



PETER HART

A tale of three drivers

and hard (Graphs 2 & 4). He relies on the antilock system to keep his truck straight. The lesson of this is that the data in the trailer VSC controller can illustrate the character of the driver. Driver A is defensive while Driver B is aggressive.

Driver C's vehicle rolled over on the 27th day of the monthly record. There were 38 brake interventions by the VSC during the 27 days in the record. Lateral decelerations greater than 0.3g are of concern. The design measure of vulnerability to roll over is called the Static Rollover Threshold or SRT (for more information see my PM article of June 2012 at www.artsa.com.au/articles). An SRT for the vehicle of 0.35g is regarded as a desirable minimum.

Graph 5 shows that many of the interventions occurred at above 0.3g. The rollover event occurred at low speed. Graph 6 shows that the rollover occurred while a moderate brake intervention was being made. The rollover event occurred while the vehicle was turning at a Tee-intersection. The speed was low. The vehicle cut the corner and clipped the gutter. This gave the trailer the kick-up it needed to roll over. The brake intervention data indicates that Driver C often put his vehicle into the rollover danger zone. He relied upon the VSC to stop him rolling over. Unfortunately for Driver C, the VSC could not overcome the basic physics of hitting a raised gutter. Graphs 7 shows the distribution of

Driver C's braking events against speed. Space prevents me from showing the distribution of speeds at which Driver C brakes his vehicle. The distribution is skewed to higher speed bands. This suggests that Driver C is not a defensive driver. I classify braking events that occur at no more than 1.5 Bar control air pressure as modest. Brake applications above 4.5 Bar are severe or emergency stops. Driver A makes fewer severe/emergency stops than Driver C who makes fewer than Driver B. Driver C's practice is to travel fast and rely upon the roll-stability intervention in the VSC to prevent rollover. Driver B's practice is to leave the braking late. Interventions about 0.3g lateral deceleration are a cause for concern. This is an absolute measure that needs no comparison. The records I have been reviewing do not have a GPS location for recordable events such as overspeeding, severe deceleration and rollover interventions. I encourage all operators who put VSC onto the trailer to get the GPS sensor option. Knowledge about the locations of interventions is valuable business information. These are the locations where the operators business is most vulnerable.

ARTSA has started thinking about the conditions under which operators might voluntarily provide location data about VSC interventions to it for analysis. There is both an operator and community interest in identifying rollover- or braking-intervention hotspots. Maybe this information can be used to improve the road and the driver. Regular discussions about the VSC-intervention and braking-performance data with the driver could help to either improve or confirm the driving performance. The VSC data logger is actually an important risk-reduction tool so operators, please routinely look at what it is telling you!

Dr Peter Hart
ARTSA

I have recently investigated the braking history of a B-double trailer set that rolled over. Both trailers had Vehicle Stability Control (VSC), which is also called roll-over control or trailer EBS. The VSC control systems keep a record of the duration and severity of braking events, as well as the details of stabilising brake interventions. I obtained monthly braking data from the VSC unit on three vehicles in the fleet. Each vehicle has a dedicated driver. The comparison of braking data paints a picture of the driving styles of each driver.

There is important information that can be extracted from the electronic brake controllers on trailers. The braking performance of two drivers, A and B can be compared as the routes are similar. Driver C is on a different route with different type of freight and is not directly comparable. Driver C's vehicle rolled over on the 27th day of the monthly record.

The following graphs show that the number of brake applications made by drivers A and B during the same month are about the same: 60,897 v 58,938. The total braking duration is also about the same: 696s v 714s. Driver C, who is on a different route, made 103,650 brake applications in 27 days.

But Drivers A and B have radically different driving styles. Driver A brakes early and lightly (Graphs 1 & 3). She drives cautiously. Driver B brakes late

