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# TECHNICAL CONVERSATIONS

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Questions about the ultimate noise bridge

**Dear Editor:**

I have been unable to understand the "Ultimate Noise Bridge" circuit in the Summer 1996 issue. I find three problems:

1. The noise generator is built in a "floating" box to ensure equal noise currents at A' and C', yet the box is AC grounded to the outer box 1 by the 0.01 and 15  $\mu$ F capacitors.

2. The receiver output RX appears to be grounded to the outer box.

3. As you know, there is no such thing as a 9-volt NiCd battery. There is the six-cell NiCd, with a plateau voltage of only 7.2 volts and the seven-cell battery with a plateau voltage of 8.4 volts. Most 9-volts are of the six-cell construction. The Varta and Saft have seven cells. Will either work in the circuit, or must you use the higher voltage, seven-cell version?

I enjoy *Communications Quarterly*. It is outstanding in this era of beginner-oriented magazines. Don't ever let anyone tell you that it is too technical. They miss the point entirely!

**Ruddy Ellis, W4LNG**  
Atlanta, Georgia

Cosmic cousins

**Dear Mr. Hyder:**

This is in response to your letter to *Communications Quarterly*, dated June 14, 1996. I regret that I have been unable to respond sooner. Your letter raises some very valid points; but in addressing them, I come to different conclusions that you did.

I fully agree that the vast distances between the stars preclude two-way communications with our cosmic neighbors. But does this negate the value of simplex transmissions? All my life I have been receiving one-way communications which have enhanced my being—from Moses, Aristotle, Shakespeare, and George Bernard Shaw. Because I cannot engage them in a dialogue, is the communication any less valid?

You are absolutely right about the challenges of decoding a communication from a race with which we have nothing biologically in common. But translation and interpretation aside, the mere confirmation of the existence of other civilizations can have a profound impact on humanity. If, because we have at least all physical law in common, we do manage to interpret

some of the intercepted transmissions, I would consider that a bonus. But existence of proof alone is, in my opinion, still worth the price of admission.

Some in SETI may indeed be looking for a father figure. I prefer to think more along the lines of finding a brother figure, or a distant cousin. Though I've never personally met my cousins in Europe, though we do not speak the same language, I still feel there is a bond between us. Why should it be otherwise with our cosmic cousins.

Finally, Frank Drake's speculations as to the nature of alien civilizations are just that—speculations. But about the nature of photons, we need not speculate. They are indeed the fastest spaceships known to man, and stand a far better chance of traveling between the stars than do alien visitors, be they benevolent or malevolent. Further, they are the substance of ham radio communications, and we hams are in a unique position to exploit them for the good of all humanity.

**Paul Shuch, Ph.D., N6TX**  
Executive Director  
The SETI League, Inc.

Triode/tetrode efficiency comparison

**Dear Editor:**

Thanks to W6TMF for calling my attention to an oversight in my article "4CX400A Russian Tubes for the MLA-2500 Amplifier" (*Communications Quarterly*, Summer 1996).

**Table 1** is an apples-to-oranges comparison of the performance of the 4CX400A tetrode to the 8875 triode. As W6TMF points out, the Eimac 8875 data presented in my article was taken at 432 MHz. As he states, transit-time effects at 432 MHz will reduce efficiency, so the comparison is unfair.

When comparing Svetlana 4CX400A published data to the correct Eimac HF data, the Svetlana tube still has higher efficiency than the Eimac tube because of the unique Russian secondary emission inhibiting geometry in the 4CX400A; however, the difference is less dramatic than shown in the article.

My thanks to W6TMF for finding the oversight and to *Communications Quarterly* for the opportunity to set the record straight.

**Bob Alper, W4OIW/6**  
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