



## **BULB FAILURE**

**Field Failure:** Taillight bulbs burn out in a matter of weeks.

**Unit:** New truck in service for just a few months.

**Cause:** The “Ground” path from battery Neg. terminal through the Battery Box to the “C” Rail Frame, was no longer providing an adequate electrical return for the system.

**Diagnosis:** The batteries were grounded to a custom battery box that is located in the center of the vehicle. The battery box is mounted with brackets to the vehicle cross members which are then attached to the “C” Rail Frame. This multitude of daisy chained mechanical connections provides too many opportunities for vibration, and moisture, to eventually develop corrosion inside the assembly until the electrical connection fails. This practice provides a predictably unreliable electrical ground return for the vehicles electrical system. Other equipment on the vehicle then starts seeking its ground through the bulbs in the taillight causing them to rapidly burn out.

**Field Service:** Customer installed a new battery ground cable to the “C” Rail Frame.

**Recommended Corrective Action:** During installation of Custom Battery Boxes a proper electrical ground, independent of mechanical ground, needs to be installed. A ground needs to run from the battery Neg. post to the drivers side c-rail through a minimum of a 2awg ground strap. This gage wire will handle 200 amps of current for the length required. The cable connectors shall only be crimped with an approved ratcheting crimp tool specifically designed for the size wire and connector used. The connection to the frame will be made with a properly tensioned nut and bolt to clean bare metal or to a similarly clean welded stud.