

**MAINTENANCE BULLETIN #36**

***Subject: Tires.***

**Tire failures (blowouts) have become a growing problem on OES engines and water tenders. Concurrently, tire industry standards have changed, and tire companies have begun to address tire age or “shelf life.” In order to maintain a safe and efficient fleet of fire fighting vehicles, this office has determined the following to be a minimum standard for tires.**

**Tread Depth**

Historically, tread depth has been used as a criteria for determining tire replacement. The California Vehicle Code, Section #27465 states that no person shall use a pneumatic tire on a vehicle axle when the following tread depth is reached: one thirty-second of an inch tread depth in any two adjacent grooves at any location on a tire; four thirty-second of an inch tread depth at all points in all major grooves on a tire on any steering axle; and two thirty-second of an inch tread depth at all points in all major grooves on all other tires on the axle of the vehicle.

**Tire Age**

Tires degrade over time, even when not being used. UV exposure, high ambient heat, and exposure to oil and ozone gas all are causes. Steel belts can rust inside tires if inflated by air with moisture in it. When in use, tires deteriorate from heat caused by hot climates, high speeds, and high loading conditions.

Most manufacturers design their tires for commercial truck applications where miles are more important than years; basically, tires are expected to wear out long before they rot out. As a result, the stabilizers in many tire rubber compounds are formulated to offer protection for only a limited time. Failures can include sudden sidewall blowouts or bead separations.

Tire age can be determined by checking the DOT code on the sidewalls. For tires manufactured before the year 2000, the last three digits represent the week and year of manufacture. For example, if the last three digits are “229”, the tire was produced in the 22<sup>nd</sup> week of 1999. For tires made after Jan. 1, 2000, a four digit code is used: the first two digits represent the week of production, and the last two digits represent the year of production. So, if the last four digits are “2205”, it means the tire was manufactured in the 22<sup>nd</sup> week of 2005.

**Tire Replacement Policy**

Regardless of appearance and tread wear, tires over 7 years old should be replaced with new ones. **When replacing tires when located in the assignee’s home locale, ensure that the vendor**

utilizes tires that are no more than 6 months old. When replacing tires during a deployment, ensure tires are no more than 12 months old.

On occasion, a tire lug may be torn off from one of the drive (rear) tires. The lugs are usually torn from the outside edge of the tire. Replacement of these tires will be determined by the following criteria:

If there are no cords/steel belts showing in the location of the torn lug, the tire will not be replaced.

Conversely, if the cords/steel belts are visible, the tire will be replaced.

If multiple **adjacent** lugs are torn off, regardless of the lack of visible cords/steel belts, the tire will be replaced.

If multiple lugs are torn off, but they are not adjacent, the tire will only be replaced if there are cords/steel belts visible.

### **Standard Tires Used**

Steering Axle (front): Goodyear G287 with Dura Seal

Drive Axle w/**11R22.5** (rear): Goodyear G164

Drive Axle w/**12R22.5** (rear): Goodyear G124 Note: If Goodyear begins to make the G164 in the 12R22.5 size, OES will transition to that model tire.

Drive Axle option (rear): OES will consider the use of the Goodyear G244 on a case-by-case basis for assignees who have a higher level of off road usage. Authorization must be obtained from the OES Fire & Rescue Chief, or his designee, for use of this tire.

### **Tire Pressure Maintenance System**

To maintain accurate and equal tire pressures in the rear tires, OES is installing Cat's Eye Tire Pressure Maintenance Systems. These systems mount on a lug of the outside dual and connect the two valve stems via stainless steel hoses. The indicator or "Cat's Eye" is closed under proper inflation. When the eye opens, tire pressure has dropped below the designated minimum or an air leak is indicated. When a catastrophic failure occurs in one of the tires, a check valve operates to trap the air in the remaining tire.