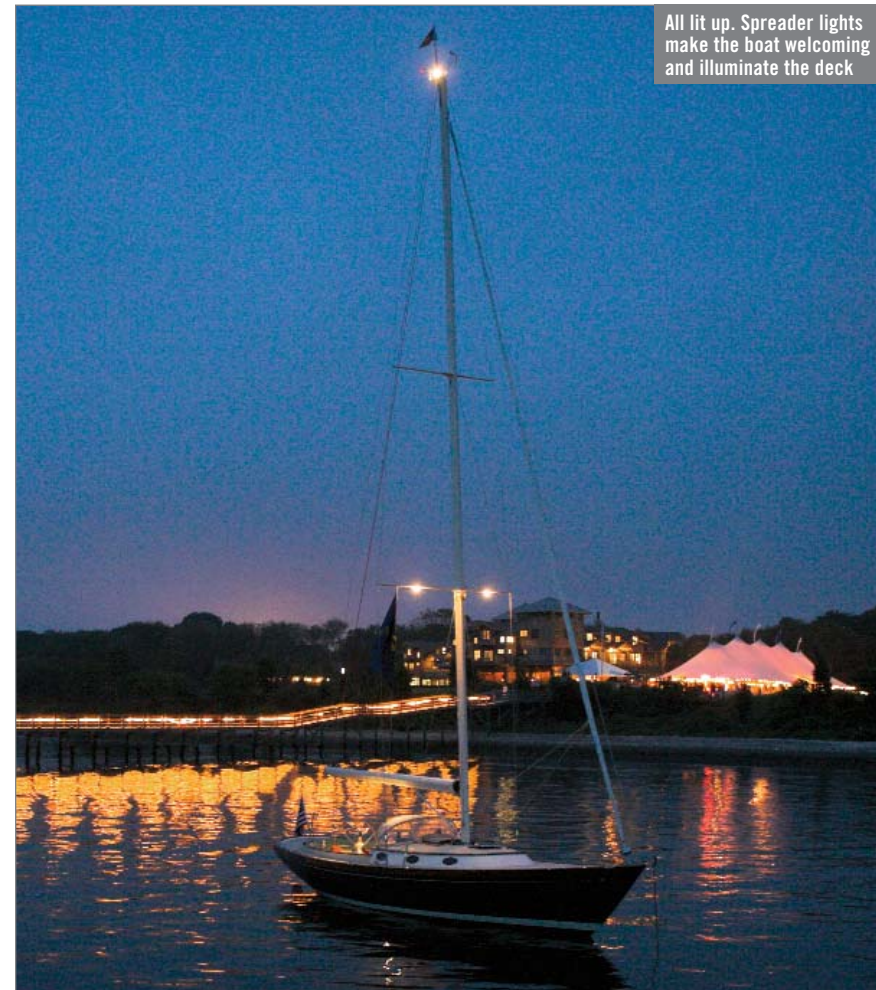


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SPREADER LIGHTS



All lit up. Spreader lights make the boat welcoming and illuminate the deck

see the dock, so I turned on my boat's spreader lights and found a problem looking for a solution. I didn't really want to leave the spreader lights on the whole time I was away from the boat, so a remote control seemed an obvious solution. On the other hand, if I didn't want to carry the remote control with me, the delay timer might come in handy. In the end, I tried both ideas and ended up combining them in different ways. I'll explain these solutions below, and you can pick the one that best suits you and your habits. There are many possible applications for these circuits, including identifying your boat in a crowded anchorage, boarding from a dock on a moonless night, boarding or returning from your dinghy, and offloading luggage before dawn to catch an early flight home.

First, let's look at the normal spreader-light control circuit you probably already have on your boat (Fig. 1). You may or may not have an indicator light on your breaker panel, but I think you will find this is useful for all of the circuits that follow. The circuit is pretty simple; turn on the breaker switch, and the spreader light and indicator light both light up. You wouldn't want to mess up that simplicity.

The circuit breaker provides overload protection, and you don't want to lose that when adding new features, so you'll need a 15-amp fuse to protect the additional circuitry. The remote control comes with this fuse and an inline fuse holder.

When the remote control is triggered,

REMOTE-CONTROL SPREADER LIGHTS

Pete Dubler comes up with a cheap and ingenious solution to lighting up a sailboat deck at night

Nick Cancro, owner of Sailor's Solutions, and I are blood brothers in many ways. We both love old boats and we both love gadgets. He and I are constantly sending gadgets or ideas for gadgets to each other. I truly like only those that are reliable and serve a useful purpose, and that is exactly what I get from Nick.

Recently he sent me two gadgets to "find a clever use for." The first is a key-fob

remote control, just like the one I use on my car's remote door locks. The second is a flexible and configurable timer relay board. I don't think Nick ever imagined I would find a way to use the two together.

After studying the instructions for both, I decided to sleep on the boat a few nights to dream up good ideas for them. Leaving the boat one moonless evening for the marina shower house, I was unable to

✓ CHECKLIST

TOOLS

- ✓ Soldering iron
- ✓ Screwdrivers
- ✓ Pliers

MATERIALS

- ✓ Remote-control module
- ✓ Timer board
- ✓ Cables
- ✓ Wire ties

PHOTOS BY MARK CORKE; ILLUSTRATIONS BY RACHEL FRENCH

FIGURE 1: COMMON CIRCUIT

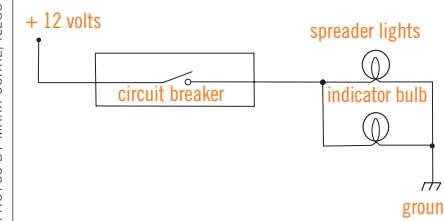
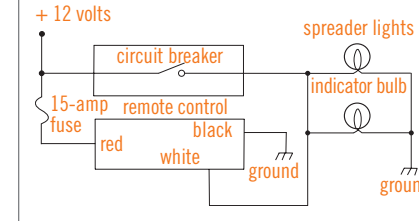


FIGURE 2: REMOTE CONTROL



it simply passes current from the red wire, which also powers the remote control, to the white output wire. The black wire provides ground to the remote-control receiver. Another wire from the remote receiver, a blue antenna wire, is not shown in the schematic below (Fig. 2) as it is left unconnected. Now either the breaker switch or the remote control can turn on the spreader lights. The same switch used to turn on the lights must also, of course, be used to turn them off.

The second feature utilizes the timer

relay board. This little module is amazingly versatile. The timer can be set anywhere from one second to one hour. The timing cycle can be one-shot or repeating. It can be triggered by a positive- or negative-going pulse and by the beginning or ending of that pulse. All of these features are set by positioning a set of five jumpers or, for the time delay, turning a small potentiometer.

Perhaps the board's neatest feature is the time-delay setting mechanism. Want a 6-minute delay? You don't have to sit through long trial-and-error attempts at



Not just for spreader lights. With a bit of ingenuity, these units could be used for a host of applications

setting the potentiometer precisely. You just set jumper one (JP1) to "seconds" and adjust for a 6-second delay. Move JP1 to "minutes" and the delay will be 6 minutes.

There is no limit to the potential uses for this relay board. For example, you could use it to turn your anchor light into a flashing beacon (not exactly a legal light) or set your LPG valve to turn itself off after 20 minutes in case you forget to turn it off yourself.

Figure 3 shows the schematic with the push button I added (Radio Shack 275-646)

SPREADER LIGHTS

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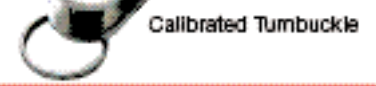
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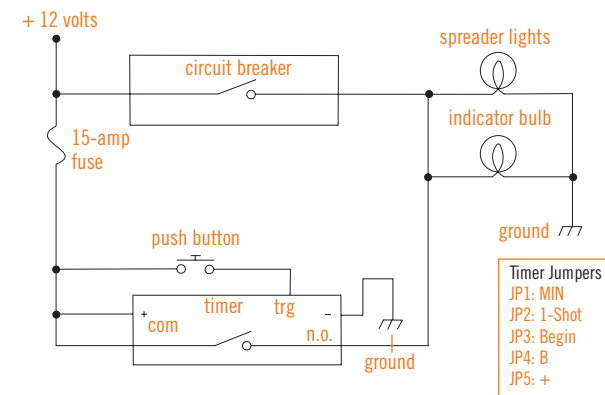
SPREADER LIGHTS

ELECTRICS

to my breaker panel, just to the right of the spreader lights' breaker, to trigger the timer. Sailor's Solutions is going to include this push button with the timer board. Now when the button is pressed, the spreader lights come on for 8 minutes and then turn themselves off. This is very convenient for leaving the boat, but does not help when returning to the boat.

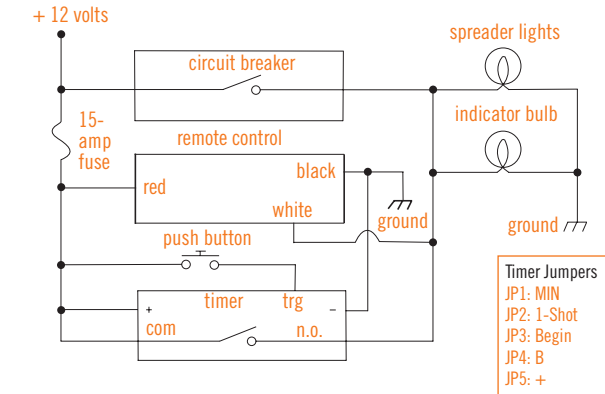
Seeking a better solution, I combined the two circuits so I can

FIGURE 3: AUTO-OFF TIMER



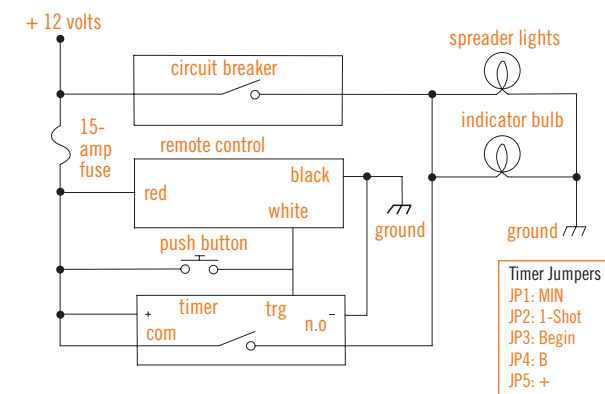
Timer Jumpers
 JP1: MIN
 JP2: 1-Shot
 JP3: Begin
 JP4: B
 JP5: +

FIGURE 4: REMOTE-CONTROL AND AUTO-OFF TIMER



Timer Jumpers
 JP1: MIN
 JP2: 1-Shot
 JP3: Begin
 JP4: B
 JP5: +

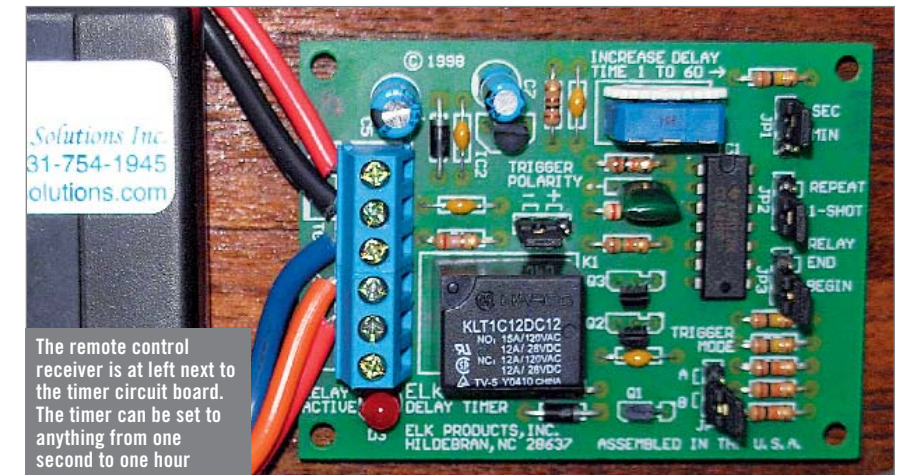
FIGURE 5: REMOTE CONTROL OF AUTO-OFF TIMER



Timer Jumpers
 JP1: MIN
 JP2: 1-Shot
 JP3: Begin
 JP4: B
 JP5: +

either turn the spreader lights on/off remotely or run the lights for the timed-delay period. **Figure 4** shows this circuit. Now this might seem like the ultimate solution, but I had to try just one more variation.

The final circuit I created (**Fig. 5**) allows me to use the remote control to start the timer cycle. The advantage is that I don't have to remember to turn the spreader lights off using the remote control after I go below. The push button also allows me to start a timed cycle of the spreader lights as well. There is only one small catch: After starting the timing cycle by pressing the "on" button of the remote, the "off" button must be pressed before the "on" button can start another timing cycle, even though the lights may already be off. So, I just press "on" and then "off" each time I start the timed cycle with the remote. That's not too big



a price to pay for the convenience.

I mounted both modules on the wall behind my breaker panel. The relay timer board comes with double-stick mounting pads. I used a bit of industrial Velcro to fasten the remote receiver to the wall.

The first time I pulled out my remote control, now attached to a floating keychain, to show off this new gadget to my friends, they were impressed, but one asked, "What's next, power windows?" Hmm, let me work on that...

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