IMPROVING VEHICLE SAFETY IN AUSTRALIA AND NEW ZEALAND: THE ROLE OF ANCAP

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ABSTRACT

The Australasian New Car Assessment Program (ANCAP) has had a significant impact on the Australian and New Zealand motor vehicle landscape over the past 20 years through its independent, non-regulatory, consumer-driven program. Five star cars are now available in all vehicle categories; the majority of manufacturers now approach ANCAP to obtain a rating prior to launch to leverage sales; and ANCAP assessments are now seen as the de facto standard, taking the place of regulation. Since 2011 ANCAP has been increasing the stringency of its requirements for each star rating level annually. In future years ANCAP will continue to raise the bar, updating and broadening its suite of physical crash tests and introducing performance testing of safety assist technologies (SAT). These advancements will see consumers provided with even safer vehicles, and in time, perhaps even cars that will not be able to crash at all.

NCAPs drive vehicle safety improvements through a non-regulatory approach. This paper examines the effectiveness of the Australasian NCAP, its achievements and its future direction.

INTRODUCTION

The Australasian New Car Assessment Program (ANCAP) exists to provide consumers with independent, clear and concise vehicle safety information. The aim is to reduce death and injury on our roads and encourage manufacturers to supply - and consumers to demand and purchase - the safest vehicles. This is achieved through the communication and promotion of vehicle safety ratings. ANCAP uses a five star rating system (five stars being the highest rating) to communicate comparative levels of vehicle safety. While physical crash testing has dominated the program over time, advanced technology is becoming increasingly important. Historically it has been relatively simple for consumers to understand the apparent difference in safety between cars. As the photographs below illustrate, the differences were stark.

Then

Now

This is not the case today, where differences between cars may be substantial but not immediately discernible to consumers. Convincing consumers of the merits of safety technology is a huge challenge for ANCAP.

DISCUSSION

Consumer Awareness

Since the establishment of ANCAP in 1992, regular market research has been undertaken to track consumer awareness of the ANCAP brand, and also to monitor consumer uptake of the safer vehicles message and in turn, the purchase of safer cars.

Figure 1 shows the increase in consumer awareness of the ANCAP brand (both name and logo) across Australian and New Zealand new car buyers [1].

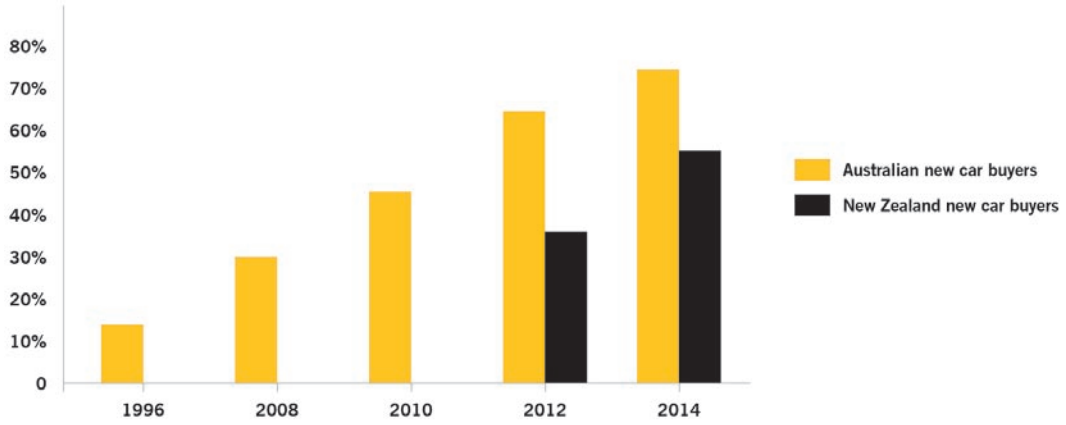

Figure 1. Awareness of ANCAP amongst new car buyers in Australia & New Zealand.

2014 results reveal that 74% of Australian new car buyers were aware of the ANCAP brand - an increase of 15% over 2012, and 60% more than 2010. Brand awareness amongst the New Zealand new car market was slightly lower at 54% in 2014, although showing significant growth since the first survey in 2012 (36%).

In order to reach these high levels of awareness ANCAP had to do two critical things. First, it had to establish itself as a professional organisation of integrity, with a strong focus on accuracy and reliability and demonstrated expertise in a complex technical field. Second, it had to convince manufacturers and consumers that this was indeed the case.

On reflection, it probably took the best part of a decade before ANCAP had made headway on the first critical point. There were many reasons for this including the fact that independent crash testing was a rather new and immature field (other than in the USA) and there was a belief in the community that if governments approved the sale of cars then *ipso facto* they must be safe. Early crash test results revealed the imprudence of this belief. Consumers were presented with the stark reality that by and large, cars were not particularly safe. Manufacturers were presented with a significant challenge in both a technical design and an ethical obligation sense. This challenge has been accepted.

As well as publishing test results, ANCAP undertook a range of marketing activities to explain and demonstrate its professional expertise and integrity of its processes. These included for example, test laboratory visits, consumer-focussed publications, greater interaction with the media, increased public advocacy for safety and closer ties with governments.

In relation to pursuing the second critical point, there were two significant events that occurred during the 2000s. The first was the awarding in 2001 of the first five star ANCAP safety rating – this made both consumers and manufacturers take notice of safety. The second was the awarding in 2008 of the first five star ANCAP safety rating for an Australian-built car. This resulted in a prominent advertising campaign during the 2008 Olympic Games where, for the very first time, a major local manufacturer extolled the benefits of an ANCAP rating to consumers.

Other manufacturers followed suit and what started as a trickle of five star ratings and associated marketing turned into an avalanche. It was clear that safety was becoming a major factor in selling cars and this was borne out in ANCAP's market research. In earlier research, safety had rated fourth or fifth in priority behind price, car type and performance.

Figure 2 shows that in 2014 Australian new car buyers ranked safety as a top priority when making purchasing decisions [1].

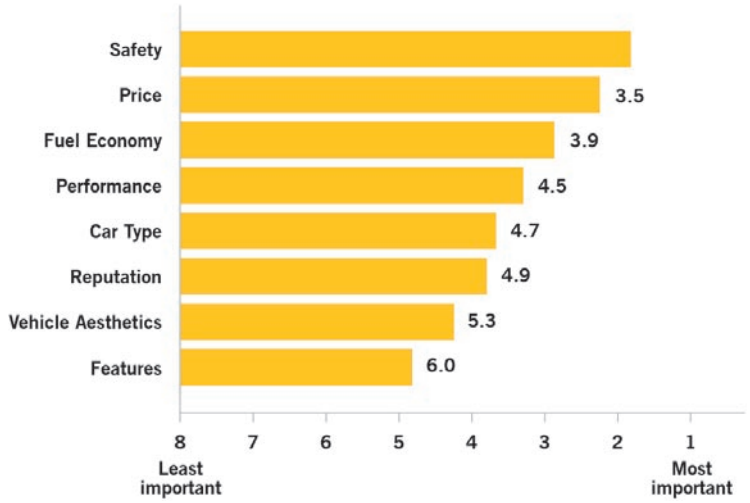

Figure 2. Importance of Vehicle Attributes to New Car Buyers, 2014.

Market Penetration

With awareness of ANCAP in Australia now high and growing quickly in New Zealand, ANCAP's influence on consumer purchasing was also apparent in the sale of five star rated cars.

Figure 3 reveals the portion of new cars sold in Australia in 2014 holding a five star ANCAP safety rating [2].

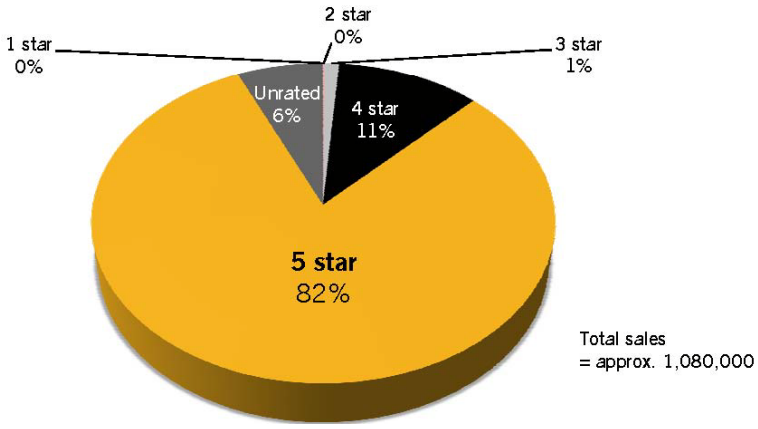

Figure 3. 2014 Australian new motor vehicle (passenger, SUV & LCV) sales by ANCAP safety rating.

In less than a decade, the penetration of five star cars in the Australian market has grown remarkably. In 2014, 82% of all new cars sold were models which held a five star ANCAP safety rating. In the relatively small Australian market this amounts to nearly 900,000 cars. A further 11% held a four star rating (~120,000 cars). Less than 2% (~20,000 cars) had a rating lower than four star, with just 6% (~65,000 cars) being models without a rating.

In New Zealand, 88% of all new *passenger* cars sold in 2014 held a five star ANCAP safety rating [3]. In both countries there are now numerous five star models available in all vehicle categories, providing a range of choices across all price points.

ANCAP's influence on five star vehicle sales can also be attributed to five star fleet purchasing policies implemented by governments and a range of private, domestic and multi-national organisations.

Positive Outcomes

With all the excitement about the prominence of ANCAP and the acceptance of safety ratings by consumers and manufacturers alike, it is easy to overlook an assessment of the outcomes of safer cars. Figure 4 sets out the reduction in fatalities on Australian roads over the last decade [4]. In that time there has been a 29% reduction in fatalities.

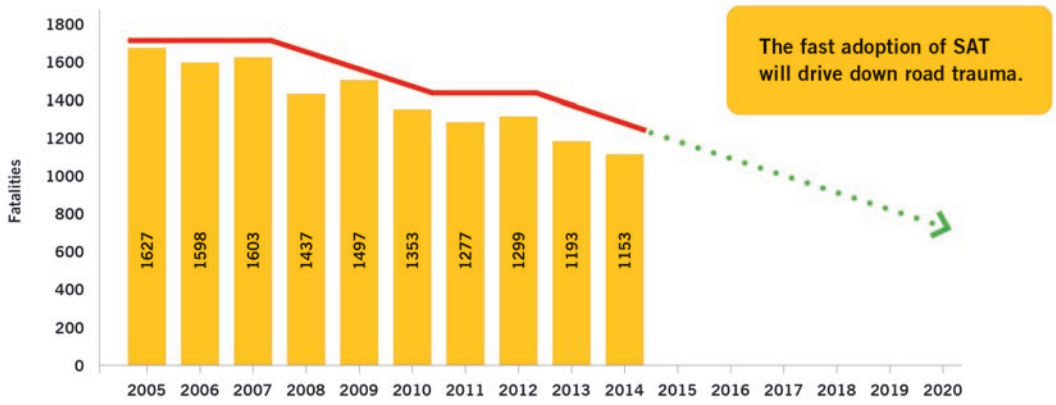

Figure 4. Australian Road Fatalities 2005-2014.

Clearly there are many factors that contribute to the reduction in fatalities, but what is also clear is that newer, safer cars play a very significant role. Figure 5 shows a snapshot of passenger vehicle fatalities and passenger vehicle registration by year of manufacture. It shows that older cars, while a smaller part of the fleet, account for a higher number of fatalities: the reverse is true for newer cars [5].

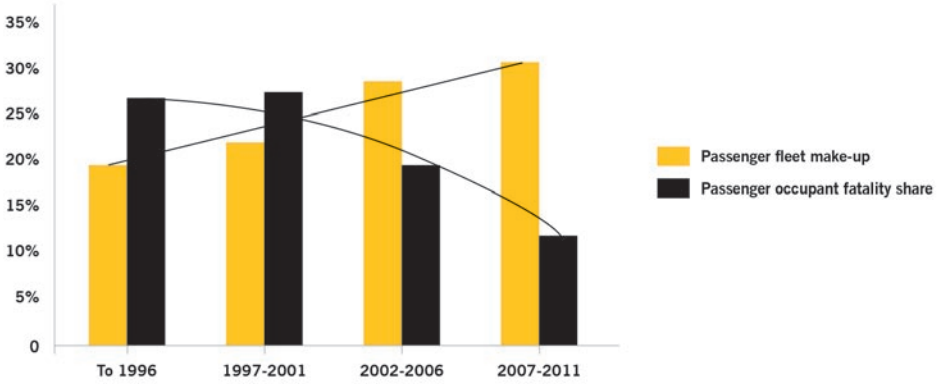

Figure 5. Passenger Fleet: Share of Registration vs. Share of Occupant Fatalities 2011.

Autonomous Emergency Braking

Since 2011, ANCAP has introduced stepped increases to the requirements vehicles must meet in order to achieve each of its five rating levels. These increases relate not only to physical crash test performance but also to the inclusion of safety assist technology (SAT) [6]. From 2015, ANCAP has taken another important step to further enhance vehicle safety, with a new focus on SAT and the substantial impact it will have on reducing road trauma. This will be achieved through ANCAP's alignment with Euro NCAP and the move to a more sophisticated test and assessment program encompassing performance assessments of active, life-saving SAT [7]. From 2018 ANCAP and Euro NCAP testing and assessment regimes will be effectively aligned.

In spite of the positive outcomes of recent road safety initiatives, over the last fifteen years Australia has slipped from eleventh to sixteenth place in the world in terms of road deaths per 100,000 population. More must be done to see this decline reversed and SAT has a huge role to play in achieving this.

Today, autonomous emergency braking (AEB) has already shown significant benefits in reducing the number of crashes. Early figures showed a 27% reduction in Europe [8] and 14% in US [9]. Recent Swedish research reveals AEB has reduced the risk of real world rear-end crashes in metropolitan areas by 54-57% and in all areas

by 35-41% [10]. These figures are largely supported by other, as yet unpublished, research (funded in part by ANCAP).

The central issue now is how we encourage consumers to demand, and manufacturers to supply, this technology. If left to the market alone it may be many years before the technology becomes available in all new cars and perhaps decades before it becomes ubiquitous in the fleet. Regulating the technology would likely lead to a similar outcome given the time it takes to develop and implement. The only practical way to ensure that this technology has an accelerated introduction into the market is for consumers, road safety practitioners and fleets to demand it. This puts a particular onus on ANCAP and other programs to pursue this with vigour.

Autonomous Technology and the Consumer

The idea of autonomous cars may well have its roots in the twentieth century development of the automatic transmission and other similar devices. Over time there have been many incremental advancements, but none is more exciting or arouses more fear than the prospect of the autonomous car. The move to autonomy has accelerated rapidly in the last decade and shows no signs of slowing. While it seems inevitable that at some time in the future all cars will operate this way, there are some challenges to face before we arrive at that future time.

The world is full of autonomous devices and machinery that once required specialised training and human control and intervention. Trains, ships, trucks, aeroplanes are all good examples and while most are happy to get on an aeroplane and fly thousands of kilometres at speeds approaching the sound barrier, there is something about owning and driving a car that on occasion provokes an irrational response to change, notwithstanding that the risk of death or serious injury is much higher in a car than in these other forms of transport.

The inevitable progression of advanced technology presents a new set of challenges for ANCAP in maintaining consumer trust. Having been exposed to the results of physical crash testing and graphic images of cars that perform well and those that perform poorly, the consumer has been an active participant in safety because the results are evident and the benefits apparent.

This may not be the case with some of the more technically complex SAT. There are no tangible images of good and bad performance to which the consumer can relate.

Surrendering control of the car will be difficult for those already driving. Driving skills are often worn like a badge of honour, particularly among younger people and if this is threatened, resistance will be strong. However, there is light at the end of the ‘generational’ tunnel and the existence of this light will ensure that subsequent generations of drivers will embrace technology and readily accept a new and different place for the car in society.

CONCLUSIONS

ANCAP has had a significant impact on Australian and New Zealand motor vehicle safety over the past 20 years through its independent, non-regulatory, consumer-driven program. Five star rated cars are now common; manufacturers are embracing the ANCAP process by actively pursuing and promoting ratings; and consumer awareness and use of ANCAP ratings is at a record high. Accelerated introduction of life-saving technology is vital and new methods of communicating this to consumers and manufacturers will be required.

The era of autonomous technologies has commenced and consumers and NCAPs alike must acknowledge and embrace it if there is to be a further dramatic reduction in road trauma. ANCAP's future test, assessment and communications processes will therefore continue to evolve in order to ensure that consumers secure access to the safest cars, and in time, perhaps to cars that will not crash.

REFERENCES

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SUV = sports utility vehicles, LCV = light commercial vehicles (excludes heavy vehicles).
[3] New Zealand Motor Industry Association new vehicle registration (sales) data (January 2015).
[4] BITRE Road Deaths Monthly Bulletins (January 2015).
[5] Compiled from 2012 Australian Bureau of Statistics Survey registration data & BITRE Australian Road Deaths Database (includes SUV).
[6] SAT is a generic acronym for active safety devices and systems (e.g. stability control, autonomous braking, fatigue warning, lane departure warning, adaptive headlights).
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[9] IIHS / HLDI News Statement: *Crash avoidance features reduce crashes, insurance claims study shows; autonomous braking and adaptive headlights yield biggest benefits* (3 July 2012).
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