

Multiway switching

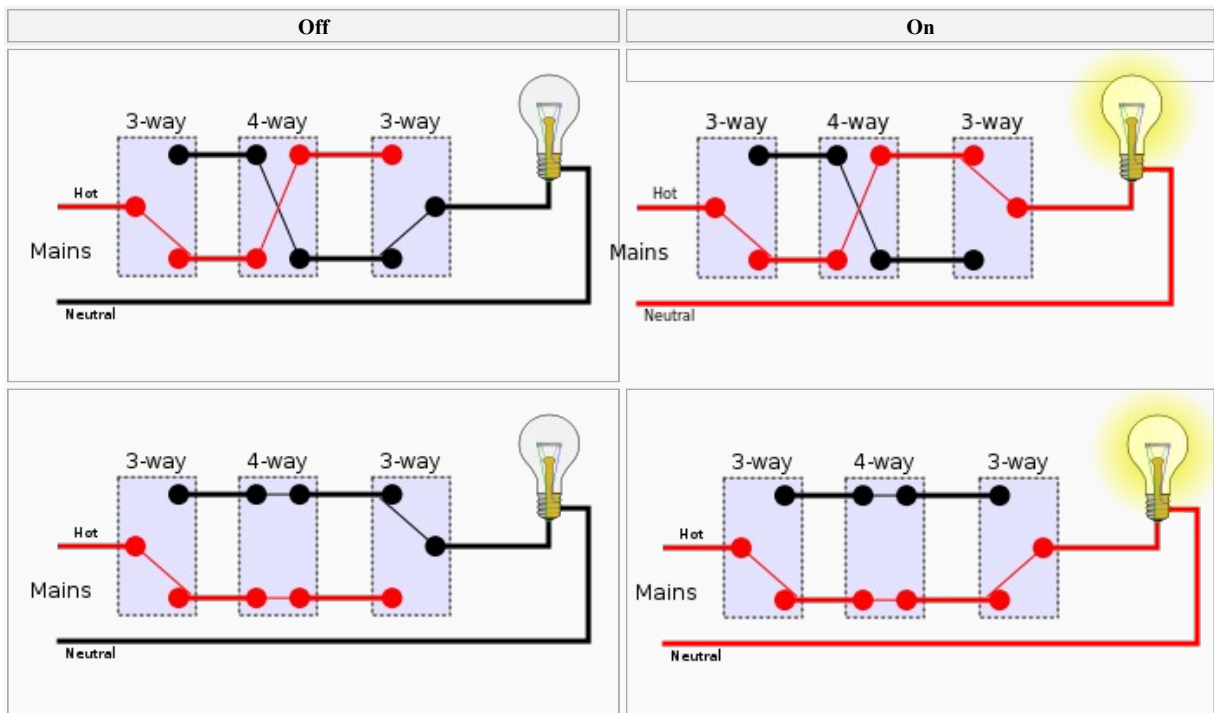
Two locations

Switching a load on or off from two locations (for instance, turning a light on or off from either end of a flight of stairs) requires two SPDT switches. There are several arrangements of wiring to achieve this.

Traveler system

In the traveler system, also called the "common" system, the power line (hot, shown in red) is fed into the common terminal of one of the switches; the switches are then connected to each other by a pair of wires called "travelers" (or "strappers" in the UK), and the lamp is connected to the common line of the second switch, as shown.

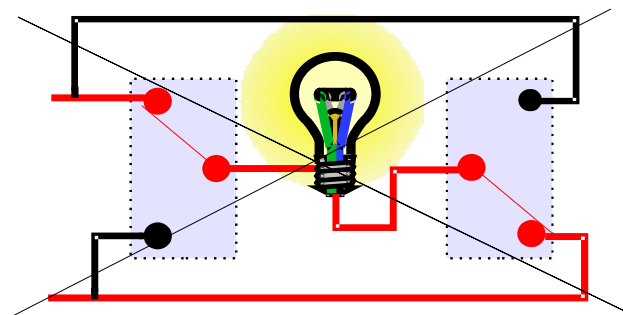
Using the traveler system, there are four possible combinations of switch positions: two with the light on and two with the light off.



Carter system

The Carter system is now prohibited. As the shell may be energized, even with the light switched off, this poses a risk of electrical shock when changing the bulb.

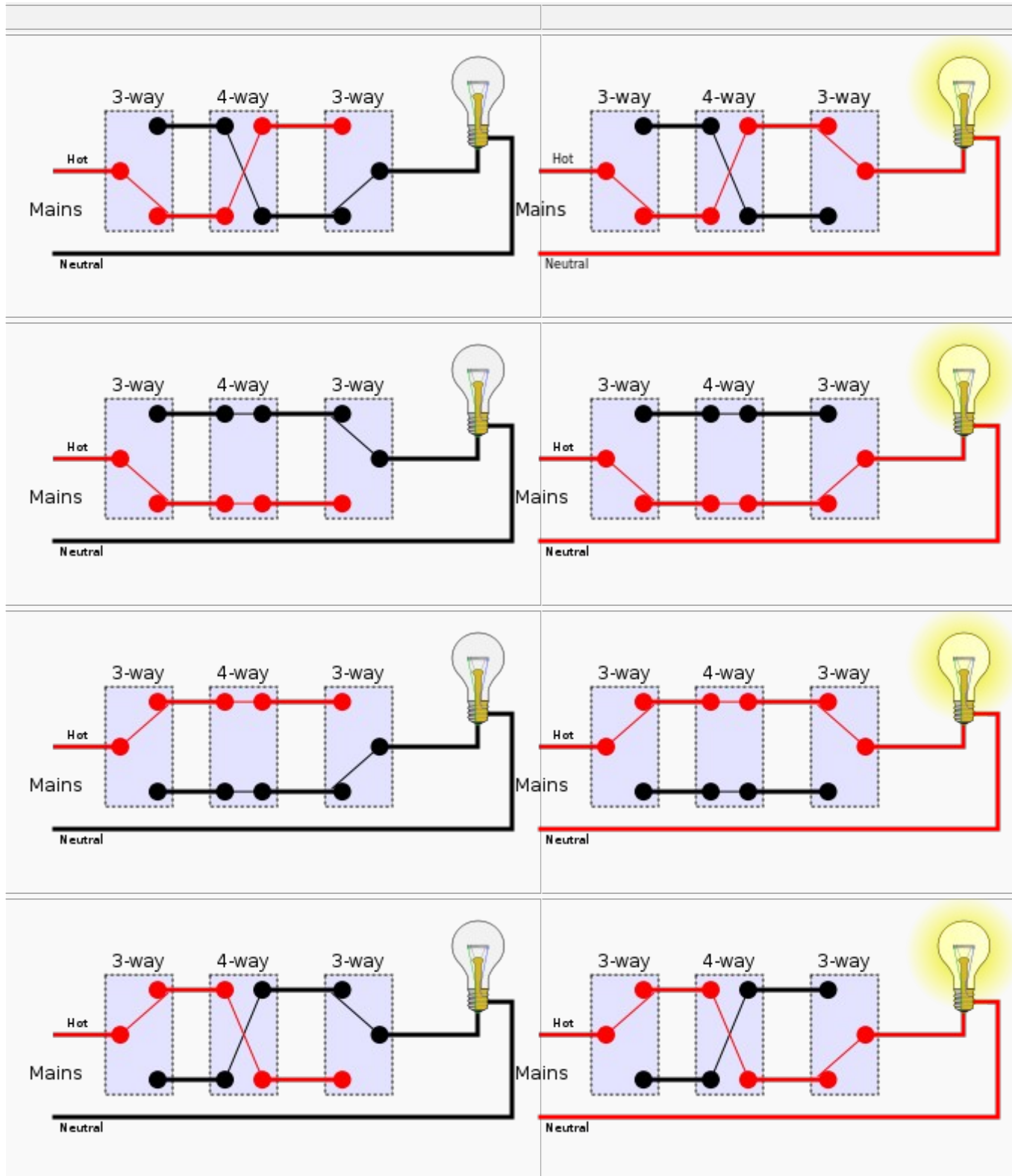
This wiring system may still be encountered in older "grandfathered" electrical installations



More than two locations

Traveler system

Using three switches, there are eight possible combinations of switch positions: four with the light on and four with the light off. Note that these diagrams also use the American electrical wiring names.



As mentioned above, the above circuit can be extended by using multiple 4-way switches between the 3-way switches to extend switching ability to any number of locations.