

Heavy vehicle fuel efficiency

- ▣ Why is fuel efficiency important?
- ▣ What can be achieved?
- ▣ How can fuel savings be implemented?



Peter Baas



Why is fuel efficiency important

- ▣ Heavy vehicles are 4% of the road fleet but use 21% of the fuel
- ▣ 5% saving in HV fuel bill = \$100 million p.a. benefit to NZ economy
- ▣ 5% fuel saving can typically improve fleet profitability by 15%
- ▣ Safety, maintenance, tyre wear, environmental and other benefits

What can be achieved?

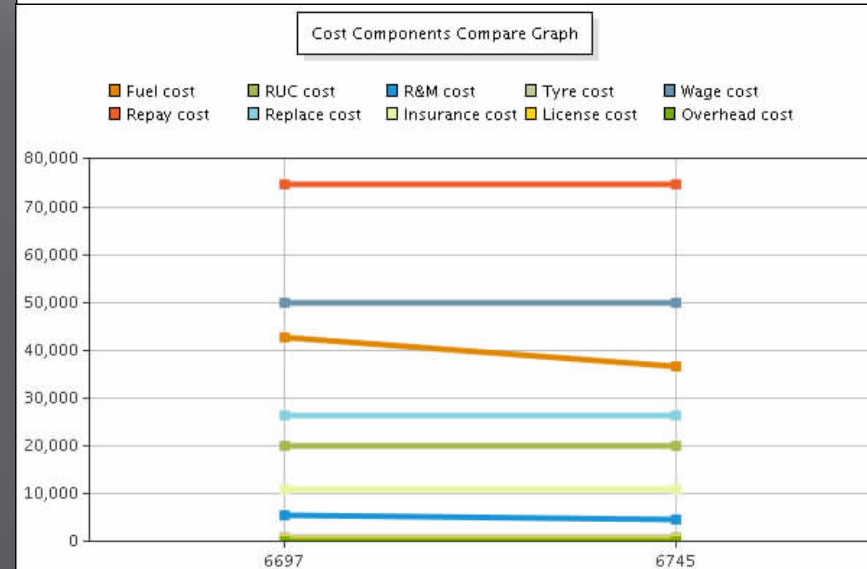
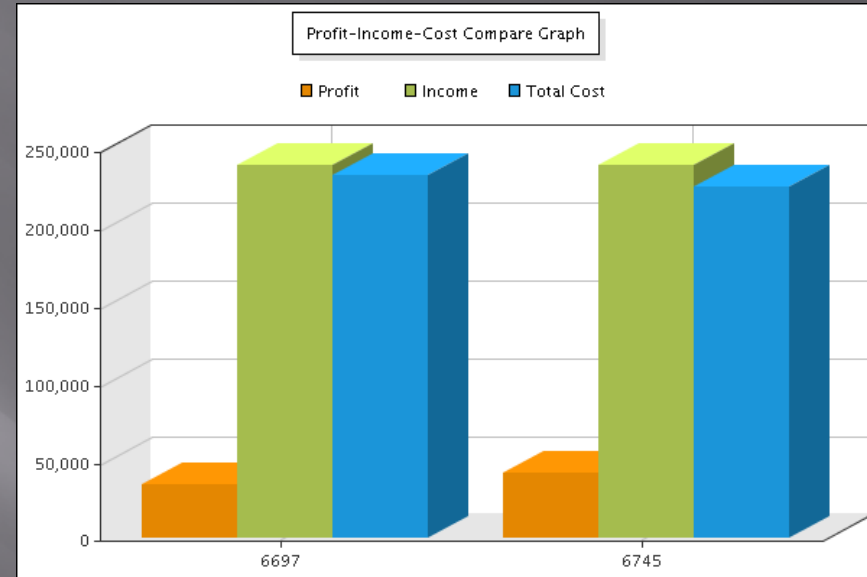
Case study

- Over 2 to 3 years achieved:
 - 17.8% reduction in fuel consumption (l/100km)
 - 50% reduction in incidents
 - 99% reduction in 90km/h speed exception reports from vehicle instrumentation
- Four main factors addressed:
 - Management / leadership
 - Drivers
 - Journey
 - Vehicles (selection and maintenance)



Inter-city short haul owner-driver

- ▣ 62,400km p.a.
- ▣ 980 hour run p.a.
- ▣ 14% reduction in fuel use
- ▣ Profit increased from:
 - \$35,000 to \$42,000 p.a.
 - \$0.56 to \$0.68 /km
 - \$35.84 to \$43.00 /hr



Winstone Aggregates

- Saved 10% fuel
(305,000 litres or \$355,000 p.a.)
- Low implementation costs;
payback within 12 months
- “Softer” benefits – your
drivers & fleet are your brand
ambassadors

26 quarries nationwide
4.5 million cubic tonnes pa
5.5 million km/year travelled



Typical savings

Item	Examples	Fuel saving
Driver training	SAFEDNZ	5% - 10%
Vehicle selection	Downsize Commodore from 5.9 litre V8 to 3 litre Omega (14.3 l/100km to 9.3 l/100km)	35%
Maintenance	Replace clogged air filter	10%
Tyres	Ensure tyres inflated correctly	2%
Aerodynamics	Cover empty tipper trucks	8%

Typical savings if use 10% less fuel

Vehicle	\$ saving per year
1.8 litre Corolla 28,000km p.a.	\$320
3 litre Ute 50,000km p.a.	\$825
6 Wheeler tipper truck averaging 45,000 kms	\$3,150
Truck-trailer averaging 155,000 kms	\$12,400
5 axle B-train double shifted averaging 290,000 kms	\$23,200

SAFEDNZ

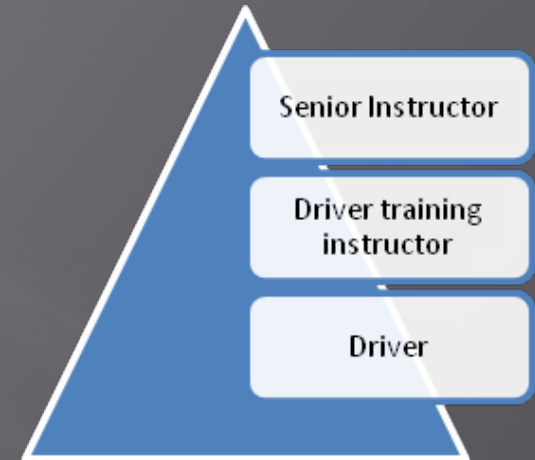
- Driver development course for truck, bus and coach drivers
- Launched 15th July 2010
- Joint MOT, NZTA initiative with industry
- Based on UK govt scheme with proven safety and fuel efficiency benefits (~10% on average)

www.safednz.govt.nz



Training of SAFEDNZ instructors

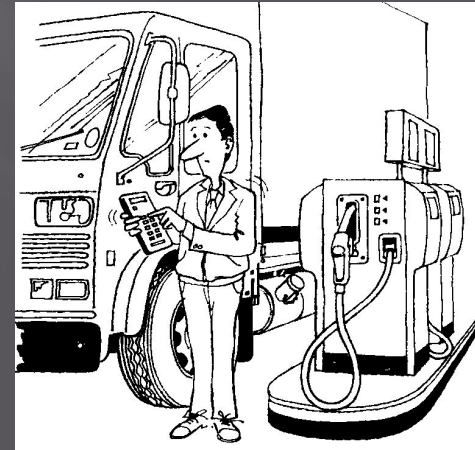
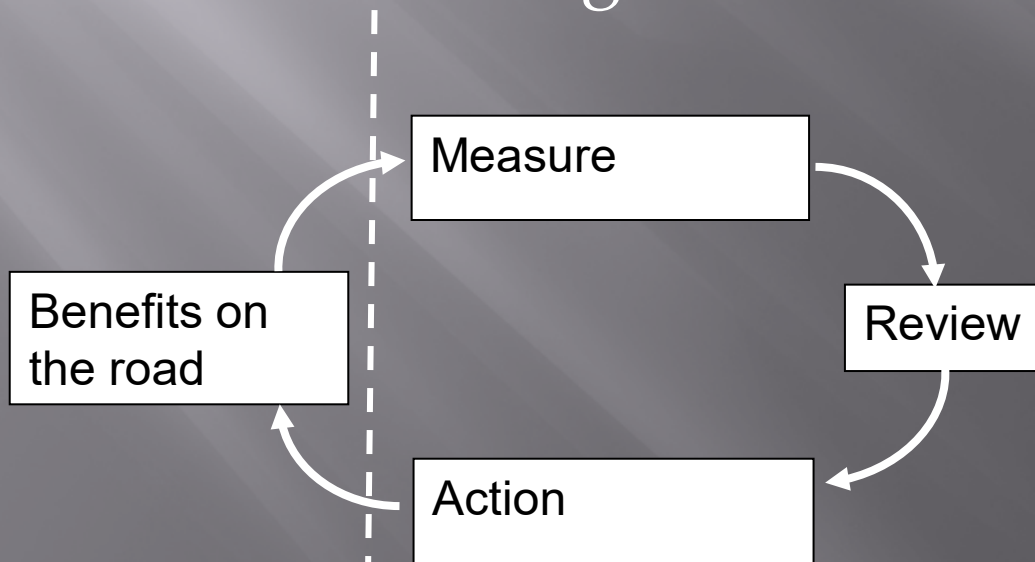
- Standard circuit ~ 35 km long
- Mix of: urban and rural roads, intersections and different terrains
- Before and after measurement



	% Reduced trip duration	% Reduced fuel use	% Reduced gear changes	% Reduced brake applications	% Reduction in braking distance	% Reduction in time spent braking	% Increased time in green band	% Reduced time above green band
Seniors	6.0%	4.9%	48.2%	25.7%	38.3%	49.8%	31.3%	50.8%
DTIs	4.3%	5.3%	28.5%	23.8%				
Seniors + DTIs	4.9%	5.1%	36.0%	24.7%				

How can fuel saving be implemented?

- ▣ Focus on fuel efficiency will improve safety and profitability
- ▣ Driver training is important but not sufficient
- ▣ Fleet management commitment vital



Fleet management

- ▣ sets priorities
- ▣ influences on-road behaviour
(including speeding)
- ▣ selects the drivers
- ▣ arranges training
- ▣ selects the vehicles
- ▣ manages maintenance
- ▣ sets schedules
- ▣ makes it all happen

Influence of management on safety

- ▣ Fleets with good safety management systems have less than $\frac{1}{2}$ the crash rate of those that don't irrespective of fault
- ▣ Halved crash rates when safety management systems introduced

Based on:

- Analysis of the crash rates of 48,000 heavy vehicles in NSW, Queensland and Victoria, half of which were accredited to Trucksafe or NHVAS. (Baas, Taramoeroa 2008)
- US, Australian, Canadian and other studies

Getting started

- ▣ Obtain board level agreement
- ▣ Appoint an in-house fuel champion
- ▣ Monitor and analyze fuel use etc.
- ▣ Set realistic targets
- ▣ Involve all staff
- ▣ Introduce SAFEDNZ driver training
- ▣ Improve maintenance, vehicle selection, tyre management etc
- ▣ Look for other possible fuel savings

www.safednz.govt.nz

www.eecabusiness.govt.nz

Win Win

Saving fuel:

- Reduces fuel bills
- Reduces maintenance costs
- Reduces tyre wear
- Reduces insurance premiums
- Improves profitability
- Provides a competitive advantage
- Improves safety
- Improves public health
- Is good for the environment
- Is good for the NZ economy

