Rewiring the Marker Lights as Turn Signals

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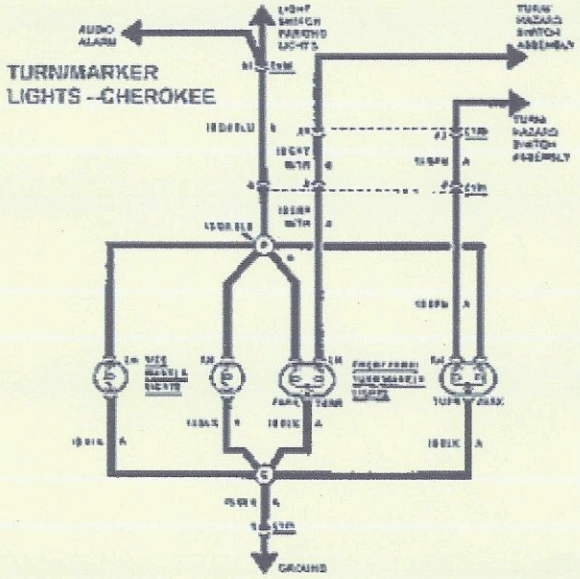
Here's an easy way to add a little safety feature to your early XJ/MJ. Later XJs (somewhere in the '90s) already have this feature. This article describes how the side marker lights on the XJ/MJ can be easily rewired so that they too act as turn signals.

It takes as little as clipping and resoldering one wire behind the front turn signal and front side marker lights to add this little additional safety feature. Material cost involved here is one drop of solder and 2in of electrical tape per side!
The following article is written with the beginner in mind. The seasoned wrencher may perhaps benefit from the wiring schematic.



This is the scanned version of the XJ's wiring diagram. (From: "Electrical Troubleshooting, 1986 Cherokee/Wagoneer 70 Series" USA/Canada Edition 8980 010 080) No Copyright information. Presumedly: ©Copyright 1986 AMC/Jeep.
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This version (in color) shows the modification(s) necessary based on the previous scan.
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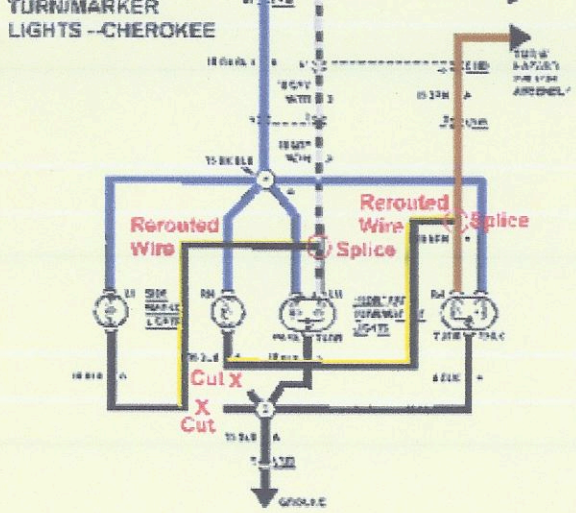
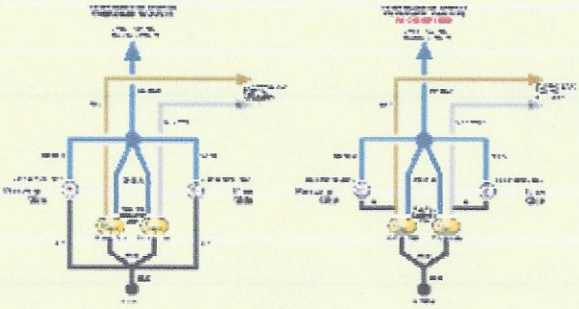




Here another schematic. This is the same one but the elements have been rearranged and the wiring has been simplified even more (in color).
[View 2-page PDF file]

Warnings!

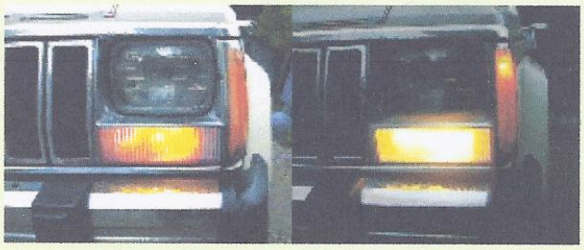
- Disconnect the battery!
- Make sure you understand the wiring, otherwise you risk shorting the circuit (electrical fire!)
  You fry your Jeep, guess who's to blame? You! :-)
- During this install you will use hot (soldering iron) and sharp (cutting) tools.
- According to my pair of wire cutters, wear safety goggles!

The Parts

- Some electrical tape
- Rosin core solder and perhaps flux for *electrical* connections
- An old XJ or MJ

- Soldering rod/gun
- Cutters (scissors, and wire stripper)
- Cutting blade
- Phillips screw driver
- Miscellaneous other typical tools

The Procedure

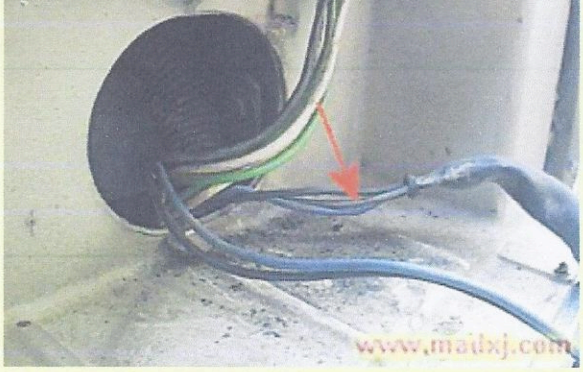


Left: Day (unmodified). Right: Night (unmodified)

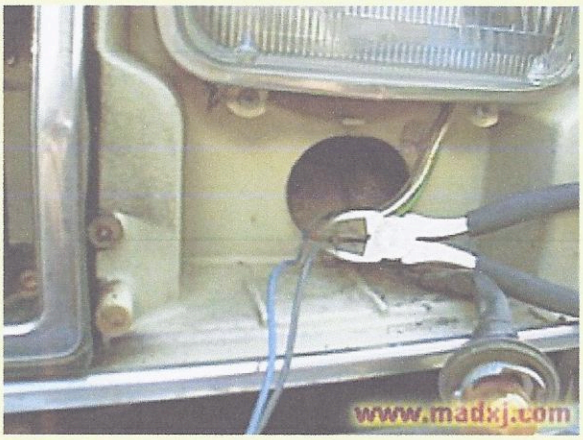
Pre-Test:

- (With the battery connected) turn the ignition on, and activate the turn signal and turn on the head lights (or at least the parking lights). Make sure that the bulbs are working as intended, otherwise fix pre-existing problems first!

Start with removing the head light bezel, turn signal housing and side marker lens. Gently pull the wires out for the turn signal and side marker.



The follwing procedure is demonstrated on the driver's side. Do the same for the passenger's side, except instead of cutting the gray/black wire, cut the brown wire.
Here, on the *driver's side* locate the gray wire with a black tracer.



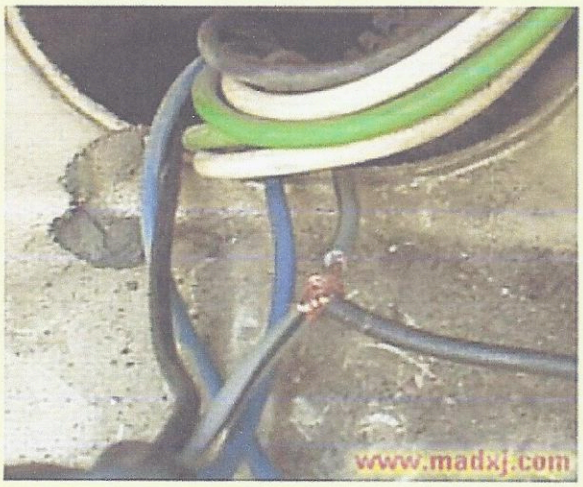
Then clip the *side marker's* ground wire which is the black one. Clip it far enough back so you won't have to extend it later. The side marker wires need to be long enough to reach up into the side marker lens.

With a wire cutter/stripper remove about 1/4" of the insulation. Wear your safety goggles while doing this (or so it is suggested on this pair of wire strippers from Sears Hardware).

With a box cutter (or similar) make two cuts into the *insulation only* of the gray (with black tracer) wire (driver's side) or brown wire (passenger's side). Don't cut any of the copper strands. Cut the insulation all around the wire's circumference.
Make a similar second cut into the insulation about 1/4" away from the first cut.

Between the two cuts, make one last cut length-wise. If you use your finger as backing behind the wire, you will end up (most likely) sliding off the wire, cutting into your finger.
Peel back the insulation. You should have some short piece of bare copper wire, without any copper strands dangling off of it.

Push the copper strands of the gray (or brown) wire apart in the middle. Insert the bare end of the black wire in here.

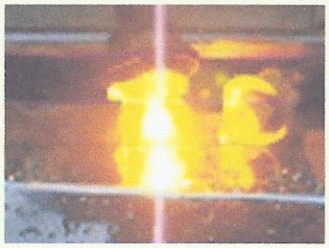


Wrap the black wire's copper strand around the other wire (gray w tracer).
Now is the time to make a quick test to see if things work as anticipated.
If your Jeep catches on fire after you connect the battery, something wasn't right. Buy a new Jeep and start over. If you shorted a circuit, check your fuse panel for a blown fuse.
Before soldering the connection, now it would be best to run a quick test!

Test:

- With the battery connected, lights off and turn signal off, check the light bulbs. Yes, you guessed it: Nothing should happen.

- Turn the ignition on, and activate the turn signal (head lamps off). The turn signal and the side marker should flash on/off at the same time.



- Same as above, but with the head lamps on (or at least park lights on), the turn signal and side marker lights should flash *alternatively*.
  Further, make sure that the filament for the parking lamp is working properly.
  The filament for the turn signal is the brighter one and flashes whereas the dimmer filament is for the parking lamp and stays on.

If everything works as intended, continue.
Add some solder. Don't ignore this, you'll end up with a bad connection otherwise.

Use the electrical tape to insulate the bare solder connection (Jeep's version of doing this is using duct tape!)
Then add another second layer around all the wires (as shown).

Left: Day *(modified)*. Right: Night *(modified)*

Final Test:

Lights off, signal on: Synchronized signal.
Lights on, turn signal on, alternating signal.

Reassemble Jeep.

That's it.

Summary

This simple procedure adds a bit of extra turn signal visibility and doesn't cost a dime to do. It's one of those quick and easy, no dollar-spent, procedures that may just come in handy when other projects are too costly or too time-consuming.