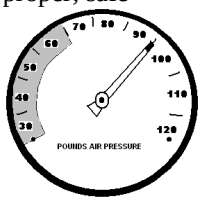
Job Name: _____ Job Site Location: _____

Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 425: Air Brake Safety (Part B – Using Air Brakes)

Introduction: If you drive a heavy vehicle equipped with air brakes, it is important to know the proper procedure for inspecting the brake system, and the correct way to use the air brakes for control of your vehicle. Using compressed air to operate the braking systems is the most effective means of slowing and stopping heavy vehicles. However, correct use of the air brakes is essential to the proper, safe function of those systems. Following are guidelines for the proper use of air brakes:



- ***Air Pressure –*** Allow time for the air to build up after starting to ensure brake function. The normal functioning air pressure for the brakes is between 80-120 psi, and the low air warning must come on at 60 psi. Allow dual air systems to come up to 100 psi before proceeding.
- ***Always pay attention*** to the low air warning signal. If it comes on pull your vehicle over as soon as safely possible and stop while the brakes still allow you to control the vehicle.
- ***Normal service braking*** – Push the pedal down to bring the vehicle to a smooth, safe stop. If driving a vehicle with a manual transmission, do not push the clutch pedal in until the engine rpm is down close to idle.
- ***Emergency stops*** – You should brake in a way which allows you to keep your vehicle in a straight line, and allow you to turn if it becomes necessary. You can use the "controlled braking" method, or the "stab braking" method:

  - "Controlled braking" method – Apply the brakes as hard as you can without locking the wheels. Keep steering wheel movements very small when doing this. If you need to make a larger steering adjustment or if the wheels lock, release the brakes. Re-apply the brakes as soon as possible.
  - "Stab braking" method – Apply brakes all the way, and release the brakes when the wheels lock-up. As soon as the wheels start rolling again, apply the brakes fully again (it can take a second for the wheels to start rolling again). If you re-apply the brakes before the wheels start rolling again, the vehicle will not straighten out.
- ***Brake fading or failure*** – Excessive use of the service brakes results in overheating and leads to brake fade. Brake fade is caused from excessive heat causing chemical changes in the brake lining reducing friction and expansion of the brake drums. As overheating expands the drums, the brake shoes and linings must travel farther to contact the drums, and the force of contact is also reduced. Continued overuse may increase brake fade until the vehicle cannot be slowed or stopped at all.
- ***Braking on downgrades –*** The use of air brakes on a long or steep downgrade is only a supplement to the braking effect of the engine. Once the vehicle is in the proper low gear, the following braking technique should be used:

  - Apply the brakes just hard enough to feel a definite slow down.
  - When your speed has been reduced to approximately 5 mph below your "safe" speed limit, release the brakes (brake application should last about 3 seconds).
  - When your speed has again increased to your "safe" speed limit, repeat the previous steps.
- ***Parking brakes –*** Anytime you park, apply the parking brake, except as noted below. Pull the parking brake control knob out to apply the brake, push it in to release them. Do not use the parking brake if the brakes are very hot, such as just coming down from a very steep downgrade. If the parking brake is applied on very hot brakes they may be damaged by the heat. If the parking brake is used on very cold days when the brakes are wet, they may freeze to the drum so that the vehicle cannot move. Let hot brakes cool before applying the parking brake. If the brakes are wet, use them lightly while driving in low gear to heat and dry them.
- ***Spring brakes*** – All trucks and heavy air brake equipped vehicles must have spring brakes for emergency brakes and parking. They use the mechanical force of springs because air pressure can eventually leak away. When driving these powerful springs are held back by air pressure. If the air pressure is removed the springs put on the brakes. Never push the brake pedal down when the spring brakes are engaged as the brakes could be damaged by the combined force of the springs and air pressure.

Conclusion: If your vehicle does not have automatic air tank drains, drain your air tanks at the end of each working day to remove excess moisture and oil. See meeting **#424: Air Brake Safety (Part A)**, for air brake inspection procedures.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Employee Signatures: ***(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)***

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These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.