

require an Over-the-Road Skills Demonstration for operators they feel need to be checked out by an Equipment Operator Instructor.

- Operators **may** also request an Over-the-Road Skills Demonstration of themselves.
- If the operator's performance is acceptable for all criteria, then he or she is Recertified for the appropriate classification of One Person Plowing. If the performance in any of the criteria is not acceptable, the operator will be trained in the deficiencies noted and reassessed for Certification.
- All operators should also be given the opportunity to obtain some large dump truck time prior to the Snow and Ice Season.
- All Supervisors **are required** to annually attend both classroom and shop session training for their entire duration.

### **ONE PERSON PLOWING SAFETY POLICY AND PROCEDURES**

The safety of N.Y.S.D.O.T. employees and the traveling public **must** not be compromised by One Person Plowing. Plowing speed **should** be dependent upon weather, road surface conditions, highway geometry, physical features, traffic and established guidelines. Plowing speed should be in the range of about 15 mph to 35 mph. When conditions exist such that visibility becomes extremely limited then the operator **should** use one or more of the appropriate options available:

- slow down
- raise the wing and proceed with the front plow only
- pull off the road to a safe location, turn all exterior lights off and call the Supervisor on the mobile radio to report conditions and receive further instruction.

It is not possible to identify every possible situation that can occur in Snow & Ice Operations. Therefore, in situations where the traveling public or equipment operation may be in imminent danger, the operator **may** initiate actions contrary to normal operating policies and procedures in order to prevent a serious accident from happening. These actions should be reported to a supervisor as soon as possible. Remember, employee safety and the safety of the traveling public **must** always be assured first before attempting any action that is contrary to applicable laws and/or N.Y.S.D.O.T. policies and procedures.

Generally during OPP, the wheels of the Large Dump Truck **should** stay on the travel lane pavement. However, there are certain situations when one person plowing operations **may** permit the truck wheels to be on the shoulder. The shoulder characteristics and other conditions that **will permit** one person shoulder operations are:

- a minimum shoulder width of 5 feet
- unquestionably stable paved shoulder
- reasonably smooth shoulder
- favorable physical features beyond the shoulder including frozen or stable earth, few obstacles and a low fore slope angle
- visibility is good and traffic is relatively light

When clearing snow exclusively from the shoulder, consideration should be given to raising the front plow when not needed to avoid damaging the cutting edge. Clearing the shoulder is thus accomplished with the wing plow. Operators should also be aware that traffic may attempt to pass their vehicle in the portion of the lane that is now unoccupied because the plow truck is partially on the shoulder.

Routes or beats where OPP shoulder plowing is acceptable **must** be initially determined by the Resident Engineer. The shift supervisor **must** also determine shoulder plowing acceptability based on the conditions as they exist during particular snow & ice events.

During certain times of the Snow & Ice Season, **some** shoulders are likely to be soft and unstable. Special care **should** be exercised before the shoulder freezes in the fall and when the shoulder thaws in early spring or in extended warm weather periods during the winter season. When plowing these shoulders two people **should be** assigned to the truck. This operation **may** be accomplished by clearing the pavement with the front plow (OPP) and subsequent shoulder plowing with two people.

If reasonably possible during single truck operations, lower the wing from the farthest right pavement travel lane. However, some wing lowering operations may be accomplished safely using other strategies. During tandem and close echelon plowing operations with radio communications between both operators, the wing **may** be safely lowered in any lane. In all circumstances, before lowering any wing while on the road, the operator **must** check all mirrors and windows. If there is any indication that a vehicle may be in the location of the wing area, the operator **shall not** lower the wing.

Benching or shelving with the right wing **shall not** be done during OPP. A wing person **must** be in the truck during this operation. Benching with the left wing **may** be done in the OPP mode. The locking wing brace/block pins must be inserted prior to benching or shelving.

**Spot Benching or Shelving** with the wing (right or left) is allowed for a **limited** duration in areas where drifting, sight distance and other critical road hazards could occur. Spot Benching must only be done when traffic, highway configuration and visibility is favorable. This is at the operator's discretion and must have supervisory approval. OPP operators must make sure the locking wing brace/block pins are removed and advise the residency radio watch person or supervisor prior to and after performing spot benching operations and use extreme caution while benching.

Hopper Access by an OPP operator is at their discretion, after notifying the radio dispatcher/supervisor and when another person is in the vicinity. The ground person needs to have visual contact with the person on top of the hopper. Also the area must be well lit.

An OPP operator **may** clean the windshield, plow lights, side windows and check other areas of the truck. Safer alternative methods of accomplishing this are possible by using extensions on ice scrapers, squeegees, snow brushes, etc. The operator also **may** climb the hopper ladder to inspect the contents of the hopper and climb the spinner housing to inspect the chute as long as the three point climbing procedure is used and the spinner and conveyor are not engaged. Before climbing the ladder, the all wing(s) **must** be raised and secured with the safety chain. However, any climbing is discouraged by the Department. An alternative method for determining the condition of the material in the hopper without climbing the truck ladder is to observe it through the gate opening in the rear of the V body.

OPP operators **must** report via the truck radio to the base station or another vehicle when exiting and re-entering the vehicle during snow and ice operations on the road.

During OPP, use of both the right and left wing at the same time is **limited to** close echelon plowing operations and to unusual or special conditions such as on ramp and off-road areas.

However, the particular geometry of some very limited section of highway **may** require the use of both wings at the same time to properly clear the pavement. These areas **shall** be identified and approved by the Resident Engineer prior to the Snow & Ice Season or when the need occurs.

When tire chains are needed, they should be installed at the work location with the help of other employees. An OPP operator **shall not** install tire chains in the field (away from the work location). If tire chains need to be installed in the field because of changing weather conditions, pull off the road to a safe area and call for assistance. Removing tire chains in the field by a one person operator **may** be done in those rare situations where road conditions have changed to a point that the chains are no longer needed and their continued use may cause damage to the tires if not removed. If this becomes necessary, contact your Supervisor and advise him or her of the situation.

## OPP BACKING POLICY

Avoid backing whenever possible. In maintenance facilities, **where other employees are available**, they **must** give assistance to the vehicle operator in accomplishing a safe backing maneuver.

Immediately prior to starting any backing maneuvers, sound the horn three times in short sequence.

A driver operating alone is **not required** to exit the vehicle for the purpose of checking behind the vehicle during actual snow and ice operations when visibility is reduced because of falling snow, sleet, freezing rain, fog or darkness, or because of blowing snow caused by wind conditions. This applies regardless of location including the maintenance yard or parking areas.

## TPP BACKING FOR SNOW AND ICE OPERATIONS

During snow and ice operations, a very limited number of situations exist where backing a snow and ice vehicle is unavoidable. In those situations where backing is absolutely unavoidable, and only when both of the following conditions exist, the wing person will not be required to exit the vehicle for the purpose of directing the backing maneuver; nor will the operator, if alone, be required to exit the truck to check behind the vehicle.

- When visibility is reduced because of falling snow, sleet, freezing rain, fog or darkness; or because of blowing snow caused by wind conditions.

AND

- During actual snow and ice control operations on the highway.

When both conditions above exist, and backing is executed without direction, the operator **must** use extreme care, and back as slowly and cautiously as possible.

Check all rear-view mirrors before and during backup. Sound the horn three times before backing. Open the window and listen for the sound of automobile or truck engines that may be behind you. Operators **must** make every reasonable effort to avoid backing maneuvers.

Highway Maintenance management **must** carefully review their operations to limit and define those snow and ice situations or locations where this portion of the policy is applicable. It applies during day or night operations. It does apply in the yard, and in all parking areas. **WHEN IN DOUBT, DON'T BACK UP!**

## LENGTH OF CONTINUOUS DUTY

Employees **shall not** normally operate in the OPP mode after 12 continuous hours of duty (including breaks). The 12 hours of duty includes any combination of tasks. For example, an employee who cuts brush for 8 hours **should** only operate in the OPP mode for 4 more hours. An employee **may** operate in the OPP mode after 12 hours if both the employee and supervisor agree. In this situation the employee **may** work an additional 4 hours of OPP, thus totaling a 16 hour shift.

The following are **Non-OPP** tasks:

- operator with wing person assigned
- non-highway operational activities

Snow and ice operations for all employees **may** be limited in some circumstances. Severe storms, traffic conditions, beat characteristics and personal illness could cause an OPP operator to become fatigued fairly quickly. As a result of these circumstances, the supervisor **may** elect to limit the length of duty. This decision should be based on discussions with the operator and observation of the operator's physical and mental condition. If the supervisor concludes the operator is not capable of continuing in the OPP mode, the operator **shall** be assigned to a non-OPP task or excused from duty for a minimum of 8 hours.

## "16 AND 8" WORK HOUR POLICY

Employees **shall not** normally work longer than 16 hours of continuous service (including two, ½ hour meal breaks), without being 8 hours in off-duty status before returning to duty.

If a serious staffing shortage and extreme unusual weather conditions occur it may be necessary to require the **Temporary Suspension** of the "16 & 8" policy. The Resident Engineer **shall** personally approve such a suspension.

The supervisor at the work location **shall** discuss with any employee who volunteers to work longer than 16 hours his or her ability to do so, and for what duration. The supervisor **shall not** permit the employee to do so if he or she is so fatigued as to preclude working safely.

Circumstances **may** occur where an employee's "16-hours" or continuous work are completed during the employee's regular work shift, and the employee may still have several hours to work to complete his or her 8-hour shift. In these circumstances, the employee **will** be permitted to go off-duty and charge the remaining hours to appropriate leave.

If the employee does not elect to go off-duty, the employee **will** be assigned to a normal work detail. Obviously, a person just completing 16 hours on-the-job (15 hours of labor, plus two ½ hour meal breaks) should be given an assignment that is not physically demanding. The "golden rule" applies perfectly to these situations.

The circumstances of each incident of "16 & 8" suspension **shall be reported** each pay period by the Resident Engineer to the Regional Transportation Maintenance Engineer. The suspensions will involve **all** incidents when an employee works longer than the 16 hours.

### **SAFETY ASSURANCE FACTORS**

Prior to and during periods of long storms, managers and supervisors should take the necessary action to enhance the safety of all employees. Field supervisors should periodically check the condition of personnel, and if in the supervisor's opinion the employee needs a break, appropriate action should be taken.

Employees should be allowed a minimum of one-half hour for meal breaks, and as a minimum should have two meal breaks in a 16-hour period. Employees should be allowed to provide for themselves hot beverages at their work location.

### **PERIODIC COMMUNICATIONS**

A one person plow operator is **required** to be in communication on a periodic basis with the base station or another N.Y.S.D.O.T. vehicle with a mobile radio or cellular phone. Radio/phone communication **may** be initiated by the operator or radio dispatcher depending upon what works best at the work location. Communication reporting is **required** at a minimum of at least one time while on a snow and ice beat. The Resident Engineer is responsible for developing any additional criteria for periodic communications. For example: additional communication reporting requirements **may** be that the operator is to report when leaving the yard, during the first quarter of the beat, half way through the beat and at some point when the beat is nearly completed.

The operator **must** also report via the radio or cellular phone when exiting and re-entering the vehicle for any reason during Snow & Ice Operations. Operators **should** use the radio/phone to report any unusual and/or potentially unsafe conditions they observe. (For example, an accident scene). As a general rule of thumb: When in doubt report it!

On a snow and ice route with known communications dead spots, the operator **must** call the base station or another N.Y.S.D.O.T. radio prior to entering the communications dead spot and after exiting the communications dead spot. A good practice would be for the operator to contact the base station three to five minutes prior to the communications dead area. If the operator cannot contact the base station, he or she should try contacting another vehicle or base station that will relay the information.

The radio code for entering an OPP radio dead area is 10-20, and 10-90 when leaving the radio dead spot. More detailed information on radio codes, operating procedures and radio dispatcher responsibilities can be found in Section VII of this manual.

## OPP APPLICABILITY

OPP **shall be** used to the maximum extent reasonably and safely possible. The only recognized OPP beat exception is for communication dead spots (radio and cellular phone). Cellular phones are an acceptable form of communication. A true communication dead spot, for the purpose of assigning a second person to the truck, is 15 continuous minutes (approximately 7 ½ miles at normal plowing speed) or more. A map of communication dead spots should be kept in each vehicle assigned to a specific beat. When a vehicle is operated outside its normal assigned route, the operator should be given the map designating communication dead areas on specific routes.

## OPERATIONAL EXCEPTIONS

Some operational and weather conditions **shall** require that two people be assigned to a vehicle for snow and ice operations. As more experience is gained with OPP, other operational exceptions **may** be allowed.

The following is a list of **mandatory** operational exceptions where two people **must** be assigned to the truck:

- Benching or shelving operations on the right shoulder **shall** require two people be assigned to the vehicle.
- Work or re-load locations **shall** require two people to be assigned to the associated trucks if there is no communications or if a Large or Medium Size Loader cannot be provided. If communication capability and a large or medium size loader are present, then an OPP operator is allowed to load the truck providing he or she is trained to do so. An OPP operator may use a small loader at an unstaffed work or reload location if communications (radio or cellular) are operational. When loading alone, the operator **must** communicate with another NYSDOT employee when exiting and re-entering the truck.

Operational exceptions **may** be granted in the following circumstances:

- Certain road characteristics, volume of traffic, population density and physical features.
- In situations where the installation of tire chains is likely to be required while on the beat or the outside passenger side door window is likely to become and remain covered with snow or ice during a particular event, two people **may** be assigned to the truck if other solutions are not available.
- Some large dump trucks specifically assigned to clear snow & ice from ramps and intersections **may** require that two people be assigned to the truck.

- A limited number of beats in congested areas **may** require two people be assigned to the truck.
- If the personal safety of the operator is jeopardized by any condition or conditions not addressed above, then two people **may** be assigned to the truck.
- Where traffic volume is or is expected to be extremely high (level of service D, E, or F) during the operation, two people **may** be assigned to the large dump truck if the right wing is attached. In most locations, this should be for short duration during the morning and evening peak of commuter traffic or on a major holiday.

### III. **GUIDELINES FOR THE APPLICATION OF SNOW AND ICE CONTROL MATERIALS**

#### **GENERAL**

Choice of material will depend on (in priority order):

- Pavement temperature
- Time of day
- Traffic volume
- Nature of the particular snow and ice event
- Air temperature and wind velocity
- Availability of materials

#### **SALT (SODIUM CHLORIDE)**

If the combination of conditions for salt to work properly is favorable, pure or treated salt should be the material of choice.

The Departments approach to ice control is proactive. Anti-icing is the preferred tactic to take, when appropriate. In Appendix A are general guidelines for anti – icing operation. The recommendations are in tabular form.

The use of these tables depends on knowledge of pavement temperatures and the ice bond characteristics prior to treatment. Application rates are shown for operations using untreated salt, treated salt and straight liquids. These application rates are based on several years of experience in both New York and other States and are meant to be a guide. Experience of individual highways or network of highways will determine exact rates. The Resident