

Subject: A primary report on desulfators/ pulsers  
Date: Mon, 9 Jan 2006 14:39:57 -0600

I'm writing it up as I speak...There is a lot of monotonous data there to cyper thru....Piles of it, much too raw.

Here's a "summary"; More will follow:

Richard Lines of Courtiestown Marine (England) [www.courtiestown.co.uk/](http://www.courtiestown.co.uk/) gets the top honors for the standard thermistor controlled hi frequency pulsers.

His custom thermistor controlled pulsers are well made, with quality components on a professional circuit board, nicely cased. It beat my own custom hand-built "Alistair Couper" designed pulser, hands down. Not only did they edge the competition out, but the cost, even after shipping from England to the US, was a bargain. You fellows in Europe ought to get a great deal on them. They do a really good job at cutting the sulfates crystals down to size and restoring the batteries without chewing up the positive plates. They hit the "sweet spot"

Most of the other custom-built hotrods broke down or smoked...Even the higher output commercial ones conked out. The low output commercial pulsers, even though they were very reliable, were best used as sulfate "preventatives", not removers. The signal outputs were not as strong as the custom pulsers.

Don Denhardt's second generation design has good output, but is not all that robust; I'm not crazy about the Radio Shack flimsy breadboard and the supplied light gauge copper wires for the battery leads... The heavier gauge leads and broader board paths on the Richard Line's design will conduct the signal better. Good components on the Denhardt, but a flimsy board. I changed the wires out to a heavier gauge and got better performance. I'm sure that will change in the future. Don Denhardt is a prime leader in the development of desulfators. I'm sure his newer generations of pulsers are superior...I've not tested them.

A confederate of Richard Lines, Rick (in Canada) sent a late entry in. It was a computer controlled PIC design. This model was super in removing sulfates.... Better than the 555 controlled thermistor designs. That was the only PIC computer chip controlled pulser that I tested. I got it in a bare board configuration (no case), but I'm sure that it will be professionally encased for the public. I now prize it for pulsing my own personal batteries. I'm sure that it will cost quite a bit more than the base thermistor controlled units. Outside of the PIC chip, that replaces the 555 timer, it has the same components as the Richard Lines models.

Richard Lines has informed me that they are including a fused mode for reverse polarity protection for future production. The polarity protection is supposed to minimally interfere with the pulser signal performance (a real problem on other "protected" pulsers). I have not tested this model. He told me recently that he has a contract with a manufacturer who will produce his, and Rick's designs on a commercial basis. The hi-frequency pulsers are coming of age.

There were really no bad custom built pulsers....Some were a bit on the crude side. They worked well, sometimes too well, and overheated, blowing components (that's does not include the reverse polarity problems). As developement continues, the problems will be resolved and more reliable models will emerge.

On the idiot-proof, commercial side, I have to give credit to the "Chubby Dutchman", Chuck Van Breemen [www.batterylifesaver.com](http://www.batterylifesaver.com) . His "Battery Lifesaver" does a good job on removing sulfates (compared to other commercial models). As I mentioned, most commercial models are good to fair for preventing sulfates, but since the signal shapes and output are not as high as the custom built models,

they are not my first choice in rehabilitating badly sulfated batteries.. His Battery Life Saver, BLS-12B churned out a square wave (with some almost hidden spikes) that would grind away at the sulfates. Reverse polarity was not a problem with his models...This is a good model for the inattentive or carefree.

His model was epoxy potted into a giant heat sink (they used a lot of juice to product the signal and needed the huge heat sink to cool). I'm not crazy about the epoxy potting since you can't repair it if it fails, unlike the models with the open circuit boards. It could, in my opinion, also use much shorter and heavier gauge copper wires for the battery leads. Heavier wires conduct the signal better, so that more of the signal gets to the plates, where it counts.

The BLS signal did not interfere with AM radio signals, like the custom built models. It is well built, overall. I trust my wife with it.

Note: A really good, hi-output custom hotrod pulser will interfere with your neighbor's AM radio signal reception on a weak station (you test these pulsers by tuning an AM radio offstation and listening to the normally 1kHz signal merrily singing away, if it is working). You can even hear them audibly singing from a few feet away.

You won't have to worry about the FCC tracking you down for radio signal interference, if you go with the Chubby Dutchman...That a good point with some people. Some custom hot rods will broadcast like crazy. I wonder about them and a cardiac pacemaker.....

I would heartedly recommend the B-12/24-B (spring clamps) or the BLS-12/24-C (brass ring terminal) for the average consumer... It works! He makes a BLS12/24-A model (not tested) for sulfate prevention, but it supposedly doesn't have the output of the other models. I would prefer the more powerful models, BLS-12/24-"B" and "C". They work either on 12 or 24V batteries. He has a 48V model, not tested... My guess is that it will be on par with his other models.

Most hi freq pulsers use the battery own stored electricity to power the signal and send it back into the battery. On the other hand, I had one 120VAC powered model that I tested. It's output was TOO GREAT. It literally dissolved the lead peroxide plates on a motorcycle battery (I could observe the plates through the clear plastic sides). The battery got really hot to the touch. It also heated up a small automotive starter type Group 24 battery...I'm sure the plates were dissolving. That was the end of that testing. I'm sure it would work on a very large group of batteries, all at once, but I'll have to test that in the future.

Until I'm done, I'll keep the maker's name undisclosed.

I have another model that I am still testing. It is made for automotive batteries. The pulser is permanently attached (not clipped on) and only pulses when the alternator is charging. This will not run your car's battery down below starting strength if you leave your vehicle parked for a couple of weeks. I'll report on that later, since this test involves more time. It's looking good so far.

I'm still running tests on various models, since this is, at best, a slightly subjective test procedure; Not all candidate batteries are identical to start with, even though I tried my best to match batteries to the tests.. Redundancy and repeatable results are important factors in deciding whether it was just a fluke or a good consistent performer, on the pulser's behalf.

If you purchase one of the above mentioned designs, from Richard Lines, or Chuck Van Breemen, you can't go wrong.

I'll have more to report in the future.... These tests can't be finished overnight.

Don in Tulsa

PPS: I'm not involved with the sale or commission of these various desulfators; Other than receiving some free components directly involved in the tests, I don't get a plug nickel for it..... The above is my stated opinion, but I've put a lot of sweat and hours into coming to those unbiased opinions. I literally spent thousands on testing equipment and candidate batteries. I've got a lot more testing to do.

PPPS: If you didn't send me a pulser to be testing, you can correct that in the near future...I'll be running updates. This is a fast evolving field.