

ELD PROTESTS SET FOR NEXT MONTH 2

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Randall Reilly

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Light maintenance

Frequent inspections help in keeping lights in top condition and avoiding violations **BY JASON CANNON**



Goodyear

Lights account for almost 30 percent of all Compliance, Safety, Accountability violations. Lighting violations carry six severity points each. Headlight and taillight violations bring an automatic out-of-service violation, adding another two points.

To make matters worse, poorly maintained lights invite inspectors to give the truck a thorough lookover that could lead to more violations.

“Identifying a cracked or missing lens by a walkaround inspection is a pretty simple way to reduce the chances of being spotted for a violation,” says Megan Vincent, Phillips Industries’ mar-

keting manager. “Why risk it?”

That’s why there is no more important step in lighting safety than a proper pre-trip inspection, says Brett Johnson, Optronics International’s president and chief executive officer.

Root causes of failure

Flickering or dim lights are usually pre-failure symptoms that can be caused by improper bulbs, damaged wiring or corroded sockets.

“Beyond just visually inspecting whether a light is lit, a driver or technician should always inspect connections and harnesses,” says Andrew Liuzzo,

Truck-Lite’s marketing communications specialist. “A multimeter can aid greatly in ensuring that a lamp is receiving proper voltage.”

Because LED lighting is more resilient than incandescent lighting, a dim or flickering LED is even more likely to indicate a problem beyond the light itself, says Johnson. That’s often corrosion, which can be avoided by sealing out foreign substances.

“The main ingredients for corrosion are water, de-icing chemicals, salts and road debris,” Vincent says. “Combine that with electrical current, which accelerates the development of corrosion even further.”

Also look for signs of field repair in a malfunctioning lighting system, says Brad Van Riper, Truck-Lite’s senior vice president and chief technology officer.

“Fix any field repairs with proper procedures like removing any corrosion, removing wiring that exhibits green corrosion and using heat-shrinkable covering over splices and repairs,” Van Riper says.

In modular systems, connectors have reservoirs to hold dielectric grease for the electrical system. Connectors should be inspected regularly during planned maintenance and the grease replenished as needed, Johnson says.

“Moisture and corrosion are constantly assaulting a system at its weakest points, and that is any connection point,” he says. Some owner-operators apply adhesive-lined heat-shrink tubing to all electrical connectors.

Corrosion prevention starts by properly sealing connections when the light is installed, Vincent says. “We also encourage the use of grease to further prevent the damage of corrosion,” she says.

It also helps to remove any wire probes or picks used by technicians to penetrate the wire to measure voltage or continuity, Van Riper says.

“The use of these wire probes causes permanent damage to the stranded wire, and the corrosion will wick up through the harness, causing the movement of corrosion through the electrical system,” he says. “The use of dielectric grease with a corrosion inhibitor is a great recommendation we make to help improve the resistance of your wiring system.”

LEDs vs. incandescents

LEDs cost more than incandescent lamps but offer significant advantages: They are more durable, usually have a wider voltage operating range and produce the same light output in low-voltage or voltage-drop situations, Vincent says.

“When voltage drop occurs with incandescent lamps, they get dim, and you could be cited for insufficient lighting,” she says. If roadside service is necessary, the failure of a \$5 lamp can cost hundreds or thousands of dollars in service fees, lost productivity, fines for violations and significant points against the CSA scores of the driver and the fleet.

Marker lights demonstrate the extended life value offered by LEDs, Van Riper says. “A red incandescent marker lamp has a rated life of 5,000 hours, while a red LED marker lamp has a rated life of 100,000 hours. Couple the life benefit of LED technology with the resistance to mechanical damage, shock and vibration, and you have a product that can potentially last the life of the vehicle.”

Truck makers now order more than nine LEDs for every one incandescent lamp, says Marcus Hester, Optronics’ vice president of sales and marketing. Hester says modern LEDs use only 10 to 30 percent of the amps needed to light an incandescent lamp, freeing that power for other components.

Switching to LEDs

Converting a truck or trailer from incandescent to LED lighting can be



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as simple as unplugging the old light and plugging in the new one, but not in every case.

“Tractors are a little more specific as to what they can replace as opposed to the variety available for trailers, and it’s straightforward,” Vincent says. “In recent years, tractors have started using the same taillight as the trailers, 4-inch round, which makes it more universal. In some cases, for trailers, changing over from an incandescent lamp to an LED may require an adapter. Mounting applications may need to be taken into consideration as well.”

Incandescent systems often come with PL-3 connectors that are less reliable than the weathertight connectors found on most LED lamps, Johnson says. While Optronics recommends the use of weathertight connectors where possible to assure optimal service life, trucks with existing incandescent lamps using PL-3 connectors can be upgraded easily to Optronics’ LED lamps, he says.

Van Riper says to avoid using bulbs labeled “offroad use only” because they can damage a headlamp beyond repair. He also notes that replacement kits designed for converting halogen lamps to LED or high-intensity discharge are illegal.

“Use of illegal HID or LED kits in your headlamps will cause glare levels

too high for oncoming drivers,” he says. “All replaceable bulb headlamps and bulbs should be marked with the DOT symbol, and if they are not marked, we advise that you do not use them. For vehicles equipped with halogen headlamps, we recommend that you stick with halogen replacement bulbs called out by the manufacturer.”

Other lighting violations

Reflectors and conspicuity tape are critical items that often are overlooked. Johnson calls them “the last bastion of safety and visibility in a situation when the lighting and power are out on a vehicle.”

The National Highway Traffic Safety Administration requires most trailers to be equipped on the sides and rear with a means of making them more visible. The NHTSA rule allows trailer manufacturers to install either red and white retroreflective sheeting or reflex reflectors.

Drivers can receive violations for having defective reflectors and conspicuity tape and should make sure reflectors are free of cracks and dirt, Johnson says.

“Over time, conspicuity tape can also degrade to the point that it is no longer sufficiently reflective, thus making an unlit truck a sitting duck for a collision,” he says. D