



AIR BRAKE SYSTEM MAINTENANCE

The maintenance of air brake systems is an important topic. Understanding how and why things happen to affect the system is essential to any maintenance technician trying to diagnose and repair the air brake system. The information contained in this bulletin is designed to assist you in your diagnosis of air brake system problems.

AIR BRAKE ESSENTIALS

The first essential to consider for a well-maintained air brake system is clean, dry and oil-free air delivered to the air brake system. Without this, the air brake system will not deliver the right amount of air to the valves for operation at the proper time.

The air delivery system consists of the air brake compressor and its governor, the air dryer, and the wet tank along with the connecting lines and filters. This system is responsible for clean, dry, oil-free and particulate-free air being delivered to the "wet tank" or primary reservoir. *The maximum amount of moisture, or water, that is acceptable in the "wet tank" is two (2) ounces or less.* When the wet tank is drained and found to have two (2) ounces or more of moisture, something is wrong with the air delivery system. When this amount of moisture is found in the "wet tank," it is a clear indication that oil is working its way toward the wet tank.

When the air dryer desiccant bead sack gets partially covered with oil from the oil getting past the rings of the compressor, oil will then migrate to the wet tank and into the air brake system valving. Since the air valves utilize rubber seals that are damaged by oil, the air brake system will slowly begin to operate improperly.

Air valves that cannot deliver the right amount of pressure at the right time will show up as *rapid and uneven friction material wear*. This rapid wear is an indication of improper valve timing. Proper valve timing is necessary to insure that all of the brakes on a vehicle deliver the right amount of braking to safely stop the vehicle. This requirement for the air brake system is known as "timing". When the timing is right, rapid, uneven brake wear is eliminated, because the axles are working to their designed capacity on all wheel ends.

Other problems that can affect the brakes timing are the brakes adjustment, slack adjusters adjustment, brake hardware replacement and bending of the spider support system in each wheel assembly, and improper matching of friction material to the drum. At each friction reline all of these items should be *checked and replaced if there is any doubt* and done only in axle sets to maintain axle timing.