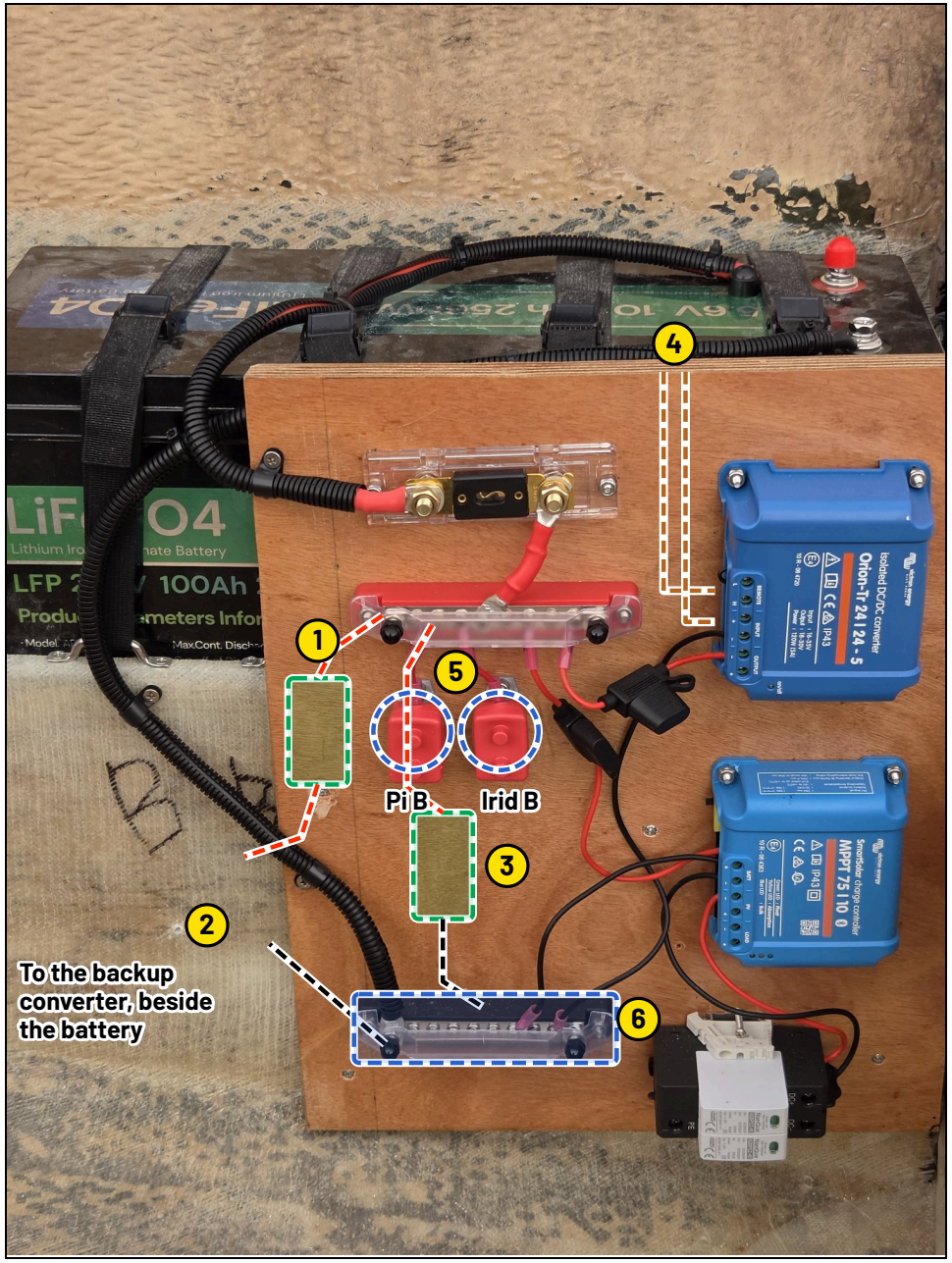
BACKUP BATTERY BOARD: CHANGES

Mike's photo, Nov 3 · numbers match the list



WHAT CHANGES

1. **New 20 A auto-reset breaker for the backup converter's input,** left of the two breakers. Jumper from a free + bar stud at the left end. Out: 12 AWG red, short, to the converter beside the battery; its 12 AWG black from the – bar.
2. **The backup converter** (Victron Orion-Tr Smart 24/24-17, isolated) mounts beside the battery, off the board. Its output: 12/2, about 17 ft, to the backup-fed bar on the main bus board. Pi B turns it on by its remote pair.
3. **Bilge pump 2's 5 A breaker,** moved from the main bus board, below the two breakers. 14/2 out to the Ultima switch and pump 2. A 1.5KE33CA surge diode across the pair here: one leg on the breaker's out stud, the other on the – bar.
4. **Two pairs from the main battery** go straight to the Orion-Tr: its input (14/2 from the main board's Orion breaker) and its on/off pair (16/2 or 18/2 from central node channel 10). In at the top edge, not bundled with any backup wire, each tagged MAIN BATTERY. They are the only wires here from the other battery.
5. **Label the two breakers there now:** Pi B (left) and Iridium B (right). Label the new ones Converter and Bilge 2.
6. **– bar gets five more wires:** converter input –, pump 2 –, the surge diode's other leg, Pi B –, Iridium B –.

new part or new spot · comes off · new + wire · new – wire · wire from the main battery

STAYS AS IT IS

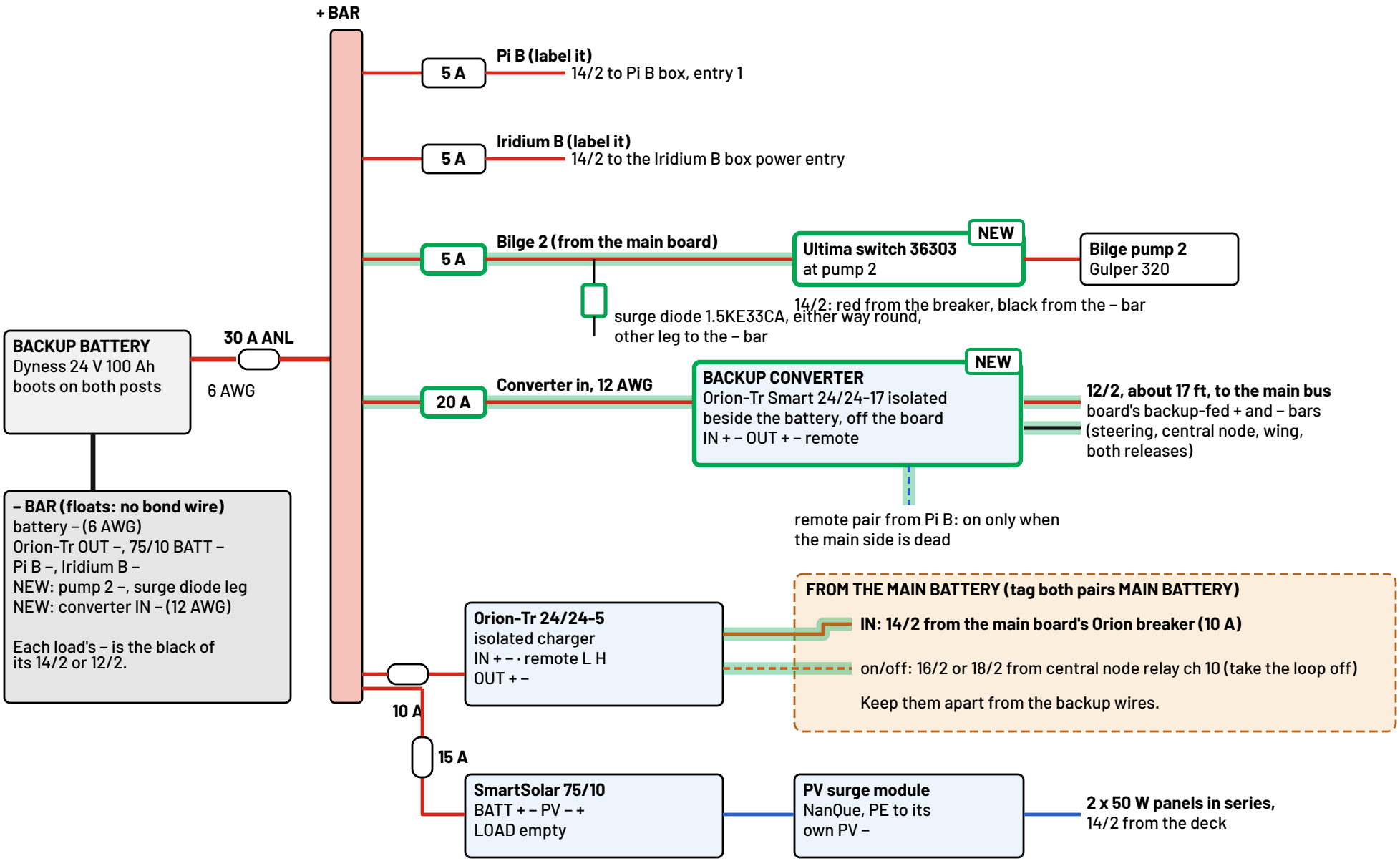
The 30 A ANL, both bars, the Orion-Tr, the SmartSolar 75/10, the PV surge module and the two fused charger leads. No on/off switch on the battery lead. The backup minus floats: no bond wire on the board, bars or any case.

STILL TO WIRE (ALREADY PLANNED)

Pi B and Iridium B 14/2 out of their breakers. Boots on both battery posts. The two 50 W panels into the surge module, last.

BACKUP BATTERY BOARD: WIRING

how it connects after the changes · not to scale · new parts in green



+ wire · – wire · remote (on/off) pair · new or moved · × comes off

BACKUP BATTERY BOARD: WIRES AND ORDER

every new wire · lug hole to fit each stud

NEW WIRES

From	End	To	Wire
+ bar	free stud, left end	Converter breaker, in stud	12 AWG red, short
Converter breaker	out stud	Backup converter IN +	12 AWG red (from the 12/2 roll), short, off the left edge
– bar	free stud	Backup converter IN –	12 AWG black, beside the red
Backup converter	OUT + and –	Main bus board, backup-fed + and – bars	12/2, about 17 ft
Backup converter	remote	Pi B box	Pair from Pi B (where it enters Pi B's side: open)
+ bar	free stud	Bilge 2 breaker, in stud	14 AWG red, short
Bilge 2 breaker	out stud	Ultima switch at pump 2, then the pump	14/2 red; black from the – bar
Surge diode	1.5KE33CA	Bilge 2 breaker out stud and the – bar	Its own leads, sleeved. Either way round
Orion-Tr IN + and –		Main bus board, Orion breaker (line 13)	14/2, about 17 ft, tagged MAIN BATTERY
Orion-Tr remote L and H		Central node, relay channel 10	16/2 or 18/2, tagged MAIN BATTERY. Take the wire loop off
Pi B breaker	out stud	Pi B box, entry 1	14/2 red; black from the – bar
Iridium B breaker	out stud	Iridium B box, power entry	14/2 red; black from the – bar

WHY

The backup converter runs steering, the central node, the wing and both releases from this battery when the main battery is dead. Its draw is about 15 A at a rudder move and 19 A at its full 17 A out, so a 20 A breaker holds it and protects the 12 AWG. Pump 2 lives on this battery so it is always armed. Only the two isolated Victron converters touch both batteries.

ORDER OF WORK

1. Done in place: nothing comes off the wall. Lift one end of the 30 A ANL (the + bar goes dead; the battery lead up to the ANL stays live). Cover the two 50 W panels. Pull the Orion-Tr's green remote plug.
2. Mount the converter breaker and the Bilge 2 breaker (1, 3), screws no longer than the board is thick. Jumpers from the + bar.
3. Mount the backup converter beside the battery (2). Land its input pair, then its 12/2 output run to the main board, then its remote pair.
4. Pump 2's 14/2 and the surge diode (3).
5. Main battery switch off. Run the Orion-Tr's input and on/off pairs in from the top edge (4) and tag them.
6. Labels (5). – bar wires (6). Covers on.
7. Close the ANL last.

PARTS

Part		Where from
Backup converter	BUY	Victron Orion-Tr Smart 24/24-17 isolated, ORI242440120. Amazon amazon.com/dp/B07YN4LGR9 (on the Buy list)
20 A breaker	HAVE	A spare BFXM 20 A (four bought Sep 7, two used: Steering and Switch)
Bilge 2 breaker	HAVE	Off the main bus board (change 7 there)
Surge diode 1.5KE33CA	HAVE	The 20-pack
Ultima switch	BUY	Johnson 36303, at pump 2. Amazon amazon.com/dp/B000KKB53Q (on the Buy list)
12/2, 14/2	HAVE / BUY	12/2 roll on hand; the second 14/2 roll is on the Buy list
Post boots	BUY	On the Buy list