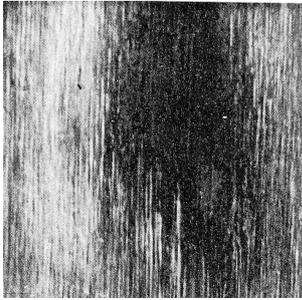


Some of the more common brake and clutch troubles are pictorially presented in subsequent sections; although these faults can affect performance and shorten the life of the components, only in exceptional circumstances do they result in complete failure.

## BRAKING TROUBLES

### Metal Surface



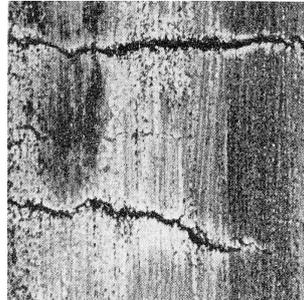
**Heat Spotting**

#### *Characteristics*

Small isolated discoloured regions on the friction surface. Often cracks are formed in these regions owing to structural changes in the metal, and may penetrate into the component.

#### *Causes*

Friction material not sufficiently conformable to the metal member; or latter is distorted so that contact occurs only at small heavily loaded areas.



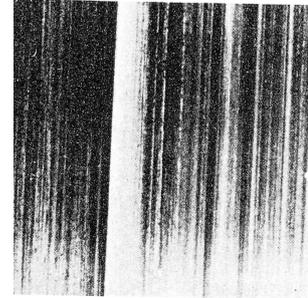
**Crazing**

#### *Characteristics*

Randomly orientated cracks on the rubbing surface of a mating component, with main cracks approximately perpendicular to the direction of rubbing. These can cause severe lining wear.

#### *Causes*

Overheating and repeated stress-cycling from compression to tension of the metal component as it is continually heated and cooled.



**Scoring**

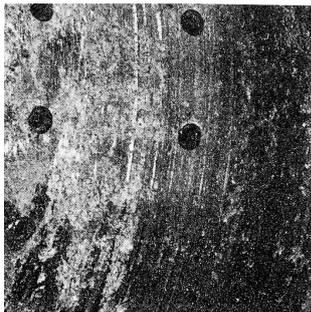
#### *Characteristics*

Scratches on the rubbing path in the line of movement.

#### *Causes*

Metal too soft for the friction material; abrasive debris embedded in the lining material.

### Friction material surface



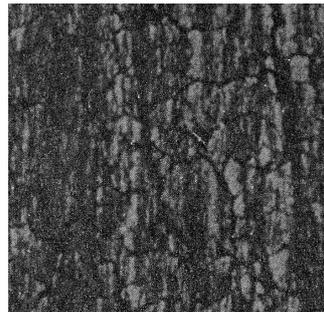
**Heat Spotting**

#### *Characteristics*

Heavy gouging caused by hard proud spots on drum resulting in high localised work rates giving rise to rapid lining wear.

#### *Causes*

Material rubbing against a heat-spotted metal member.



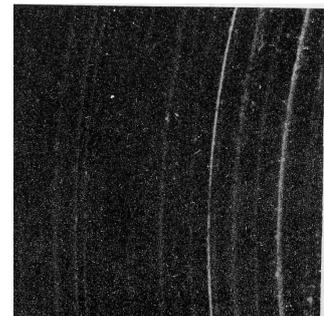
**Crazing**

#### *Characteristics*

Randomly orientated cracks on the friction material, resulting in a high rate of wear.

#### *Causes*

Overheating of the braking surface from overloading or by the brakes dragging.



**Scoring**

#### *Characteristics*

Grooves formed on the friction material in the line of movement, resulting in a reduction of life.

#### *Causes*

As for metal surface or using new friction material against metal member which needs regrinding.