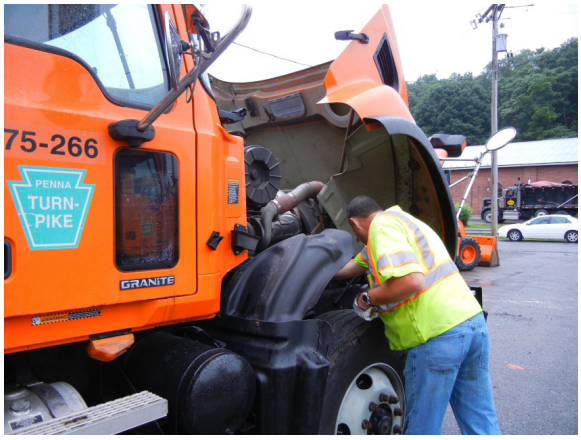
PennDOT LTAP
technical
INFORMATION
SHEET #175
SUMMER/2016

MOTORIZED EQUIPMENT PREVENTIVE MAINTENANCE

How do you make the equipment you own last longer? Perform regular, routine maintenance on it. Preventive maintenance lessens the chance of equipment failures, increases the life expectancy of the equipment, and maximizes your return on investment.



Although all types of equipment will benefit from a preventive maintenance program, the focus of this tech sheet is motorized equipment, such as cars, light trucks, heavy trucks, maintenance/construction equipment, and small equipment (mowers, chainsaws, and string trimmers).

More specifically, this tech sheet will explore two main types of preventive maintenance:

1) Manufacturer-recommended scheduled maintenance, and
2) Daily pre-startup inspections

Manufacturer-Recommended Maintenance

The owner's manual that accompanies each new piece of equipment details scheduled preventive maintenance necessary to extend the useful life of the equipment. This information lists the recommended type and intervals of maintenance and provides instructions for completing it.

Failure to comply with the manufacturer's recommended maintenance not only results in equipment breakdowns and a shortened lifecycle, but it may void any warranties offered by the manufacturer. Remember that in the long run taking care of maintenance as scheduled is more efficient and cost-effective than dealing with the costs and hassles of repair to failed equipment. Furthermore, any unexpected breakdown will interfere with scheduled work activity and result in lost productivity.

From a safety perspective, it is better to have the equipment inspected and maintained at your assembly area rather than risk a breakdown along the roadway. Tending to a broken-down piece of equipment out on the roadway endangers the safety of the crew and the motoring public.

Daily Pre-Startup Inspections

Most of the time, preventive maintenance brings to mind regular oil changes and annual safety inspections. While these items are certainly important, a daily pre-startup inspection is another critical form of preventive maintenance that helps to keep a piece of equipment in good running order. This daily inspection is the first line of defense against premature failures and breakdowns, which could have detrimental health and safety consequences for crew members, the motoring public, and possibly the environment.

What should be inspected prior to starting a piece of equipment? The answers will vary depending on the type of equipment and the manufacturer. The best guidelines for pre-startup inspections can be found in the owner's manual for a particular piece of equipment.

Typical pre-startup inspection items include the following:

- Engine oil level
- Engine coolant level
- Air filters (depending on type of work being performed)
- Battery fluid level and loose or corroded terminals
- Properly inflated and undamaged tires and wheels
- Emergency brake and brake liners (check for leaks)
- CDL break test, if a piece of equipment requires CDL certification
- Hoses and fittings (check for leaks, wear, or other damage)

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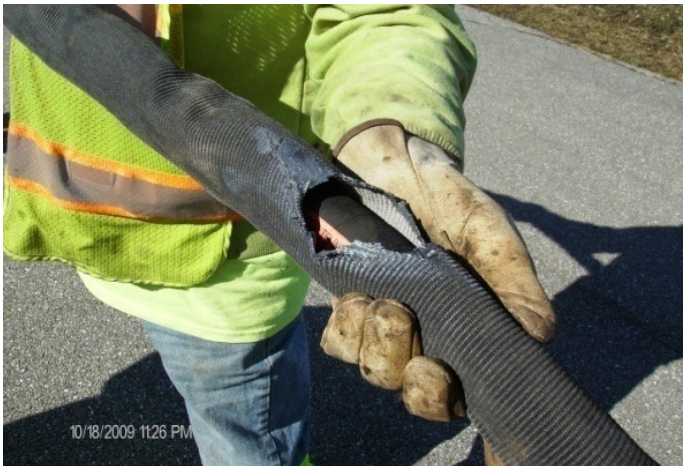
Any equipment with pressurized hoses, such as air compressors and hot asphalt machines, should be checked for worn hoses, fittings, and nozzles. It is important to note that a broken pressurized hose on a hot asphalt machine can endanger the crew, passing motorists, adjacent property owners, and the environment.

A damaged outer cover can be replaced at a fraction of the cost of replacing the entire hose. Furthermore, such action will reduce potential damage a broken hose could cause to passing cars and adjacent properties.

It is recommended that you use an inspection form that lists the daily pre-startup items employees should check on a piece of equipment. If your organization does not currently use a daily checklist for equipment but would like to implement a program, PennDOT and other organizations have sample forms to get you started.



Replacing a damaged outer cover can be done at a fraction of the cost of replacing the entire hose.

Check moving parts on a piece of equipment to ensure that all bolts/nuts are properly tightened. A loose blade from a mower will ruin the day of anyone or anything that gets in its way.

6482

OPERATORS DAILY REPORT FOR MOBILE EQUIPMENT

DATE

EQUIPMENT NO.	MAKE	KIND
OPERATOR	MAINTENANCE FACILITY	FOREMAN
STARTING MILEAGE/HRS.	STOPPING MILEAGE/HRS.	TOTAL MILES/HOURS
		RENTAL HRS.

BEFORE OPERATIONAL CHECKS

ALL EQUIPMENT	OK	NG	TRUCKS	OK	NG
Engine oil level Added qts.			Air pressure - brake		
Radiator coolant level			Fuel Level		
Hoses and belts			Seat Belts		
Power steering fluid			Air pressure build-up 25 lb./minute		
Water separator			Proper Registration / Insurance Card		
Air Cleaner			Vehicle Condition		
Restriction gauge					
Valid State Inspection					
Oil Pressure			**OTHER EQUIPMENT**		
Lights, four-ways, and revolving lights			Sediment Bowls		
Backup alarm			Rain Cap		
Tire Pressure-cold (visual)			Essential lubrication Y or N (note if lubed)		
Hydraulic fluid			Towbar, ring, safety chain		
Starting ability Good Poor			Hydraulic hoses-leaks, frayed		
Battery-water, posts, connections			Fire Extinguisher		
Proper Lubrication					

DURING AND AFTER OPERATIONAL CHECKS

ALL EQUIPMENT	OK	NG	ALL EQUIPMENT	OK	NG
Hoses/lines - coolant leaks			Tires - wear, cuts, improper mounting		
Fuel oil, fluids, leaks			Glass, windows, mirrors, reflectors		
Fluid levels - hot readings			Mud flaps		
Transmission shifts properly-fluid level			Steering		
Instruments - gauges			**ADDITIONAL EQUIPMENT**		
Horn, lights, wipers			**TYPE** / **EQUIP NO.** / **HOURS**		
Brakes - parking, Foot			**Plow**		
Drain air tanks			**Spreader**		
Clutch - grab, slip, chatter					
Unusual noises					
Exhaust and muffler					
Back up alarm					
Directional signals					

FOREMAN

REMARKS: NOTE: Any item checked in **NG** column **MUST** have comments in remarks section

CHECKED AND REPAIRED | MECHANIC | DATE

A pre-trip inspection form will ensure employees conduct a thorough inspection in compliance with your organization's policies and procedures.

By properly maintaining your equipment from cradle to grave, you will help to minimize equipment breakdowns and maximize limited equipment funding.

If you have any questions, you can call LTAP at 1-800-FOR-LTAP for assistance.