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QST Issue: Jun 2002
Title: What Can You Do with a Dip Meter? (May 2002 QST, pp 65-68)

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make the modification for you. This should be quite simple for anyone who works regularly with SMT boards.

How to do it

You need a 1000-µF 16-V electrolytic capacitor (RadioShack #272-958) and some #30 insulated wire-wrap wire (RadioShack #278-502). First, clip the capacitor leads to about 1/8-inch on each end. (The fine wire will solder to these leads later.) Prepare two pieces of fine wire, about 3/4-inch long, by stripping 1/16-inch from one end and 1/8-inch from the other. The capacitor will be mounted with a double-faced foam-tape strip (RadioShack #64-2344). Cut a piece of foam strip roughly equal to the size of the capacitor.

Disassemble the 756PRO as follows: Remove all power and other cable connections to the rig. Turn the rig upside down and set its top on a soft cloth on your workbench. The front panel should face you.

Use a wrist strap to ground yourself to the rig and prevent any damage from static electricity. Remove the bottom cover by removing the six screws in the bottom and the two on each side. Loosen the two handle screws by four or five turns. Remove the cover and set it aside.

On the right side of the rig, you will see the main board. The new capacitor connects underneath the DSP unit, which is the large shiny metal shielded assembly on the main board. Carefully remove the DSP unit by lifting it straight up off the main board. You may need to rock it a bit to loosen it. Set the DSP unit aside.

Under the DSP unit are seven capacitors in two rows. Figure 1 shows the 1000-µF capacitor installed on the mounting tape. C316 is located about 1/2-inch below and left of that tape, with wires tack-soldered to each terminal. Notice that the negative side of this capacitor is toward the front panel.

First, tack-solder the 1/16-inch stripped end of a #30 wire to each terminal of C316. We recommend you tin this with a tiny ball of solder (1/64-inch), before touching it down to the capacitor tab. Do this quickly, to avoid overheating.

Next, place the foam tape on the board and install the 1000-µF capacitor, keeping its negative terminal toward the front panel. Finally, solder the #30 wires to the leads of the new capacitor. Verify the proper polarity.

After checking your work, carefully reinstall the DSP unit. Make sure it is carefully aligned before seating the connectors fully. Reinstall the bottom cover and screws. No adjustment or realignment is needed. Your 756PRO is ready to rock and roll—minus the rumble!

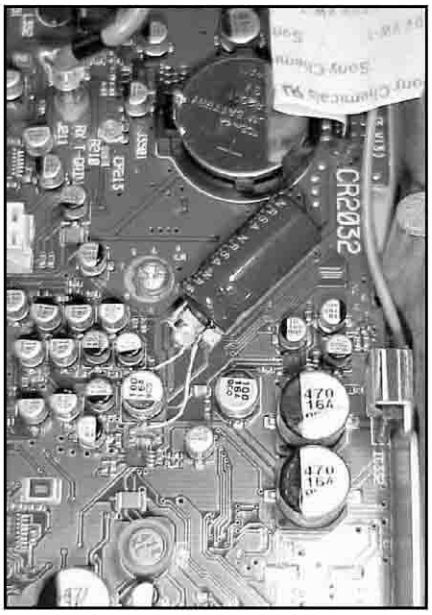

Figure 1—Add a capacitor to cure audio rumble in ICOM IC-765PRO and PROII.

You may still hear some vestiges of the noise-blanker signal with very, very strong signals, but this wasn't noticeable on the author's unit at normal audio levels. On CW, you will still hear some thumps on very strong signals, but we believe they're entering the audio chain at a different point. In any case, they're substantially reduced by this modification. Key clicks due to sharp filter response will still be present.

The authors would like to gratefully acknowledge the help and support of George, W5YR, and Adam, AB4OJ, for their help in corroborating the observations of the rumble phenomenon, and contributions to the diagnosis.

ALUMINUM-FOIL ANTENNAS: THE "CATFISH" YAGI

By Nate Williams, W9GXR, 6915 Prairie Dr, Middleton, WI 53562

◊ I enjoyed the Doctor's answer to Bob, W6XS, on page 55 of the December 2001 *QST* regarding an aluminum-foil Yagi antenna. Here is the e-mail I sent Bob.

The November 1955 issue of *CQ* magazine carried an article on the "Catfish Special" Yagi antenna for 15 meters. This was the first Yagi I ever built and used. It was a two-element Yagi made up of bamboo poles covered with aluminum freezer foil. The thrust of the article was that the Japanese used bamboo poles painted with aluminum paint in early Yagis. The driven element was split, with a one or two-inch spacing and the Yagi was fed with 300-Ω twin lead. My Dad almost fell off our flat roof as we put this contraption on a 20-foot push-up mast, but did this antenna work out! Of course in the late 1950s, we experienced "once in a lifetime conditions" as far as propagation was concerned. Guys could work the world with AM running 20-W on 10 meters using a hunk of wire for an antenna. Concerning all the technical details, we weren't smart enough to know that it might not work, so we put the doggone thing up and started working DX. None of us had the sophisticated test equipment around today.

Try the "Catfish Special." It's cheap, fun and nobody will believe you are transmitting on freezer foil. Oh yes, the foil was held in place by tape along the elements. None of the dimensions are critical, use spacing between elements and element lengths that fit standard parameters for Yagi antennas.

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FEEDBACK

◊ Through no fault of author K6TAF, some errors appear in "What Can you Do with a Dip Meter?" (May 2002 *QST*, pp 65-68). The equal sign was left out of both Eq 1 and Eq 2, and π was left out of Eq 1. Eq 1 should read:

$$L = \frac{1}{4\pi^2 f^2 C}$$

In Eq 3, the minus sign was left out of the expression $F_1 - F_2$.

And finally, the section of the article in the first full paragraph of the second column of page 67, from "Short each end of the cable…" to "at half the desired frequency" should read:

> Short one end with a loop and leave the other end open circuited. Couple the dip meter to the loop and look for the lowest frequency dip. This is the frequency at which the cable is approximately ¼ wavelength long. It is slightly short, due to the detuning effect of the loop. Making the loop smaller will minimize the effect. Page 27-8 of *The ARRL Antenna Book* describes a more accurate method that replaces the loop with a series tuned circuit that resonates at the desired frequency. If you need a 1/2-wavelength section, you can use the ¼-wavelength technique at half the desired frequency.

◊ There is a typographical error in the Web address given in "Radio Line of Sight Plot Server" (May 2002 *QST*, p 107). The correct address is **users.rcn.com/acreilly/los_form.html**. QST