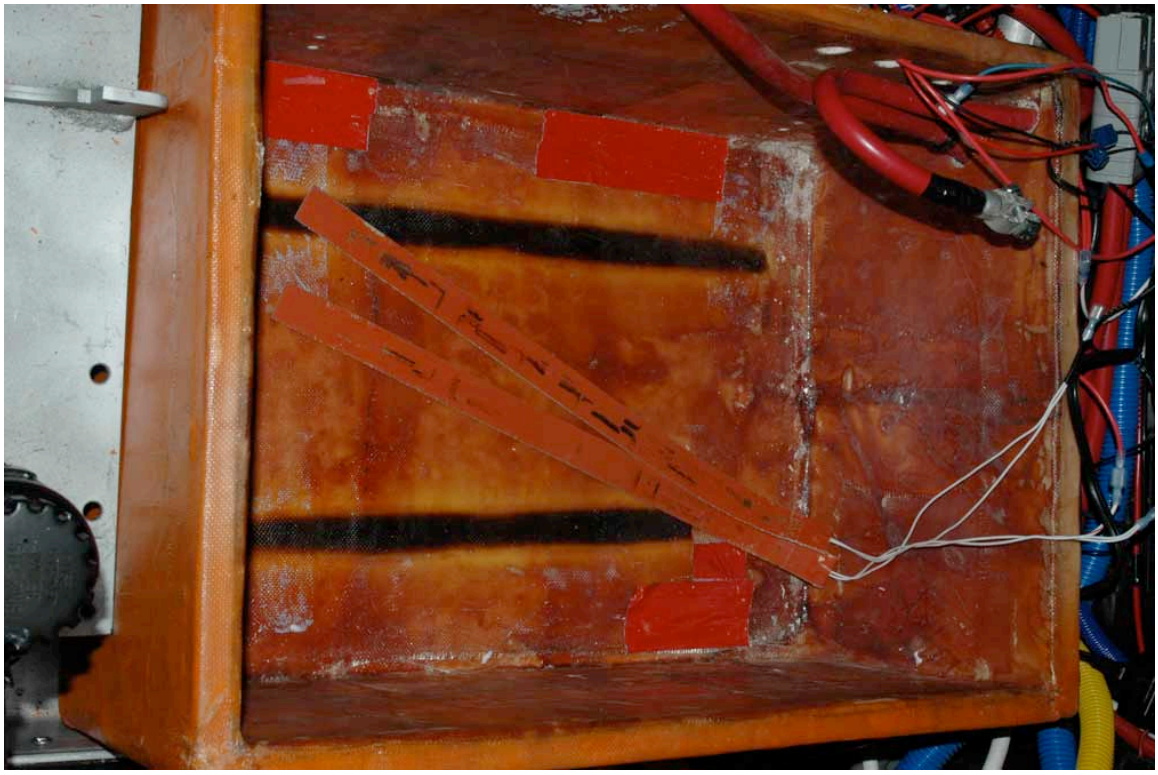
The Volt Vette Project
Chapter 29 (and a half)

Something is Burning

As I tested the battery box heaters, I smelled something odd. Was something burning! I really didn't want to think about what it might be. I didn't want to pull 900 pounds of hard to get to lead. The smell goes away. I dodged a bullet, maybe. For a while. For a few days.

Then the front batteries go cold. Then the middle batteries go cold. I pull the plug on the heating system, and order new heater strips.

Jukka comes by and helps me remove all the batteries. Things looked bad, really bad. The catalog said these heat strips were designed for "gentle warming", but they didn't operate that way.



The bottom of each box showed heavy burn marks.

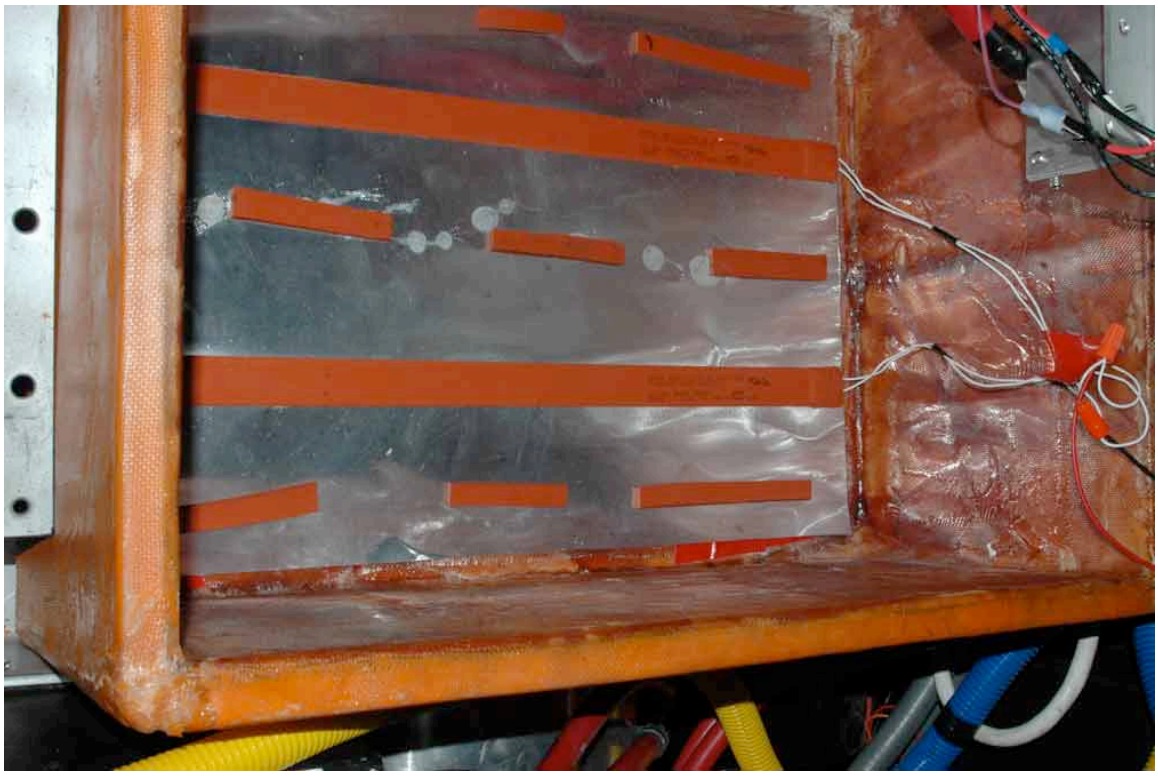
And some of the batteries showed signs of melting. Poor heat flow! Really poor heat flow!

Moving forward, I thought about placing the new heat strips between 2 sheets of aluminum directly under the batteries. Dave P thought there should be an air gap between the batteries and the heaters, and I agreed to give it a try.

But first, I reinforced the boxes by putting down a fresh layer of fiberglass.

Next, I glued the heat strips to the aluminum sheet, using 3M Fire Block Sealant. This did not test well; perhaps it was blocking the flow of heat to the sheet metal. So I switched to Dap 100% Silicone Gasket Sealant. Some of the fine print in the catalog said that the adhesive must applied so that there are no air pockets between the sheet metal and the heat strip, otherwise the heat strip would burn up. Wish I had known that at the start! I cover every

inch of the backside of the strips with sealant. Then, with a wooden roller, press the strips to the aluminum.



After placing the sheet at the bottom of the battery box, silicone rubber spacers are put in to support the weight of the lead batteries. Once I had the batteries back in the box, I started testing. The new system easily passed the smell test, and after resetting the temperature sensor, it finally looked like I could move on to the next chapter.