Abex CORPORATION

AMERICAN BRAKEBLOK DIVISION

HEAVY DUTY SERVICE BULLETIN



BULLETIN NO. 18

BRAKE FADE SHOULD FRIGHTEN US

One must experience Brake Fade to know how frightening it can be. Being able always to stop safely from all speeds is the assurance expected when one applies the brake, but how often is this not the case when we unknowingly exceed the limits of the brake capacity. Brake Fade in essence is the result of the build-up of extremely high operating temperatures beyond the tolerance of the brake and brake lining without allowing the brakes to cool sufficiently between the stops. While Brake Fade is customarily associated with successive high speed stops that do not allow for the brakes to cool between the stops, Brake Fade can just as readily present itself when braking in tight sequence from lower speeds where the traffic demands continuous braking that does not permit time for the brakes to cool between the stops.

What is Brake Fade and how can one protect against it. Have you had the experience of stopping on ice? Well that is essentially the feeling when Brake Fade sets in -- the pedal remains the same and increased pedal effort makes no difference. While all brake linings have their heat limitations because of the manufacturer's particular composition (binders and bonding agents), some lose their friction at much lower temperatures than others. The condition of the brake drum too has an influence to the degree how it accepts and dissipates the brake heat. The heavier drum or the one of standard diameter has more heat sink available to handle the heat. It is the destructively high operating temperatures beyond the durability range of the particular brake lining that can bring about Brake Fade.

What are the safeguards that would limit Brake Fade? First use the specifically engineered lining set for the particular brake. Reline the entire vehicle. Mate drum diameters on the common axle and have all drums within their safe limits. Avoid pedal riding especially on steep grades where the lower gear should be utilized to relieve the brake. Do not overload the vehicle beyond the capacity of the brake.

Associated with Brake Fade is the recovery phase -- how fast the lining returns to its normal friction level. Some brake linings that fade do return to their original friction level -- some sooner than others. But what alarms one is Delayed Fade. This is a most undesirable feature in a brake lining. After a lining begins to recover from a fade condition and without any warning returns suddenly again to the fade, this is known as Delayed Fade. The distressing and alarming concern with Delayed Fade is that one can never feel fully assured of stopping safely. This is particularly frightening when the brake is with you only to leave you on the next application. The unexpected condition leaves the driver unprepared. It is totally dangerous.