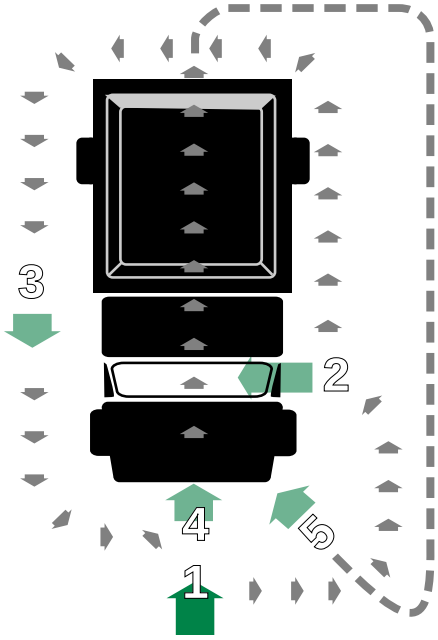
Preventive maintenance a money saver *from page 1*

recommends a five-part general inspection procedure:

1. Approaching the vehicle
2. In cab inspection
3. Around the vehicle
4. Under the vehicle
5. Engine compartment

A summary of what to look for in each step was distributed to workshop participants. Copies are available from the T.I.C. Call, fax or e-mail for a copy.



General guidelines for equipment inspection intervals

Operation hrs	Miles	Days	Inspection type*
50-100	3000-6000	30	A
250	10,000-20,000	90	B
500	40,000-50,000	365	C

* Maintenance items for each inspection type:

A = checking fluid levels, greasing, and general check over
B = all A inspection items plus changing engine oil and filters
C = A & B plus repacking wheel bearings, changing differential and transmission fluids, and similar activities

Don't just follow the routine, though, Garrod says. Think also about how the vehicle is used. For example, a vehicle with low mileage may be incurring a lot of wear because it is constantly idling. It should be inspected sooner.

Driver inspections

The driver knows more about how a vehicle is operating than anyone. Drivers should inspect their vehicles daily before they take them out and after they return to the yard.

Continued next column

Maintain cooling system, prolong

Forty percent of all diesel engine problems are directly or indirectly related to improper maintenance of cooling systems, says Carl Garrod, Diesel Mechanics Instructor at Fox Valley Technical School. Garrod reviewed how and when to maintain cooling systems at the T.I.C.'s December Equipment Maintenance Workshops.

Check coolant and test often for acidity, dissolved solids, and proper additive levels, as well as freeze protection.

When cooling system chemicals are not tested and properly maintained you get corrosion, cavitation, scale, and silicate drop out, Garrod says.

Scale is a residue build up on cooling system walls. It insulates the metal from the engine coolant, letting it get overheated. Every 1/32nd of an inch of scale has the insulating effect of two inches of metal. Overheating can damage engine parts and cause premature failure.

Cavitation is a pitting of the exterior cylinder walls. It happens when coolant lets bubbles form on the walls, and then the bubbles are

Routine driver inspections promote vehicle safety and help spot developing problems before they become serious.

Federal law requires such inspections for commercial operators — which includes private firms or individuals who contract with a municipality to do street maintenance and repair. Although municipalities are exempt from the law, the inspections make good sense, not only for preventive maintenance, but also in case of a lawsuit.

Many drivers have little mechanical background, so shop mechanics should explain how to inspect the truck. Inspection forms, like the one required for commercial CDL holders, help ensure thoroughness.

Driver condition reports will let you know about problems— if the reports are clear, complete and detailed. The report from the CDL test works well, says Garrod.

"If you don't use the drivers' condition reports, neither will they," says Garrod. Take the reports seriously, and the driver will too.

For printed summaries of the standardized inspection method, contact the

engine life

burst by normal piston action. Eventually they can create a hole in the cylinder wall.

Corrosion is caused by chemical imbalances in the coolant. Silicate dropout, or green goo, results from over-concentrated antifreeze, too much corrosion inhibitor, low coolant levels, and a variety of other causes. It will plug coolant passages.

Use simple tests

Nearly everyone tests coolant regularly for freeze protection levels, and some also test for proper additive levels, but too many people overlook tests for acidity and total dissolved solids, says Garrod.

"It may sound like a lot of work, but it takes just five minutes to do the tests," he says. "And the $300 cost of a test kit is a lot less than the price of boiling out a radiator."

Even routinely flushing the radiator and refilling it every two years won't ensure a proper coolant mix, says Garrod. Two years is too long. Some chemicals start to deteriorate in three to six months.

Use recommended products

Garrod's advice for keeping cooling systems in good shape:

- Use low silicate and low phosphate antifreeze that is designed for diesel engines.
- Follow the recommendations of your equipment manufacturer for what additive to use.
- Test regularly and replenish additives.
- Consider installing "need release" filters to extend service intervals.

Mechanics should *DO IT ALL*

A preventive maintenance program includes seven parts, according to Garrod. And every one of them is important.

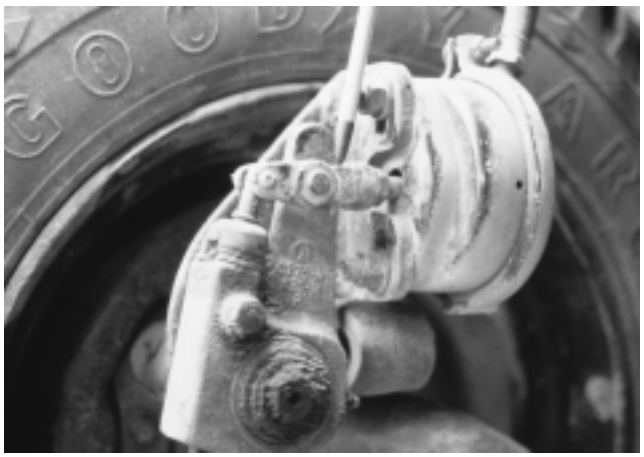
D river vehicle condition report.
O perate the equipment yourself. Test drive it.
I nspect equipment. Be consistent and thorough.
T est equipment.
A djust and tighten.
L ubrication.
L ots of record keeping.

Record keeping is particularly important. Without it you might as well be doing demand maintenance because you lose the advantage of a planned and methodical approach. Computerized and paper systems for record keeping are available from such sources as J.J. Keller and the American Trucking Association.

T.I.C. at 800/442-4615, or use the form on page 7 by fax or mail.

Brake safety and adjustments

More than half of all truck brakes inspected in one 24-hour period had incorrectly adjusted brakes, according to a study by the National Highway Transportation Safety Agency (NHTSA). At the same time, only a quarter of all trucks with automatic adjusters on their brake systems were out of adjustment.



Inspect brake slack adjusters daily. Truck brakes are often out of adjustment.

Since improperly adjusted brakes are a safety hazard, the Federal Highway Administration took action. Automatic brake adjusters are now required on all commercial motor vehicles for both mechanical and air brakes. The rule took effect in October 1995 for vehicles manufactured on or after October 20, 1994.

Although the rule has not been adopted in Wisconsin yet and does not apply to municipal-owned vehicles which are exempted from most Commercial Motor Vehicle regulations (49 CFR 396), the safety and liability benefits are clear.

Checking brakes is supposed to be part of every CDL driver's daily pre and post trip inspections. In addition, a 1992 CMV Act rule also specifies training and experience standards for those who inspect brakes. But, as the study shows, there are many badly-adjusted brakes on the road.

"If your driver has a crash and the brakes weren't adjusted, you take the chance that you'll get nailed in court," says Fox Valley Technical College instructor Carl Garrod. He strongly encourages municipalities to keep automatic brake adjusters on trucks and to routinely certify those who adjust brakes manually.

"Just because drivers have a CDL doesn't mean they know how to adjust brakes," Garrod says. "And it's relatively simple for a mechanic to certify their skill and put it on paper." Fill out a simple certification form and put it in a file. That way you'll feel more confident of your vehicles' safety and also be protecting your community from unnecessary liability.

For a sample "Brake Inspector's Certification" form, contact the T.I.C. at 800/442-4615 or use the form on page 7.