

WHITE PAPER: SPIREON - SNOW PATROL-PREPARING YOUR FLEET AND DRIVERS FOR WINTER

Snow Patrol: Making It Through Winter Safe and Sound

Every year, Old Man Winter presents a special set of challenges to truck drivers. Freezing temperatures will test the limits of your truck. Treacherous road conditions will test your abilities as a driver. If you're not cautious, you could find yourself in a deadly situation. According to the Federal Highway Administration, [an average of 467 fatalities are associated with icy driving conditions annually, and 23% of all vehicle crashes every year are caused in part by inclement weather, such as rain, sleet, snow, fog, and wind.](#) Beyond battling the elements, slippery roads, and low-visibility, fleets are also battling the clock. Expectations of on-time deliveries and hours-of-service limitations can put pressure on drivers and cause them to make dangerous mistakes.

The key to making sure your fleet gets through the season safely is preparation. Preparing means ensuring your staff has a roadworthy vehicle and necessary tools to get them through the bitter cold. Preparing means accounting for slower road speeds and allowing for more time when booking loads. Preparing means educating your drivers on the on-road hazards they'll face this season.

In a Spireon/FreightWaves webinar, "Winter is Coming," Tom Boehler, Director of Safety at Erb Group, outlined steps companies can take to improve safety and efficiency during the winter months. Before the first snowstorm hits, the key areas Boehler says carriers need to prepare for include equipment checks, laws, trip planning, and driver training. In this white paper, you'll learn tactics you can deploy ahead of time that will help your drivers navigate winter roads safely and keep your truck operational.



THE ESSENTIAL WINTER EQUIPMENT CHECKLIST

Wet, cold, and icy weather are harsh on any vehicle and can significantly hinder their operational efficiency – this is especially true for trucks that are on the road and exposed to the elements 10 to 12 hours out of the day.

Fleet managers need every break they can get during the winter, and the last thing you want is a stranded driver when it's freezing outside and there's dangerous road conditions. Performing routine maintenance and inspections will ensure your vehicle can withstand the elements, prevent costly breakdowns and downtime, and most importantly, keep your drivers safe. To make this task easier, fleet managers can utilize driver vehicle inspection reports to ensure all vehicle systems are functioning and to preempt on-road equipment failures.

Make sure your drivers and mechanics are regularly inspecting essential components – like tires, brakes, wiper blades, fluids, and electrical systems. Fleet managers should also review laws regarding snow build-up and tire chaining in the areas they're running. Special equipment areas and their related regulations also require extra attention during the winter months.

Tires

Traction is critical when it comes to driving on snow or ice-covered roads. According to the NHTSA, 738 people died in tire-related crashes in 2017. Check the tread depth on the tires and look for signs of wear and tear. The more wear on the tire, the less effective they are at traversing on snow or ice. Keeping tires correctly inflated will also ensure you have the best traction possible. Not all tires are built the same, and some of them will pack up with ice or snow. If you're frequently traveling through areas that are consistently wet or below freezing, make sure you're equipped with proper winter tires or all-weather tires (not to be confused with all-season tires).



Fifth-Wheel Lubrication

The fifth-wheel is the sole component that connects the tractor to the trailer and has a huge affect on steering and turning corners. It's important to perform regular maintenance and lubricate this part every season. If you're operating in snowy or icy conditions, it should also be performed in the spring leading up to the winter in addition to your regular routine. There are differences in lubrication, so it's crucial that you're using the correct grade. In the winter you should be using a winter grade lubrication, not a summer grade. Summer grade lubrication is thick and can hamper the steering of the fifth wheel.

Tire-Chaining Laws

Fleets should ensure their vehicles are equipped with the proper chains or traction devices. Not only is this important for driver safety – in many areas, it's the law! These laws always seem to be changing, and different states or Canadian provinces have different requirements, so fleet managers need to review all state and Canadian tire chaining on an annual basis if you run routes that cross borders or state lines.

It is also important to train drivers on how to use tire chains, where to store them, and how to check if they are functioning properly. Boehler says he sees a lot of frustration with DOT officials when it comes to tire chain driver training, or lack thereof. “They don’t know how to put chains on, they don’t know where they are, they don’t have them on.” All of this, Boehler says, can lead to a precarious situation. “When they start climbing mountains, they can spin out.... and accidents start occurring.” Training drivers on how to chain tires is essential, otherwise this potentially lifesaving piece of equipment is rendered useless.



Brakes

The ability to slow down is essential during any driving conditions, but even more so when roads are icy and stopping distances are longer. After every stop, drivers should check for even and uniform braking (something you particularly want on slippery surfaces). Boehler suggests fleet managers should set up a dedicated safety lane at their terminals where mechanics and drivers can check their brake performance.

Draining Your Tanks

It's important to preform regular maintenance on your air dryers before the winter season hits. The air dryer's job is to remove moisture from the brake system and to prevent water freezing the lines. Frozen air lines can lead to frozen brakes – and that's the last thing you want to discover that as you're trying to come to a stop. Even if the air line dryers are functioning, you shouldn't expect them to do all the work. Boehler also stresses draining moisture from your air tanks on a daily basis to prevent freeze-ups.

Batteries

There's nothing worse than turning the key in the ignition and hearing an ominous "click click click". As the temperatures start to drop, the engine becomes harder to start and batteries lose power. It's important to start the winter season with good batteries and test them on a regular basis.

Lights

When daylight hours get shorter, visibility is everything. After every stop, drivers should make sure that their headlights, clearance lights, brake lights, and signals are clear and wiped off. Drivers using trucks outfitted with LED lights will have to do this task more frequently, because LED's don't build up heat and melt the snow off as easily. During fall PMs, check the illumination level of lights and replace any dim lights.

Wiper Blades

It might seem like a trivial detail, but a working set of wiper blades with plenty of washer fluid can go a long way in making dark, wet, winter drives less stressful on drivers. During the fall PM's, make sure your techs are replacing wiper blades with a new set and give drivers an extra set to carry along in case they rip or stop working. They should also completely fill the truck's windshield washer reservoir using winter fluid mixed with a deicing agent.

Mirrors and Windows

Make sure mirrors and windows are clean so drivers start their trips with the highest visibility possible. Equip them with squeegees, paper towels, window cleaner, and a scraper to clean off ice and snow. You should also remind your drivers to start checking their heater and defrosters to ensure there's proper air flow and heat. This is particularly important to clear away fog or freezing rain from the windshield.



ERB GROUP:

"They don't know how to put chains on, they don't know where they are, they don't have them on."

- Tom Boehler
Director of Safety

Cooling Systems

Check radiators and make sure those coolant levels are topped up with winter coolant. This is especially important if you're traveling in areas where the temperature is below freezing. Coolant that's weak or over-diluted with water can freeze when the temperature dips below 32 degrees Fahrenheit. Inspect the radiator and hoses for leaks, and make sure all clamps are tight.

Mufflers & Exhausts

During cold temperatures, carbon monoxide can hang low in the air around the bottom of the cab. This might not be a problem for a regular motorist, but truck drivers tend to sit in their cars for long stretches of time, and if carbon monoxide is slowly leaking into the passenger compartment it could be fatal. Make sure drivers and mechanics are regularly checking to see if the muffler and exhaust systems are tight and there's no leaks present.

Bunk Heaters

Don't wait until last minute to start cleaning bunk heaters. Over the summer, dust, debris and dirt can accumulate and clog it up. Get those bunk heaters clean and make sure they are working before you head into the winter.

Addressing Snow Build-Up

After weeks of dealing with the white stuff, drivers might be tired of clearing ice and snow off their trucks, but it can be a safety hazard. Sheets of flying ice can cause damage to surrounding cars, and in some instances, injury or death. For this reason, Canada, along with a growing number of states, are starting to take a hard stance on snow and ice build-up and are holding drivers and carriers accountable. And now, if you don't clear off your vehicle, you could face a fine. To avoid liability issues, fleet managers need to come up with a snow-removal plan for their drivers and vehicles. Boehler says in some areas, like New Brunswick, they provide scrape blades for trailers at weigh stations that drivers should take advantage of. But when resources like this aren't readily available, you'll have to think outside of the box. It might be as simple as googling 'truck wash' or 'snow removal near me'. This might also mean using a drive-through scraper or some type of platform that are either purchased or built in-house. Boehler says he's seen companies tackling this issue by attaching hydraulic brushes to front-end loaders. All the drivers simply have to do is drive under the brushes as they leave, which is a safer, and more efficient, process than clearing off the snow manually. You also need to come up with a game plan for dealing with snow-build up once trailers arrive at shippers' and consignees' locations. Boehler suggests hiring private contractors. "We have contacted different people in that area that will go up and will come in and clean off our trailers at those drop locations," he explains.

CB Radios

CB radios are still a valuable tool to trucker safety. When cell phone reception is poor or weather forecasts aren't up to date, tuning into a CB radio during a snow squall can give you critical information on what the conditions are like ahead of you.

Trip Planning

Icy bridges. Holiday traffic. Road closures. Snowstorms. While you can't prevent these incidents from happening, you can, however, utilize proper trip planning to steer clear of these obstacles. Your dispatch team should monitor weather and road conditions in the corridors that drivers are traveling in and have a backup plan in place if delays occur. This means knowing which alternative routes to take so that drivers can safely reach their destination or telling drivers where they can find parking for the night. Dispatch can use their telematics systems in conjunction with forecast information to direct trucks out of storm-affected areas by using the best alternative routes available.

During the holiday season, customer expectations of on-time deliveries and hours-of-service regulations clash with congested highways, slower speeds, and deteriorating driving conditions. That can put a lot of pressure on the driver to take risks in order to make up for lost time. When booking loads, dispatchers should account for weather and road conditions to ensure that drivers have ample time to get to their destination without feeling rushed. Responsible carriers and customers know that safety is of prime importance – even if it means missed or late deliveries. In these situations, it's all about communication within your team and setting expectations with your clients. Boehler recommends teaching drivers to communicate with dispatch if they're going to be running late so they can start rebooking appointments and update arrival times. Based on his experience, he says "customers are very good at working with this, and when we explain the situation they are accommodating".

While your dispatch crew can play a significant role in driver safety, there's only so much planning they can do from behind a desk that's hundreds of miles away. Dispatch might have already selected the safe road to take and identified alternative routes, but local conditions—like snow squalls, traffic accidents, and road closures— can change without warning and might not appear on your company's weather or traffic report. Before every trip and during their rest breaks, drivers should watch the weather forecast and listen to the radio for road advisories. Things like road closures or inclement weather slow drivers down, require extra road time to navigate around, and make it difficult to find parking, which can result in a driver exceeding their hours of service limits. If poor conditions are in the cards, drivers should allot themselves extra travel time and plan their stops in advance. This can go a long way in making their deliveries on-schedule and keeping them within their driving hours.

Preparing Your Drivers

Everything about driving is easier in the warmer months. Stopping distances are shorter and your drivers can more easily react to dangerous situations. Winter roads, on the other hand, are less forgiving. If you're not careful, you could find yourself careening toward a guard rail watching your life flash before your eyes.

From slippery roads to low-visibility to poor traction, drivers are exposed to increased hazards in the winter and yet many do not alter their driving habits. To get through this season safely, fleet

managers need to train their drivers to shift their mindsets and adjust their driving behavior for the changing roadways. Drivers should understand what makes winter driving different and learn how to avoid and handle situations like skids and spins.

Fleet managers can utilize past data from their telematics systems to inform these training sessions. Data history can indicate harsh braking, jack-rabbit starts and stops, and other safety related driving behaviors at a driver-specific level. To prepare their drivers for the hazards they might face, Fleet managers should take the time to practice the following defensive driving techniques with their team.

WHAT TO KNOW BEFORE DRIVING IN THE SNOW

Keep it Slow and Smooth

All of your driving should be done slowly and smoothly. This means starting slowly and smoothly, turning slowly and smoothly, and stopping slowly and smoothly. Remember, in snow and ice, the tires are just barely gripping the road and stopping distance is reduced dramatically. On a slippery road, rapid or aggressive movements can cause you to lose even more traction and tire control altogether. Slow movements are key to combating poor traction and ensuring you're not going to spin out of control.

Avoid Getting Stuck in Snow

When snow heavy areas are unavoidable, and you find yourself stopping for a rest in a yard or a dock that's packed in with snow, there are preventative measures you can take to avoid getting stuck. If you're parking in a snowy lot for, Boehler says you want to roll in a little past your stopping spot and back up a little bit. This gives you a little bit of starting room in the morning and helps you avoid pushing into snow right away. You should also consider putting on tire chains or laying down kitty litter where you'll be parking at.

Adjust Your Speed

Posted speed signs mean nothing in snow or ice-covered roads. You should slow down and adjust your speed to match the weather conditions and road conditions, visibility limits, and traffic around you. According to the FMCSA, you should reduce your speed by $\frac{1}{3}$ on wet roads and by $\frac{1}{2}$ or more on snow-packed roads. For instance, if the speed limit says 60 mph, you should reduce your speed to 40 mph on a wet road and 30 mph on the snow-packed road.



Increase Your Following Distance

Stopping distances on ice or snow-covered roads are three to 12 times longer than on dry pavement. With reduced stopping ability, it's critical that drivers are leaving a larger following distance. During ideal conditions, the average following distance is one second for every 10 feet of vehicle length. During adverse conditions, drivers should lengthen the following distance by two or three times the usual gap.



Lane Changes

When conditions are ideal and the pavement is dry, lane changes can be done fairly quickly. That all changes during winter. Drivers need to make lane changes slowly and gradually, and ensure they have plenty of room.

Steering

Reduced traction available on snow and ice makes steering more difficult and requires smooth controlled movements of the steering wheel. Harsh movements of the steering wheel can lead to skidding or loss of control. If you need to take evasive action to avoid a collision, gentle deceleration and steering is the better than braking, particularly if you're traveling above 25 mph. This is because less distance is required to steer around an object than to brake to a stop.

Entering Curves

Because Trucks and trailers carry a lot of weight, drivers should enter curves slowly, regardless of the season. With slippery road conditions, curves become even more hazardous for large trucks. Drivers should start slowing down well before approaching a curve. Exercising caution before entering curves is even more important for loaded trailers, as they're 10 times more likely to roll over than trucks with empty trailers.

Test the Road Conditions

As we mentioned earlier, driver should monitor the weather and road conditions before every trip and during every break. In addition to listening to advisories on the radio, this also means testing the road conditions themselves. Before leaving the lot and entering a major highway, drivers should take a moment to test their brakes and steering. The way the tractor trailer reacts will indicate what driving conditions they can expect.

Identifying Black Ice

Black ice is a thin, transparent layer of ice that forms when temperatures get near freezing. It gets its name because it blends in with the surrounding pavement, making it difficult to spot. Fleet managers should train drivers to recognize when and where black ice forms. The warning signs of black ice formation include ice accumulation on mirrors, antennas, windshields, or roadside trees and signs. If water spray from vehicles traveling in front of you suddenly stops, this can also indicate an ice patch is underneath. The most common locations for black ice are shaded areas or areas that freeze quickly—like roadways beneath hills, underpasses, bridges, and overpasses.



Stopping with ABS & Stopping Without ABS

Nowadays, most trucks are equipped with an Anti-lock Braking System. As their name implies, these systems are designed to automatically pump the brakes and prevent the wheels from locking up, thereby helping the driver maintain control when trying to stop on a slippery surface. If your vehicle is not equipped with ABS, you can simulate the locking effect by pumping and releasing the brakes rapidly.

CONCLUSION

The old saying “an ounce of prevention is worth a pound of cure” never rings more true than in the winter. And, unsurprisingly, it turns out there’s a correlation between preparation and fleet safety. “I see accidents happening more and more, but it’s with drivers that haven’t been educated,” Boehler says. “And when I see the large fleets around our area and in the states that do this training, you definitely see a huge decrease in the number of winter accidents they have.”

In summary, before the rubber hits the snow, fleets need to have a plan in place to ensure their drivers can make it safely through the season. This means preparing well in-advance and taking the appropriate steps to prepare for inclement weather. This includes:

- Inspecting vehicles to ensure they are winter-ready in the fall and spring.
- Providing drivers with necessary equipment to brave the winter roads, like tire chains.
- Reminding drivers to always thoroughly conduct pre and post-trip inspections.
- Reviewing winter-specific laws in the regions they travel, like snow build-up and tire chaining.
- Utilizing weather forecasts and route mapping software to determine alternate route for drivers to safely travel.
- Establishing a culture of safety within your team and with your clients that prioritizes safe arrivals over on-time arrivals.
- Providing drivers with necessary education and training to deal with on-road hazards, like poor tire traction and skidding.