

## Employee Handout - Preventive maintenance

1. Discuss the driver's role in a preventive maintenance program.

Content: Observation and communication are key. A driver needs to put his/her senses to work while on the road.

- \* Listen for unusual or abnormal equipment sounds. Rattles, squeaks, and hisses can indicate trouble.
- \* Smell for unusual odors (burning rubber, hot oil, etc.). A good sense of smell can help in making an early diagnosis of trouble.
- \* Feel for changes in your vehicle's response. Steering, braking, and shifting all have their own unique feel in a particular rig.
- \* Observe all equipment carefully during routine inspections. Look for defects in all vehicle components.

If a defect is found during a routine inspection or while on the road it is important to report it as soon as possible to the company's maintenance department.

Notes: If time and space are available this would be a good time to walk through a pre- and/or post-trip vehicle inspection with your employees. You may also want to distribute samples of the preventive maintenance forms (including driver vehicle inspection reports) your company requires.

Exercises: None

2. Discuss how driving habits play a role in the preventive maintenance program.

Content: There are four major areas (tires, brakes, clutch, and engine) where driving habits can effect a vehicle.

1. Tires. Good driving habits can help extend tire life. Avoid road hazards whenever possible. Hitting potholes can break rims, throw wheels and front ends out of alignment, put tires out of balance and at times cause complete tire failure. Fast starts and stops as well as scraping tires against curbs should be avoided. They can cause unnecessary wear on tires.

Proper inflation can help reduce the wear and tear on a vehicle's tires. Ideally, tire pressure should be checked when the tire is cold, but can be checked during the trip.

The heat generated by an underinflated tire and highway speeds can reduce a tire's tread life, or cause the tread to physically separate from the tire body, causing breaks in the body cords.

An overinflated tire doesn't absorb road shocks well, and runs the risk of being punctured. An overinflated tire also has less traction. Tread

doesn't make proper contact with the road.

2. Brakes. Good braking habits will extend the life of a vehicle's brakes. One habit to avoid is "fanning" a vehicle's brakes. Continuously fanning the brakes can reduce air supply to an unsafe point and build heat. When driving downhill, gearing down is better than fanning the brakes.

The best way to make an effective stop is to firmly apply the brakes, easing up on them as the vehicle slows down.

Maintaining proper stopping distance is another way to extend brake life. The more space a driver has in front of another vehicle the more time he/she will have to brake smoothly.

Brake adjustment should be checked regularly. Changes in braking action, such as unusual sounds or pulling to one side should be checked immediately.

3. Clutch. A clutch cannot last forever, but its life span can be extended if it is properly spec'd and maintained. Starting out in the correct gear, engaging the clutch properly, and not riding the clutch or causing it to slip are all key.

Abusive habits (riding and slipping the clutch, engaging the clutch while coasting, and coasting with the clutch released and the transmission in gear) will shorten the life of a clutch.

Clutch problems can also be caused by improper shifting techniques. Drivers should not skip gears or shift up before the rig has reached adequate speed. Those bad habits force the clutch to absorb the difference between engine speed and truck speed and can generate excessive heat.

4. Engine. Progressive shifting and good observation skills are two ways to extend an engine's life span.

Progressive shifting can reduce equipment wear and save fuel. In progressive shifting the driver only accelerates enough to bring the engine RPM up enough to allow the driver to shift gears.

The advantage to progressive shifting is that the engine doesn't work as hard as it does when using the standard shifting technique.

One of the more obvious signs of engine trouble is oil consumption. If the vehicle's oil consumption goes to less than 200 miles per quart, it

may be one of the early signs of engine trouble. The vehicle's oil level should be checked at the end of each work day and the surface under the vehicle should be inspected for potential leaks.

Another indicator of trouble is injectors that become erratic. Often plugging, poor spray patterns, or over fueling causes erratic injectors.

Notes: There are several videos available that address specific driving habits (braking, shifting etc.). If necessary, show your drivers a video dealing with the specific area that needs reinforcement.

Exercises: None

3. Discuss the importance of regular vehicle inspections.

Content: A well performed inspection can detect a problem with a vehicle before it causes a breakdown or accident.

The Federal Motor Carrier Safety Regulations (FMCSR) dictate what inspections are required and what items must be inspected.

1. Pre-Trip Inspections. A pre-trip inspection is conducted prior to each trip to identify problems that could cause a breakdown or accident. Though the regulations do not require a driver to complete a written pre-trip report, there are specific items that must be checked prior to beginning a trip. (See Sec. 392.7 and Sec. 393.13.)

Emergency equipment must also be checked prior to a trip. (See Sec. 392.8 and Sec. 393.95.)

2. On-the-road inspections. On-the-road inspections of a vehicle's cargo and load securing devices are required within the first 25 miles of a trip, and when the driver makes a change of duty status, after the vehicle has been driver for 3 hours or after the vehicle has been driven 150 miles - whichever occurs first. (See Sec. 392.9.)

It is a good idea to use these mandatory inspections as an opportunity to check the rest of the vehicle.

A quick check of tires, wheels, rims, brakes, lights, electrical connection, and coupling devices can prevent accidents and the need for major repairs while on the road.

3. Post-Trip Inspections. A post-trip inspection must be conducted at the end of a driver's day of work on a commercial motor vehicle. The driver is required to fill out a report covering specific parts and accessories. Before the vehicle can be operated again, any items listed as needing maintenance must be repaired and the carrier is responsible

for certifying that the repairs were made or that the repairs weren't necessary. (See Sec. 396.11.)

Notes: This training program covers a minimum amount of vehicle inspection information. See the driver vehicle inspection training program for specific details.

At the conclusion of your presentation distribute copies of your company's preventive maintenance policy and review it with your drivers, answering any questions they may have.

Exercises: None