

Chapter 3

Snow & Ice Training Program

Annual Review Checklist

Wing Plow Operational Guidelines



Snow & Ice Training Program

Our employees are our most important resource and providing a safe environment in which to work is the department's top priority. The department is committed to the safety of its employees. To ensure this commitment is met, WSDOT consistently emphasizes how to work in a safe and safety-conscious manner.

With the increasing complexity of statewide snow and ice control, training of WSDOT personnel is essential. The complexity and cost for snow and ice control, demands that our staff have the best tools and training available. The current snow and ice training program consists of the following:

Annual Review of Snow and Ice Procedures:

- Pre-Activity Safety Plans
- A Procedures Checklist
- An ATMS roster

Crew or area meetings should take place before winter and include all permanent and temporary field personnel. Supervisors or Lead Techs should check each item on the checklist and review them during the meeting. **Each employee must sign or initial the ATMS roster for the review and return the checklist and roster to the Region Maintenance Training Coordinator (RMTC).**

On the Job Training:

On the job training is an extremely important part of our training program. This is done routinely, especially with temporary or new employees within every state maintenance area. Each maintenance area will be responsible for documenting on the job training conducted within their respective area.

Wing Plow Training:

This training program consists of classroom and hands-on operational training, which is provided by regional training staff. **All employees who will be operating a wing plow must complete this training and be certified as a wing plow operator.** Refresher training will be amended and will be covered and documented in the "wing plow" portion of the Annual Review, of Snow and Ice Procedures.

Maintenance Academy Training:

When available, this training helps provide entry level employees with basic skills needed to help deliver the Snow and Ice Program.

Other Snow and Ice Training Opportunities:

Road and Street Conferences, Pacific Northwest Snowfighter Conferences, and various other seminars are available to enhance snow fighting skills on an occasional basis.

Annual Review of Snow and Ice Procedures

Safety

- 1) Develop, review and update pre-activity safety plans for winter related operations
- 2) Injury Procedures
- 3) Reporting personal accidents (see chapter 6 of the Safety Manual)

Coordination

- 1) Radio procedures
 - a) Road and weather reports
 - b) Reporting accidents
 - c) Etiquette
 - d) Changing system or group
- 2) Plow routes and responsibilities
- 3) WSP call out procedures/priority system
 - a) Responding to incidents and accidents
 - b) Documentation needs for serious accidents
- 4) City and State responsibilities
 - a) Snow removal
 - b) How to plow within city jurisdiction (where to put snow)

Policies and Directives

- 1) MAP (performance measurement)
 - a) Level of service
 - b) Roadway condition goals
 - c) Roadway priorities
- 2) Procedures for stranded motorists
 - a) Towing policy
 - b) Calling for help
 - c) Transporting passengers
- 3) Talking to the media
- 4) Talking to the public
- 5) Mail box replacement criteria
- 6) Winter scheduling including contingency
 - a) Call out procedures
 - b) Shift assignments

Chemical Applications

- 1) Chemicals currently being used – solid and liquid
 - a) How do they work
 - b) When to apply
 - c) When to reapply
 - d) Rates
 - e) Timing
 - f) Application areas
 - g) Areas of priority
 - h) Using pre-wet
 - i) Sand or abrasive use
 - j) Slurry
- 2) Calibration (see Equipment)
- 3) MSDS info

Equipment

- 1) Plowing

- a) Techniques
 - b) Timing
- 2) Wing plow (see Wingplow Operational Guidelines)
- 3) Chemical application techniques
 - a) Solid
 - b) Liquid
- 4) Calibration of equipment
 - a) Solid
 - b) Liquid
- 5) Procedures for Installations
 - a) Plows
 - b) Other attachments
- 6) Loader Operation
- 7) Equipment procedures
 - a) Reporting deficiencies
 - b) After hour breakdowns

Record Keeping

- 1) PDA records
- 2) Snow and Ice Database (entering records on the PC)
- 3) Automated Data Collection Program and PDA use
- 4) After Action Reports
 - a) Documenting success or failure of treatments
 - b) Side by side comparisons (where applicable)
- 5) Inventory reporting and stockpile measurement

Weather

- 1) Northwest Weathernet forecast formats & feedback
- 2) Other weather sources
- 3) RWIS refresher

Environmental

- 1) Review BMP's
- 2) Application locations (Fish Sticks)
- 3) Stockpile management (containment)
- 4) Other

Supervisor Signature

Date

Wing Plow Operational Guidelines

Pre- Operational Check List:

1. **Inspect** components for the following:
 - Plow and plow frames for cracks, broken welds or loose bolts. Safety chains and bits for wear and general condition.
 - Plow pins for washers and cotter pins.
 - Hydraulic lines, fittings, and cylinders for damage or leaks.
 - Safety chain security for transporting.
 - Tower slide lubrication.
 - Bolts and push beam anchor bolts, lift cable for fraying and proper tension.
 - Rear mounting plate and wing brace vertical supports for bends, loose bolts or cracks.
 - Wing extension push arms adjustment. These should accommodate road width.
 - Controls for smooth and correct operation.
2. **Repair or replace** any items found to be deficient. Be sure to know what size wing is on the truck.
3. **Check** the condition of the plows periodically during the shift and inspect at shift end.

Lowering the Wing:

1. Be certain area is clear and the safety chain is removed.
2. Set toe (leading edge) to approximately 6 inches above the pavement.
3. Lower the heel (trailing edge) to approximately 6 inches above the pavement.
4. Lower the wing evenly to the pavement and allow a small amount of float at the float link.

Raising the wing:

1. In an urgent or emergency situation use the wing lift switch on the joy stick, or manually raise the toe and heel until the wing is fully raised.
2. Raising and lowering may be performed with the vehicle in motion.
3. When approaching railroad crossings, slow down and raise the wing so as not to hook into tracks.
4. Slack in the tower cable will cause a delay when raising the wing.

Safe Operating Practices:

1. The Supervisor of the area should develop a site-specific plan for wing plow operation (“Wing Caution Zones.”). There are obstacles. Know where they are.
2. Important: Refrain from unhooking the safety chain on the wing until the engine has been started and the hydraulics on the wing are pressurized, because the cylinder may not support the wing until charged.
3. Do not operate a plow unless you are qualified, trained and understand how to operate the vehicle and the controls.
4. An operator not qualified to operate a wing plow can operate the truck and front plow as long as the wing is safety chained and not used.
5. Adjust your plowing speed to the conditions, e.g. obstacles, traffic volumes, pedestrians, highway conditions, grade, terrain and visibility.
6. Use caution when plowing around obstacles. If in doubt raise the wing.
7. When roadway features are too narrow to accommodate the use of the wing without lane changes, raise the wing plow.
8. Do not use the wing in weather conditions where visibility is adversely affected, such as heavy fog or whiteout conditions.
9. Wing plowing is not recommended on soft surfaces such as gravel shoulders. If you do use the wing on soft surfaces, do so only after slowing to a safe speed and adjusting the wing lift to prevent the wing from penetrating the soft shoulder material. (Float link adjustment)
10. Do not use the wing plow to widen out shoulders. The operator cannot see the plow tip well enough to make the fine adjustments necessary to perform this job safely.
11. Do not use the wing if traffic or highway conditions are not suitable for safe operation.
12. When using the wing plow, remain constantly alert to traffic and roadside obstacles.
13. It is recommended to carry ballast and use tire chains if needed when using the wing plow.
14. Before leaving the unit secure wing plow if wing is in the up position with safety chain or leave plow in the down position resting on the ground.
15. Slow down and downshift instead of lifting the wing plow will help maintain your plow pattern and reduce the time to clear the travel way.
16. When plowing alone with the wing plow, use the front plow and the wing plow in the same direction. Plow only the right lane and the shoulder. Don’t use as a “V” plow.
17. When plowing in tandem in multi-lane areas with median snow storage, it is recommended that at least one truck plow to the left a few hundred feet in front of the wing unit. This plow pattern provides a clear path left of the wing truck for motorist inclined to pass.
18. When gang plowing (3 or more trucks), position the wing plow unit where the wing can be buffered or protected by one of the other plow trucks in the formation. Regional direction will dictate whether or not the wing may be used in the center or left lanes. Check with your supervisor for proper guidance.

19. Safety chains are not designed to keep the wing tight against the side of the vehicle. Wings can move out even with safety chains properly attached. This is especially true on ten-wheelers.
20. When storm conditions impair visibility and the centerline is difficult to find, discontinue use of the wing plow.
21. Do not rub guardrail with the wing. The leverage exerted on the wing can turn the truck toward the rail. Be aware that when the wing is in the up position, it still extends past the edge of the front plow and can strike obstacles that the front plow will clear. Check rear support arm for breakaway bolts.
22. Use a block to prevent accidentally raising the wing whenever the truck or plow is being worked on.
23. When mapping wing plow caution zones, don't forget to include expansion joints on bridges. Check plow angle vs. joint angle.