TMMM Brake Seminaar

25 March 2021

Brake Testing - Challenges and Recommendations - A Case Study

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Introduction:

<u>AIM</u> :To Highlight Necessity of Proper Brake Maintenance and Testing Procedures

- We were involved in numerous accident investigations over many years
- Many accidents happened in spite of so called "Brake Testing"
- Basic problem operator under pressure to perform – Take short cuts and by-passes
- Operator often the only one responsible for testing the brakes of his machine – on Ramp.



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Case Study – Fatal Accident by UV

- Shift started as usual with test on brake Ramp
- Early in shift driver parked UV on slight incline and switched engine off
- Vehicle rolled backwards and fatally injured a man
- Inspection Reveiled:
- Brakes ticked off on sheet
- No brakes on vehicle when engine stopped No pressure in accumulators
- No Park brakes



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Investigation

Axles Stripped: Brake discs Badly Worn





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No Friction Material Left



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Accumulators Badly Scratched & Dysfunctional

Charge Valve Severely Scratched





Investigation





Oil from Accumulator

Seal on Accumulator Piston

Brake System was Obviously not Properly Maintained and Tested

Investigation



Door Safety Mechanism Jammed



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Recommendation

- Training of technicians on brakes by the OEM do not take it for granted that a qualified diesel mechanic is a brake specialist.
- 2. High Speed testing of brakes especially park/ emergency can be harmful for the brake system.
- 3. Static testing will be affected by the condition of the engine and transmission.
- 4. Regular sampling and analysis of the hydraulic oil is important.
- 5. Correct charging pressure of the brake accumulators and the testing thereof is very important.
- 6. Follow Brake Wear measurement as specified by OEM



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Recommendation

 Whenever any brake service or brake component replacement is done, the machine has to be brake tested as per OEM recommendations.

- 8. Interlocks should always be in place and NEVER allowed to be disconnected!
- 9. The tyres should be of the same profile and size.
- 10. Brakes are just as effective as the underfoot conditions where the TMMM operates.

11. Park brake has to be used only when the machine is stationary - NEVER to retard the machine during normal service.



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