

Auto Emergency Braking (AEB) – A mass media campaign to increase fitment rates of AEB in Victoria, Australia

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Abstract

The TAC's vehicle safety campaigns began over a decade ago and focussed on encouraging consumers to purchase a safer car by consulting independent safety ratings provided at howsafeisyourcar.com.au. Recent campaigns have also focussed on specific safety features, electronic stability control (ESC) and curtain airbags, which were supported by research demonstrating their potential safety benefits.

Technological innovation proceeds rapidly within the automotive industry with manufacturers introducing a range of new safety-based technologies which have the potential to improve safety outcomes. An especially important innovation in recent times is the introduction of Auto Emergency Braking (AEB) systems. The effectiveness of AEB has been investigated in a number of studies and a range of effectiveness was found but the overall trend is a reduced number of crashes for vehicles equipped with AEB.

In 2014, the TAC ran a mass media public education campaign to raise awareness and encourage consumers to look for a vehicle with AEB when they next purchase a car. The AEB campaign was successful with regard to reach as well as message take out. The peak prompted recognition (69%) was in line with the target of (70%). Perhaps the most telling measure was the increase observed in awareness of AEB over the course of the campaign, rising to 80% of all Victorians. While there was lower than usual recall of any road safety advertising, and spontaneous recall of the campaign, this may relate to it not being perceived as a "road safety" campaign.

Introduction

Safer Vehicles is one of the four key pillars of the Safe System approach. Its power to contribute to trauma savings is captured in the following statement: If we all changed overnight from our current vehicle to the safest vehicle in our class, then the road toll would drop by about a third starting the following day! (Newstead, Delaney, Watson, & Cameron, 2004). This piece of research alone explains the continuing strong commitment of the Transport Accident Commission (TAC) towards improving the safety of vehicles on Victoria's roads.

The TAC's vehicle safety campaigns began over a decade ago and focussed on encouraging consumers to purchase a safer car by consulting independent safety ratings provided at howsafeisyourcar.com.au. Recent campaigns have also focussed on specific safety features, electronic stability control (ESC) and curtain airbags, which were supported by research demonstrating their potential safety benefits. Fitment of these two technologies has increased steadily over the years and ESC is now mandatory in all new passenger vehicles in Australia (excluding light commercial vehicles).

Technological innovation proceeds rapidly within the automotive industry with manufacturers introducing a range of new safety-based technologies which have the potential to improve safety outcomes. An especially important innovation in recent times is the introduction of Auto Emergency Braking (AEB) systems. This feature is beginning to appear in a number of models, including more affordable models, such as the Fiat Panda which retails for as little as \$AUD 22,500.

What is AEB?

AEB is a generic term for vehicle safety technologies that help improve safety by identifying unsafe situations and hazards and automatically slowing the vehicle when a collision is imminent. AEB systems typically use sensors, radar, laser or cameras to monitor for risk and detect potential collisions with other vehicles, pedestrians or hazards. Although most AEB systems vary in their functionality, most systems will provide a warning (audible and/or visual) to the driver. AEB systems will also intervene and slow the vehicle down automatically if the driver does not respond. Some systems will also charge the brakes in order to provide the most efficient braking and prepare the vehicle for collision by pre-tensioning the seatbelts. If the driver takes over control of the vehicle, the AEB system disengages. AEB has the potential to prevent a crash from occurring or reduce the impact speed of a crash.

There are three different types of AEB systems:

City system – this version is designed for city driving, where crashes often occur at low speeds but can cause debilitating injury such as whiplash. Systems that can mitigate crashes at up to 20km/h are classified under this category. Typically, these systems look for the reflectivity of other vehicles and are not as sensitive to pedestrians or roadside objects.

Inter Urban – this version typically utilises long range radar to scan further ahead of the vehicle (up to 200 metres) at higher speeds between 50-80km/h.

Pedestrian – this version uses forward facing cameras to detect vulnerable road users through their shape and characteristics. The way in which pedestrians move relative to the path of the vehicle is calculated to determine whether they are in danger of being struck.

These three versions of AEB are not mutually exclusive and there are vehicles that may have two or more versions. It is important to note that within each type of system there will also be variation in functionality depending on the manufacturer and even car model (in terms of warnings, braking function, time-to-collision etc.,).

Effectiveness of AEB

The effectiveness of AEB has been investigated in a number of studies and a range of effectiveness has been found but the overall trend is a reduced number of crashes for vehicles equipped with AEB (Chauvel, Page, Fildes, & Lahausse, 2015; Insurance Institute for Highway Safety, 2011, 2012; Isaksson-Hellman & Lindman, 2012). There is limited real world performance data available for AEB at the current time, particularly in Victoria and Australia. Research by Schittenhelm (2013), indicated that 53% of all rear end collisions could be mitigated in crash severity and 35% of rear end crashes could be avoided completely. More recently Fildes et al., (2015) found similar reductions (38%) for rear-end crashes for vehicles fitted with AEB when compared to similar vehicles without AEB.

In addition, an Australian AEB simulation project estimates that AEB has the potential to reduce fatal crashes by 20-25% and injury crashes by 25-35% (Anderson, Doecke, Mackenzie, & Ponte, 2013). Research utilising insurance claims data have also found that forward collision avoidance systems, especially those that brake autonomously, showed the biggest claim reductions of 10-14% (Moore & Zubby, 2013).

Overall the research is very promising and indicates that AEB has potential to prevent crashes. Based on the research, the TAC chose AEB as the focus of a new campaign to educate the Victorian public about the technology and encourage new car buyers to consider AEB when making their purchase decision.

Communication Objectives

There were three key communication objectives for this campaign:

Increase awareness of AEB

As AEB is a fairly new technology, many car purchasers simply weren't aware of the technology, how it works and its benefits. Qualitative research confirmed that there was very little awareness of AEB. Increasing awareness was the key communication objective of this campaign.

Increasing awareness seemed to be somewhat straightforward however there was some complexity given the number of versions of AEB and the different systems available in the marketplace. Qualitative research showed that in addition to having very little awareness, consumers also confused AEB with other safety technologies such as ABS, Brake Assist and Adaptive Cruise Control.

Drive consumers to howsafeisyourcar.com.au

Another key communication objective was to drive consumers to howsafeisyourcar.com.au to find out more information about AEB, how it works, which vehicles have AEB etc. There is a lot of information about AEB and not all of it can be communicated in a 30 or 60 second television commercial (TVC). Driving consumers to howsafeisyourcar.com.au to find out more may help them to choose a vehicle with AEB.

Persuading consumers to purchase a car with AEB

Although increasing awareness of AEB was important, it may not have been enough to encourage consumers to purchase AEB in their next vehicle. Therefore it was also important to persuade consumers to purchase AEB in their next car. Persuading consumers to purchase AEB was also a key communication objective of this campaign.

Qualitative Research

The TAC engaged Luma Research to conduct exploratory qualitative research to increase our understanding of Victorian consumers' knowledge and perceptions of AEB prior to developing a brief for the advertising agency. Some key findings are as follow:

Awareness

- There was low awareness overall
- For those that were aware, they had limited knowledge of what it does and how it works
- AEB was easily confused with other technologies
- Males wanted more technical details, females asked some broad questions but assumed all cars will have the feature

Important considerations

Scenario – The research showed that it would be important to use a situation that people can relate to and to avoid situations that demonstrate ‘bad behaviour’.

Target – The campaign needs to appeal to both family and non-family households.

Vehicle type – The research demonstrated that it was important to choose a vehicle that implies wide availability and affordability

Tone – The tone of the ad needed to be serious and reassuring while avoiding negative, judgemental and blaming language.

The qualitative research by Luma also found that those who had AEB were big advocates of the technology. They described situations where the technology had helped them to avoid a crash. Those that had bought a vehicle recently without AEB, were disappointed that they hadn’t considered the technology after hearing the stories from those who did have the technology.

Qualitative research also identified the most acceptable generic name for the technology; auto emergency braking was the best option, rather than autonomous emergency braking.

The campaign

The TAC provided a brief to incumbent agency Clemenger BBDO Melbourne. Clemenger developed 4 creative concepts which were tested with qualitative research and the strongest concept was chosen for development.

It was recognised that it would be important to include all three versions of AEB in the broader campaign; however, it would be difficult to demonstrate all three versions in a 30 or 60 second TVC. Inter urban AEB was chosen for the TVC as analysis of TAC claims data showed that rear end collisions in speed zones from 60 km/h to 80 km/h account for the highest number of claims and the highest costs. Additionally, the low speed AEB systems are more common and appear to be making their way into the market naturally. Inter urban systems are lagging behind and could do with a push to increase uptake and availability.

The final TVC shows a man driving through traffic when another car suddenly cuts in front of him at the lights. A voiceover describes AEB as his car stops safely. Another version of the man's car continues on and crashes into the back of the other car, giving him a bloody nose, showing what happens without AEB. The tagline of the campaign was “AEB senses danger then brakes”. The campaign was run across all regular media channels, including TV, outdoor, radio, print, online and through TAC partnerships.

The campaign had the following objectives:

- 70% campaign awareness among the Victorian community
- An increase in overall awareness rate of the “How Safe is Your Car” (HSIYC) website to 60%.
- Contribute to an increase in the proportion of people considering safety as a high priority when purchasing a vehicle.
- Set a benchmark for AEB awareness as tracked by the TAC’s Public Education Evaluation Program (PEEP)
- Contribute to the demand of AEB by purchasers and long term, aim to make AEB a standard safety technology in the Victorian passenger car fleet.

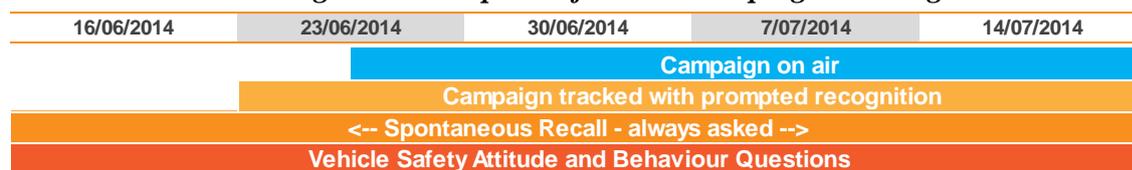
Methods

PEEP is conducted by Wallis Consulting Group on behalf of the TAC. PEEP is a continuous tracking program surveying 100 Victorians each week with specific campaign measures and road safety attitudes and behaviour questions. PEEP was used to evaluate the AEB campaign.

Timeframe

The AEB campaign ran from June 26 to July 20 and was measured in PEEP from June 23 to July 20. Questions relating to attitudes and behaviours were asked from the week commencing June 16 to the week commencing July 14. The time period is shown in the Figure below:

Figure.1 Time period for AEB campaign tracking



The monitor tracked a number of aspects of the campaign, including:

- Spontaneous recall of the advertising;
- Prompted recognition (including recall of HSIYC website); and,
- Attitudes and behaviour relating to vehicle safety.

Recruitment

TAC campaigns are “on air” at all times and so recruitment is ongoing most of the year. All Victorians over the age of 18 are in scope for the survey, although non-drivers complete a shorter version of the questionnaire. Multiple sampling methods are used to obtain participants including VicRoads registration and licencing database, randomly selected fixed line telephone numbers (RDD) and an online panel. All respondents have the option to complete the survey online and the VicRoads and RDD sample may complete online or via Computer Assisted Telephone Interview (CATI). The VicRoads sample is sent a letter from the TAC/Wallis inviting them to participate either online or to wait for a telephone call. Quotas are applied for age, sex and location for the online panel and combined VicRoads/RDD sample. The data are weighted to ABS 2011 Census data for age, gender and location. Weights are re-calculated each week.

Questionnaire

The PEEP questionnaire includes questions on the following:

- Demographics (including age, sex, location, license type, vehicle type, kilometres etc.,)
- Spontaneous recall of road safety advertising
- Prompted recall of current campaign/s
- Driving/Riding attitudes and behaviours
- Media consumption

Results

Spontaneous Recall

Spontaneous recall of road safety advertising in general is measured continuously every week. Just over a third (37%) of all respondents (n=401) recalled seeing any road safety advertising in the period AEB was on air. When asked to describe the ad they had seen, 6% of all respondents mentioned an ad that related to “Vehicle Safety”, with 5% of all respondents specifically mentioning the “AEB” campaign. Spontaneous recall of “Vehicle safety” advertising was very low in the first two weeks of the campaign (2% and 1% respectively). Recall peaked in the third (11%) and fourth (12%) weeks before trailing off (7% and 4% in the two weeks following the campaign).

Those who recalled seeing an ad relating to “Vehicle Safety” were largely on target (78%) with the message they believed the ad was trying to convey. The key messages were:

- When buying a new car find out about emergency braking (49%);
- Buying a safer vehicle / vehicle safety (24%); and,
- Slow down / drive more slowly (10%).

Prompted recognition

After hearing a description of the AEB ad on the telephone, or reading a description of it online, just over six in ten (62%) respondents recognised the AEB ad over the three weeks it was on air, with recognition peaking in the final two weeks of the campaign (69%). The peak result meets the campaign objective of 70% recognition. Recognition was similar across most demographics, although drilling down into the data shows recall was highest amongst males aged 40 to 59 years (77%). Those who were intending to purchase a car were as likely to see the ad as those who were not. Given that recognition was high amongst all Victorians, the message was pervasive rather than targeted.

Prompted message take out

Respondents who saw the ad were asked what they thought the ad was telling people to do. Compared to the message take out amongst those who recalled the ad spontaneously, on target message take out was lower, at 65%. The key messages were:

- When buying a new car find out about emergency braking (40%);
- Buying a safer vehicle / vehicle safety (20%);
- Slow down / drive more slowly (10%);
- Concentrate while driving / keep your eyes on the road (9%); and,
- Drive safely / carefully / responsibly (9%).

Overall, 65% of Victorians believed the campaign was relevant to them. The proportion who felt it was relevant increased over the course of the campaign, with 52% believing it was relevant in the first week rising to 74% in the final week. The results suggest that the campaign was felt to be more relevant amongst those who were considering buying a vehicle in the near future.

There is a large difference between spontaneous recall and prompted recognition levels. Based on qualitative development work we suggest this may be due to the fact that “Vehicle Safety” campaigns are not perceived to be in the “road safety” category by respondents.

Awareness of the HSIYC website

Awareness of the website increased from 47% in the first week of tracking (prior to the campaign being launched) and increased to 55% in the final two weeks of the campaign. We note that the target was 60%.

Advertising effectiveness and efficiency

Wallis uses two measures to judge the effectiveness and efficiency of the campaign. The effectiveness is determined by effective recognition, which is the proportion who recognised the campaign and took an “on-target” message from it. The AEB campaign had an effective recognition of 40%. Both the reach and message take out measured well, while neither was outstanding.

Vehicle safety measures

While vehicle safety is not a road safety issue that Victorians say they have discussed with friends and family, and not one they think of as being a key issue facing Victoria, it is nonetheless important. The majority (90%) believe it is worth spending extra to buy a safer car, and half (51%) feel strongly that this is the case. This sentiment is fairly consistent, with only a minor difference in that females (93%) are slightly more inclined than males (87%) to be willing to spend more for safety features. Although most feel it is worth spending more, not all are able to. Just shy of seven in ten (68%) agree that they can afford these features. Younger drivers were the least likely to be able to afford these features (53%) and those aged between 60 and 69 years (85%) the most able to afford them. Additionally, those planning on purchasing in the next 24 months (37%) were more likely to *strongly* agree than those who were unsure or not planning a purchase (26%).

Overall the majority (67%) of Victorians were aware of AEB. However, the campaign clearly had some influence, with awareness climbing from 57% prior to the campaign to 80% at the end. Furthermore, 84% of those who had seen the ad were aware of AEB versus 45% of those who had not. Although the majority is aware of the technology, only 5% believe they have it in the vehicle they mainly drive. Two thirds (67%) believe it is likely that the next car they purchase will have AEB. Those planning an imminent purchase (next 12 months) were slightly less likely to think their new car will have AEB versus those who are planning to purchase at a later date (65% versus 75%).

Conclusion

The AEB campaign was successful with regard to reach as well as message take out. The peak prompted recognition (69%) was in line with the target of (70%). Perhaps the most

telling measure was the increase observed in awareness of AEB over the course of the campaign, rising to 80% of all Victorians. While there was lower than usual recall of any road safety advertising, and spontaneous recall of the campaign, this may relate to it not being perceived as a “road safety” campaign.

The TAC will continue to run this campaign at key times and monitor community perceptions and fitment rates of AEB.

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