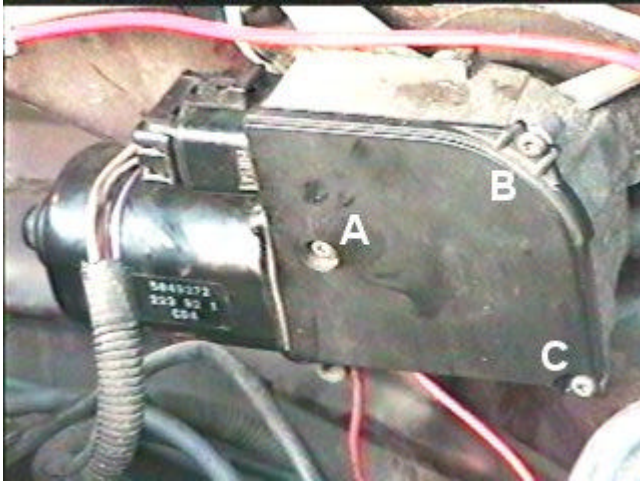


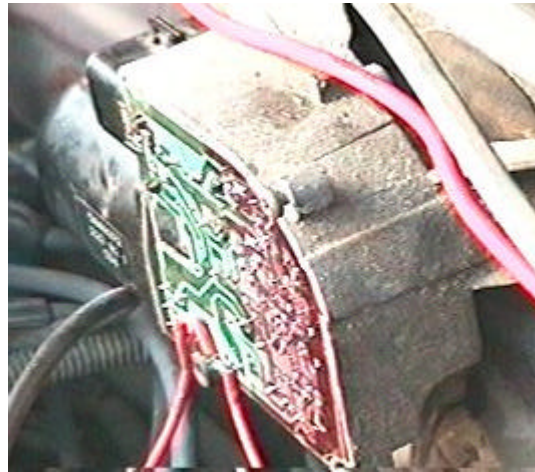
## The Suburban Wiper Syndrome

My '92 Suburban K2500 was recently struck by the "erratic wiper" syndrome. This problem is apparently well known among Sub owners...and has been said to often be related to solder joints on the wiper control circuit board. The board is located inside the wiper motor assembly, behind the flat cover shown here, just above the firewall on the driver side in the engine compartment.

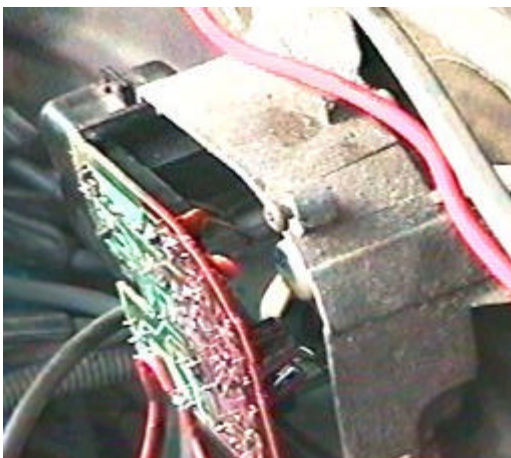


I decided to look at mine...the hard way. I removed the entire wiper unit, which involves taking some plastic off up near the windshield, and disconnecting the wiper mechanical and electrical linkages, plus some bolts, screws, etc. The EASY way, as I learned later, is to just remove the three screws holding the circuit board cover. Actually, you only have to remove screw A, and just loosen B and C, since the corners are slotted, rather than holes. They are Torx head.

When the cover is removed, the circuit board is visible...



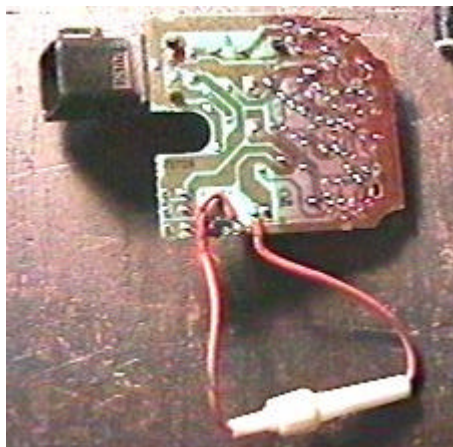
Amazingly, the board can simply be LIFTED OUT (with careful prying around the edges).



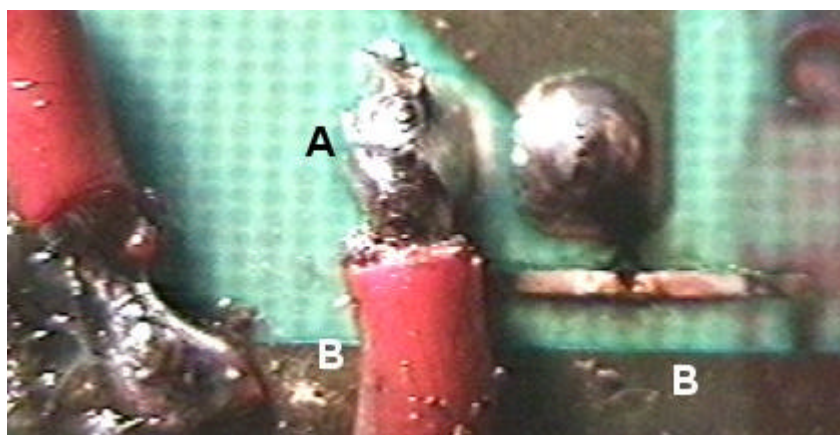
As shown next, the circuit board comes free, with the black cable connector socket attached to it (so disconnect the cable first ... of course you have to lift the plastic catch on the plug up to do that).



These pictures were taken AFTER I made my first attempt. I must have shorted something out in my testing, because now it didn't work at all. By examining the circuit board, I saw a burned-through trace on the board. In case it was a likely future burn-out spot, I soldered an external fuse holder to bridge the burned area...the red wires and white holder you see below. This arrangement just hangs out of the box when re-assembled, so I could replace the fuse if need be in the future without opening the wiper unit. Typically you wouldn't have to do this...it was just to make up for my error.

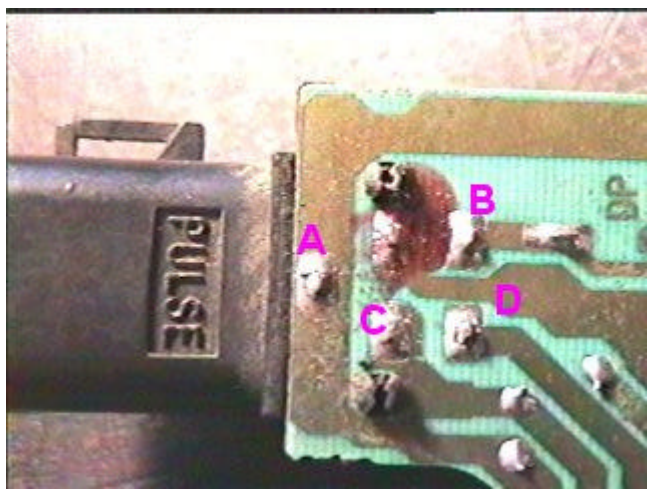


And here is a close-up of the burned spot. The wires connect between the origin solder joint A, and a heavy ground trace B that the burned trace is connected to.



All this is beside the point though. I didn't see any problem with the soldering on the circuit board (didn't look carefully enough), so I presumed the problem was with the connector contacts. I cleaned them up, put it back together, and it seemed to work fine. However, shortly it began to act up again. This time, at least, I knew enough just to pull the board, rather than the whole wiper assembly.

This time, I saw the real problem...four solder joints had cracks in them...all of them where the black electrical connector socket prongs come through the board...A, B, C, and D below.



Here are closeups of some of the cracked joints. These were clearly the problem...when it started acting up again, I found I could make it do funny things by wiggling the connector socket, yet I'd cleaned up the actual plug prongs, and made the socket contacts tighter by judicious use of a dental probe. So something internal had to be it.

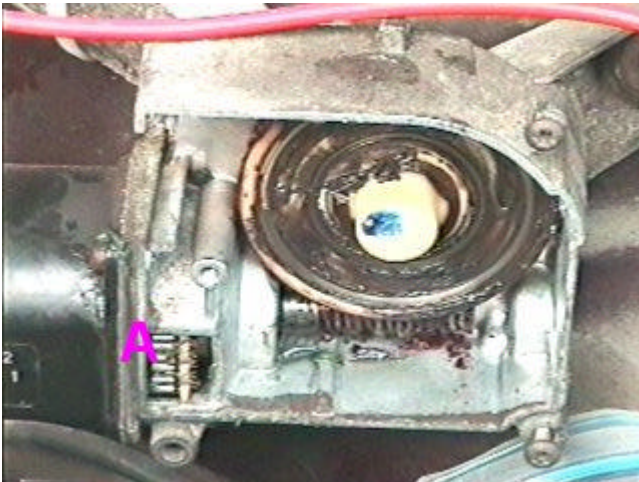




I think one cause of the cracks is that these soldered prongs act as support for the wiring socket. There are two extra plastic support pins that come through the board, but these aren't very effective. Probably at some point someone tried to pull the wire connector off, and twisted the hell out of it before they realized they had to release the plastic clip to get it out! The solution is simple: resolder the joints as others had recommended. Since they are heavy lugs from the socket connector, you can use a good amount of heat without fear of damaging parts. This may not be true with other solder joints, however...just the ones on the socket lugs. Here's one of the joints after re-soldering...



Here's a shot of the wiper housing before putting the board back in.



To make a long story a bit longer, I stuck the board back in (being careful to seat the board prongs back into their connectors shown at A). You can see the commutator rings that allow the wipers to come back to "home" position after turning the switch off. Everything works fine now, and I anticipate it doing so for a long time to come...and the Burb lived happily ever after!

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