

## Tips for winter mainenance

**WINTER MAINTENANCE**—plowing, deicing, sanding—puts a lot of strain on equipment. The best way to ensure your operations are smooth and reliable is to do regular, preventive maintenance. Adding new equipment also can make the job easier and save costs, sometimes for relatively little outlay.

Dave Lyga, Shop Superintendent with the Trempealeau County Highway Department, offered a number of suggestions at the TIC's Winter Maintenance workshops last September. Some highlights are described here. Details and specs are in the workshop packet (extra copies available).

*Deicing chemicals can corrode and damage wiring.*



*Protect wires by using plastic loom.*

**Electrical** Salting and anti-icing liquids are making it more and more difficult to prevent electrical corrosion. Lyga recommends using quality (sxl) wiring designed for marine and salt usage, and sealed connectors (Weatherpak or equivalent). Completely seal all connections and splices with good

quality epoxy-lined butt connectors that shrink when heated. Protect wires by running them inside a plastic loom.

Be careful with testing. Don't poke wires with a test light; corrosion will start almost immediately. Also, use a multi-meter whenever possible to protect sensors and other functions that require fewer than 12 volts.

**Hydraulics** Keep moisture and contamination out of the hydraulic system. Check all the hoses, change filters every year, and change the oil if it's milky white from moisture. When attaching snow equipment let a small amount of oil leak out to flush any dirt or contamination before hooking up the hoses. "It's kind of like cleaning a wound on your arm before putting on a bandage," says Lyga.

**Fuels** Change fuel filters annually, and check for moisture. Fuel after plowing when the tank and fuel are both cold. Avoid putting cold fuel in a warm tank to minimize condensation. Use anti-gel products only if necessary, or purchase a blend of #1 and #2 diesel to prevent fuel gel. The blend has less power and fuel economy, however. Add cetane boosters to diesel to increase power and cut exhaust smoke during morning start-ups.

Bio fuel—diesel blended with 5% soybean oil—works well Lyga has found. It already has cold weather gels, and it runs more smoothly with less hesitation and less smoke than straight diesel. "The power is as good, or better, than standard grade diesel fuel and we're getting 5–7% better mileage," Lyga says. Though it costs 2–3% per gallon more, the better mileage produces a net savings.

**Air** Keep air filters clean. Check all clamps on the air to air after-cooler tubes and hoses. Air leaks here can cause significant engine power loss. Keep outside fins clean and repainted and clear out



*Flush liquid system tanks and pumps thoroughly.*

any dirt and debris that builds up between the radiators.

**Lubrication & flushing** Have plow drivers grease often. "You have to push the moisture and salt brine out of the joints and replace it with fresh grease," Lyga says. Keep clutch adjuster rings free so you can adjust when necessary.

Vacuum the throttle pedals to clear out salt from your boots and lubricate with penetrating oil to eliminate problems like engine service warning lights due to faulty throttle sensors.

Flush out liquid system tanks and pumps thoroughly. Add two gallons of windshield washer solution and leave it in the tank until you are ready to use it.

### **New product ideas and specs**

"Don't be afraid to try new products and ideas," says Lyga. Preformed or spray-on plastic reduces drag on the plow moldboard and keeps salt moving in dump bodies. Rubber blades, or carbide blades with rubber inserts



*New WisDOT lighting guidelines include HID head lamps.*



Plastic reduces drag on the plow moldboard.

at the bolt holes, are great for reducing vibration and quieting road noise for the operator.

Good lighting is also very important for your safety and the public's. New WisDOT lighting guidelines include high intensity discharge (HID) headlamps, an LED light strip mounted on the rear of the truck, and an LED wing plow

lamp and end marker to mark the end of the wing plow. They are required for trucks purchased after January 1, 2005 that plow snow on state highways with 25,000 or more vehicles per day and discretionary for others.

LED stop/tail/turn lights are the most effective rear lighting available at this time. It is a very good idea to upgrade current trucks with LED lights. They take less voltage and are very long lasting. The price has come down considerably and no special conversion is needed. LED clear/white sander lights are now also available.

"When ordering a new truck, do a lot of research and ask a lot of questions so you can develop good specifications," says Lyga. Specs don't have to be many pages long, but they should list the components that are most

important to your needs. Be specific about what you plan to install on the truck chassis.

For your electrical needs, ask for a "body builders electrical harness" with switches already installed. Many new trucks use multi-plex wiring that sends multiple signals simultaneously to many functions. "You cannot just cut and splice wires for adding equipment any more like we used to," says Lyga.

Ask for a "clean frame package" if you plan on installing underbody scrapers, pusher axles, front mounted spinners, etc. Talk to your body company and find out what requirements they need to properly mount your equipment. Failure to do this will result in extra costs to you.

**Using Salt and Sand for Winter Maintenance**, TIC Bulletin No. 6, gives good basic information and practical tips on using deicing chemicals and sand.

**Snow Equipment Maintenance packet** has details and specs on winter equipment. Request from the TIC.

## CDL reminders and changes

**DRIVERS WHO** operate snowplows and other trucks weighing over 26,000 lbs. gross vehicle weight must have a Commercial Drivers License (CDL) under federal law. This requirement took effect in 1999, but changes and clarifications over the years have produced some confusion. Also, further changes take effect as of September 30, 2005.

Instructor Gary Kreuger discussed the CDL at the TIC's Winter Road Maintenance Workshop in September. Here are some questions from participants about who is required to have a CDL.

### **Q** Aren't municipal employees exempt?

No. Regardless of who you work for, you must have a CDL if you are driving a Commercial Motor Vehicle (CMV).

### **Q** Are motor graders considered a CMV?

No. You do not need a CDL to operate a motor grader.

### **Q** What about trucks that weigh exactly 26,000 lbs.?

They are not considered a CMV. A bus designed to haul 16 or more passengers including the driver **is** considered a CMV, even if it weighs less than 26,000 lbs.

### **Q** Do you need a CDL to drive a truck with air brakes, even if it doesn't weigh over 26,000 lbs.

No.

Changes affecting operators with CDLs include:

**Bring your Social Security card** to renew your CDL. This change, made by the Patriot Act, is already in effect at some WisDOT DMV

locations in the state and will be at all in 2005.

**Drivers can not drink any alcohol** four hours before operating a CMV; they can not have any trace of alcohol on their breath; they are considered legally drunk with a blood alcohol level of 0.04% or greater.

**Several penalties and standards will be stricter** as of next September. A person can lose the CDL for: a major traffic violation while driving a CMV or other vehicle; driving a CMV without obtaining a CDL or without having the proper class of CDL for the vehicle; driving a CMV without a CDL in your possession; and other conditions.

**States can not issue a special, or occupational, CDL license** when the CMV privilege is disqualified, nor when the non-CMV license is revoked, suspended or cancelled.

For more details, including a chart of **Wisconsin CDL Alcohol Related Offenses**, request the **CDL packet** from the TIC.