



Two Batteries, Two Chances

Installing a dual-circuit battery switch is well worth the peace of mind it offers when you shut down your engine far from port.

BY CAPT. WILSON SHEPPARD

I have always appreciated two things about twin-engine boats — their maneuverability and the opportunity to “limp” home if one engine fails. Let’s call the latter insurance. Similarly, two batteries will provide two chances to start your engine(s). Based on the growing number of 12v accessories available to boaters, let’s call dual-battery systems smart. To manage two batteries properly, a selector switch is used to activate and deactivate each battery’s circuit.

When I bought my current boat, most of the accessories and their wiring were old and non-functional, and there were two ON/OFF switches for the battery banks. I decided to remove the accessories, the wiring and the accessory (or house) battery, which left me without an additional battery, if my starting battery failed. Also, since my boat has two engines, one of my alternators was not being fully utilized to charge the battery.

HOW ARE YOU WIRED?

To understand your existing wiring before adding a switch and/or a battery, start at the positive terminal on your battery and follow the wiring through the entire circuit, labeling and diagramming as you go. To be thorough, follow the wiring from the negative terminal, too. If you have a second battery, repeat the steps. Labeling and diagramming the wiring will keep your electrical system organized and

make it easy to troubleshoot.

On my boat, the port-side ON/OFF switch formerly controlled the house circuit. From the starting battery, the positive terminal was connected to the starboard ON/OFF switch. Two cables ran from the switch to the engines’ wiring harnesses, and a battery cable for the ground was connected between the engines. The negative terminal of the battery was grounded on the port engine.

MAKING THE SWITCH

I planned to replace both of the old, cracked ON/OFF switches with a battery selector. The guys at West Marine in Long Beach, Calif., recommended the e-series Dual Circuit Plus (DCP) battery switch (\$59.99 retail) by Blue Sea Systems (blueseasystems.com).

A two-battery selector switch usually has four positions: Off, Battery 1, Battery 2, Combine Battery 1 + Battery 2. The Combine feature (also labeled All or Both) uses both batteries for starting. Most battery switches must be in the Combine position to charge both batteries. The switch would have to be moved to the house bank (for example, Battery 1) after the engine(s) are shut off to avoid discharging the starting battery (Battery 2) while using electronics. The DCP has three positions — Off, On, Combine — and automatically separates Battery 1 and Battery 2 circuits, so only the house battery powering the accessories is being discharged.

Blue Sea Systems also offers an Add-A-Battery package (\$142.99), which includes a DCP and an Automatic Charging Relay (ACR) for single-engine applications to charge two batteries from the engine’s alternator.

DOWN TO THE WIRE

The DCP and ACR installation instructions provide you with a chart for selecting the proper wire and fuse size based on the charging amperage of your boat’s alternator and, if you have one, battery charger.

The DCP switch has four 3/8-inch terminals separated into pairs labeled “1” and “2.” You can use either pair for

STEP BY STEP



➤ Both of the old battery switches were cracked (1), so Sheppard replaced them with a single Dual Circuit Plus and an Automatic Charging Relay from Blue Sea Systems (2). Sheppard altered things slightly, but the wiring diagram (3) is a good guide for how to hook things up.



the starting and house circuits. For the house circuit, one terminal of a pair is connected to your accessories and the other to the positive terminal of your battery. On the starting circuit, one terminal is connected to your engine's wiring harness and the other to the positive terminal of the starting battery.

The ACR has two 3/8-inch terminals labeled "A" and "B." It also has spade-type connections for ground, start isolation and a remote indicator lamp. The basic installation of the ACR requires three connections: a fuse-protected connection between terminal A and one battery; a fuse-protected connection from terminal B to the other battery; and a fuse-protected wire from the ground connection to the negative terminal of the house battery or a ground bus bar.

For safety reasons, be sure to use properly sized ring connectors for the DCP and ACR. Secure the connections under the provided lock washer and nut.

After consulting with Blue Sea Systems, I planned to install only the

DCP with a battery wired to each engine's alternator, which will allow the alternators to charge the batteries independently — and I would still have the option to combine them.

I already had another battery to use for the house/backup circuit, so I connected it to a terminal on the "1" side of the DCP and ran the wiring for the starboard engine to the other terminal. For the starting circuit, I connected one terminal from the "2" side to the positive terminal of the starting battery and the other to the port engine's wire harness. I tested the charging on both batteries, and it seems to be working fine. I do plan to add a positive bus bar and a ground bus bar to the house circuit, so I can begin updating my onboard accessories.

The Dual Circuit Plus battery switch was easy to install and well worth the peace of mind. Whether you have one or two engines, a two-battery system will give you twice as much confidence to get out on the water without worrying about being able to spark life back into your boat. **BW**

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