



NZ TRANSPORT AGENCY  
WAKA KOTAHI

**IRTEENZ**  
**Rydges Hotel, Rotorua**  
**June 18-20, 2013**

**Post implementation of the Heavy-vehicle Brakes  
Rule**

# When brakes don't work



# History of HV braking in NZ

Prior to the late 1980s the braking requirements for HV & HV combinations were in 4 pieces of legislation:

Goods Service Vehicle (Constructional) Regs 1936

Heavy Motor Vehicle Regulations 1974

Traffic Regulations 1976

Passenger Service Vehicle Construction Regs 1978



# History of HV Braking in NZ

After 1989 the following changes were made.

TR1976, GSVCR1936 & PSVCR1978; no changes  
HMVR1974 amended to allow max GCM of 44  
Tonne with conditions incl compliance with Heavy  
Vehicle Braking – Interim Specification

Director empowered to accept or specify other  
codes or standards

# History of HV Braking in NZ

1990, Transport (Vehicle Standards) Regs 1990  
Requires two brake systems, service & park  
with 3 functions; service, park & emergency  
Required standards compliance – this  
requirement deferred on a number of  
occasions by gazette notice prior to the  
introduction of the HV Brake Rule

# History of HV Braking in NZ

1991, using powers from the HMVR1974 the 1<sup>st</sup> Edition of the Heavy-vehicle Brake Code.

No legislative changes

Introduced specific brake force distribution requirements for both single vehicles & combinations

Use of software required

Ensure interchangeability, laden focus

## History of HV Braking in NZ

In 1997 the 2<sup>nd</sup> Edition of the Brake Code was introduced and the 1<sup>st</sup> Edition was revoked but not retrospectively.

2<sup>nd</sup> Edition an upgrade & expansion of the 1<sup>st</sup> Edition with more alignment to UN/ECE Reg 13 including recognition of Load Sensing Valves.

No legislative changes, used provisions in HMVR1974



# Prior State



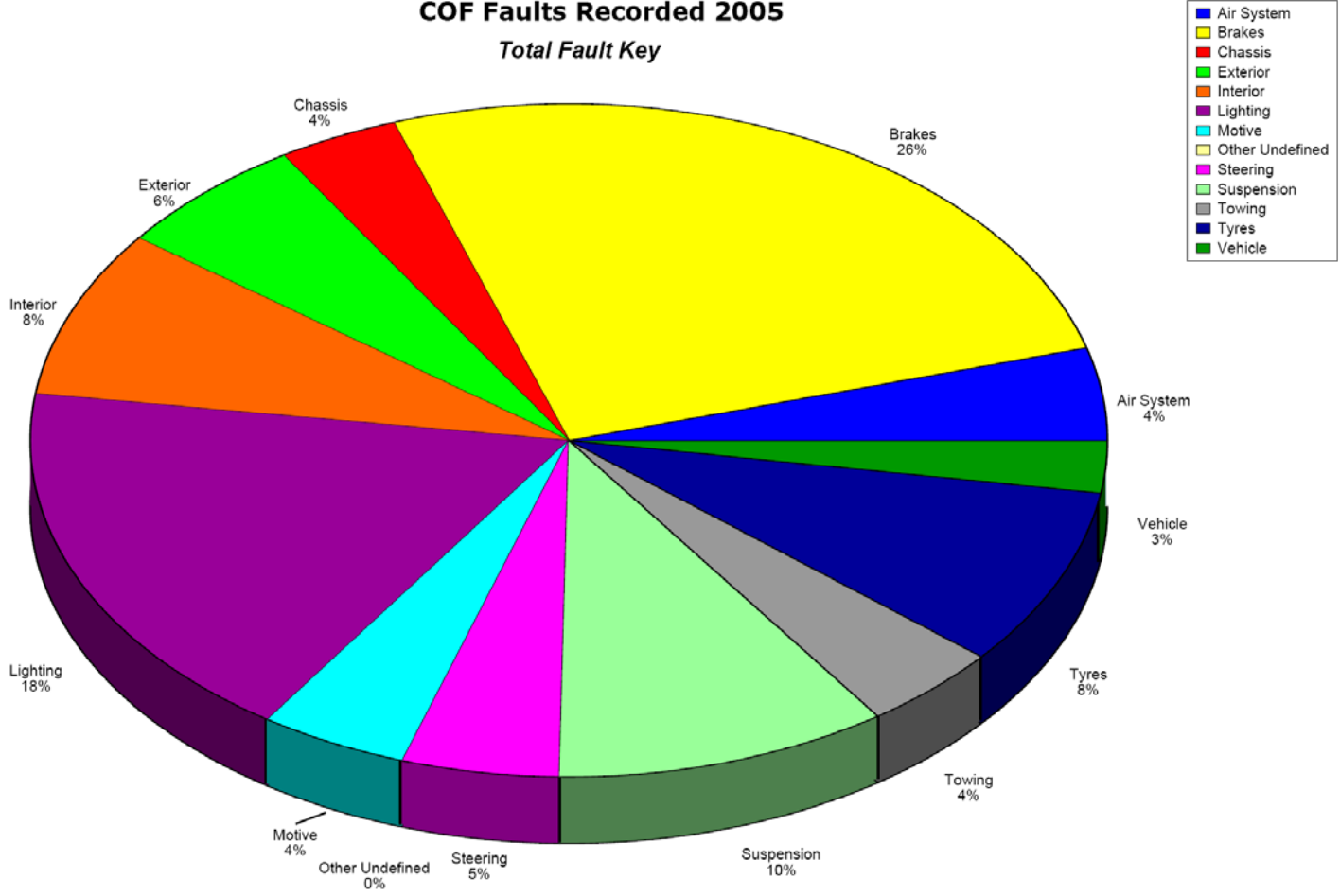


# Background



# COF Faults Recorded 2005

Total Fault Key





# Background





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# The Heavy-vehicle Brakes Rule

# Heavy-vehicles Brakes Rule

Came into force on 1 March 2007

Many requirements carried over / relaxed

Some new requirements (e.g. GSRs) in force from introduction.

More substantial requirements came into force on 1 July 2008 (mandatory standard compliance & Schedule 5)

Affects all vehicles over 3.5T & all braking systems; air, hydraulic & electric



## Performance requirements

Service brake: Minimum 0.5g deceleration or not more than: 7 m from 30 km/h

Parking brake: 18% slope; or not more than 18m from 30 km/h, semis require 0.2g (20%)

Emergency brake function required



## Safety / balance requirements

The braking effect on each braked wheel must provide stable and efficient braking without adverse effect on stability or directional control

Vehicles manufactured or modified in NZ after 1 July 2008 must comply with this requirement at any load condition (from empty to fully laden)



# Hydraulic brakes - Auxiliary brakes/controls

Requirements for Hydraulic brakes

Introduced retarder controls

Permitted trailer brake hand-controls and ‘yard-release’ valves

Introduced controls for bus-stop brakes, hydraulic locks, hill-start aids & other temporary ‘brakes’

# Standards Compliance

From 1<sup>st</sup> July 2008 imported heavy vehicles being first registered in New Zealand, with the exception of heavy trailers, must comply with a specified brake standard (plus ABS)

All heavy trailers must comply with Schedule 5 with some allowances for TC trailers

Requirements in the rule take precedence

## Schedule 5 – single vehicles

Requires brake force to be proportional to the load carried, having regard to the dynamic load transfer.

Brake force must be proportional at any load condition, except ABS-braked vehicles

Calculation must confirm compliance at least at full load and in the unladen condition



# Modification & Repair

## *Modification:*

the purpose is alteration (and it may affect the braking performance)

## *Repair:*

the purpose of which is to 'reinstate within safe tolerance'





# Schedule 5 – air-braked powered vehicles towing full trailers and also full trailers



# Certification

The requirement for the current Heavy Vehicle Specialist Certification process was introduced in 2002

Previous brake categories HVEB/HVMB for Brake Coding 39-44T, HVEH for all other brake certification & HVEC for brake modifications as part of chassis certification

All replaced by HVEK introduced in 2007



# In Service Inspection



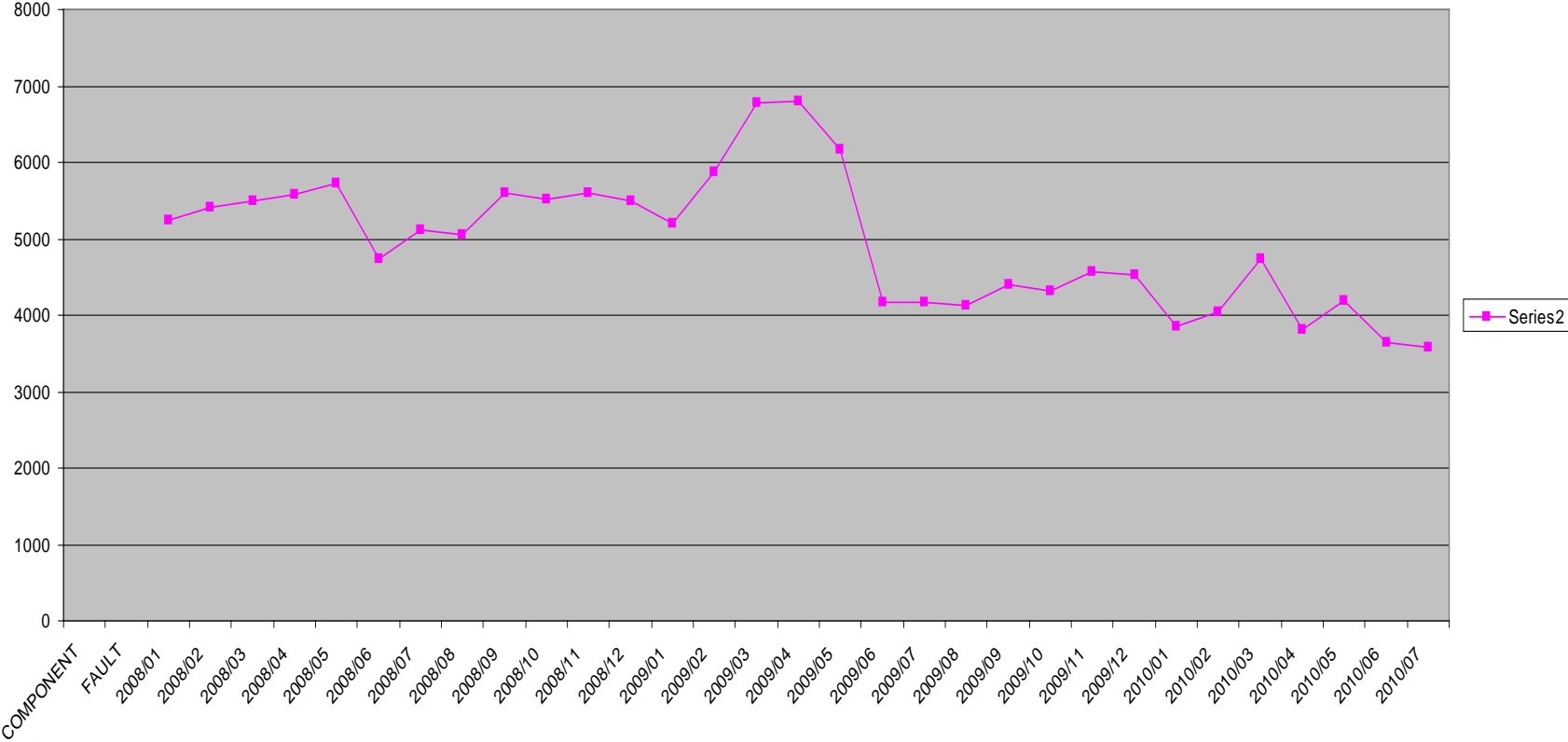


# In Service Inspection

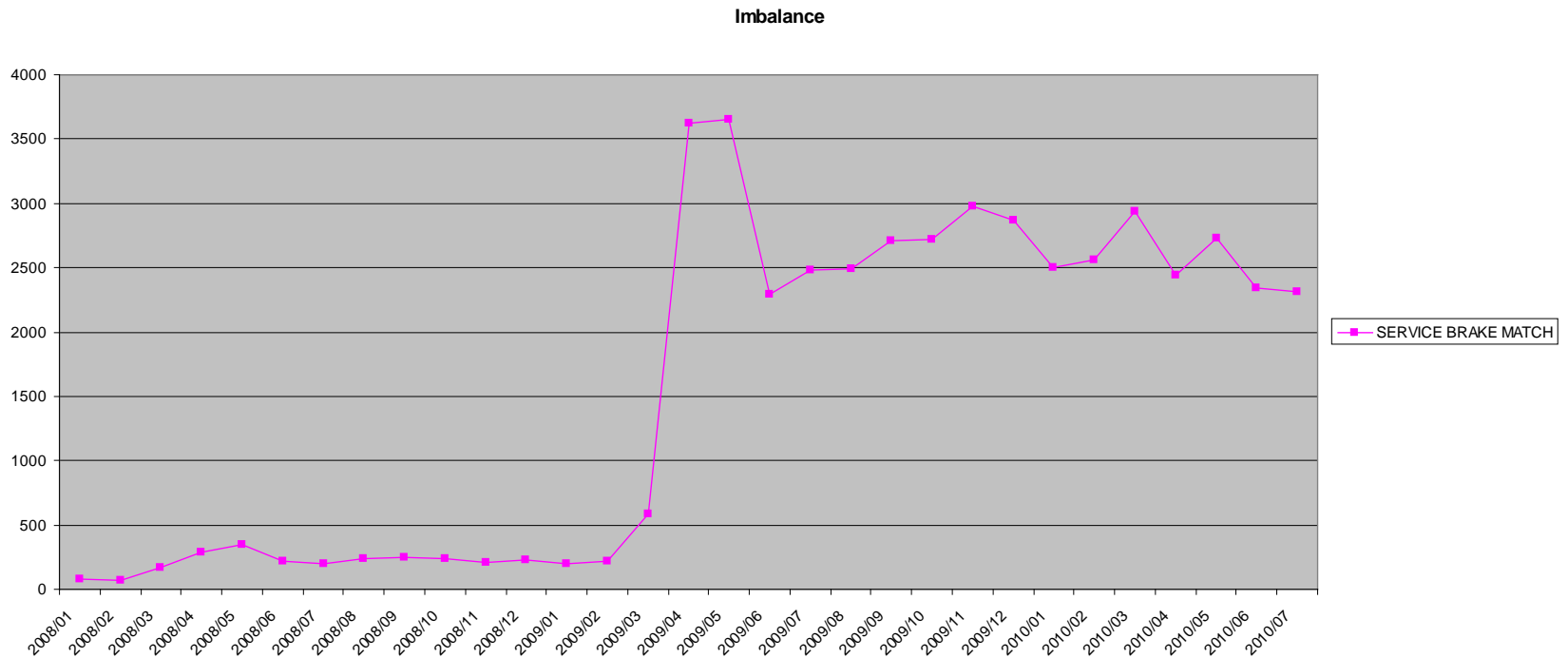


# Service brake faults

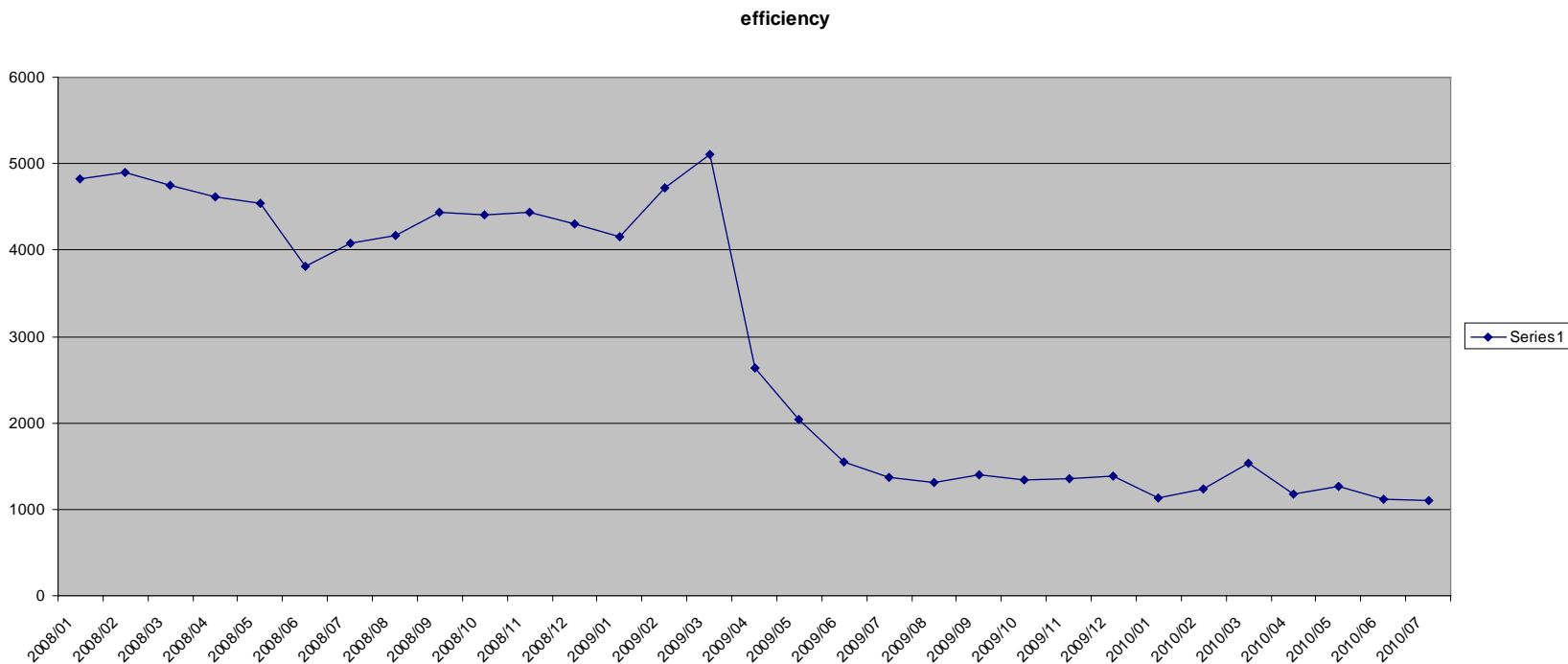
Total CoF service Brake Faults



# Imbalance



# Performance



# Roadside Inspection





# Future state

## Looking to the Future

Take advantage of developing technology

Review the Rule to future proof it by making it performance based and enabling rather than prescriptive

Recognise that as a regulator we cannot lead technology

Develop a partnership with the industry to encourage uptake of new technology



## Future State

Recognise that we have a world class periodic inspection regime when it comes to brake testing

Look at enhancing this by developing or incorporating methods to inspect new technology

Recognise that there are those that still see ABS/EBS as a hinderance rather than a valuable safety tool and work constructively with them

# What to avoid!



# Thank you for your attention

<http://www.nzta.govt.nz/resources/heavy-vehicle-brake-testing/docs/heavy-vehicle-brake-testing-protocol-and-procedures.pdf>

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