



“....and now we have cold cheese!”

- *One satisfied customer's story*

Ed and Melanie bought their first boat, a 1997 Catalina 34 sloop, in June, 2012, and keep her on a mooring in South Bristol, Maine. The first season, they made do with whatever came with the boat in terms of batteries and power supply. After meeting Bruce at the Newport Boat Show in 2012, they vowed that the 2013 season would be more comfortable, convenient, and energy independent. This is the story of how they achieved exactly that.

Step 1 – What do we hate?

We chartered a lot before purchasing. One night we were playing our CD's on a chartered sloop that had one house and one starter battery and noticed that the power required to run the CD motor was visibly draining the house battery. At that moment we decided that we would not tolerate battery capacity that was too feeble to play music! We also bought a sailboat because we like to sail, and having to run the engine just to charge the battery was not only noisy and intrusive, but goes against our interest in maintaining the smallest possible carbon footprint. We drive a hybrid car; it seemed inappropriate to be running a diesel engine just to top off the boat batteries. We also hated lugging ice around. When chartering, we'd bought block ice or pre-froze gallon jugs of spring water. The weight and bulk made provisioning a big deal, and then there was always melted ice to deal with in the bottom of the ice box.

Step 2 – What are our energy requirements?

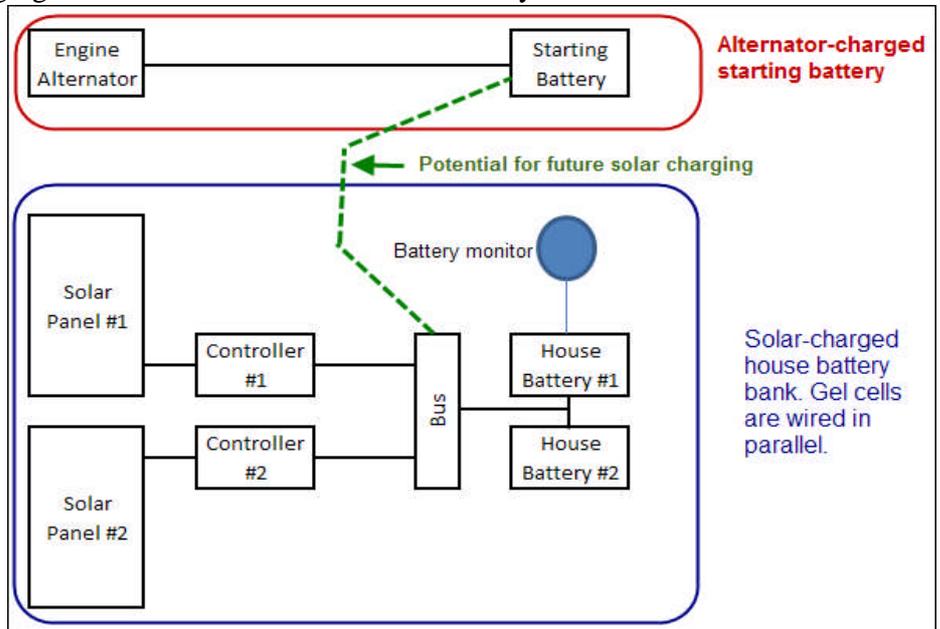
Using one of Bruce's calculators, we assessed the power requirements of everything on the boat, from the autopilot to the refrigerator (which we'd never even turned on during the 2012 sailing season), to the newly-installed LED lights throughout the boat. That allowed us to see our total requirements, assuming we were 100% dependent on solar for recharging.

Step 3 – How will we meet our needs?

The two gel cell batteries that came with the boat were nearly a decade old and had probably only lasted that long because the boat had been kept at the dock on shore power. We found when we had them tested that the one used for starting was no longer able to maintain a charge; the other was still in pretty good condition. We decided to replace both batteries with 183 amp hr 8G 4D (gel) cells and to use them in parallel as the house battery. We purchased a cheap group 26 flooded cell battery to use exclusively for starting. Based on one of Bruce's calculators, we found that two 100 watt SP100 panels should meet our needs, given their high efficiency. Because of their flexibility, we could simply mount the panels on our bimini using Velcro, instead of having to purchase a separate frame. We found we could just fit the two panels athwartship, avoiding having them cross the frame. With Bruce's assistance we purchased controllers appropriate to the panels, determined the cabling required given the distance of the run, and selected a monitor that would allow us to see what energy was being produced, what was being used, and tell us the remaining battery capacity. We also worked with our boatyard owner to find the best way to run the wiring through the deck, which only required drilling two small holes and left us with a “plug-in” connection at the deck level for easy seasonal removal.

Step 4 – Putting it all together

The two replacement gels went into their designated location under a settee. We commandeered the outboard portion of a hanging locker to house the new starter battery. Given the distance between the panels and the house battery bank, we also decided to put the controllers in the locker, midway between the panels and the house battery bank as that would allow us to use 10 gauge wire, which was the largest that our through-deck connectors could accommodate. The starter battery is charged solely by the alternator at this time, but a future option would be to modify the existing system to allow the panels to charge it as well.



What did we get?

We turned on our refrigerator in June and it's been running ever since. We can toss provisions in a canvas bag and trust that when we get to the boat, the ice box will be cold. We have ice cubes 24/7. We can keep staples on the boat (did we mention cheese?). We check the battery monitor regularly and the house capacity has not dropped below 93% all summer despite multiple cloudy days. When the sun is out, we show a net charge *even when the refrigerator compressor is running!* The small amount of motoring we do to get out of our cove has been sufficient to keep the starting battery charged from the alternator. We have our music, our lights, our wine and cheese. We only run the engine when there's no wind and we have to get somewhere. Life is good. Thanks, Bruce, for a fabulous product and installation experience!

