BRAKEPRO™

TECHNICAL BULLETIN

VOLUME 4, # 3

RUST CONTAMINATION

Rust contamination, **can cause** friction material cracking and overheating, and **must be taken** into consideration when doing any diagnosis of brake problems. The term "rust jacking" is the name given to contamination of the steel components such as brake shoe tables and attaching hardware and components.

With advances in brake friction material, the life of brake linings is increasing over what has been usual in the past. With this increase in mileage and life, the other components of the foundation brakes are being required to withstand more problems. Brake shoes, brake springs, retainers, S cams and bushings and rivets or attaching bolts for friction material are ill equipped to withstand the power of corrosive materials that will shorten their life.

Areas with snow removal needs are seeing more corrosion and damage to these components due to the materials used to keep the snow and ice off the roads. Fleet maintenance managers are beginning to recognize this problem in transit and local delivery vehicles. The culprit can be traced to the use of chlorides in different chemicals that prevent the formation of ice and snow. Numerous chemical concoctions are being used today to prevent ice and snow from becoming problems.

Snow removal has now become snow prevention that is laid down before a major snowstorm that in the form of salt and sand, calcium chloride, or magnesium chloride. All of these formulas are highly corrosive to foundation brake and hardware components. Salt and sand are the least corrosive, calcium chloride is more corrosive, and magnesium chloride is the most corrosive of all of the formulas.

Steel brake shoes are the area of major concern to friction material. These chemicals, thru the heating and cooling of the brake systems, migrate to the steel shoe table and then establish corrosion between the friction material and the steel shoe table. This can be seen in the pictures above. Careful inspection and meticulous cleaning of the steel shoes along with the painting of these items only help the shoes withstand some of the corrosion. When magnesium or calcium chloride is used on the roads, corrosion is guaranteed to appear and cause damage.

One corrosion-prevention tactic is to wash fleets in the field; but brakes and foundation components are not flushed that well, because they are concealed and cannot be easily cleaned. The problem is aggravated by a brake inspection procedure that is usually just to determine the lining thickness, which typically does not require removal of brake drums during the inspection process. Slack adjusters are another item that is being affected by the use of calcium and magnesium chlorides. Premature failures are being experienced, some if which are caused by lack of grease and the introduction of these chlorides into the inner workings of the slack adjusters. Thus, routine greasing of the slack adjusters will tend to increase the life and in some instances drive out the corrosive problems.

Rust that invades the steel table will cause rust to get under the friction material, swell and create cracks and breakage of good friction material and ruin it before its full performance and life are experienced.

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