

# ADD-ON ICC SWITCH

*This device will enable you to use your coach's marker lights or headlights to signal other drivers*

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**W**e attended a local rally with friends this past November. On the way to the campground, our friend noted that we were signaling other motorists with our headlights and courtesy lights. After arriving, he asked how we were flashing our lights. We explained that we had modified the original partial ICC circuit on the directional signal lever. He then wanted to know whether he could install a similar circuit on his coach.

Ed inspected our friend's coach and determined that it had a dash-mounted headlight switch with a foot switch to control the bright headlights. The location of the dash switch was inconvenient for use while driving.

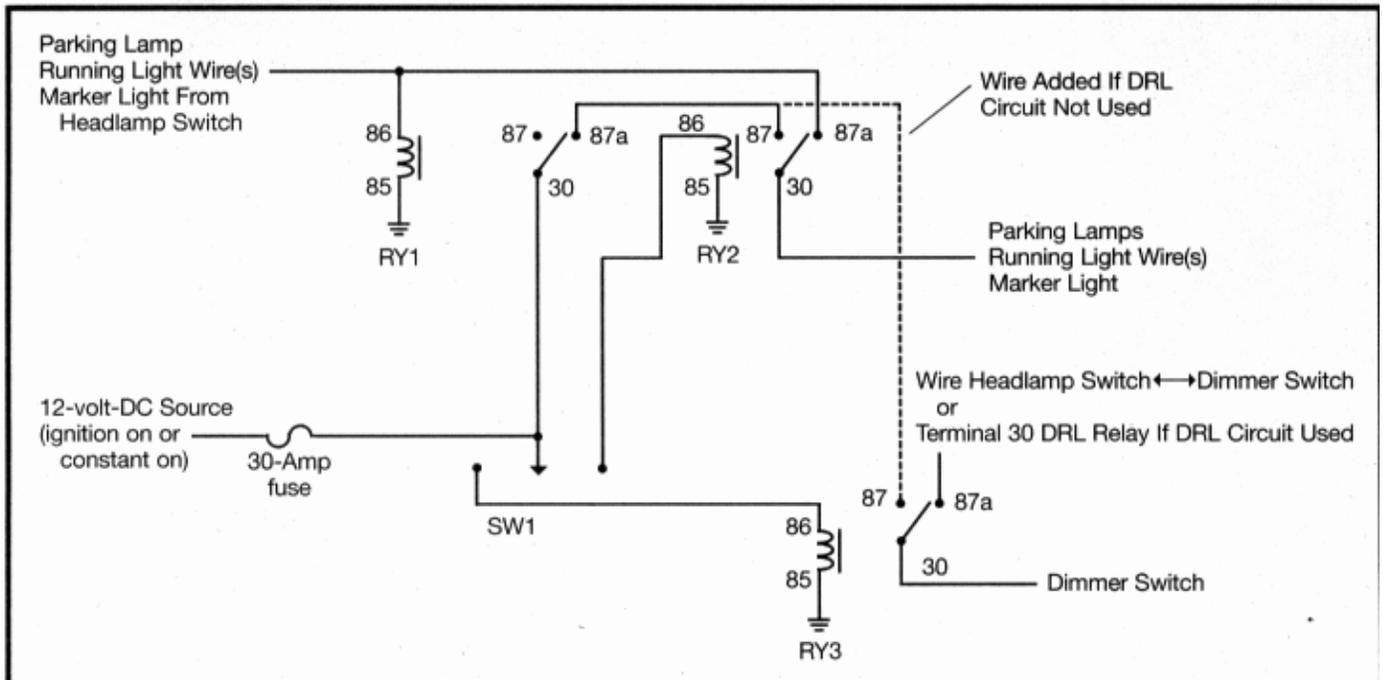
For obvious safety reasons, you do not want to frequently avert your eyes from the road to activate an ICC switch.

The topic of ICC switches was first addressed in FMC magazine by Ken Wilson, L13812, in the September 1987 issue ("Installing A Full-Function ICC Switch," page 48). We took up the subject again in February 1994 ("A Full-Function ICC Switch For Prevost Coaches," page 50). The ICC switch information given here lets you use one switch to activate the coach's marker lights or blink the headlights, day or night. It's designed to be used in conjunction with the daytime running lights circuit (DRL) described in our January 1996 article ("Daytime Running Lights For Coach And Car," page 76), but it can be modified and used without the DRL

circuit, if desired.

## INSTALLATION:

1. Disconnect the negative cable from the battery.
2. Identify the wire on the headlight switch that goes to the marker, running, and parking lights. On some coaches, this may be more than one wire. If so, identify what each wire supplies, and decide which you want to incorporate into the ICC circuit (one, two, or three). For the purposes of this article, we will discuss a single wire circuit.
3. Cut this wire or detach it from the headlight switch connector.
4. Find a suitable location for the three relays.
5. Extend the wires cut in step 3 as needed to reach the relays.



6. Connect the wire from the headlight switch to terminal 86 of relay 1 and terminal 87A of relay 2.

7. Connect terminal 85 of all three relays to ground.

8. Connect terminal 87A of relay 1, to terminal 87 of relay 2.

9. Connect terminal 30 of relay 2 to the remaining end of the wire cut in step 3.

10. Determine a convenient location to mount the double-pole double-throw (DPDT) momentary center off switch. This will have two sets of three terminals. We will be using only one set as in a single-pole double-throw (SPDT) switch.

11. Connect a wire from a 12-volt-DC source (ignition on or constant on), properly fused (30 amps or less if tolerated), to the center terminal of the switch.

12. Connect a second wire from the 12-volt-DC source to terminal 30, relay 1.

13. Connect a wire from terminal 86 of relay 2, to one end terminal on the switch.

14. Connect a wire from terminal 86 of relay 3, to the other end terminal on the switch.

Remember, since we are using a DPDT switch, there will be three unused terminals on one side of the switch.

15. Interrupt the wire from the

headlight switch to the dimmer switch (not the wires going from the dimmer switch to the headlights).

Note: If the DRL circuit is already in place, this wire will originate at terminal 30, on the DRL relay.

16. Connect that wire to terminal 87A of relay 3.

17. Connect a wire from terminal 30 of relay 3, to the dimmer switch.

18. Reconnect the battery negative cable.

## HOW THE SYSTEM WORKS:

### *Markers—Daytime:*

Pushing the momentary switch in one direction activates relay 2. With the marker lights off, terminal 30 is in continuity with terminal 87, which is supplied with 12-volt-DC power through relay 1. This illuminates the marker lights.

### *Markers—Nighttime:*

With the marker lights on (via the headlight switch), relay 1 is engaged, which eliminates 12-volt-DC power to terminal 87, relay 2. The marker lights are lit through relay 2, terminal 87A-30. Pushing the switch activates relay 2, which interrupts 12-volt-DC supply to the marker lights, causing them to blink off.

### *Headlights:*

If used with a DRL circuit, the function will be the same for daytime and nighttime use.

Pushing the switch in the opposite direction from the marker light side engages relay 3, which interrupts 12-volt-DC supply to the headlights, causing them to blink off.

If one does not wish to use the DRL circuit, a wire connecting terminal 87, relay 2 to terminal 87, relay 3 will be required. This would cause the lamps to illuminate momentarily when the dash headlight switch is off and to blink off when the switch is on.

## PARTS LIST:

### *Available from RadioShack:*

- 1 each DPDT, momentary, spring return to center off, part #275-709 (An SPDT, momentary, spring return to center off can be used but is hard to find.)
- 3 each SPDT 30-amp 12-volt-DC cubic relay, (Hella changeover relay), part #170-66200
- 3 each relay base, part #170-87123 (optional)
- 1/4-inch terminal relay base, part #170-87272 (optional)

*Available from P.U.M.A. (601 N. West St. #207, Wichita KS' 67203; (800) 333-7862; identify yourself as an FMCA member):*

- 1 fuse holder + 30-amp fuse
- Butt connectors 16-14 gauge
- 1/4-inch female quick disconnects