**Instructional Guide: Defensive Driving Module**

This guide provides useful information related to the Clear Roads Defensive Driving Training for Snowplow operators. The focus of the defensive driving training will focus on strategies the snowplow operator can use to prevent crashes caused by another vehicle. Two of the common snowplow crashes types are relevant to this training: wing plow strikes and rear-end, other vehicle striking crashes.

This training module is intended for all snowplow operators and should be completed in less than 2 hours. This module discusses four major topics:

1. General defensive driving practices
2. The importance of cleaning equipment
3. How to properly use vehicle lighting
4. Safe operating characteristics

**Training Objectives**

After completing this module, snowplow operators will be able to:

1. Identify appropriate visual scanning techniques.
2. Recognize the snowplow’s blind spots.
3. Describe how to anticipate other vehicles’ actions.
4. Identify appropriate evasive maneuvers.
5. Minimize or prevent a snow cloud.
6. Describe safe following distances.
7. Describe how to avoid road rage.
8. Describe why it is important to keep the mirrors, lights, and windows clean.
9. Identify equipment to be included in a pre-, mid-, and post-trip inspection.
10. Describe the proper use of turn signals while plowing.
11. Identify the proper use of wing plow.
12. Select safe turn around location.
13. Demonstrate safe left turn procedures.

**Format**

This module is separated into three sections: basic defensive driving strategies, improving conspicuity, and safe operating characteristics. Included in the notes section of each slide is a suggested narration. The suggested narration can be used by the training facilitator word-for-word or can be modified.

There are brief check-on-learning breaks throughout the module. These questions break the content into small sections and help the operators remember important information.

Finally, facilitators can add agency-specific guidance or policies where appropriate throughout the module.

**Slide Summary**

This module contains 59 slides. ***Table 1*** provide an overview of the slides.

**Table 1. Slide Descriptions**

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| **Slide** | **Content Topic** | **Content Description** |
| 1-6 | Introduction to the module | The first six slides provide a summary of the training, the training objectives, and an overview of snowplow crashes where another vehicle struck the snowplow. |
| 7-24 | Basic defensive driving strategies | This section of the module provides information and strategies to prevent crashes using general defensive driving behaviors. |
| 8-9 | Rear-end crash simulation | A simulation showing another vehicle rear-ending the snowplow. This video should be shown twice. The first time, the operators should just view the simulation. During the second viewing of the simulation, the trainer should discuss appropriate scanning strategies and the importance of using the warning lights. |
| 10-11 | Appropriate visual scanning | These two slides discuss the process of scanning the environment for hazards and provides recommendations for improved scanning. |
| 12-13 | Hidden hazards | These two slides review how to identify and predict hidden hazards. They also describe the snowplow’s blind spots. |
| 14-15  21-22  29-30 35-36 41-42 47-48 54-55 | Check-on-learning | These slides present example quiz questions. This information can be used a brief review or can actually be used as an evaluation. |
| 16-17 | Responding to hazards | These slides present information on how snowplow operators can safely respond to other vehicles using evasive maneuvers. Specific strategies are provided. |
| 18-19 | Snow clouds | Hazards associated with a snow cloud are presented. A short crash video from the Wisconsin DOT is included. It demonstrates the dangers of a large snow cloud. |
| 20 | Speed | Recommendation for plow speeds. Trainers can adjust the recommended speeds if their agency has a lower recommended plowing speed. |
| 23 | Road rage | Tips to avoid road rage and aggressive driving are discussed. |
| 24 | Following distance | Recommendations related to safe following distance are presented. |
| 25-36 | Improving conspicuity | This section includes information about the importance of keeping the windows, mirrors, and lights clear of snow and ice buildup. |
| 26-27 | Example of poor visibility | These slides provide information on why it is important to remove snow and ice buildup. The photo in slide 26 is an example of a reduced visibility due to snow and ice buildup on a windshield. The driver of the vehicle continued down the road even though the visibility out the front windshield was partially obstructed. The trainer should discuss the dangers of not cleaning the windshield. |
| 28-32 | Vehicle inspections | Recommendations on equipment to check during pre-, mid-, and post-trip inspections. |
| 33-34 | Turn signals | Information about the importance of using turn signals is shown. Suggestions are provided on the proper use of turn signals. |
| 37-55 | Snowplow operating characteristics | This section covers other operating strategies that snowplow operate can use to prevent crashes where another vehicle strike the snowplow. These include using a wing plow, selecting safe turnarounds, and making left turns. |
| 38-40 | Using wing plows | These slides describe wing plow, how the can be used to clear snow, and why they can create a hazard if not used carefully. Slide 39 shows a short video from the Idaho DOT about the benefits of wing plows. The trainer should facilitate a discussion about the benefits discussed in the video. The video also demonstrates how the wing needs to be raise the wing prior to approaching roadside obstacles. |
| 43 | The wind | This slide discuss some of the dangers associated with plow during high winds and how the wind may be used to carry snow spray away from other vehicles. |
| 44-46 | Safe turnaround locations | These slides present information related to safe turnaround locations. Slide 44 shows an example photo of an unsafe turnaround location. This turnaround is small, and the snowplow is not able to turnaround without doing a 3-point turn. Secondly, the turnaround is already occupied. The other plow makes it difficult for the snowplow to safely enter and exit the turnaround location. Third, there is a curve in the road a short distance away. The snowplow operator would not be able to identify approaching cars until it was too late. The example on slide 45 is a safe alternative. This turnaround location provide clear sight lines in both directions and the snowplow operator can clearly see any approaching vehicles. |
| 49-51 | Left turns | These slides present information on performing safe left turns. The simulation on slide 49 shows an example of an unsafe left turn. The simulation on slide 50 provides an example of a safe left turn. The trainer should compare and contrast what made one safe vs. one unsafe. |
| 52-53 | Allowing the public to pass | These slides provide information on why long lines of following vehicles may become a hazard. Strategies to allow the public to pass are presented. |
| 56 | Additional resources | Information on additional resources are presented. |
| 57-59 | Acknowledgements |  |

Additional Resources that can be used to find additional information on defensive driving strategies for heavy vehicles.

* Clear Roads snowplow operator and manager training resources: <https://clearroads.org/training-resources/>
* National Safety Council Defensive Driving Courses: <https://www.nsc.org/safety-training/defensive-driving>
* Smith System Professional Driver Training: <https://www.drivedifferent.com/>
* Federal Motor Carrier Safety Administration’s Driving Tips: <https://cms8.fmcsa.dot.gov/safety/driver-safety/cmv-driving-tips-overview>