

## **Case Study – Penetration of Electronic Stability Control and Curtain Airbags in the Victorian market**

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### **Abstract**

Vehicle safety is one of the main pillars of the Safe System approach and its importance in combating the road toll is well recognised. In recent years, a number of vehicle safety features have gradually entered the market, with a few showing great road safety potential, particularly Electronic Stability Control (ESC) and Curtain Airbags (CA). The proven safety benefits of ESC and CA made them worthy candidates for promotion by the Transport Accident Commission (TAC) and its road safety partners in Victoria.

Since the commencement of promotional activities and public education campaigns, the number of new vehicles sold in Victoria with ESC and CA has risen from a low of 22% and 24% respectively in 2006 to close to 60% and 50% respectively at the end of 2009. More importantly, public awareness and demand for these safety features encouraged the Victorian Government to ensure they were available on all new passenger vehicles, and in 2008 it was the first jurisdiction in Australia to mandate ESC and CA in new vehicles from 2011 and 2012, respectively.

This paper will provide a detailed case study on how public education created critical demand for safety features and paved the way for the Government to mandate these technologies.

**Key Words: Electronic Stability Control (ESC), Curtain Airbags (CA), Government Mandate, Vehicle Safety**

### **Introduction**

The Transport Accident Commission and its road safety partners have adopted the ‘market driven approach’ to accelerate the uptake of safer vehicles and vehicle safety technologies within Victoria. This approach aims to influence market forces and dynamics via stimulation of consumer demand for critical safety features and standards of vehicle safety. Healy, Passmore, Thompson and Truong [1] described a range of initiatives conducted by the TAC in conjunction with its partner agencies, which draws upon the market driven approach with regards to vehicle safety. This approach, when applied to specific safety technologies, can derive significant results.

Utilising the market driven approach, the TAC conducted a range of campaigns and activities in a bid to raise vehicle buyer’s awareness of the safety benefits of two key technologies – ESC and CA.

### **What is Electronic Stability Control (ESC)?**

Electronic Stability Control (ESC) is a vehicle safety technology, which can assist drivers to avoid crashes by reducing the risk of skidding and losing control through selectively braking individual wheels to bring the vehicle back on track. ESC assists with correcting impending oversteer or understeer, vehicle stabilisation during sudden evasive manoeuvres, enhanced handling on gravel patches and improved traction on slippery or icy roads [2].

No other active safety feature has the potential to reduce single vehicle crashes like ESC. According to Scully and Newstead (2007), ESC has the potential to reduce single vehicle injury crashes by up to 30%. The effects of ESC are even more pronounced in 4WD vehicles, where ESC can reduce the risk of a single 4WD injury crash by up to 66% [3].

Whilst ESC has significant safety potential and has been in production since the mid 1990’s, it was a technology that was offered in less than 25% of vehicles sold in Victoria in 2006 (refer to Figure 4). In 2006, TAC market research indicated that only 1% of participants sought ESC as a safety feature in past purchases [4], indicating a lack of awareness of the safety benefits of the technology

### **Are Curtain Airbags different to Frontal Airbags?**

CA are designed to protect vehicle occupant's heads in the event of a side impact crash. CA are typically located at the top of the door rails above the side windows and are activated and deployed instantaneously in a crash. The CA forms a cushion between the occupant's head and the window and/or other objects such as trees and poles [5]. With intersection crashes (which often result in side impact collisions) accounting for approximately 28% of all fatal crashes and 39% of all serious casualty crashes [6], CA can make the difference between life or death. Research by the Insurance Institute for Highway Safety [7] estimates that head protecting airbags can reduce driver deaths in the event of a side impact crash by up to 40%.

In 2006, only 24% of vehicles sold in Victoria were available with CA (refer to Figure 4). Whilst most people were familiar with front airbags, CA was a relatively new concept, with only 5% of people seeking side airbags or CA in their past vehicle purchase, as compared to 60% who sought out driver and passenger airbags [4].

To address the gap between the public's awareness of the existence and safety benefits of ESC and CA, the TAC launched a number of public education campaigns, and along with its road safety partners, staged a number of promotional events and activities to educate the public about the safety benefits and availability of ESC and CA. A description of the key activities undertaken is provided below.

#### **Public Education Campaigns**

The TAC's vehicle safety campaigns aim to raise awareness of vehicle safety issues in general and more specifically, vehicle safety features on new or newer second hand cars.

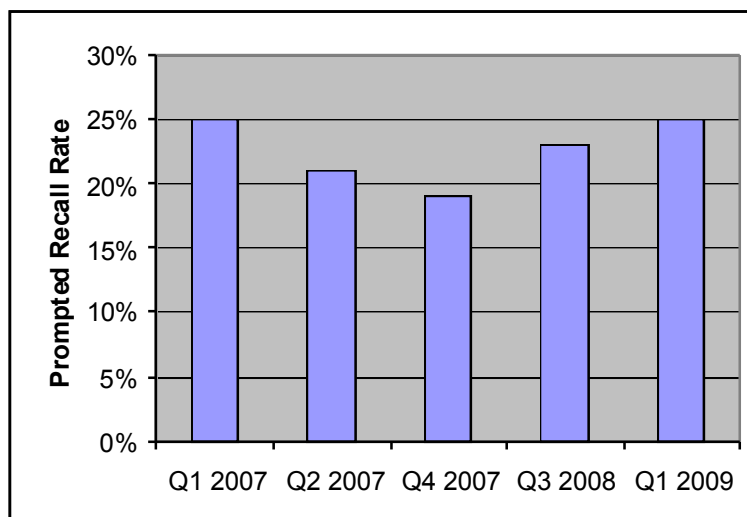
Between 2007 and 2009, the TAC launched three new vehicle safety public education campaigns with the aim of educating the community about the life saving potential of both ESC and CA. A short description of each television commercial (TVC) and its tracking results follows.

#### ESC – Four Little Words

With the assistance of Holden and Bosch Australia, an advertisement was developed to highlight the difference between a vehicle with and without ESC in an emergency situation. Consumers were encouraged in the advertisement to ask dealers, 'Does it have ESC?' before purchasing a vehicle as this technology could save their life.

#### *Prompted Recall Rates*

To date, five waves of the campaign have been tracked. The recall rate for each wave of the campaign was tracked and the results are presented in the graph below.



**Figure 1: Prompted Recall Rates for *Four Little Words***

From Figure 1 it can be seen that recall rates of *Four Little Words* over the different campaign waves have ranged from a high of 25% to a low of 19%. The lower recall rates can potentially be attributed to corresponding lower media weighting.

#### *Main Messages & Impact on Behaviour*

The message take out from the advertisement appears to be quite clear. The main messages consistently taken from the advertising over the five waves of the campaign were:

- Buy a car with ESC
- Safety is important when buying a car/consider safety
- Safety is the most important feature in a car

The majority of the people (between 66% - 73%) were able to relate to the advertisement and believed it was speaking to people like themselves. More encouragingly, between 37% - 45% stated that the advertisement had impacted upon their decision making behaviour when buying a car, with the main ways they would or could change being:

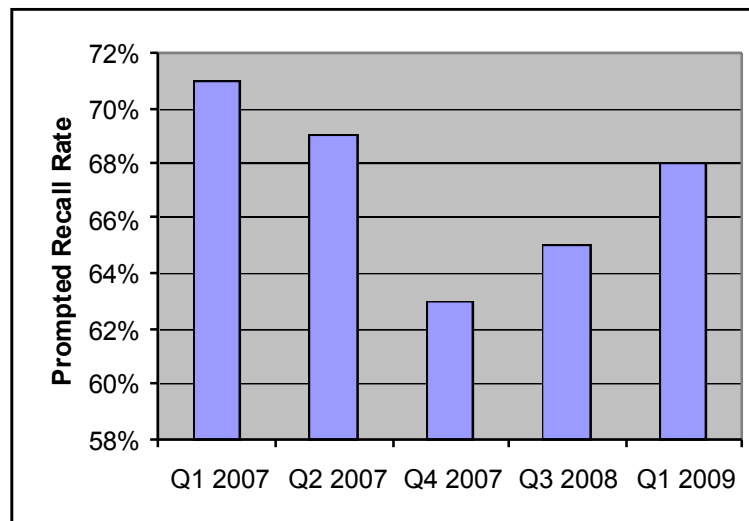
- Consider more safety features
- Consider the safety of the car when buying
- Making the safety of the car a priority when buying
- More awareness of vehicle safety as an issue

#### CA - Everyday Expert

In this emotive and instructive advertisement, an actor acting as a brain injured victim discusses the life saving benefits of CA. The advertisement encourages consumers to demand CA in their next vehicle purchase.

#### *Prompted Recall Rates*

To date, five waves of the campaign have been tracked. The recall rate for each wave of the campaign was tracked and the results are presented in the graph below.



**Figure 2: Prompted Recall Rates for *Everyday Expert***

From Figure 2 it can be seen that the prompted recall rates of *Everyday Expert* have been consistently high, with the peak being in quarter 1 2007, when the campaign was first launched and had a high media weighting. Decreased media support in subsequent waves of the campaign and could partially explain the lower recall rates observed in the latter waves.

#### *Main Messages & Impact on Behaviour*

The message take out from *Everyday Expert* lacked the message clarity of *Four Little Words*. The main messages taken from the *Everyday Expert* over the five waves of the campaign include:

- Buy a car with CA
- Don't speed
- Drive safely
- Importance of wearing a seatbelt

Over the 5 waves of the campaign, the advertisement demonstrated strong levels of personal relevance, with between 76% - 80% of people believing it talked to them. More importantly, between 28%-42% stated the advertisement has influenced their buying behaviour. The main buying behaviour changes include:

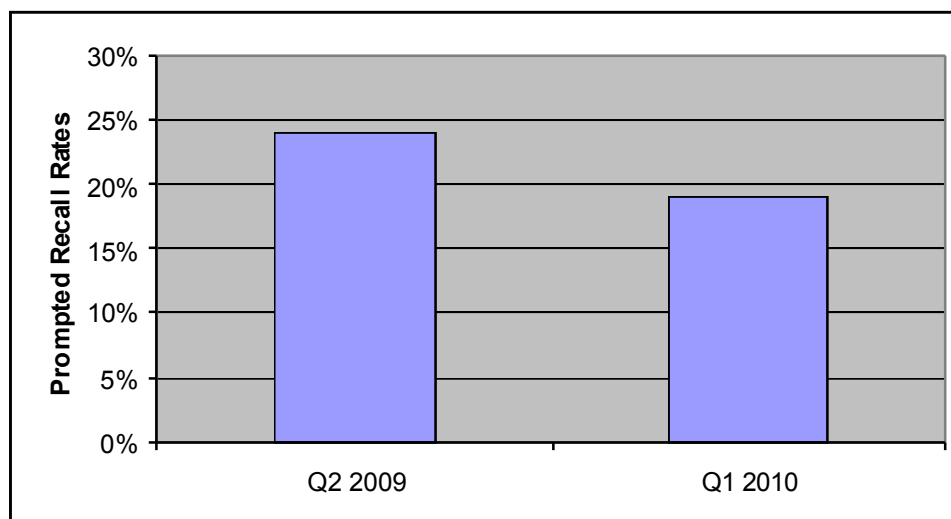
- Considering safety of car when buying
- Consider buying CA in next car
- Make safety of a car a priority when buying
- Increased awareness of vehicle safety as an issue

#### ESC & CA - James

In the last of the three new vehicle safety campaigns, Victorians were urged to put safety first when buying their next vehicle. The *James* campaign starred James O'Loughlin from The New Inventors and asked that buyers choose a vehicle that could save their life – if the vehicle does not have both ESC and CA, cross it off the consideration list because you are risking your life.

### Prompted Recall Rates

To date, two waves of the campaign have been tracked and the results are presented in the Figure 3 below.



**Figure 3: Prompted Recall Rates for *James***

The average prompted recall rate for *James* when the campaign was first launched in May 2009 was 24%, with a peak of 35% following the heaviest media week. The recall rate decreased slightly to 19% in the subsequent wave of the campaign in early 2010, although it should be noted that the media weighting was substantially higher in the earlier wave.

### Main Messages & Impact on Behaviour

The message take out from *James* was quite clear, with the main messages taken from the two waves of the campaign being:

- Buy a car with CA
- Buy a car with ESC
- Buy a car with side head protecting airbags
- Safety is important when buying a car/consider safety

Over the two waves, 75% of people surveyed stated that the advertisement is talking to people like themselves. Between 40%-49% of the people surveyed stated that the advertisement has influenced their car purchasing behaviour, with the main ways being:

- Consider the safety of a car when buying
- Make safety of a car a priority when buying
- Being more aware of vehicle safety as an issue
- Being more aware of curtain airbags
- Think about the features of a car
- Consider buying CA in my next car
- Definitely buy CA in my next car

For each of the three TVCs, there was also supporting press, radio, outdoor and web activity. The TAC's [howsafeisyourcar.com.au](http://howsafeisyourcar.com.au) website was updated with the latest information on ESC and CA, along with a current list of vehicles with the technologies available. All TVCs and supporting activity directed consumers to [howsafeisyourcar.com.au](http://howsafeisyourcar.com.au) for more information. The website experienced almost double the usual number of visitors when *Four Little Words* and *Everyday Expert* were launched in February 2007

and a significant increase in visitors was also observed for the launch of *James* in May 2009. This appears to be the general trend, with each wave of the campaigns generating a peak in visitors to [howsafeisyourcar.com.au](http://howsafeisyourcar.com.au).

### **Partnerships**

The TAC was involved in a number of partnerships that assisted increasing awareness of ESC and CA among the general public and also acted as a support for the TAC's public education campaign. These included:

#### *ESC partnership*

The TAC, together with VicRoads and RACV, staged a number of promotional activities to raise awareness of ESC and to educate consumers on the safety benefits and availability of the technology, through the use of the Bosch ESC simulator. The simulator has been used in a number of public demonstrations including major urban and regional shopping centres. Other events include the Melbourne International Motorshow, the F1 Grand Prix and a number of conferences. The simulator is still being used by the partners to continue to educate the public about ESC. More information on the simulator program is available at [www.safecars.com.au](http://www.safecars.com.au).

#### *Australasian New Car Assessment Program (ANCAP)*

The TAC and other Victorian agencies continue to support the ANCAP, which provides consumers with up to date information on how well new vehicle models protect their occupants in crashes. ANCAP is also an important tool in encouraging the production of safer vehicles via consumer demand and as a direct influence on manufacturers.

For a vehicle to receive the coveted five stars, it must achieve at least 32.5 points overall, with at least one point being scored from the pole test. Head protecting technology such as CA can provide the protection needed to obtain the points in the pole test. Also, since January 2008, to achieve a five star rating, vehicles are required to have ESC fitted. This extra criterion has no doubt acted as an incentive for manufacturers to include the technology on a wider range of their vehicles.

In mid 2008, the Ford Falcon became the first Australian manufactured vehicle to achieve a 5 star safety rating. The Falcon has both ESC and CA and furthermore, ESC was made a standard feature across the automatic petrol Falcon range. The TAC welcomed this milestone achievement by an Australian manufacturer and together with VicRoads and RACV, publicly acknowledged Ford's achievement via a congratulatory ad. Similarly, a congratulatory ad was also developed for Holden's Commodore Omega when it achieved the coveted 5 star rating in late 2008. The congratulatory ads helped shape consumer expectation of 5 star vehicles and set a public benchmark for other manufacturers.

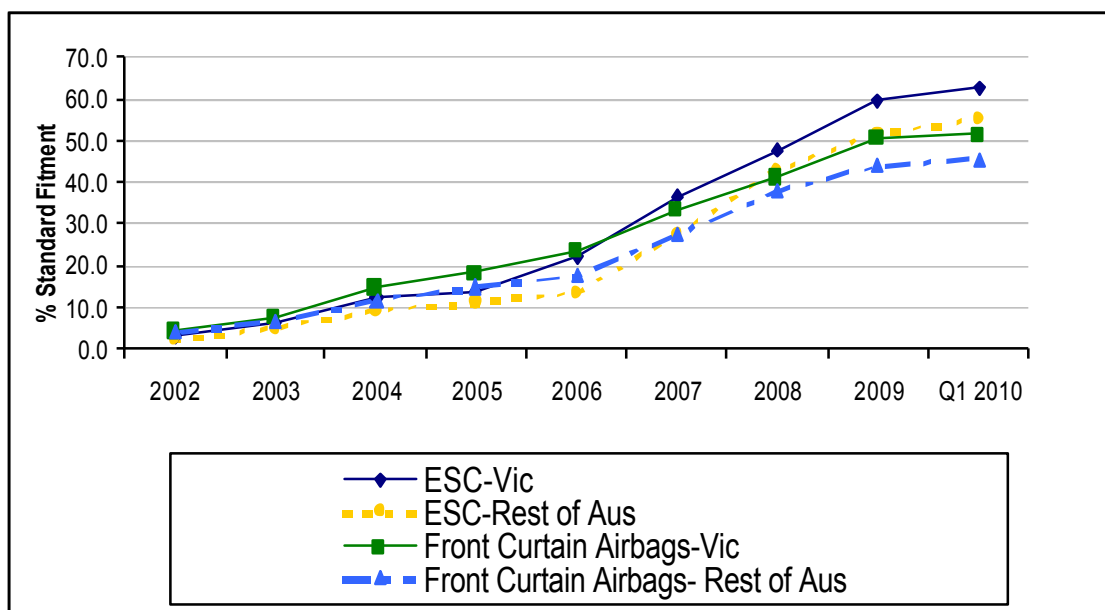
#### *Australian Automotive Research Centre*

The TAC, Department of Innovation, Industry and Regional Development (DIIRD) and Bosch Australia provided support to update facilities at the Australian Automotive Research Centre. This important development potentially accelerated the launch of new vehicles with ESC available as it allowed manufacturers to conduct their ESC testing in a timely and convenient manner (Healy, Passmore, Thompson & Truong, 2007).

### **Government Mandate**

The efforts of the TAC and its road safety partners in promoting ESC and CA, along with manufacturer's commitment to vehicle safety, saw the steady rise of ESC and CA being fitted as standard features in new passenger vehicles sold. Since the commencement of promotional activities, the fitment of ESC and CA has increased from a low of 22% and 24% respectively in 2006 to the current 63% and 52% respectively in quarter 1 of 2010 (refer to Figure 4). This accelerated growth in ESC over the last 5 years was largely driven by the increased fitment in the large, medium and 4WD segments, whilst light, small and

commercial vehicles have poor levels of fitment.



**Figure 4 – ESC and Curtain Airbag Standard Fitment Rate in New Passenger Vehicles Sold**  
[Source: R.L. Polk Australia]

In 2009, in recognition of the life saving potential of these two technologies, the Victorian Government announced that all new vehicles (with the exception of light commercial vehicles) registered from January 2011 must be fitted with ESC and from January 2012, all new vehicles registered must be fitted with a head protecting technology such as CA. Although fitment rates for both technologies have been steadily rising, the TAC welcomed the mandate as this will accelerate the uptake and ensure that consumers purchasing new vehicles from 2011 and 2012 will have the extra safety protection offered by these two technologies. The overall Victorian fleet will also benefit from the mandate once these new vehicles enter the second hand market.

The Federal Government soon followed Victoria's lead and announced that all new models of passenger vehicles must be fitted with ESC from November 2011, with all models to have the technology from November 2013, bringing the rest of Australia in line with Victoria. From Figure 4, it can be seen that Victoria is ahead of the rest of Australia in terms of ESC fitment rate (63% vs 56%) and is well placed to introduce the new legislation earlier. The new legislations are important developments and will greatly increase the safety of the Australian fleet.

### Next steps

The TAC will continue its promotion of ESC beyond the commencement of the mandate in January 2011. The promotion and education will be directed at used vehicle buyers as more used vehicles on the market are becoming available with ESC. Another market segment that requires attention is the light commercial vehicles. As this segment has been excluded from the ESC mandate in Victoria, much work remains to be done to encourage buyers to choose light commercial vehicles which already have the technology fitted. This is especially important considering many light commercial vehicles are used as work vehicles and spend much time on the road.

To date, promotional activities have focused more heavily on ESC, however, with the ESC mandate in sight, more effort will be dedicated to CA. Between now and the commencement of the mandate of CA in January 2012, the TAC will continue to promote and educate consumers about the availability and utility

of the technology to accelerate the uptake of the technology in order for the public to reap the safety benefits of the technology ahead of time.

### **Conclusion**

ESC and CA are two life saving technologies that were deemed by the TAC and its road safety partners as worthy candidates for promotion within Victoria. Via public education campaigns and supporting promotional activities, consumer demand for these technologies was stimulated and a steady increase in the availability of ESC and CA resulted. The demand for these critical safety features and the increased availability paved the way for the Victorian Government to announce the mandate of ESC and head protecting technology such as CA in new vehicles in 2011 and 2012, respectively. Much work remains to be done with the light commercial and used car segments in regards to ESC and with Curtain CA, continued education and promotion is necessary to encourage its uptake ahead of the mandate.



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