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THE BARGAIN BASEMENT - PART 2

Easy, inexpensive hints and kinks for the BCB DXer

By Leonard Hyde

1. CAR VOLTAGE FOR THE AUTEK QF-1

The Autek QF-1 may be operated from 12 volts DC. Take the cover off the QF-1, and locate the main filter capacitor. This is a round black cylinder about 2 inches high, and stands upright on top of the circuit board. Going under the board, solder a wire to the board at the spot where the (+) terminal of the capacitor is connected. This wire goes to the positive leg of the 12 VDC source. The (-) leg may be hooked to any available ground on the QF-1. A good place to tie it is under any screw on the QF-1 case. Use a socket that matches the plug on your 12 VDC source. For use in the auto, a cigarette lighter plug may be used to connect to the vehicle's electrical system. I use a phono plug and socket for connection to the QF-1. Just make sure that the polarity doesn't get crossed, and everything will be fine. The QF-1 normally operates at 16 VDC, but I have successfully used it at voltages as low as 9. The "tuning" will be different, but the unit will still work just fine.

2. SLIP RING CONNECTORS FOR LARGER LOOPS

Headphone jacks and plugs may work fine for rotating ferrite bar antennas, but what about larger air core loops? A cord winder from an old canister vacuum cleaner solves the problem. Disassemble the cord winder by drilling out the rivets that hold it together. Watch the spring - it is coiled and may unwind itself violently when tampered with. Remove the slip contacts. There are two sections, rotor and stator. Don't cut off the attached wires - you'll need them. The contacts themselves are almost impossible to solder to. (If the contacts are burned, get another winder. Many times, these vacuums are junked because the cord winder contacts burn up, thus interrupting the current flow to the motor.) After obtaining the slip ring connector assembly, you will have to figure out how to adapt it to your loop. A simplified diagram of my loop design appears below. With the slip ring contacts installed, your loop will spin with the best of them, and you can now enjoy DXing sans that confounded coax swinging around everytime you rotate the loop.

3. SHIELDING FOR AIR CORE LOOPS

I find that my loop is far less sensitive to TVI and electrical QRN when shielded on three sides. I use aluminum foil, taped to the loop along three edges. Wires are taped to the foil in several places, and tied to the shield (or ground) of the coax leading to the receiver. Noise pickup is reduced noticeably, with no apparent effect on sensitivity or directivity.

4. CAR VOLTAGE FOR THE DX-440

I tried Radio Shack's 9 volt cigarette plug adapter, which is rated at 300 mA. No dice. A check of the instruction booklet showed why - the DX-440 requires 400 mA. Here's the fix. Use a standard auto cigarette lighter plug, putting a 50 ohm, 10 watt resistor in the positive leg between the car and the DX-440. In my car, I obtain 8.87 volts, fine for the DX-440. If you want to get fancy, put a 9 volt, 1 watt Zener diode in for voltage regulation. I didn't - with a current draw of only 400 ma, there is no heating of the resistor, so the voltage stays constant. If you plan to use the receiver with the engine running, the Zener might be a good idea. I don't know what the voltage limit for the DX-440 is, but why take chances? Depending on the car itself, the voltage could increase by 1 to 2 volts with the alternator turning. Of course, this will work for any device requiring 9 VDC at a similar mA rating.

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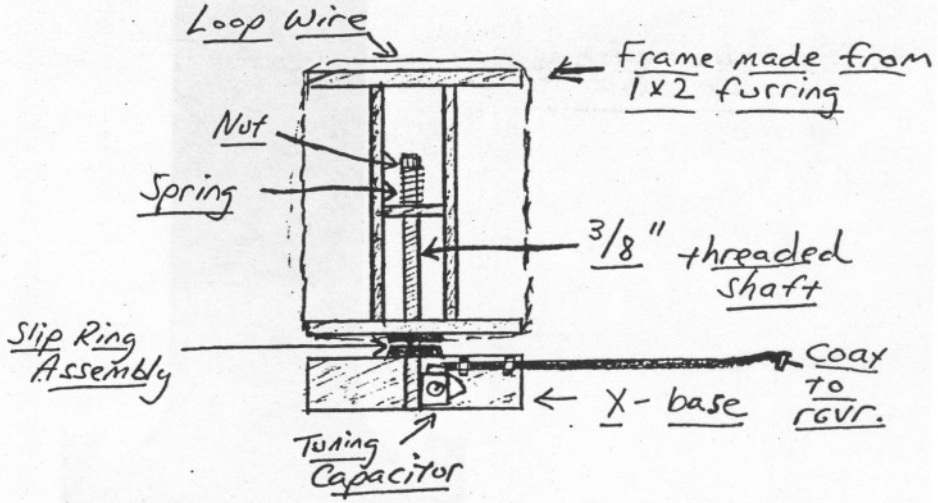
5. LOW BATTERIES CAUSE PROBLEMS

Low "D" batteries in the DX-440 will dim the display and pull down the two "AA" microprocessor batteries, even with the radio OFF. Why? I don't know. The microprocessor should operate independently of the receiver. Yet, when replacement of the AA batteries did nothing to cure the dim display in my DX-440, I found that pulling out the weak "D" batteries restored the display to it's normal state. Moral: keep 'em fresh, or get 'em outta there!

6. TWIN LEAD FOR AIR LOOPS

I have found that winding air core loops with twin lead TV lead-in gives appreciable gain over loops wound with a single wire. Also, the twin lead may be closewound in spiral fashion, with each turn directly over the last. This allows for an unbelievably thin loop. After years of using box loops that were nearly as wide as they were high, my loop is now a svelte 1 inch in width. Portability and appearance are much enhanced, with no apparent effect on the loop's performance. Just twist the two wires together at each end. I have experimented with double tuned loops, using each wire in the twin lead as a separate circuit, but found no advantage in doing so.

SIMPLIFIED LOOP ANTENNA (not to scale)



CAR ADAPTER FOR DX-440