

# Montgomery County Fire and Rescue Service

## FIRE CHIEF'S GENERAL ORDER

NUMBER: 12-01

February 21, 2012

TO: All MCFRS Personnel

FROM: Fire Chief Richard R. Bowers



SUBJECT: Winter Driving and the Use of Vehicle Snow Chains

This General Order provides guidance on winter driving and the use of snow chains during various types of inclement weather. The use of snow chains and the criteria for when to apply snow chains will vary throughout the County because of disparate local weather conditions at any given time. Improperly applied snow chains have caused significant damage to apparatus and can delay unit response. Risks to personnel and the apparatus should be calculated before attempting to access areas that have not been cleared of snow.

All personnel must monitor the condition of the roadways in their response area for changes throughout their shift, and report these changes to the on-duty station officer. Station officers must ensure this monitoring occurs periodically throughout the night. Methods of monitoring include traffic cameras, local television, visual checks of the station's parking lot and roads immediately surrounding the station, as well as responding to and returning from incidents. This is not to imply that units should leave the station to check the roads. All personnel must remember that changes in road conditions may require the application and removal of chains more than once during a shift. The on-duty station officer has the authority to order the application of snow chains. When the station officer determines that chains are needed, he or she will immediately notify the on-duty Battalion Chief and the LFRD Duty Officer. Battalion-wide or County-wide snow chain use will be ordered by the Duty Operations Chief and communicated through the on-duty Battalion Chiefs.

MCFRS apparatus uses two types of chains: **permanently mounted or "automatic" chains**, and **removable crosslink chains**.

### Automatic Chains

**Automatic chains** are short lengths of snow chain attached to a small drive wheel, that when activated, contact the inside tire of the rear duals. Centrifugal force throws the lengths of chain under the tire. When they are needed, the chains are controlled, i.e., raised or lowered, by the driver. For effective operation, these chains should be engaged while the unit is moving 3-25 MPH. These chains work best when the apparatus can maintain slow but steady speeds, such as in shallow snow, or on intermittently clear/covered roadways.

Automatic chains *do not* work well in accumulations over six inches of snow or when driving conditions do not permit apparatus speed to exceed approximately 5 MPH.

Original equipment manufacturer guidelines must be followed for specific types of automatic chains specifically related to driving speeds. Drivers **must raise** these chains whenever their use is not absolutely necessary, because driving at higher speeds for prolonged periods will destroy the drive wheel assembly first, and will then cause damage that may lead to catastrophic tire failure.

**Station commanders must ensure that automatic chains for units assigned to their station and so equipped, are operational.**

### **Removable Crosslink Chains**

**Removable crosslink chains** are applied manually to the outside tire of the rear duals. The chains must be well distributed around the tire and fit snugly, using bungee-style tensioners. These chains perform better than automatic chains in deep or heavily rutted snow and ice because they do not rely on centrifugal force to place them under the tire. Removable crosslink chains can be used at the same time as automatic chains because they affect different tires. Using both types at the same time increases the likelihood that a chain will be under the tread at any given time, and, therefore, increases traction. Removable crosslink chains can cause severe damage if they work loose or break. **Units using these chains should secure all fold-over locking latches with sixteen (16) gauge mechanic's wire and carry this item on the vehicle to secure broken sections if a failure occurs.** If the broken section can not be secured, the entire chain may have to be removed before a unit can continue its response.

**Station commanders must ensure that removable crosslink chains are available in the station for the winter season, including:**

- 1. Correct quantities and sizes for all apparatus, including a set of chains per axle for all tandem axle vehicles.**
- 2. Chains and links in proper working order.**
- 3. Repair materials available for the application and repair of snow chains.**
- 4. Tools readily available for the application and repair or snow chains.**

### **Automatic Traction Control (ATC) and Differential Locks**

Some apparatus is equipped with ATC and/or a differential lock.

All drivers should be aware of guidelines concerning the function and use of automatic traction control and differential locks for apparatus for which they are responsible. These guidelines may be found in the vehicle's driver/operator manuals.

Note that newer apparatus is equipped with the ability to manually activate ATC.

### **Tandem Axle Vehicles**

Tandem axle vehicles are not equipped with automatic chains. The combination of weight, ATC, differential locks, and inter-axle locks should allow these vehicles to handle the majority of snow events without removable crosslink chains.

All drivers should be aware of the guidelines concerning the function and use of driver

controlled differential locks and inter-axle locks for tandem axle vehicles. These guidelines may be found in the vehicle's driver/operator manuals.

All-Wheel Steer (AWS) aerials are not equipped with automatic chains and Pierce Manufacturing, Inc. prohibits the use of removable crosslink chains.

### **Guidelines for Using Snow Chains**

1. **When using ANY type of snow chain, frequently reassess the need for their use and inspect the chains after returning to the station. Tighten, repair, and/or replace as required.**
2. Do not exceed 25 MPH using **ANY** type of snow chain or when the inter-axle lock is engaged.
3. **Less than 6 inches of snow on the ground, or predicted.** Use automatic chains. **Raise the chains on cleared pavement** or when they are not needed for traction. Monitor weather forecast for changes that might produce more than six inches of snow and be ready to apply removable crosslink chains if conditions worsen.
4. **Six inches of snow on the ground with expected continued accumulation.** Apply and use removable crosslink chains and **raise** the automatic chains. Use permanently mounted or automatic chains only as needed, and raise them as soon as you regain traction. **AWS functions should be disabled under these conditions.**
5. **Blizzard Conditions.** The Operations Division will coordinate with the Fleet Section to call back Fleet Section personnel and provide additional resources or amended response plans. Apply and use removable crosslink chains. **Do not use the automatic chains unless you are stuck and have a tire that is spinning.** Raise the automatic chains as soon as you regain traction. **AWS functions should be disabled under these conditions.**
6. **Ice.** Apply and use removable crosslink chains. **Do not use the automatic chains unless you are stuck and have a tire that is spinning.** AWS functions should be disabled under these conditions.
7. **Other guidelines when using snow chains.**
  - a. Allow several times your normal stopping distance, and reduce speeds dramatically before entering turns.
  - b. Carry sand, absorbent, or ice melt to improve traction in small work areas, and to help if you get stuck.
  - c. Pay close attention to other vehicles moving near you.
  - d. The front axle is usually lighter per square inch of tire surface, and will be the first to lose traction on ice.
  - e. ***In ALL situations, if a removable crosslink chain breaks, STOP the unit as quickly as possible in a SAFE place.*** Notify ECC that you are out of service until you can repair or drop the chain.
  - f. All units should carry a snow, scoop, or spoon shovel to clear snow

from under the unit if a repair is necessary.

- g. Occasionally, parking apparatus farther from an incident and proceeding to the scene on foot should be considered. Remember that snow banks may contain ice and debris and often disguise obstructions, e.g. rocks, hydrants, posts, etc.
- h. If directed by the Operations Division to chain tandem axle vehicles, both rear axles will be chained with removable crosslink chains.
- i. Remember with tandem axle vehicles, that automatic traction control should only be used if you are stuck. Otherwise it should be turned off during snow conditions. Also, remember to use your inter-axle and differential locks when you are stuck.

**8. As a general rule, units running with removable crosslink chains should not drive on the Interstate Highways because of their speed restriction.**

Significantly reduced speed on the Interstate Highway will cause one hazard, while driving at higher speeds with the chains applied may cause another. This will impact the patient transport practices of EMS units serving the northern County stations. *Station officers, LFRD Chiefs, and Battalion Chiefs should consider using one type of chained vehicle to access patients and remove them to cleared roads where they can be transferred to an unchained unit for transport. Remember to notify ECC of your intended strategy.*

**9. Use this weblink as a reference to snow operations in Montgomery County, Maryland:**

<http://www.montgomerycountymd.gov/hwytempl.asp?url=/content/dot/highway/snowplow.asp>

Please address any questions to Asst. Chief Richard Holzman, 240-777-2485.

- Supersedes Fire Chief's General Order #08-17
- Supersedes section 6.25 of DFRS Policy and Procedure #808, dated June 9, 1994