indicates a poor ground, especially important for operation with the whip or long wire. For pedestrian mobile operation, use a dragging counterpoise. For long wire operation, use a suitable length of wire or wires laid out on the ground. In some cases a certain length of long wire may be highly reactive right at the operating frequency and the tuner simply won't handle it. If you think this is happening and already have a good ground, try increasing or decreasing the antenna length by a few feet. Southcom specifies a 23m (75.5ft) long wire antenna but other lengths can be used. This may well be necessary if you run into reactance problems.

12) If desired, press BATTERY TEST at any time to read battery voltage on the top meter scale. The most useful indication of battery status will be during transmit.

Note: With the FUNCTION switch in the CW position, the mike PTT operates as a Morse key, a feature that might prove useful if the key is lost or becomes inoperable.

Additional Comments:

The SC-130 manual says the dial lights illuminate whenever the BATTERY TEST switch is pressed or the FUNCTION switch is in the TUNE position. On receipt the author's unlettered SC-130 set had a light bar inside with holes for bulbs, but none were installed. Apparently early serial-numbered or unlettered sets may be missing the bulbs or even the

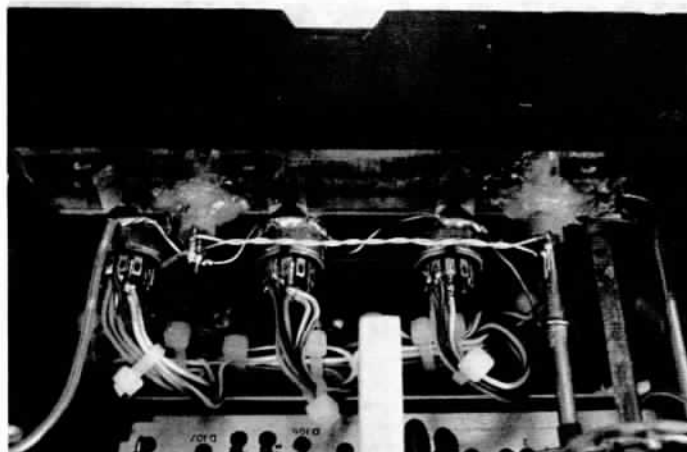
entire light bar.

The author added bulbs, and also replaced the SPST speaker switch with a DPDT switch to get the following functions:

Switch up position: Speaker ON, dial lights OFF

Switch center position: Speaker OFF, dial lights OFF

Switch down position: Speaker OFF, dial lights ON

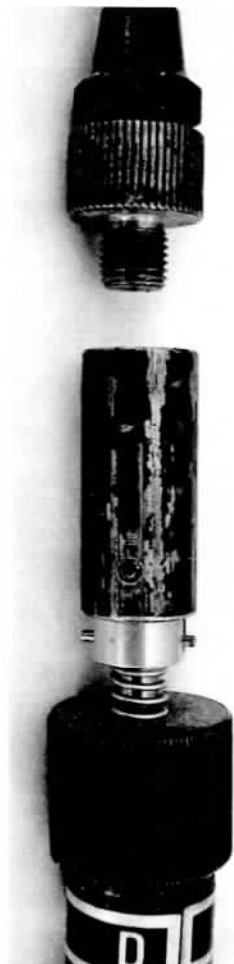


Added dial lights, secured with electronics RTV

The original SC-130 whip antenna consists of the plastic adjustable side-mount swivel bracket, three interlocking whip sections, an adjustable coil, and a tape-type top section. The whip is center-loaded, with the tape whip section above the coil. Scale measurements of a photo on the web indicate the total length of the original whip is around 80 inches or about 6.7 feet. That's a pretty anemic antenna anywhere in the 2-12 MHz range!

The author didn't know what the original whip antenna looked like, since his set came with only the side swivel base and loading coil. So when he built up a whip, he located the coil at the bottom. The fitting holding the tapped coil in the center of the whip was missing, and there was no obvious way to modify a standard AT-271 to fit. The solution was to mount the coil at the bottom of the whip. Not the most efficient, but it seems to work.

The AT-271 whip is attached to the coil using the top 1.5" of an AB-591 spring base, the bottom of said base having been sacrificed earlier to make a PRC-1099 long wire adapter. Total length is 10.2



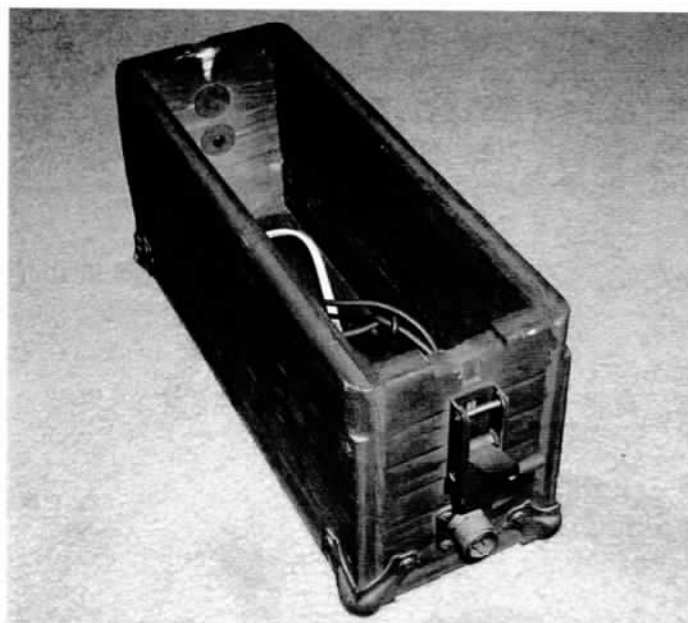
Author's adaptation of AT-271 whip.

Note use of top 1 3/8" of AB-591 spring base, attached to the Southcom coil with roll pin

feet, almost certainly more effective than the Southcom original, even considering the bottom-loaded compromise.

Amazingly, Southcom specifies in the manual, "...for short range communications and while operating in jungles and similar environments, it is often permissible...to operate with the loading coil and antenna top section plugged directly into the whip socket." That would shorten the antenna to 3.3 feet, essentially a dummy load. Yep, *very* short-range comm!

The radio came without the battery box, and the solution was just to fabricate one out of 1/2" plywood. Just remember to choose the outside dimensions at the top of the box to fit the bottom of the radio case as if the radio case was square. Then finish off the top corners to fit. The bottom corners are protected with brass fittings from the hardware store. Remember to paint everything O.D. of course.



Missing the battery box? Make one yourself!

The SC-130's 11.999 MHz top end frequency is definitely a drawback, but the advent of 60 and 30 meters means it will cover four ham bands, 80, 60, 40, and 30, instead of just the two in its range that existed when it was designed. And that ain't a bad thing.

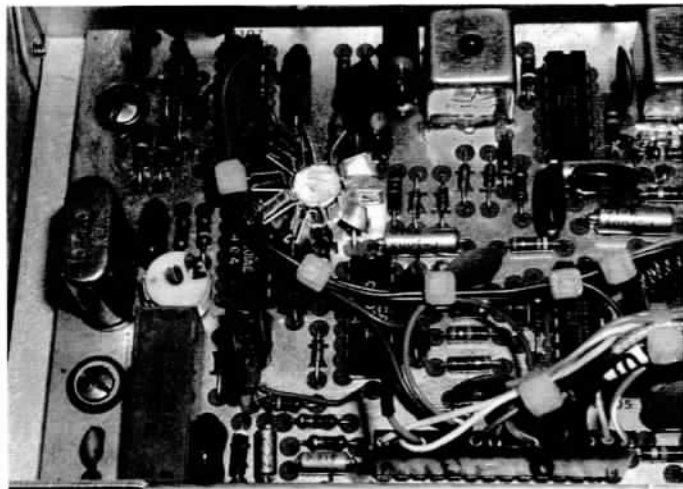
There is a very simple mod to convert the receive-only CLARIFIER control to a receive/transmit slider. This is especially handy for ops on 60 meters. It involves locating and cutting one wire.

NOTE: These procedures and illustrations are for the SC-130 (unlettered model). The SC-130D has very similar circuitry but the boards are physically laid out somewhat differently.

Release the six latches and remove the radio from the case. Remove the top cover and locate the Frequency Reference Board PC301. This is the smaller board at the right rear of the chassis; it has the 1024.0 kHz frequency standard crystal on it. There's a bright orange wire on Pin 3 of the only connector plugged into the board. This is the same on both the SC-130, and SC-130D.

Cut this wire to leave the CLARIFIER active in transmit. That's all there is to it. If you find the control is not centered on an even 1 kHz mark, first thing to try is simply remove the knob from the shaft, zero the control, then replace the knob with

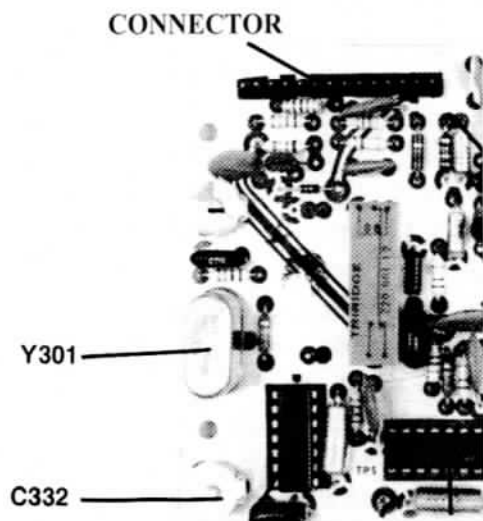
the pointer straight up. After the author did this, 500 Hz down for both RX and TX was about at the "E" in "TUNE" on the nearby function switch, and 500 Hz high was a little past the "R" in "CLARIFIER". No further adjustment was necessary.



SC130 (unlettered model) PC301 board, with stubbed-off wire at Pin 3 bottom center. Frequency standard crystal and trimmer C330 appear at left.

If you aren't happy with the offsets after you center the knob as above, try moving the frequency standard point by adjusting trimmer C330 slightly, located on SC-130 PC301 next to the 1024 kHz crystal.

PC301 is laid out quite differently in the SC130D, and the crystal and trimmer are located on the opposite end.



SC-130D PC301 board layout

With either radio variation you may have to shift the knob physically a little on the shaft in conjunction with adjusting the trimmer to get equal displacement above and below the center point.

Make a note where the -500 and +500 Hz points are, and you're ready to go on 60 meters. If you zero someone on receive, you'll be zeroed at his end when you transmit. The total CLARIFIER movement spec is 1000 Hz minimum but is usually more like 1600 - 2000 Hz.

The SC-130E has a HI/LOW POWER switch on the panel between the meter and the Southcom logo. The HI and LOW power settings are independently adjustable and are clearly marked inside on the top chassis cover.

Southcom's "1 amp average" spec for transmit current is somewhat misleading. The author measured closer to 3.5 amps on CW or continuous whistle on SSB.

What To Do If It's D.O.A.:

Sometimes overlooked by packset designers, there's a built-in fuse accessible on the back of the chassis. It's a 3AG slow-blo 3A 125V type.

Note: A 3A fuse, slow-blow or not, seems too anemic for a 20-watt PEP SSB transmitter, since peak currents can typically approach four amps. Datron specifies a 6-amp fuse for the PRC-1099, another 20W PEP radio. A regular-response 5- or 6-amp fuse would seem a better choice for the SC-130.

Fusing the input power on battery-operated packsets is absolutely imperative because batteries can sink enormous amounts of current. This is especially true with modern technologies like Li-ion. If the set develops a short and there's no fuse in the usual sense, the battery will use the wiring and/or components in your radio as such, and you will *not* like the result.

If the set is completely dead, but the fuse is okay, try powering the set from the front panel. If it works that way, check the mating between the rear radio power connector and the case connector.