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The Vehicle Pre-Trip Inspection:
Helping to Ensure a Safe Trip

The vehicle pre-trip inspection is an important loss prevention tool for the fleet manager of any organization. It is an integral part of a total risk reduction program that can prevent catastrophic losses. In this issue of the Commercial Auto *Viewpoint*, the Vehicle Pre-trip Inspection will be reviewed in depth.

At first glimpse, the vehicle pre-trip inspection sounds fairly simple and straightforward. One would think that every organization employs the same technique, and knows how and when to use it. However, we have found during fleet safety evaluations at insured accounts that there are differing opinions as to what constitutes a pre-trip inspection. From simply just making sure that there is gas in the tank and sufficient air pressure in the tires, to taking the vehicle to a service station prior to operation, the definition of a vehicle pre-trip inspection varies tremendously.

The vehicle pre-trip inspection is a systematic review of the vehicle's main operating systems and critical components as they relate to safe vehicle operations. These systems include: driving lights, engine fluids, belts, gears and transmission, mirrors, windows, seat belts, tires, brake system, steering, seats, wiper blades, doors (including the trunk door and hood), vehicle registration, insurance, and accident kit. With the exception of the engine, failure of or in any of these systems will not prevent most vehicles from operating on the road. However, these failures can lead to unsafe vehicle conditions which may in turn lead to collisions or the inability to control the vehicle after a system failure. One must keep in mind that an organization's vehicles encounter and interact with many situations during their operation. From the roads they drive on, to other vehicles and drivers, weather, congestion, loads they transport, and finally, the competence of the vehicle driver himself, the fleet vehicle is just one component of a multi-faceted system that must operate safely.

Many organizations wonder why vehicle pre-trip inspections have to be conducted at all if their vehicles are brand new, or fairly new, and are still covered by a warranty, or if they schedule regular maintenance and oil changes at every three or five thousand miles. The basic response to this question is that the exact rate and time of failure is unknown for most vehicle systems. Additionally, just because a vehicle is brand new, or fairly new, does not mean that all fluids will be filled and that all tires will perform satisfactorily. One only has to look at the many recalls that automotive manufacturers implement to demonstrate this fact.

There are two main reasons for conducting a pre-trip vehicle inspection. The first is to provide a safe vehicle for the company employee to drive; the second is to protect the many other people and vehicles who will interact with an organization's vehicles. The pre-trip inspection provides a rapid determination of the operating condition of a fleet vehicle. It will identify most shortcomings covering such areas as fluid levels, broken lights, cracked windows, gear and transmission problems, broken or loose belts, malfunctioning seat belts, and faulty brakes or lack of brake fluid. It will provide details on tire condition and wearing patterns, air leaks, and damaged rims, as well as information about fluid leaks and loose parts. Most importantly, the pre-trip inspection provides an opportunity to identify and repair any vehicle or system problems discovered during the inspection and to document such findings. This process contributes to the prevention of vehicle accidents that may occur as a result of a vehicle system failure or shortcoming. Additionally, the pre-trip inspection ensures that scheduled maintenance is being monitored, scheduled, and conducted. Lastly, a pre-trip inspection may assist in defending against legal liability by demonstrating a pro-active approach and safety-conscious atmosphere toward employee and vehicle safety.

Now that the vehicle pre-trip inspection has been clearly defined and explained, the next step is to conduct the inspection. To begin with, the fleet safety manager should have a comprehensive checklist that requires all major vehicle systems to be checked, inspected, and documented. Each vehicle should have its own individual checklist that is completed each time the vehicle is going to be used in fleet operations. The checklist should be maintained in the vehicle service file. The checklist allows for a systematic process of reviewing and inspecting each vehicle system without the driver relying upon memory to remember if he checked a system or component, or not. The checklist should also have a logical and continuous sequence so the operator can smoothly and efficiently check all vehicle components without much distraction and haphazard movement. Additionally, the checklist should require that a vehicle accident kit be checked and present, as well as a fire extinguisher and any special equipment that may be required (i.e., wheelchair straps, locking brackets, first aid kits). Lastly, the checklist should include notation of current vehicle mileage, when the next service is due and at what mileage, and a requirement to check vehicle registration and insurance.

Some tools that may be useful and should be carried in the vehicle include: screwdrivers, pliers, rags, flashlight, tire pressure gauge, and the most current vehicle service record and previous checklist. Be sure not to forget to include and use safety items such as safety goggles and gloves to protect against fluid spills, splashes, and caustic materials. These tools will assist the operator in tightening loose bolts and screws, as well as opening and loosening caps and clamps where a visual check is required. Flashlights will allow for better viewing under the hood and vehicle carriage, as well as into fluid reservoirs. A handy rag or cloth will wipe spills and clean fluid detectors or dip-sticks to ensure a more accurate reading of the liquid level present in all reservoirs. Finally, it is always a good idea to have some of the fluids and materials available that a vehicle will most likely require such as motor oil, anti-freeze, brake fluid, power steering fluid, windshield wiper fluid, and an extra set of wiper blades. These materials should be available in your transportation department's vehicle service area.

To begin the vehicle pre-trip inspection, the operator should first conduct a visual inspection of the surface area around and under the vehicle. This check is to see if any vehicle fluids are present on the ground near the vehicle, and if any car parts are strewn under or by the car. Wet stains near or under the vehicle are a clue that the vehicle has some type of leak in one of its systems. The leak may be a crankcase oil leak, brake fluid leak from a brake line or brake pump, power steering fluid from the power steering pump or line, anti-freeze leak from the radiator or reservoir, transmission oil leak from the transmission case or gear box, or it may be a fuel leak from a gas line or fuel tank. The location of the wet stain under the vehicle should be determined, and then the exact cause can be found by looking under the vehicle carriage itself with a flashlight. The deficiency should be documented on the checklist and the fleet manager notified.

Starting at the front of the car by the hood, the driver should inspect the windshield for cracks, excessive dirt and grime, and small "spider" marks which are essentially caused by small rocks, but eventually allow the crack to widen or spread the length and width of the windshield. Also, any watermarks from droplets on the inside of the windshield should be recorded, as this may be a sign of loose or defective seals. The windshield wipers should be checked for proper operation and wear, and there should be windshield wiper fluid in the reservoir. The operator can visually inspect the wiper blades. If any sign of wear is noted (i.e. dry rot or tears), the wiper blades should be replaced. The hood should be checked for dents or damage from road debris, and should open and close securely. The inspection should then move on to evaluate the headlights at the passenger side, and continue by going across the bumper. Broken or cracked headlights should be noted, and all lights (i.e., headlights, high beams, turn signals, hazard lights, driving lights) should come on when activated. Upon completion of the front exterior inspection, the operator should then proceed to the driver's side of the vehicle. Again, starting at the front wheel well, inspect for dents, loose parts, and proper tire inflation. Also, the tire threads should be inspected for proper wear; any uneven wear should be documented. Uneven wear will be evident from one side of the tire being more worn than the other or patches of worn surface.

Also, if the operator runs his hand across the threads, uneven surfaces can be detected and will feel like bumps or grooves on the tire surface, even though the tires may look okay. Tire pressure should be checked to ensure that the tire is at proper inflation level. The correct PSI (pounds per square inch of tire pressure) is annotated on the side of the tire near the company brand name. If the tire pressure is low, this should be noted by the driver.

The operator's inspection should now be around the driver's side door area. The side-view mirror should be checked for cracks, cleanliness, and proper operation. The door windows (front and back) should also be checked for cleanliness, cracks, or water leaks. Proper operation of opening, closing, and securing the door should be checked. Window operation should also be checked at this time.

The operator should continue toward the back of the vehicle and the trunk area. The rear window should be checked for cracks, holes, pitting, and cleanliness. Excess grime can build up and reduce the driver's vision and viewing area, as well as scatter sunlight in a distracting manner. The top of the trunk should be checked for damage or for any stains. The trunk should be opened for proper operation and should remain secure when closed. While in the trunk area, the interior should be checked for spare tire, jack, and emergency road kit. Any large unsecured items should be tied down or secured to prevent movement and possible distraction while driving. After closing the trunk, the driver should check all rear lights (i.e., directionals, back-up lights, brake lights, driving lights) to ensure proper function and lack of damage. This is performed by applying a hand or foot brake, turning the vehicle on, and putting the vehicle in reverse. The backing lights (white) should be on at this time. The brake lights will come on when the brake pedal is engaged. Have a colleague stand to each side of the vehicle and confirm that brake and back-up lights on both sides are working. Any deficiencies in this area should be documented on the checklist, as a failure in the lights may indicate a broken bulb, broken fuse, or faulty wiring. Check the rear bumper area for dents or damage and record if present. After completing this rear vehicle check, the operator should then proceed to the passenger side and perform the same checks as on the driver's side of the vehicle, finishing where he or she started at the front bumper area.

After completion of the vehicle exterior, the operator should open the hood and keep it propped open. The engine area should be checked from either a left-to-right or right-to-left sweep. The operator should be looking for loose or unconnected wires, missing reservoir caps, leaks, broken or loose belts, and any broken or loose engine parts. Any deficiencies should be recorded. Normally, a left to right process in checking fluid levels is a good way to start, as most fluid reservoirs start at the left side of the engine. The operator should check the radiator and anti-freeze reservoir located adjacent to the radiator. The radiator should have coolant up to the bottom of the entry portal. The reservoir should be filled to the "fill"/"full" line which is marked on the reservoir itself. Next, the operator should check the engine oil in both a cold and warm state.

With the engine off, the oil dipstick should be extracted and the end should be wiped off with a rag. The end of the dipstick has oil level indicators, such as "add" or "full", that indicate to the operator when oil is needed; the level of the oil should be recorded on the checklist and oil added, if necessary. The power steering fluid should be checked next. The fluid level should be up to the indicator on the power steering pump cap. Next, the brake fluid reservoir should be checked for leaks and proper fluid level, as specified on the underside of the cap or top of the assembly. The transmission fluid dipstick is usually located in the center and to the rear of the engine compartment under the hood. The driver should extract the dipstick, wipe it clean, re-insert it into the chamber, and read the transmission fluid indicator. This should also have an "add"/"full" indicator. Lastly, the windshield wiper fluid reservoir should be checked and filled to capacity. A clean windshield is a *must* in any driving situation. This will conclude the engine compartment checks and the operator can proceed to the final stages of inspection.

In this final section, the pre-trip inspection will address the interior of the vehicle. The operator should check all instrument panels and controls for proper functioning. The fuel gauge, engine temperature, battery power, and engine oil gauges should all be functioning correctly and reflect proper operating conditions. The directionals should be turned on and the lights seen both inside the vehicle and outside. The horn should be depressed and assured proper working condition. The parking brake should engage, and the gears should shift effortlessly when put in their stations and not stick or cause the vehicle to jump or lurch forward. The steering wheel should move easily from side to side if the vehicle is equipped with power steering. Seat belts should be checked for nicks, cuts, and wear, and should hold firm when employed into a locking position. The brake pedal should have some resistance when applied, and not feel spongy or too easy. The gas pedal should have little resistance and return to its starting position when released. Any deficiency should be documented and brought to the attention of the fleet manager. Lastly, the interior of the vehicle should be clean and clutter-free, and an accident report packet should be in the glove compartment, along with vehicle registration, insurance, and annual state inspection. As a final test, the vehicle can be given a short test drive around the facility and all systems checked for proper operation. At no time should the operator drive the vehicle if he feels the vehicle to be unsafe or it is physically uncomfortable.

The vehicle pre-trip inspection should be conducted prior to a fleet vehicle being driven. This can be a daily, weekly, monthly, or an as-required routine, but it should always be accomplished before a driver operates a fleet vehicle for the company's operations. The assigned driver of the vehicle should perform the inspection. The person who will be driving the vehicle is ultimately responsible for the safe operating condition of the vehicle. Additionally, company employees who drive their personal vehicles for company business should be required to perform the pre-trip inspection and correct any deficiencies noted.

In summary, the vehicle pre-trip inspection can be a valuable tool for identifying and correcting vehicle safety hazards, which commensurately assists the fleet manager in reducing and controlling vehicle liability exposures.

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