



As you probably remember, one of the Chris's in the club sent in a batch of trivial questions to be answered by this column. We started with the easy ones first, and are now moving to the very easy ones. The question for this month is, "Why do the headlights in my DS and my 2CV 'pulse' or 'strobe' like the lighting in a crummy French Hotel? You can see the strobing going on in other items in the electrical system such as the interior lights also."

To answer this question, we must first decide whether it is a car problem or an eyesight problem. Do you have frequent headaches Chris? Are they migraine headaches? Throbbing head? Try a very cold icepack on the back of your neck and maybe also on your temples. You will notice that the pulsing in the headlights will go away. But if this doesn't help, then it must be a car problem, so read on for the solution to that possibility, too.

The voltage regulators in most pre-1980 cars are nothing more than a set of contact points that open and close rapidly, sending short pulses of electrical current to the alternator. These pulses are supposed to average out so that the alternator produces a fairly steady 14 volts +/- about half a volt, when measured across the battery terminals. The regulator is supposed to receive a constant voltage from the "12V" source that comes into the "BOB" connection. (In fact this 12 volts is more like 13 volts when the alternator is running.)

It is important that this source of electricity to the voltage regulator be constant; if it varies in voltage, you will get interaction between the alternator, the regulator, and the rest of the electrical wires and accessories. The more you can keep the voltage to the "BOB" terminal constant, the more constant will be the output of the alternator. Constant voltage to "BOB" has a dampening effect on the voltage fluctuation of the whole system. There is a tendency for the voltage coming to "BOB" to drop when the points close inside the regulator, and the alternator begins to charge. If there is some unwanted extra resistance in the circuit to "BOB" the voltage drop will be even greater than normal. The key to getting rid of the pulsations in your headlights is to get rid of the resistance in the current source to "BOB", assuming that your headache has gone away. If there were no resistance in the current source to

"BOB", the voltage would be very constant from the battery, no matter what the current load demand from the regulator. This would provide much quicker buildup of magnetic fields in the alternator and the entire system would fluctuate much more rapidly, and within much smaller voltage limits.

If you don't believe all of this, take a double dose of Exedrin, to stabilize your eyesight, and do the following test: First, disconnect the wire that leads to the "BOB" terminal of the voltage regulator. Next, make a substitute for that wire, using fairly thick electrical wire - at least 16 gauge. This wire should be about 18 inches long, and have a female spade terminal securely connected to one end. The other end should be stripped for about one-half inch. Plug the spade end onto the "BOB" terminal of the regulator. Connect your voltameter to the battery terminals if you are curious about the voltage. Now, start your engine and set it at a fast idle - about 1,800 RPM. Turn on the running lights or headlights for the demonstration. Now touch the stripped end of the wire to the plus terminal of the battery. This is as close as you can get to a zero resistance source for "BOB". You will see marked improvement in the pulsations; they will be 90% eliminated, and much faster (if the Exedrin has worked).

If the improvement is sufficient that you are willing to do some work to find the resistance in the circuit to "BOB", then look in the obvious places. Bad connections on the fusebox are one source. Frayed wires are another. Yet another is the ignition switch. Years of corrosion will gradually add resistance to all of these connections.

But if you're like me, you can just tell your passengers that the pulsations are all in their head; you don't notice anything!

Thanks to Tom Tuling, a new Olympia resident and DS owner, for the key for answering this question.

Send your Citroen or car-related family problems to Henry Reed, 18438-47th Pl. NE, Seattle, WA 98155, USA.

