LETTERS

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Successful Soldering

I've heard and seen several interesting comments regarding my article "How to Succeed in Soldering" (**Electronics Now**, July 1999) that need to be addressed. As I expected, not everyone agrees with my methods; and as I stated in the article, my methods were only for those who weren't achieving **consistently** good results. We can lump the comments into two main categories: temperature control and fluxes.

It appears that many people are "in love" with their temperature-controlled soldering stations—I would be, too, if I had spent that much money! The main attraction seems to be "that the soldering tip lasts a lot longer" when idling at low temps. When I'm in a soldering "siege," my pencil iron idles flat-out all day long. My tips always last for at least a year. As the article stated, tip maintenance is the key issue here, as well as using the correct flux—bringing us to the second group of comments.

Some hobbyists have found what they feel are more effective fluxes than the rosin-core specified in my article. Others really enjoy removing (by whatever method) every bit of flux residue from their boards—more power to you! As you know, I consider flux removal a task that yields limited returns. The risk of contaminating non-hermetic components on your board is a serious problem that usually rears its ugly head as soon as the ambient humidity changes.

One hobbyist has used water-soluble flux for many years with good results. I've also used this type of flux in industry, and the fact of the matter is that the fluxes have to be thoroughly removed from your finished product. They are so active that any residual flux will sooner or later corrode any metal they contact. Unfortunately, there is no way to clean this flux from beneath a solder joint, and right there is where I've spent many hours repairing circuit board traces!

The article clearly stated that if you already have a good soldering method, then by all means don't change it! My method works for me, and I'll stand by it—but my method may not work well for everybody!

SKIP CAMPISI

At last, someone who knows how to solder efficiently! I have been an electronics hobbyist for 29 years and a professional technician for 24 years. The article "How to Succeed in Soldering" (**Electronics Now**, July 1999) is the one article I have seen, including my Tech School text books, that shows the "proper" method of making a solder joint, i.e., using a hot iron and applying the solder to the iron first to speed up heat transfer. I have used this method all of my career with only a slight change. I use a 47-watt iron, and my average joint is made in under one second. Well done, Mr. Campisi.

PAUL STEPHANY
Sergeant Bluff, IA

. . . and MixMaster Cautions

Thank you so much for your "How to Succeed in Soldering" article (**Electronics Now**, July 1999). Like Mr. Campisi, I have been a home experimenter for over 35 years and a pro for most of that time, but he has given me a few helpful hints. For someone who does a lot of soldering and has an iron running for long periods of time, a 40-watt or so iron, temperature controlled at 650°F to 700°F, provides plenty of reserve heat when needed without "burning up" tips when idle. Digital display, microprocessor control, and regulation to within ten degrees are overkill, but I find Weller's WTCPS soldering station, a simple magnetic-mechanically controlled arrangement, to be a worthwhile investment.

In the same issue, the article "DJ MixMaster" contains several useful and unique techniques, but it could pose some problems. First, in Fig. 3, p. 35, gain controls R116-a and R116-b drive output jacks J15 and J16 directly. The effective output impedance could be as high as 50,000 ohms, which may cause high frequency loss and hum if the cables to the power amplifier are more than a few feet long. Also, some PA power amplifiers have an input impedance of 10,000 ohms or so, which could severely upset the action of the 100,000-ohm controls. As a precaution, I would add another NE5532 stage between the controls and the output jacks to serve as a unity gain buffer.

Also, regarding the XLR connectors, the drawing of the microphone input connector, J18, (Fig. 2, p. 34) is misleading because the center pin is not ground. Additionally, resistors R119 and R120 (600 ohms) are not standard available values; as 1% metal-film units are specified for those, the closest standard value would be 604 ohms.

Last but not least, most public address speaker systems (the two or so cubic-foot cabinet housing a 12-inch cone speaker plus a compression horn) generally only have a frequency response from 80 Hz to 12 kHz. Boosting frequencies outside this range at high volume levels will only cause distortion, overheating, and possible damage. On any PA audio system I work on, I check the manufacturer's specifications regarding the speaker frequency response and use the equalizer to restrict the bandpass of the electronics accordingly.

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