

## FUTURE DIRECTIONS FOR AUSTRALIAN NCAP

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### ABSTRACT

Consumer research shows new car buyers want to consider vehicle safety before making a vehicle purchase decision. Vehicle safety practitioners can consider additional factors than the minimum standards set by regulations. These additional safety factors must be relevant to the requirements of an increasingly educated customer who has access to a wide range of safety data including that available on the Internet. To maintain relevance, Australian NCAP (ANCAP) must react to new customer issues, such as changes in new vehicle regulations, improvements in crash performance of cars in certain types of crashes, and the types of road crashes that contribute to road trauma. ANCAP must adapt to change and improve published material. It must add relevant tests that research shows contributes to improved occupant protection against vehicle crash injury.

This paper also considers the future of Australian NCAP and the relevance to consumers of including car to car tests, European side impact test, American side impact test, pedestrian impacts, and rollover tests. Vehicle manufacturers' criticisms of ANCAP are similar to those of other international NCAP groups and some responses are given. Consumers are asking for relevant product safety information to make an informed vehicle selection choice. ANCAP information must adapt and change to meet these changing consumer demands.

### INTRODUCTION

Researchers have been asking new car buyers for a long time what factors are important when they make a new car purchasing decision. Most specific consumer research information is carried out in small focus group sessions where the detailed feeling of consumers can be explored. In this way motorists' priorities and attitudes can be recorded. If the research is carried out over several years, then the changes to attitudes and priorities can be measured. The feedback from research study groups is very important for Australian NCAP, which has a goal to publish relevant vehicle safety material.

Misconceptions about what makes a car safe continue, as many consumers still equate a strong vehicle with safety. Accident prevention features, or active safety items such as ABS brakes rate a minority mention. Airbags are commonly mentioned as a safety feature, but the trickle

of unfavourable news stories, mostly from the United States, have undermined their credibility for Australians in the last two years.

Fleet managers are major purchasers of new vehicles who have become increasingly informed about vehicle safety issues. New occupational health and safety legislation defines the rights of people who are injured while working, which includes using a company vehicle while at work. There exists possible liability for a fleet manager if they knowingly supply a new vehicle with poor performance in independent crash rating programs. Manufacturers must take notice of this change to fleet managers' possible legal liability and build vehicles which perform well in consumer crash tests, or risk losing business with this large segment of the market.

### Fleet Manager and Consumer Vehicle Safety Needs:

- Consumers want clear simple, non technical advice on vehicle safety.
- The information should be applicable to the most frequent vehicle occupant injury crash types.
- Consumers want consistent, knowledgeable safety messages from authoritative sources.
- Regulatory safety requirements meet minimum consumer safety needs, but are not useful to select a safer new vehicle.

### ANCAP CONSUMER BROCHURE FORMAT SMALL CARS

Model	Airbags	Rating
Mitsubishi Mirage 96-on	(D&P Airbag)	A
Toyota Starlet 96-on	(D&P Airbag)	A
Honda Civic 95-on	(D airbag)	A
Ford Laser / Mazda 323	(D airbag)	A
Mitsubishi Mirage 96-on		A
Toyota Starlet 96-on		M
Daihatsu Charade 96-on	(D Airbag)	M
Daihatsu Charade 96-on		M
Daewoo Cielo 95 -98		M
Hyundai Lantra 95-on	(D airbag)	M
Nissan Micra 95-97	(D airbag)	M
Nissan Pulsar 95-on	(D airbag)	M
Ford Laser 95-on		P
Holden Barina 95-on	(D& P airbag)	P
Hyundai Lantra 95-on		P
Nissan Micra 95-97		P

Key to Overall Ratings:  
G Good   A Acceptable.   M Marginal.   P Poor.

### DISCUSSION

Market research with people who have recently purchased a new vehicle show there is an expectation that all vehicles will be safe. This is seen as a combined responsibility for governments to make necessary safety

regulations and vehicle manufacturers to test and ensure the safety regulations have been met. New vehicle buyers also wanted safety ratings to be available at car dealers, which is not presently the case.

### Regulations

Safety regulations require manufacturers to certify that vehicles are designed and tested to meet the minimum safety standards. These standards are often many years old and while providing a basic level of occupant protection, consumers now expect a more adequate level of protection. Much has been debated about the need for uniform international occupant protection safety standards, but in practice they remain an unrealised goal. Full-frontal tests differ in detail in most major markets, with the United States requiring an unbelted 48 km/h crash test. Aggressively deploying airbags, which have been reported as causing injury to belted occupants in crashes, have resulted in changes to reduce head and neck injuries.

In international automotive markets, manufacturers must choose front and side impact specifications that meet market regulatory requirements. This means that consumer safety test data could give different safety ratings, depending on the source country of the consumer test. An example is the Euro NCAP side impact crash test program and the NHTSA side impact NCAP test program in the United States, where the tests are to different standards, at a different test speed and with different dummies.

### Side Impact Crash Testing

Consumers researching published data or through the Internet, may be confused with the different ratings that result on the same vehicle model. Side Impact data are available on the Internet for both the Mercedes C-class sedan and the Ford Mondeo/ Contour.

**Table 1.**

#### Internet Consumer Side Impact Safety Data 1998

	NHTSA Side Impact Rating Front Occupant	NHTSA Side Impact Rating Rear Occupant	Euro NCAP Side Impact Driver
Mercedes C- class	★★★ 11-20% Chance of serious injury	★★★★ 6-10% chance of serious injury	Head & Pelvis Good Chest Weak Abdomen Marginal
Mondeo/ Contour	★★★ 11-20% chance of serious injury	★★★★ 6-10% chance of serious injury	Head Abdomen & Pelvis Good Chest Poor

Consumers may find that United States side impact crash test consumer results are different, as in Table 1, for the same models when tested by EuroNCAP.

Australia has regulated to allow certification to either the European or the FMVSS side impact standard. Manufacturers of similar vehicles could choose to certify the vehicles with either side impact standard. ANCAP will eventually adopt one side impact test, as it may confuse consumers to test similar competitive vehicles to two different tests. ANCAP will review available published side impact crash test data, and discuss issues with both the international consumer crash test community, and manufacturers' before commencing side impact crash testing.

### Airbags Regulation & Head Injury Risk

Australian regulations require manufacturers to certify vehicles to meet Australian Design Rule 69 (ADR69) which is similar to FMVSS 208 but without the need to test for unbelted occupants. ADR69 is not design specific but is performance based. Many manufacturers can meet the requirements with or without driver or front passenger airbags. This has allowed the price sensitive sectors of the small and medium passenger car market to have vehicles available in the Australian marketplace without frontal airbags. In a frontal crash, the absence of the driver airbag can increase the risk of head and chest injury between two and nine times for the same basic model. Consumers need to be aware of this significant difference, even if all vehicles meet the basic regulated standard.

**Table 2.**

#### Airbags reduce the chance of head injury

Head injury Risk. % of a life threatening injury.			
	Driver airbag	No driver airbag	Ratio of risk
Large Cars	17 %	40 %	2.4
Small Cars	6 %	28 %	4.6

In Table 2 the advantage of driver airbags in frontal crashes for small cars is very clear. The risk of a life threatening head injury requiring hospital treatment average is 4.6 time as great for small cars not fitted with driver airbags. The average ratio of head injury risk for large cars is 2.4 times as great without the driver airbag.

Consumer issues that flow from market research are the unfavourable news stories from the United States on airbag injuries to children. One United States media story, republished in the Australian media reported a parking lot low speed crash in which the passenger airbag inflated resulting in fatal injuries to the child who was a front seat passenger. No material was presented that explained the child was not wearing a seatbelt. The resulting damage to consumer confidence in airbags is dramatic. It is especially true for women who read and

believe the story could happen to their children. Research shows women have a considerable influence in the issue of safety in vehicles, especially if they transport children. They may use this media information to change from buying an airbag equipped vehicle, to making a firm decision to not specify an airbag next time they buy a new vehicle. Subsequent press and media information on the original crash has little effect on the person's belief that airbags can fatally injure a child.

The new role for vehicle consumer safety groups is to take up safety issues of unfavourable news media reported crashes and then maintain a constant media flow of the benefits of vehicle safety equipment. This requires monitoring of the print media and effort to produce a flow of good news where safety equipment has been effective in reducing occupant injury in vehicle crashes.

### **Manufacturers' Safety Information**

There needs to be more consistent safety information from sources where consumers receive occupant safety information.

At present, manufacturers do not publish material which would allow a reasonable person to make a knowledgeable comparison of vehicle safety, by model against a competitive product. However, it is acknowledged that safety of vehicles covers an enormous range of topics to ensure all safety areas are adequately addressed. The lack of availability of factual material from manufacturers on consumer safety material is not expected to change in the near future.

Often, there has been conflict from manufacturers where a poor ANCAP frontal crash test result is dismissed by a manufacturer as a one-only test, and therefore not representative of the model. Manufacturers, or their representatives in international markets, have not been prepared to make available crash test data that they have generated, so that both test results can be published. A manufacturers' dismissal of an independent crash safety test may confuse some consumers. Mostly, conflict with manufacturers is from models that have performed poorly in ANCAP tests.

Some manufacturers who perform well in consumer crash tests use the ANCAP results to show consumers the model has performed well in independent crash tests. Their advertising, and sales information packages to buyers, and prospective new buyers, reinforce the need to make a safe purchasing new car decision.

### **Car to Car Crash Testing**

Some car to car crash tests are carried out as basic research to validate the speed used in offset crash test programs developed by NHTSA, Insurance Institute for Highway Safety (IIHS), and EuroNCAP. Budget restrictions have not allowed this research testing to be considered as part of the Australian consumer program.

It is not considered necessary to repeat this type of crash as a consumer information program at this time.

### **Information for Consumer Groups**

There is a need for consumers to have access to material about many aspects of vehicle safety if they are to make a knowledgeable choice in selecting a new vehicle:

#### **Future Consumer Safety Tests.**

Frontal Crash test results.

Side impact crash test data.

Rollover tests.

Child Seat crash test results.

Pedestrian impact crash test data.

ABS Brakes, and effectiveness.

Frontal crashes into other vehicles, large trees or poles and fixed objects account for two thirds of Australian fatal vehicle crashes. For this reason frontal crashes remain the prime consideration for ANCAP. Later in 1998 ANCAP will consider if the past practice of testing two vehicles of each model, one at 56 km/h into a solid barrier, and another 40% offset test at 64km/h into a deformable barrier will continue. Should one of the tests be replaced with a side impact test? One area that has not progressed is publishing the ADR69 48 km/h crash test results in place of the Full frontal 56 km/h NCAP test. Confidentiality of test results submitted to the Government for certification purposes is no longer an acceptable reason for withholding valid consumer safety information.

Side impacts after frontal crashes are the next most serious crash causing serious injury, and is expected to be the included in our future consumer crash test programs.

Four Wheel Drive vehicles are over represented, by a factor of four, in rollover crashes that often cause severe occupant injury. An international test is needed to allow this group of vehicles to be evaluated for rollover resistance and occupant injury, with results published for consumers to make a knowledgeable choice.

Pedestrian test programs that publish results similar to those in place in Euro NCAP are seen as worthwhile to reduce unprotected road user injuries.

### **International Safety Specification Differences**

It is recognised that using international crash testing data also needs to be referred to manufacturers' vehicle specifications for the model tested, and differences in specification in each market that could make a difference to the results.

One example is the use of Euro airbags for the European market and the specification of a full-size

airbag in the Australian market. Head injury data may be significantly different in an offset test where the vehicle rotates, and the smaller Euro airbag may not capture the driver's head fully in an offset crash.

Consumers who now have access to international crash test data through Internet facilities, may be misled about vehicle safety when a particular vehicle is not constructed to the same specification as that presented in the electronic media. Manufacturers do not make differences in construction specification available to consumers in their Internet pages. Some are also reluctant to make specification detail differences available to crash testing groups.

ANCAP must consider specification differences in safety equipment that may contribute to different results on crash tests. Would the consumer be aware that for the same looking vehicle model sold in a different international market, different safety equipment levels than those supplied to Australian consumers are made available? This is particularly true for driver and passenger airbags that are not specified as standard equipment in Australia for many small or medium cars and 4WD vehicles.

### International Crash Tests

With 38 international manufacturers producing vehicles, it is financially difficult to maintain up to date consumer safety tests to ensure all data are relevant to vehicle models available in the market. There is a need to share crash test data among consumer testing countries to ensure access to relevant safety material.

With increasing availability of crash test data from NHTSA, IIHS, EuroNCAP and Japan NCAP, there is great potential to republish vehicle model crash test data in other countries. This is a great benefit in Australia, where the passenger market is supplied by 38 different suppliers selling around 500,000 vehicles a year, ref Fig 3.

**Figure 3.**  
**Manufacturer, Market Share, Models sold and ANCAP Available Consumer Material**

	Market share % 1997 data	Models	NCAP Published material (by volume)
GM	22.8	9	95.6
Ford	20.9	6	99.5
Toyota	13.8	8	95
Hyundai	9.9	4	93
Mitsubishi	9.3	5	96
Mazda	4.2	9	80
Honda	3.3	8	80
Nissan	2.9	7	75
Daewoo	2.6	6	50
Others	10.3	127	10

ANCAP material covers 73% of the passenger segment by volume. Many models in the luxury market imply they are safer than the mass produced high volume vehicles. Consumers may not have available any comparative crash safety material on these models. Australian NCAP tests from 10 to 15 vehicles a year. With data sourced from other crash testing countries, consumers in Australia can have more comparable occupant safety information on which to base a purchasing decision.

It is important to ANCAP that the consumer crash test specifications are the same to enable the use of international crash test results. ANCAP will align its testing where possible with international consumer crash tests. An area of difference will be the result presentation format, where each country will choose the presentation format that best suits the home market.

### SUMMARY

ANCAP must develop its future direction to make easily available, in a consumer friendly format, vehicle safety information required by an information society.

ANCAP should make public vehicle safety information linkages for consumers and fleet managers who use and purchase vehicles as part of their work.

Frontal airbags are effective in reducing head injury, and more action is needed to increase fitment in all vehicles.

ANCAP must work with international vehicle safety programs and manufacturers to provide consumers with best practice vehicle safety information.

There is a need for ANCAP to investigate other types of vehicle injury crashes to improve consumer safety material.

Review developments, applicability and feasibility of introducing side impact crash tests to enhance consumer vehicle safety material.

ANCAP to continue work with manufacturers and their agents to ensure correct safety information is available to consumers purchasing new vehicles, where overseas safety data may be different due to specification differences.

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