Abex CORPORATION

AMERICAN BRAKEBLOK DIVISION

HEAVY DUTY SERVICE BULLETIN

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BRAKE BALANCE - WHY IT IS SO BASIC!

Safety has rightfully gained the headlines of late and it has application equally to all road vehicles - the car, truck, trailer and bus. Attention is now being focussed on vehicle safety because of today's mounting accident rate -- it is alarming. The importance of being able to stop the vehicle safely from all speeds is today concerning the maintenance department of all fleets. Recognizing the skyrocketing of insurance rates as the result of an accident motivates fleet operators to be ever more vigilant these days to see that only a safe vehicle is put in service. No vehicle can truly brake safely if the brakes are not properly balanced. It is essential, therefore, that the first objective in brake servicing should be in the direction of attaining and, yes, retaining true brake balance throughout the brake system. At present there are increasing numbers of multi-axle vehicles, doubles and even triples in service. This emphasizes the importance of having the brakes in balance.

What do we mean by brake balance? It is the prescribed distribution of the brake load between all the brakes on the vehicle in relation to their designed capacity. Ideally, all brakes on the vehicle or train should reflect brake temperatures nearly equal if they are all working relative to their designed capacity. Brake temperatures readily serve as a telltale of the relative degree of the brake balance.

Why is brake temperature so important? It is because brake temperatures are a direct indication of the amount of work being done by each brake. Wide variations in temperature from one brake to another on the same vehicle is a sure sign of unbalanced brakes. This should signal the need to investigate the cause or causes. Abnormally high brake temperatures, especially when they are at wide variance with the temperatures of the other brakes are clues to brake problems. Sustained high temperatures lead to brake fade, rapid lining wear and, in some cases, complete lining decomposition, as well as damage and failure to brake components including the brake drum. In reality, there is no better means of viewing brake performance than evaluating the brake temperatures, their balance and distribution in relation to the designed capacity of the brakes.

What causes high brake temperatures? Brake temperatures are directly related to the amount of work performed by the brake. It therefore follows that the more energy being absorbed, the higher the temperature. Temperature variations can result when some brakes do not accept their full share of the work -- this means that the other brakes do more than their share, and, as a result, are overworked.