Modification of wiring for ‘79 X1/9 USA.

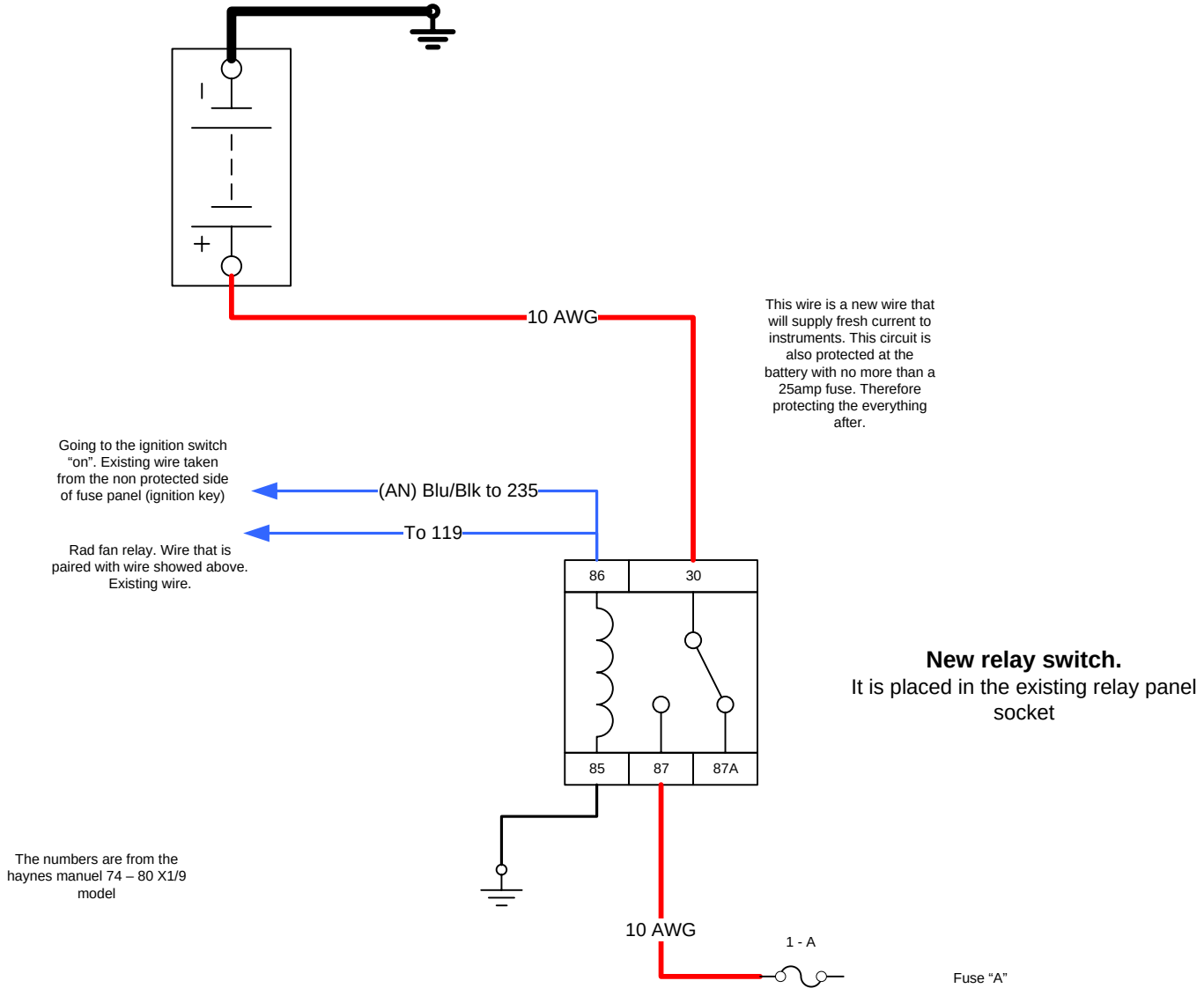
Problem: Modification to fix electrical problem at the instrument panel.
Symptoms: voltage fluctuation at clock, instrument voltmeter when wiper motor is on. The instrument voltmeter draw down.
Finding: After doing several ohm test, wire size calculation, wire/plug temperature tests it was found that the problem is that the brown wire coming from the battery going to ignition switch is to small to feed the instruments, especially at the block/plug in the fuse/relay panel.

The concept of repair:
The concept of this diagram is to off load the ignition switch circuit and transfer its load to the relay (shown below). In other words, it is to by-pass current that feed the instrument panel, heater fan, clock, wiper motor and everything that feeds fuse “A” to the really switch vice going to the ignition switch. This will also off load the white plastic plug block that is located in the fuse panel feeding all the circuitry, which showed high over heat (40c) and resistance. After making an ohms calculation the wires at the block plug was the bottle neck in the circuitry and were too small for the amount of current going thru it.

By adding a fuse at the battery you are now protecting the circuit before the fuse panel. It was also found that the ground cabling feeding the instruments and especially the wiper motor was way too far from the ground itself and the ground wire for the wiper motor was too small (AWG 16).

After doing this small modification the electrical is working much better.

Steps of repairs:
Step 1. Run a new wire from the battery to the fuse panel
Step 2. Install 30 amp relay that will go in the existing spare relay socket.
Step 3. Run a new wire from the protected side of the fuse panel at fuse “A” to 87 post of the new relay.
Step 4. Take the Blue/black wire from fuse “A” (the wire that is going to ignition) which is paired with fan relay wire (the feed wire to the Rad relay wire).
Step 5. Install a ground to post 85 of the new relay.
Step 6. Install fuse at the battery of the new hot wire.
Step 7. Place the relay in the socket
Step 8. Install ground strap at the wiper motor, alternator to body, at the starter motor.
Make sure all wire are covered with heat shrink or insulator.



Bob Lawbla B.Sc. Elec eng