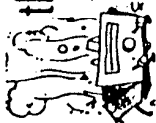


the irca technical column



A Comparison of the "Shotgun" and "Select-a-Tenna" Loop Antennas

by Randy Tomer

Although the "Shotgun" passive tuneable loop antenna (available from Radio West; I believe it's \$30 in the new catalog) is reasonably well known among DXers who listen on portable radios, there is another passive loop known as the "Select-a-Tenna". This has been available from Edmund Scientific for \$34.95, but can now be ordered from U.S. General Supply Corp., 100 Commercial St., Plainview, NY 11603 for \$19.80, catalog number 873-541W1980. They are a discount tool and hardware supplier whose catalog costs \$1.00.

What I like about the Select-a-Tenna is that it couples easily with just about any radio with an internal loop. It turns a cheapo 6-transistor pocket receiver into a real signal-inhaler with good selectivity. (This leads me to believe that in portable radios, the secret is to have a BIG, selective antenna, then everything else just falls into place.) The advantage of the Radio West Shotgun is that once it's stuck on top of a Realistic TRF or Panasonic, it not only couples well, but the radio and antenna rotate and null together perfectly. This is more difficult with the separately mounted Select-a-Tenna. The Shotgun has a much sharper peak than does the Select-a-Tenna. This could be a disadvantage for, say, listening to clear channels for the programming rather than DX'ing. My Shotgun has to be tuned slightly off frequency to get good audio response for program listening, otherwise higher pitched sounds are cut off. What I don't like about the Shotgun is that it must be stuck on a radio more or less permanently (to avoid being dropped) so you can't move it from one radio to another, and it doesn't conveniently couple with all radios. For instance with my GE TRF model 2870-A (predecessor to the Superadio), the Shotgun just doesn't seem to couple. Also, the Shotgun isn't all that practical with any smaller portable radio, due to its large size.

My assessment is that if you're using a Realistic TRF, GE Superadio, or Panasonic RF-series (or any other large portable with large built in loopstick) fairly continuously for DX listening, the Shotgun is the only way to go because of its higher "Q" and its ability to simultaneously peak and null with the receiver. However, for occasional use with just about any small radio made, I like the Select-a-Tenna. It's perfect for peaking that out-of-town talk show you like. So, the Shotgun for DX'ing, the Select-a-Tenna for long-haul listening.

One more Select-a-Tenna feature--it has an input jack for an external longwire--I didn't try it--but by running a piece of coax from this jack to the antenna input of a communications receiver, the Select-a-Tenna becomes a fair quality unamplified loop. Give it to a Rubbermaid turntable and you have a budget loop that works.

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THE "SHOTGUN" LOOP

A recent TRF modification is the Radio West "Shotgun" loop antenna, which is also suitable for some other portable radios. The Shotgun has an attractive appearance, consisting of a 15" long and one inch wide polished black plastic tube with a small black plastic box containing the tuning capacitor mounted on the tube. The Shotgun is meant to be mounted on the top of the TRF cabinet behind the handle, so that about 3" of tube sticks out on either side of the radio. This does not seem to restrict the portability of the radio, though it isn't quite as easy to grasp the TRF's handle once the Shotgun has been mounted. The mounting consists of two pressure sensitive pads strapped to the tube, and is pretty permanent.

An insulated wire runs out of the tuning box and should be connected to the ground terminal of the radio's variable capacitor--one needs to drill a small hole in the TRF's cabinet to allow this. A Fahnestock clip is mounted on the tuner box for connection of an external longwire. This is a "passive" antenna booster--there is no amplification, hence no need for batteries. It relies on a tuned parallel circuit using large ferrite cores to boost the signal snaring ability of the TRF's internal ferrite loop.

OK, you've followed the instructions (included with the device) and you have the Shotgun mounted and ready to go. You tune in a weak station on the TRF and peak the Shotgun capacitor. How well does it work? Particularly above 900 kHz, it is quite impressive. There is a good deal of boost and the tuning of signals on the Shotgun is sharp. You have the same nulling ability as the TRF alone; the Shotgun is in the same plane as the TRF's internal loop. Radio West suggests that only 12 feet of wire be used as an external antenna with the Shotgun, and rightly so. The signal strength will be boosted by such a length of wire, and the Shotgun will have to be retuned slightly due to loading. The null direction will likely shift as well and may disappear.

Don't try to use more than a short external antenna when tuning on channels near to strong locals. The excess signal will be too strong for the TRF to handle and you will get the local cross-modulating onto your DX. Also, the Shotgun should be tuned with care when listening near your locals, even without an external antenna--cross-modulation will again result if you're imprecise in your tuning.

Sometimes, it seems that the Shotgun alone provides too much boost, and some method for decoupling it from the radio's internal loop might be useful. (see p. 79). Also, longer longwires could be coupled through the loop in such a case.

On the lower end of the BCB, tuning sharpness of the Shotgun seems restricted to weaker signals. On a strong signal, tuning seems somewhat broader, and there is a definite "notch" which tunes just above the peak position. Might be useful to eliminate interference from a slightly higher frequency to what you want to listen to. Boosting ability is good--I heard WABC and WABC in Victoria using this device without a longwire. Conditions were good that night, but I had rarely heard even XERPM on the TRF previously without using a longwire booster.

For people who DX exclusively on a TRF or other portable, the Shotgun could well be a useful addition to the shack. It won't make your TRF as good as a communications receiver, but it will give quite a boost in sensitivity without destroying the TRF's nulling ability, as do various longwire couplers. It is presently priced at \$35 from Radio West.

The "Select-a-Tenna" booster antenna reviewed in these pages by Randy Tomer on Jan 2, 1982 is available from IntensiTronics Corp., P.O. Box 562, Hales Corners, WI 53130. The model 541 is \$24.95 postpaid, while the model 541M (with external antenna terminals) is \$29.95. Write to IntensiTronics for a brochure on the Select-a-Tenna if interested.

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