The brake system is one of the most important parts of your vehicle. Faulty brakes contribute to about one-third of truck-caused crashes in the United States, and poorly adjusted brakes or brake-system violations contribute to half of all out-of-service violations for commercial vehicles. Knowing how to properly use and maintain brake systems can help prevent serious injury or damage to property.

Brake Use
Frequent, hard braking can compromise brake system performance and increase maintenance costs. To get the most out of your brakes:

- Anticipate braking needs well in advance to avoid hard braking.
- Maintain reasonable speeds and safe following distances, especially on slippery roads or when traveling downhill.
- Apply firm pressure to the brake pedal and ease up as soon as you begin to slow down. (By the time you come to a complete stop, you should be applying minimal pressure to the pedal.)
- Use lower gears on hills and in heavy traffic.
- Calculate your safety buffer:
  - If you’re operating a 40-ft vehicle traveling under 40 mph, leave 4 seconds between the truck and the vehicle in front.
  - If you’re driving a 40-ft vehicle at a speed over 40 mph, increase the buffer to 5 seconds.
  - For larger trucks, allow one second for every 10 feet of vehicle length plus one extra second if you’re traveling over 40 mph.

Note: These guidelines assume good weather and reasonable traffic. More dangerous conditions may require greater following distances.

Brake Maintenance
Regularly inspect brake systems to ensure optimum performance. Even if you can’t look under the vehicle, you can listen for air leaks, check low air signals and look for component damage. Include a thorough brake inspection with every pretrip inspection.

- **Service brake check**—Wait for normal air pressure, release the parking brake, move the vehicle forward slowly (about 5 mph), apply the brakes firmly and note any vehicle pulling to one side or delayed stopping action.
- **Parking brake check**—Apply only the parking brake and shift into a lower gear. Gently pull against the brake by releasing the clutch. Verify that it holds the vehicle.
Safe Braking
Commercial Motor Vehicles

Avoid Hazards
Always keep an eye out for hazards to avoid slamming on your brakes. Hard braking can potentially lock your wheels and send you into a skid. Spread your braking over the longest possible distance by braking early and reducing your speed gradually. If you need to take evasive action, don’t brake and swerve at the same time. Apply brakes first to slow the vehicle down as much as possible; then release the brakes to swerve.

Vehicle and trailer brakes are designed for a full load and can overpower an underweight trailer, resulting in locked wheels. Be cautious when trailers are empty or cargo is unevenly distributed to prevent jackknifing.

Using your engine brake or retarder (i.e. Jacobs brake) on a slippery surface can lock up the drive axle and also cause jackknifing. Steer out of skids and minimize braking until the vehicle is under control.

When approaching a curve, apply your brakes while the vehicle is traveling in a straight line. Slow down to the point that you can apply a little power as you turn. Downhill turns are especially prone to jackknifing. If you’re going down a steep hill and wish to turn off to the left or right, don’t assume the trailer will follow you. The trailer’s momentum tends to carry it straight down the hill, so slow down or come to a stop before turning.

For Additional Information
EMC Insurance Companies: www.emcins.com

• Safety by Topic – Fleet and Driver Safety


• Motorcoach Brake Systems and Safety Technologies

Hydraulic brake check—With the engine running, pump the brake pedal three times and hold it for five seconds. The pedal should not move.

- If the vehicle is equipped with a hydraulic brake reserve system (with the key in the “off” position), depress the brake pedal and listen for the sound of the reserve system electric motor turning on. Verify that the brake warning light/buzzer is off.

Air brake check (air brake equipped vehicles only)—Release the parking brake and trailer air supply button and apply pressure to the foot brake for one minute. After the initial drop in pressure, the rate of pressure loss should be no more than 3 psi per minute for single vehicles and no more than 4 psi per minute for combination vehicles.

Test the low pressure warning alarm—Turn the key to the “on” position and rapidly depress and release the foot brake to reduce air tank pressure. The low air pressure warning signal should come on before the pressure drops below 60 psi. Continue to rapidly apply and release the service brake pedal, further reducing air pressure. The trailer air supply button (for combination vehicles) and parking brake button should pop out when the pressure falls between 20 to 40 psi. This should activate the spring brakes.

Check rate of air pressure buildup—While the engine is operating at 1800 RPM, the pressure should rise from 85 to 100 psi within 45 seconds in dual air systems.