

Winterization

Presented by
Frontier Supply Chain Solutions Inc.



WINTERIZATION



TOPIC'S COVERED IN PRESENTATION

- SECTION 1: PREPARE
- SECTION 2: LOOK
- SECTION 3: ADJUST



This lesson will take approximately 20 minutes to complete.
After completing this topic, you will be able to:

- Describe the things that will hamper your visibility while driving
- Explain how to compensate for increased stopping time in the winter
- Describe how fatigue can affect winter driving
- List obstacles to watch out for in the winter season
- Explain how to anticipate icy conditions
- Describe the features of black ice and freezing rain

Subtopics in this section include:

- Can You See?
- Keeping Your Distance
- Are You Alert?
- Holiday Drivers
- Road Marking Visibility
- Emergency Vehicles
- Overpasses and Bridges
- Black Ice
- Freezing Rain
- Topic Two Review: Look

TOPIC 2

Look

TOPIC 2 CONTINUED

Overview of the Topic



CAN YOU SEE?

- Rob knows that a large part of driving defensively is continuously looking ahead 12 to 15 seconds in front of you, as well as to both sides of your vehicle. In the winter, this can be an issue because of snow, ice, sleet or freezing rain. Rob needs to make sure that he can see all around before he heads out.
- While you're behind the wheel, road splatter can be a problem in the winter. Rob can run his heater and defroster for a few minutes before he starts out to prevent sudden fogging of his windshield at lower temperatures. Before he uses his washer, he needs to heat the windshield by turning on the defroster full-blast for a minute or two.
- Remember, it's not just about what you can see while you're driving, but whether or not other drivers can see you. Rob needs to remember to clear the snow off his vehicle as much as possible - especially the lights and reflectors so that they are clearly visible.
- Make sure that you plan lane changes well in advance so that you have time to do it safely and give other drivers time to move out of your way. Rob needs to remember to always signal his intentions!

TOPIC 2 CONTINUED

Overview of the Topic



KEEPING YOUR DISTANCE

- Probably the simplest and most important winter driving rule for Rob to remember is to keep a safe distance from the vehicle directly ahead. In fact, it takes 3 to 12 times the distance to stop on ice and snow covered roads than on dry roads. Keeping your distance allows you time to look around and then react to a potentially dangerous situation. Remember, your stopping distance is actually a combination of how long it takes you to react to a situation (reaction distance) and how long it takes your vehicle to brake to a stop (braking distance).
- For an 18 metre tractor-trailer combination, the rule of thumb on dry pavement is a following distance of 6 seconds. This gives drivers time to react and stop. However, that's on dry pavement. As the weather worsens, this distance should be greater because your braking distance is going to increase with the conditions. Drivers in smaller vehicles will be tempted to zip past you and cut you off and there is no sure way to prevent this. Your only option is to keep an eye on the smaller vehicles coming up beside you and being prepared to stop.

TOPIC 2 CONTINUED

Overview of the Topic



ARE YOU ALERT ?

- By keeping an appropriate following distance in the winter, Rob will maximize his braking distance. However, he also has to remember to maximize his reaction distance. The best way to do that is to stay alert. The more alert he is, the faster Rob can react to a situation in which he needs to brake.
- Fatigue slows reaction time. As the weather gets worse, it is even more important to stay well rested so that you can anticipate and react to situations on the road as quickly as possible. Fatigue decreases awareness, which may make you miss warning signs. If you're not aware, you won't be able to slow down or take other steps to avoid a collision. Remember that fatigue impairs your judgment in the same way as alcohol and drugs do.
- Stress can cause fatigue. Driving through a storm where visibility is bad or down a slippery grade can cause a high level of stress. Once the adrenaline wears off, you can often feel very fatigued. If you ever feel fatigued, it's important to take a break and stop driving.

TOPIC 2 CONTINUED

Overview of the Topic



ARE YOU ALERT ?

- Warning Signs of Fatigue
- The warning signs of fatigue include:
- Loss of concentration
- Drowsiness and yawning
- Slow reactions
- Sore or tired eyes
- Boredom
- Irritability
- Missing road signs
- Drifting out of your lane
- Nodding off

TOPIC 2 CONTINUED

Overview of the Topic



ARE YOU ALERT ?

- With winter, comes the holiday season. Between November and January, there are lots of celebrations. Unfortunately, there are also a lot more drunk drivers on the road as well. The National Highway Traffic Safety Administration (NHTSA) published a summary of drunk driving statistics in the United States that shows about 40% of all fatalities during the holiday period involved alcohol impairment.
- Be aware that drunk driving tends to occur at night. If you see a vehicle weaving, speeding up or slowing down erratically, try to keep your distance. In some areas, you are encouraged to call 911 if you see a driver who you suspect is impaired. Check with your carrier for more information.

Holiday Period	Fatalities per Day	Percent of Total Fatalities
New Year's	54	41%
Christmas	45	38%
Rest of December	33	28%
Whole Year	36	31%

TOPIC 2 CONTINUED

Overview of the Topic



ARE YOU ALERT ?

**Fatalities per Day in Crashes Involving an Impaired Driver by
Holiday Period (United States)**

Holiday Period	Fatalities per Day	Percent of Total Fatalities
New Year's	54	41%
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TOPIC 2 CONTINUED

Overview of the Topic



ROAD MARKING VISIBILITY

On the shoulder

In the winter, pavement markings may be covered with snow. Rob needs to keep to the right side of the road, and be aware of pavement drop off as the side of the road is not always visible. If his right wheels drop off the pavement and onto the shoulder, he should slow down and check traffic conditions before attempting to steer his vehicle back onto the pavement.

Between lanes

In bad weather, it may be very difficult to see the lane markings that divide lanes on a highway. In this case, Rob needs to increase his following distance and keep his low-beam headlights on to maximize visibility.

TOPIC 2 CONTINUED

Overview of the Topic



EMERGENCY VEHICLES

- Even though Rob may be prepared for winter, there are a lot of other drivers on the road who aren't. You may see their vehicles on the side of the road after a spin-out or in the ditch. Keep a lookout for vehicles at the side of the road, as well as tow trucks or emergency vehicles that may also be stopped. In some provinces and states, you must move to the left lane of a highway when passing an emergency vehicle stopped at the side of the road. Be aware of the laws in the areas where you are driving.
- Snowplows - Highway snowplows are usually equipped with a flashing blue light. When you see the light, keep a safe distance back. Echelon plowing is the practice of staggered snowplows operating across all lanes of a highway in one direction. All lanes are cleared at once by passing a ridge of snow from one plow to the next. It is the safest and most efficient snow removal method for multi-lane highways. Even though plows travel more slowly than normal traffic, Rob should not be tempted to pass. Passing a plow or sander can be dangerous for the following reasons:
 - The large blades on snow plows extend a metre or more ahead and to the right of the snow plow, often extending into the right-hand lane
 - Snow plows are wider at the front than they appear to be from the rear
 - Even at reduced plowing speeds, light powdery snow forms a cloud that severely restricts visibility
 - The road surface is always better behind the plow than in front of it

TOPIC 2 CONTINUED

Overview of the Topic



OVERPASSES AND BRIDGES

Highway bridges can be a problem in two ways for a truck in the winter: clearances underneath and icing on the top.

Overpasses

Clearance can be affected by accumulation of ice and packed snow which raises the road's height (thereby decreasing the clearance that you would normally have). If there is a lot of snow on the road, be aware that your clearances may be reduced.

Why are bridges icier than the road?

In winter, the road loses heat from the surface. However, there is heat trapped underneath which prevents it from freezing quickly when the temperature drops. Bridges, on the other hand, have no way to trap any heat, and they lose it from every side. They freeze shortly after temperatures hit the freezing point. When the bridge is frozen, any rain or snow that falls onto it will also freeze and stick to the bridge.

Because bridges freeze more quickly, more care is required when going over them. Slow down and be prepared in case of a skid.

TOPIC 2 CONTINUED

Overview of the Topic



BLACK ICE

- Rob hasn't had a lot of experience with black ice and is a little concerned about how to handle it. Let's look more closely at this particular hazard.
- Black ice is clear water that has frozen on dark roadways, resulting in a hidden trap for drivers who can't see it. It's often found on bridges, below overpasses and in areas surrounded by trees where it tends to be colder. You can tell when you've hit black ice because your vehicle will become very quiet - you won't hear the tires on the asphalt because they're running on ice.
- Black ice occurs most often when temperatures are near or below freezing and often forms when the temperature drops suddenly. Because road surfaces can freeze long before water freezes, drivers often think a shiny road surface indicates water, when it's really ice. A thermometer will help you keep track of the temperature outside your truck. When you notice it dropping quickly, be aware that black ice might be forming.
- Black ice can form even when it's not raining or snowing. Condensation from dew on roadways will freeze when temperatures drop and form a thin layer of ice. Even in areas that aren't accustomed to freezing temperatures, such as the Gulf Coast and Southeastern United States, a sudden blast of cold air from the north can quickly freeze and leave roadways very slick.

TOPIC 1 CONTINUED

Overview of the Topic



BLACK ICE CONT'

- Be careful of black ice in the following areas when the temperature is around the freezing point:
- Pavement that looks dry but appears darker in colour
- Low-lying areas that may have water runoff from nearby trees or land
- Bridges, which typically freeze first, and
- Underpasses and other road areas that are shaded from the sun
- Watch the spray coming up from other vehicles. If it stops, there is ice ahead!

TOPIC 1 CONTINUED

Overview of the Topic



FREEZING RAIN

- Another winter weather phenomenon that Rob hasn't encountered much before is freezing rain. This is the name given to rain that falls when surface temperatures are below freezing. The raindrops become "supercooled" while passing through a sub-freezing layer of air and then freeze on contact with any object they encounter. This might be the road, your windshield or sidewalks, trees, buildings, etc. This is one of the most treacherous weather conditions to drive in because the ice that forms is extremely slick.
- Isn't freezing rain the same as sleet?
- "Sleet" refers to ice pellets, which may accompany freezing rain, but is not the same type of precipitation.
- A storm producing a significant thickness of freezing rain is often referred to as an "ice storm". Freezing rain is notorious for causing problems on roads, breaking tree limbs, and downing power lines. It also causes ice to build up on your windshield, limiting your visibility. If you or Rob encounters an ice storm, the safest course of action may be to get off the road and wait it out.

TOPIC 2 REVIEW: LOOK

Overview of the Topic



TOPIC TWO REVIEW: LOOK

- Rob knows that he needs to be extra attentive in the winter months because of the increased risks on the roads. He needs to be able to see as clearly as possible, so he makes sure that he keeps his glass, mirrors, lights and reflectors clean at all times. He also makes sure that he has enough washer fluid because of road splatter. He signals well in advance of a lane change.
- Rob knows his following distance has to be longer than it is in warmer months. His traction can be reduced and result in stopping times that are 3 to 12 times longer than in the summer. He has to be able to keep a safe distance and try to keep an eye on the other drivers around him that may try to take advantage of the extra space.
- If Rob has a very stressful period on the road, he knows that he should take a break as soon as possible. Stress causes fatigue, which can be even more dangerous in the winter. His reaction time will be lower and he may miss signs of a problem ahead, which can cause him to spin out or get into a collision.
- Rob needs to watch out for an increase of vehicles on the road that he wouldn't encounter in the summer. Snow plows may be on the road, and he knows that it's dangerous to try and maneuver around them, especially when they are clearing the highway in an echelon pattern. He keeps an eye out for emergency vehicles so that he can move safely into another lane as he goes by.
- Rob now knows how to recognize black ice, freezing rain and sleet. He knows to watch for wet-looking patches in freezing temperatures, as well as ice buildup on his windshield.