

## Dim-dip headlights on the 2CV

(c) Mike Phelan 2/2002

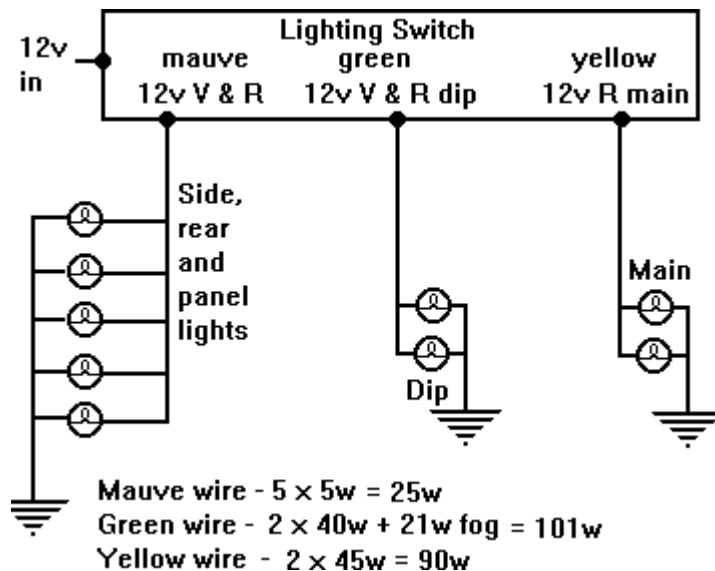
- Do you have a 1987 or thereabouts 2CV ?
- Does your light switch get red-hot ?
- Do you wonder what that corroded can on your front chassis rail is?
- Read on...

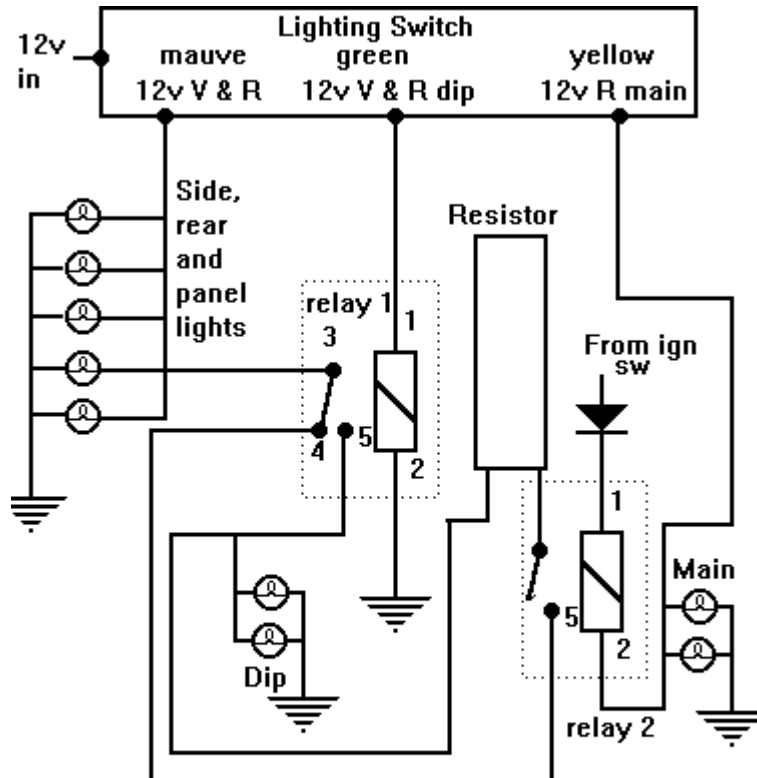
Around 1987-88, many 2cvs had this system fitted. In the UK, and possibly other countries as well, it always used to be quite legal to drive on sidelights in a built-up area (one with street lights). The UK police, who used Ford cars at this time, modified them so that when sidelights were on, and the engine running, dipped headlights at reduced intensity were displayed. Many manufacturers followed this; eventually it became illegal to drive on sidelights at all, after dark.

A 2CV with dim-dip has several differences:

- There are 2 relays on the bulkhead next to the battery box
- There is a large resistor mounted on the front cross member, to ensure it gets a good dose of salt, grit, etc.
- There is a diode behind the instrument panel
- The wiring loom is different

Haynes shows the circuit on p202, but it is incorrectly captioned '1969 onwards', and none too clear, so I have redrawn it below. The first picture is the 'normal' arrangement without dim-dip.





**Mauve wire -  $5 \times 5w + 2 \times 40w + 21w \text{ fog} = 126w$**

**Green wire -  $6w \text{ relay}$**

**Yellow wire  $2 \times 45w = 90w$**

### Why is it so complicated, and how does it work?

To answer the first question, if the lights were arranged that the sidelights were only illuminated when 'sidelights only' was selected, and not on as with main beam and dip, the solution would be simple - just one relay to switch from 'side' to 'dim dip' and a resistor would be needed.

However, this is not so - sidelights are on with all positions of the switch except 'off', fed from the mauve wire, hence the complication, and the excessive current passing through the sidelight contacts on the switch.

When the sidelights are on ( all positions except 'off') relay 1 common contact is live, and relay 2 common contact is fed from it. In the 'sidelights only' position, if the ignition is on, relay 2 feeds the dipped filaments through the resistor, the main beam filaments acting as an earth return. When switch is in the dip position, relay 1 is energised and breaks supply to resistor. When in the main beam position, the feed to the main beam de-energises relay 2, as both ends of coil are live.

The diode is to prevent the main beam voltage from feeding the ignition.

Sooner or later, one of these diodes will go short-circuit - you have a chance to gain amazing credibility when someone says to you 'my engine keeps running when I turn it off, if I switch to main beam'

These fiendish arrangements really need disabling, before your light switch melts. To do this, disconnect both relays and the resistor, and connect pins 1 and 5 of relay 1 connector together (green and black with grey sleeve) Do it properly with a scrap relay or two male connectors on a short lead. If your colours are different, pin 1 is live on dip only - test with bulb, pin 5 goes to dipped filaments - test with lead from battery. Tie loom up neatly.