Brake Inspection Monitor

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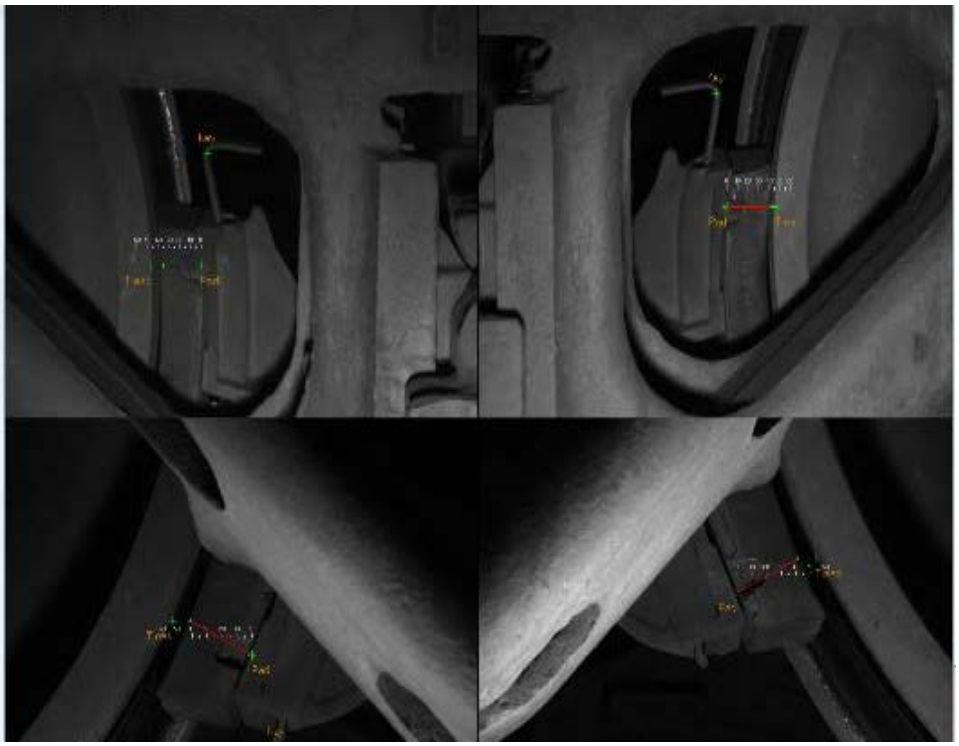

Brake pads on trains are designed to wear. The composite brake pad is designed to provide friction between the wheel tread and the brake pad (shoe), but the wear rate of the brake is much greater than that of the wheel so that the inexpensive brake wears out before the expensive wheel.

The challenge for the rolling stock maintenance manager is scheduling the change of the brake pad early enough so that it doesn't present a safety risk before the next inspection but late enough to maximise the life of the component and minimise costs.

Wayside monitoring using sophisticated video imaging technology can inspect the brakes whilst in-service, measure the remaining material in the pad and calculate a replacement window based on the historical wear rate. Alarms can be sent for critical events via email or other methods.

The BIM is applicable for most braking systems including monitoring of brake shoes and disc brake systems.

BIM system benefits include:

- Bi-directional monitoring
- Flexible track installation window (as traffic permits)
- Trending database
- Suitable for electrified environment
- Integrated Alarms/Alerts
- Self cleaning system operation
- No track modifications required for installation
- Suitable for standard track structure
- Interfaced with maintenance management systems
- Modular components reducing installation and maintenance times
- Auto compensation for track modulus variations
- Improved monitoring and brake wear maintenance

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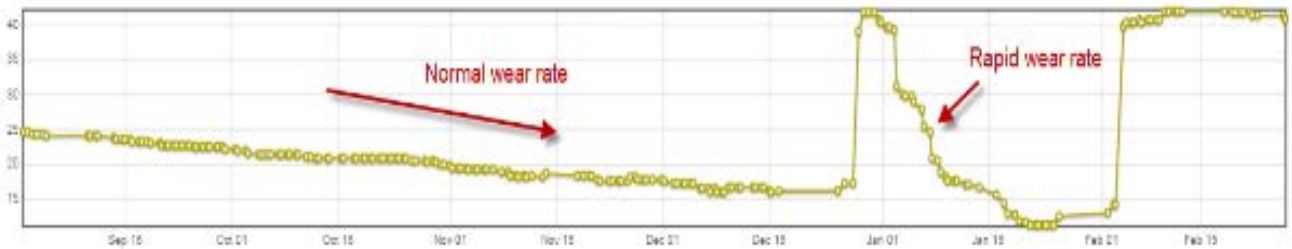
The BIM is configured as a bi-directional system with images taken as the train approaches the front of the lenses or as it departs the site.
The images are high quality, produced using high flash intensity and the fast shutter speed reducing the effect of ambient light so that the same result is achieved by day or night.

When data processing is complete all the reports are generated and sent to the client. The cycle continues with the capturing or processing or when the above activities are finish the system is going to low power demand stand-by mode.
If a critical defect is identified, such as a missing composite brake pad an alarm can be sent to initiate the appropriate action.



BIM Parameter Measurements

- **Alignment and uneven wear**
- **Pad thickness/wear**
- **Broken or damaged brake pads**
- **Identification of damaged or missing brake key**
- **Disc damage**
- **Wear rate determination**
- **Brake application status**