



*She may think it's funny but someone's already tried this on more than one Isetta. Not good.*

In the last issue of *Minutia*, we discussed several aspects of the Isetta's electrical backbone and touched on items such as wiring up the turn signals, potential problems with off-the-shelf flashers and system grounding among other things. This time around, let's take another look at the Isetta's horn circuitry, external lighting and a few other tidbits.

Now there are going to be those of you out there who read and memorize every issue. If you fall into that category, you'll recognize part of this article as having appeared, in one form or fashion, in Part 8 of *Two Guys From Texas* (Winter 2003, Volume 12, Number 1) where Robert Mace and I discussed the electrical system as part of an overview of restoring our cars. Part of the dialogue pertained to the horn and related plumbing. In order to maintain continuity (no pun intended) with the first installment of this article, that subject will be served up here as well.

The Isetta horn circuitry has baffled more than one person. It's not that it's so hard to understand it but troubleshooting a dead Klaxon can require a multi-pronged attack due to it's multiple points-of-failure. From Terminal Block 1 on the driver's-side wheel well, Circuit 56 (tan) goes up into the instrument panel, out the front hole to the right of the steering column swivel and over to the carbon brush on the left side of your cast aluminum steering column. Two wires, circuits 30 and 31 (tan and green/white) head forward, along the bottom of the door frame tubing and on down to your horn. Up top, there's a funky, copper clip that fits into the underneath side of your horn button that 1.) seats the button/bezel tightly in the top recess of the steering wheel and 2.) provides a grounding point for the horn.

Many of the horns installed on Isettas were made by Noris. My early '57 slider has an Artes unit

manufactured in Spain. If you'd feel better about having a good, loud horn(s) in the 118dB range, Hella makes a 300Hz/500Hz matched pair for around \$70.00. Hella lists part numbers 85115 and 3AG 003 399-801 on the box. Either one will bolt right on to your original bracket although if you mount both of them, you'll need to make an additional 8" bracket out of 1/8" strap steel for horn #2 and a pair of jumper wires to get juice over from horn #1 ... no biggie. Make note that these horns use male spade lug type connectors as opposed to the original screw posts so plan accordingly. Be sure to buy two (2) double-male lug connectors for horn #1, one side for the main leads from inside the car, the other to continue over to that second trumpet.

Now, put on your X-Ray Spex and make note of what's going on underneath your horn button and inside the steering shaft. There is a single wire that connects to the post on the bottom of the horn button and runs down inside the steering shaft. It emerges through a hole just above where your cast aluminum steering column is fastened by a round clamp. Just above that hole is a brass ring that fits around the shaft. There is an insulating ring between the brass ring and the steering shaft. The wire is soldered onto the bottom lip of the ring. When everything is put together, your carbon brush should ride dead center on that ring so it can make constant contact regardless of which way or how far the steering wheel is turned. Most owners have found that the old insulator ring has gone bio-degradable on them and/or the wire has broken loose from its solder joint ... both items that will cause the horn to go buns-up every time.

I used a candelabra skirt for my ring. A candle *what?* That's basically a short, thin plastic tube used to cover up the socket/bulb bases in lighting fixtures ... an aesthetic item. Just cut about an inch off and you have a new, long-lasting insulator ring. For good measure, make it just slightly wider than your brass ring. Use a thin coat of epoxy on the inside of your insulator to secure it to the steering shaft and a thin coat on the outside to secure the brass ring and you're done. By the way, those skirts can be found at your hardware store in the vicinity of the electrical section. Should run a buck or less and will make 3-4 rings for a multi-lifetime supply. Be sure to take your steering column with you and check the fit. When someone asks you what they can help you with, just tell 'em you need a candelabra skirt for your Isetta steering column and watch the look on their face. Great entertainment!

Horn doesn't work? Here are a few things to look for. 1.) The obvious. Are the wires fastened to your terminal block, horn, carbon brush and horn

button? 2.) is the wire in your steering shaft soldered to the brass ring? 3.) Is the ring insulated from the steering shaft? 4.) Do you have a good carbon brush? It may be worn down too far for good contact or might be cracked. If you answered yes to 1-4, might not hurt to pull your horn off the car for a closer look. Is the "volume control" screw on the back set for the loudest setting? Not all horns have this adjustment but if yours does, make note that at either extremity of its possible settings, the horn may be completely silent, just giving you max-blast around the middle of its travel. If you get a hearty goose-honk out of it, you've got it set properly.

If all of that's in order, take the cover off of the horn. You should be looking at an aluminum resonator plate. There should be a round gasket around the perimeter of the base of the horn that isolates the base from the resonator plate. My gasket looked like 45 year-old newspaper and had deteriorated to the point that it no longer served its purpose. It was also the last thing I thought of. You can do a cheap, quick check by simply putting masking tape around your horn base, putting it back together and trying it. If that did the trick, you can make a nice one from gasket material. Linda "Googly Eye-setta" Noland in Dallas has had great success with empty Captain Crunch boxes, too.



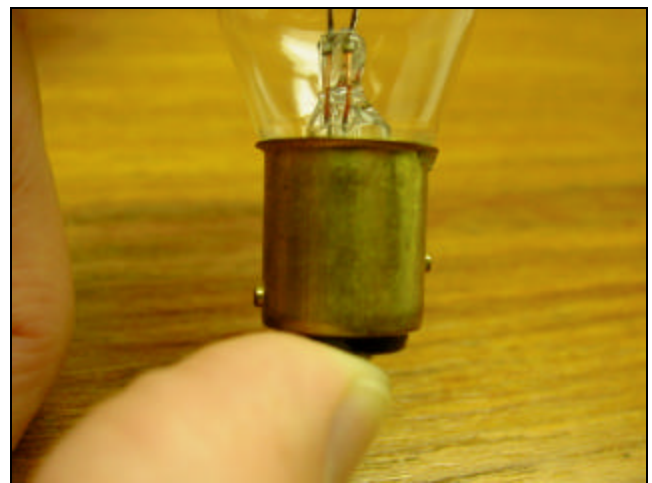
*Well speak of the devil! it's the Googly Eye-setta and Cruise Director Linda "Cap'n Crunch" Noland in Duncanville at the 2002 National Meet. Photo by Jim Janecek.*

Finally, you might want to get another horn and give it a try. Given the fact that it's basically an electromagnet, there's not much to wear out on a horn but at 45 years old, stranger things can happen. Parts suppliers have originals for you at reasonable prices or you can hit the local Auto Zone for one or go the Hella route.

Let see .... so far we've blinked, flashed, honked and grounded. Might be worth mentioning a mundane topic here but one you'll need to address sooner or later ... your external lights. As previously mentioned, your headlights are industry-standard 7", off-the-shelf units. Yes, they still make sealed beam headlights and, yes, your headlight will plug right into your wiring harness.

Halogens range from standard bright white to the blue, Euro look. Pricing should fall into the \$12-\$20 range at your auto parts store. You can also up your visibility level by looking into xenon lights for your tail/brake lights and parking/turn signal lights. They run a tad more and allegedly last longer but standard, off-the-shelf bulbs will do the job just fine.

One thing to note here. When you're buying new bulbs, you'll probably be staring at a rack of various sizes and colors. They all start to look alike after a while. Pay attention to the bayonet pins on the base of the bulb. Your Isetta's front turn signal lights and tail lights use a 12 volt bulb with staggered pins ... one higher up on the base than the other. There are identical bulbs out there that use pins that are directly across from each other. Those won't work because you can't seat them in their respective sockets. Look closely at the bulb from the side to make sure you get the right pin configuration so you're not making a return trip to the parts store.



*Here's a close-up of those staggered pins on the base of the turn signal/tail light bulb. This one is a Philips #1157 and is used for the tail light. The same bulb in amber is used for the front turn signals.*

One more small item you'll need is a festoon lamp for your license plate light. You'll need two (they're usually sold in twin-packs) if you go with the center light setup. Sylvania, among others, makes this lamp for you. You'll want to go with their part number 6411.



*Here's an exciting shot of that festoon bombilla you'll need for your license plate / rear center light.*

That pretty well wraps it up. The best allies you have in getting your electrical system up and running properly are John Jensen's wiring diagram and color coding chart. You can always go out on the Internet and check out the Restoration section of the Isetta Tech site listed below where John's two charts are posted. The Isetta Owners of Great Britain Bulletin Board ([www.isetta-owners-gb.com](http://www.isetta-owners-gb.com)) is an excellent forum for all topics Isetta. If you're having a problem or just need clarification on something, post your situation out there. You can expect feedback from someone who's been there and done that before.

Oh yeah, *always* disconnect your battery before performing any electrical connections, changing bulbs, tightening wiring, etc. Which also reminds me that the fuses you'll be needing are also the Euro-style festoon fuses. All circuits use the 8 amp variety. Keep a couple of spares in the car just in case.

Finally, if anyone out there in *Minutialand* is interested in seeing articles on any other Isetta-related topics in the future, please get in touch and we'll jump right on it.

And now, we rejoin the regularly scheduled program in progress ...

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*Photos by Bruce Fullerton except where noted.*



*Freeze frame from the Matchbox 20 music video "Unwell".*