The National Baseline Roadworthiness Survey and its implications

During the second half of 2017, the National Heavy Vehicle Regulator (NHVR) conducted a 'baseline' survey of the roadworthiness of the Australian fleet. Authorised mechanical roadside inspectors inspected about 11,000 individual heavy vehicles in the jurisdictions operating under the NHVR umbrella. The assessments were made against the latest version of the National Heavy Vehicle Inspection Manual, which gives guidance on roadworthiness standards.

A recently published Consultation Draft provided a summary of the results of the baseline survey, for consideration of a risk-based roadworthiness inspection regime for Australia. The results of the baseline survey are important and will inform policy decisions in many jurisdictions about mandatory roadworthiness inspections and how to target high-risk vehicles for inspection.

I want to analyse the top-level statistics from the 'baseline' survey that the NHVR has made public. Graph 1 shows the proportion of vehicles by age with a major defect. Trailers are much more likely to have a major defect than the hauling vehicles – nearly one in three trailers is likely to have a major defect. This suggests that trailers are the 'poor relations' when it comes to service.

Graph 2 shows the proportion of inspected vehicles by configuration with a major defect. B-doubles have significantly fewer defects than single combinations. This almost certainly reflects the lower median age of the B-double fleet, compared with the single combination fleet. In my December 2017 article, I showed a graph that reports the median age of the main registration categories. The median age of the prime movers for multi-combinations is 6.4 years, whereas the median age of a prime mover for single-trailer service is 10.5 years.

Considering trailers, the median age of a lead trailer is nine years,/ whereas for a semi-trailer it is 12.5 years.

Graphs 3 and 4 show the proportions of major and minor defects found according to broad categories in the inspection manual. Brake defects are most common for both hauling vehicles and trailers, and steering and suspension defects are also prevalent. So what leads to these defects occurring, considering that any defect can be avoided with proper maintenance?

Graphs 3 and 4 report on the nature of the first four defect categories. Here are my assessments of the key learnings of the baseline roadworthiness survey data:

Vehicle age is the key determinator of likely defect level.

Brake defects are prevalent. There can only be one explanation for brake defects – many operators in our industry do not inspect, adjust and replace brakes frequently enough. This is particularly true on trailers.

On average, trailers are in worse condition than hauling vehicles. Trailer service is sometime missed, and often the trailer sits parked when the hauling vehicle is serviced.

Buses have lower defects than trucks because they are better maintained and they probably travel fewer kilometres per annum. Suspension and steering systems are not being adequately inspected and measured.

Old vehicles require more extensive, and therefore more expensive, maintenance than younger vehicles. On average, the industry needs to spend more money on maintaining older vehicles.

There is another factor that may be responsible for brake defect classification – test uncertainties difficulties arising from roller-brake testing of axles. That is, some of the reported brake defects may have been invalid. The NHVR recently released a National Roller Brake Testing Procedure. Testing equipment may need to be updated to comply with the national procedure. This welcome development shows that the NHVR is working to get to the bottom of the roller-braking controversy (see Chairman's Technical Column – February 2015).

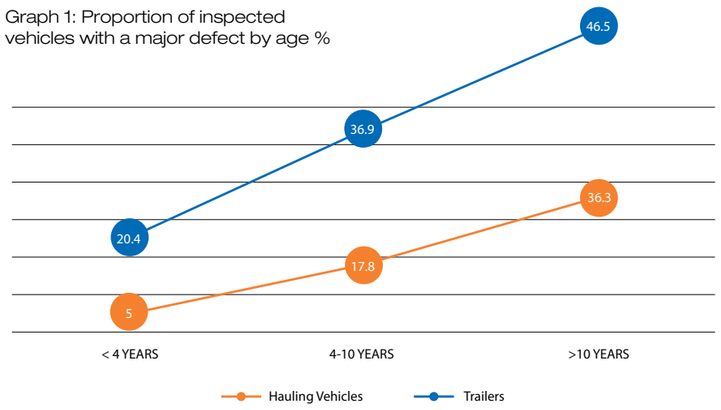
In 2016, the American Transport Research Institute published a report called An Analysis of the *Operating Costs of Trucking: 2016 Update*, which can be accessed online. It found that 38 per cent of the average costs of running a long-distance truck in the US went to drivers wages and benefits, while fuel costs made up 25 per cent. Lease and purchase expenses accounted for 14 per cent of costs; insurance six per cent; tolls and tyres, etc. six per cent, and 10 per cent went on repair and maintenance. The baseline survey results suggest that many Australian operators don't spend 10 per cent on repair and maintenance.

Replacement considerations should account for the real maintenance costs of the vehicle. That is, what should be spent to keep the vehicle roadworthy and efficient? This cost for a five-year-old vehicle is probably about double its first-year maintenance costs. At age ten, it is probably four times higher. The cost of repair and maintenance is the canary in the workshop and must be monitored as it is a key factor in the decision to replace equipment.

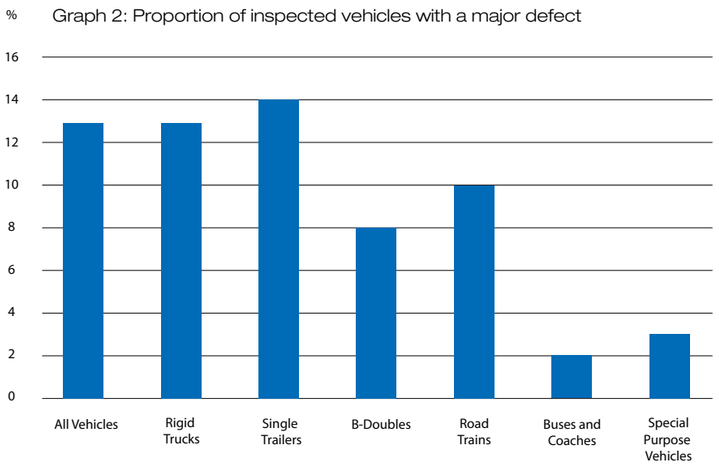
Changes to mandatory inspection requirements for heavy vehicles are in the wind. These changes will provide an incentive to update to newer vehicles. They will also likely target particular industry sectors.

Dr Peter Hart
Chairman, ARTSA

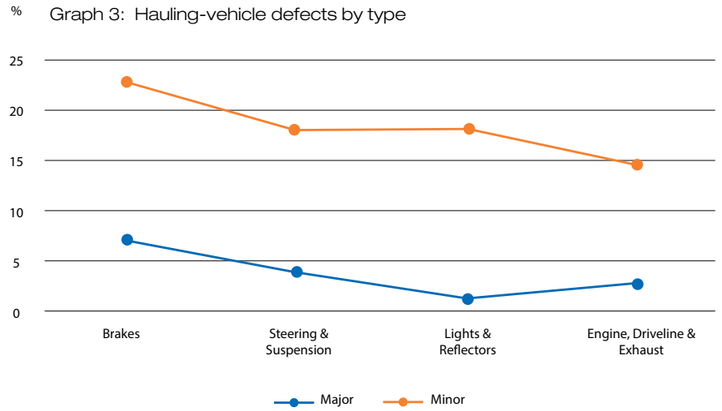
Graph 1: Proportion of inspected vehicles with a major defect by age %



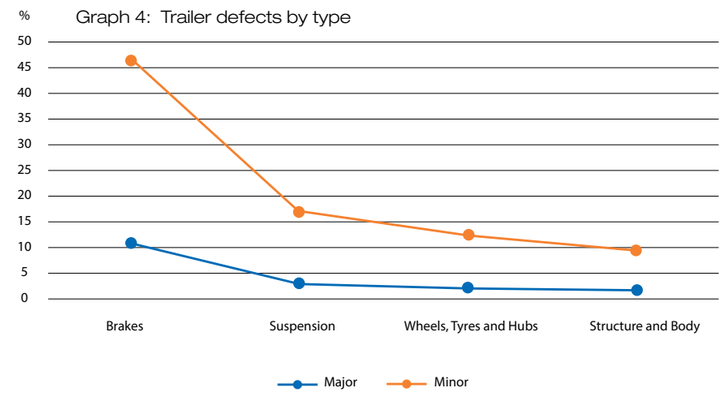
Graph 2: Proportion of inspected vehicles with a major defect



Graph 3: Hauling-vehicle defects by type



Graph 4: Trailer defects by type



GLOBAL LEADERS SUMMIT

ARTSA will hold the 2018 Global Leaders Summit in conjunction with MEGATRANS2018, 8–9 May in Melbourne.

Dr Alan Finkel, Chief Scientist of Australia, will open the Summit.

See the ARTSA website for details.