Addendum to HC Comings 'n' Goings

Tech Article – Lithium Ion Battery Installation

By Bruce Hislop, VP Tech

In the Spring Tech Talk I wrote about ordering a pair of 100 Amp Hour Lithium Iron Phosphate (LiFePO4 or LFP) batteries. I now have these batteries installed and the July Rally was the first real use of them.

It was dry-camping so the new batteries would need to run our all electric fridge and one or two Fantastic Fans from Friday to Sunday with minimal recharging from the Onan and the solar panel. I didn't get time to wire in the new DC to DC charger, so the batteries had to power the fridge while travelling as well. The solar panel did provide a little bit of power, but it was overcast, so it contributed very little.

We left home with charged batteries and arrived at Hawley's in Belleville about 5 hours later with over 80% charge capacity remaining. I calculated the power consumed at about 40Ahr with the solar panel picking up a bit of the load. We ran the Onan generator for an hour or so later which brought the batteries back up to about 90% charge. Friday evening and overnight to 7:30am Saturday took the batteries down to 50% at which time we started the generator to make our morning coffee. We ran the generator for a bit later on Saturday afternoon to bring them up to about 80%. Same thing for Sunday. We had shore power for the rest of the time.

Coming home from Bon Echo on Thursday was a drive of 5 hours which without the DC-DC charger the batteries had to carry the load. We arrived home with 99.8% on our battery monitor. The mostly sunny day helped the solar panel kept up with the fridge and two fantastic fans. I let the batteries continue to power the coach overnight until Friday. At 1:00pm Friday morning (about 28 hrs on battery) we had used 104Ahrs or just over 50% of the capacity of the two batteries. This was helped by the solar panel during the daylight hours. The attached photo shows the Inverter consuming 9.6Amps to power the fridge (compressor running) and the solar panel contributing 7.7Amps to this (actual battery draw is 1.9Amps at this point)

Remember I am using an all-electric fridge through an inverter. Most of you have propane powered absorption fridges which require very little electric power while on propane. If you change your house lights to LED, then your major power use is the fans and occasional fresh water pump use. In that case one 100Ahr battery should run your house electrics for several days (or more with the help of a solar panel).

I am impressed with the LFP batteries performance. They powered the fridge and fans without an issue. They recharged quickly minimizing the operation of the Onan generator. The expect life of LFP batteries is 2,000 to 5,000 recharge cycles (vs a few hundred for LA batteries). These batteries should outlast more than a few sets of LA golf cart batteries.