

trucks produced by IVECO (Italy) and Saab-Scania (Sweden) are exclusively fitted with hydraulically actuated drum brakes(17,18,19).

5.2.2.3. Heavy Trucks. The "heavy truck" designation refers to either single-chassis trucks or segmented tractor-trailers having a GVWR of greater than 26,000 lbs. In general, the single chassis trucks have hydraulically-actuated brake systems, while the brakes of tractor-trailer combinations are generally air actuated.

Large truck brake systems are almost exclusively drum type, either of the leading-trailing type (Figure 3a) or the leading-leading type. For these severe braking requirements, thick block segments rather than thin strips of friction materials are bolted or riveted to shoes. Some success has been achieved in qualifying non-asbestos block materials for heavy truck applications. This success has been due in part to the ability to mold the non-asbestos materials into rigid blocks possessing sufficient mechanical strength.

The use of disc brakes in the heavy truck market has received some attention, but the overwhelming majority of the systems is still centered around the use of drum brakes. Because drum brakes still offer some performance advantages over disc brakes, a complete conversion to disc brakes in this vehicle market is not expected.

Qualification of non-asbestos materials for truck and trailer service is progressing through the combined efforts of foundation brake manufacturers, truck manufacturers, and friction product manufacturers. Most of the aftermarket friction product manufacturers do not possess the facilities to evaluate the performance of their products under vehicle service conditions.

5.2.3 Off-Highway Trucks and Equipment

Farm equipment and construction equipment have braking needs different from those of on-highway trucks. Braking speeds will be lower and required brake torques will be higher.

Examples of off-highway equipment include road scrapers, road graders, excavators, haulers, cranes, mobile drilling rigs, and other large