LITHIUM FOR LiFe

THE THINGS YOU SEE!

WITH (TRUTHFUL) PHIL BIANCHI

Images by Phil Bianchi unless stated otherwise.

I've jumped in at the deep end and bought a lithium battery system.

Why? Last year when attempting to crest a CSR dune, 'The Old Girl' lurched, spluttered and belched smoke. By quickly switching fuel tanks the problem ceased, only to reappear if I changed back. A thorough inspection of the fuel system, at Durba, found nothing. The fuel filter was ok, no leaks and there was heaps of fuel.

Outback Spirit Tours arrived with a gaggle of glamping customers. I spoke to Mick their mechanic whom I'd met previously, 'You've got an aftermarket fuel tank haven't you?' 'Yes' I replied. 'They usually place a tiny fuel filter up high to pick up swarf etc, I bet that's blocked,' he added.

Colonoscopy like, I poked around under the Old Girl's skirts and found under a mud face pack the 'piddly' little fuel filter. (I later found it cost $4.50.) Not having a spare filter or a correct diameter pipe

Plenty of room for a second fuel filter after removing the third battery.

to bypass, we drilled a hole through the filter, allowing fuel to pass. It worked. Back home and wanting a permanent fix, I decided on a quality second fuel filter system with a water catchment bowl. But there wasn't room in the engine bay for a match with the wood scraped off let alone a filter assembly.

A second fuel filter was a priority, so I sacrificed the third battery in the engine bay. Yes three do fit in a 100 Series. Performing a radical 'battery cradlectomy' I came up with a new bracket to secure both filter assemblies.

Why two auxiliary batteries? Being a sleep apnoea sufferer I need a CPAP machine for sleep, resulting in around double the usual power consumption of just a fridge overnight or around 40 a/h. 'Go lithium', a little voice said.' Who was I to argue? I raided my bank account, causing a run on the Aussie dollar, but I got my complete lithium battery system. It came from RV Lithium Systems, Maddington WA and was set up in a portable black box. I opted for a tidy 'all in one box solution', so as not to have the usual spider web of spaghetti wiring, brackets and components mounted all around.

What's in the black box?

* 100a/h lithium (LiFePO4) battery with cell balancing and protection.
* REDARC 1240d BCDC 40amp dual input battery charger with MPPT solar input.
* Victron BMV-712 Smart meter.
* Numerous Anderson, cigarette lighter, USB, merit, Engel fridge plugs and outlets.

* Anderson plug inputs for engine and solar charging and cables and fuses.
* All in a box made from 10mm thick high-density polyethylene.

This battery's output is equivalent to a 160a/h regular battery. It supplies up to 80 useable amps versus the typical 50 useable amps of a 100a/h wet cell. It recharges some four times faster than a 'wettie' and the whole box weighs 21 kg. An equivalent wet cell weighs around 32 kgs for the battery alone.

The Victron BMV-712 Smart meter, with blue tooth connectivity, displays the battery's voltage, amps in/out, amp hours consumed, time until flat, percentage state of charge and has a low battery voltage alarm.

My lithium battery is securely fitted inside the cruiser behind the driver. The hard solid case is computer-tower-like and can readily be moved from vehicle to vehicle.

What's the cost? Are you ready for CPR and the heart attack paddles? It was $3000 plus. Are you off the floor yet? Is your heart beating properly? Think about it, the Victron meter costs $350+, the REDARC 1240d approximately $600, then there's the LiFePO4 100a/h battery at around $1,300, plus box, fuses wiring etc, you quickly reach $3,000.

Yes there are cheaper systems out there; but I wasn't going to sacrifice a cheap price for durability, reliability and quality components; and of course the medical condition featured heavily in the decision.

Positives:

* Recharge rate is 4 times faster than regular batteries.
* Off road performance is brilliant; proven on a two week desert trip.
* Superb reliability because of high quality components.
* Significant weight loss over a wet cell.
* Increased output capacity.

For me risks associated with a 'cheapie' system include:

* Battery failure (and I had heard of vehicle fires), disastrous at any time especially on an extended trip.
* Loss of $1000s in vehicle and food preparation, fuel and pre-paid fuel not collected.
* Travelling companions frustrated at delays or early trip termination and financial loss.
* Loss of credibility; failure to arrive at prearranged meetings with Traditional Owners, scientists, fellow travellers etc.

Want to know more? Go to RVLithiumSystems.com.au or contact Paul on 0414 433 899, he builds his own batteries, is a 12 volt expert and a great bloke.

While it appears to be expensive and the upfront cost may give coronaries to many, when I considered factors such as needing power for refrigeration and a CPAP machine, the reduced weight, fast recharge rate and the longevity of the battery; the high buy in cost was excellent value for money and will repay itself in dollar terms and peace of mind. I've always been interested in lithium batteries; the puny $4.50 filter problem gave me the reason to spend $3,000. And no I'm not going to go soft and run a hairdryer or electric blanket, well not yet!

Thanks also go to Alex Garner, writer extraordinaire in this magazine, for confirming in his recent article on batteries the benefits of lithium battery systems.