Vehicle Standard (Australian Design Rule 11/00 – Internal Sun Visors) 2006 Amendment 1

Made under section 7 of the Motor Vehicle Standards Act 1989

Explanatory Statement

Issued by the authority of the Minister for Infrastructure, Transport Regional Development and Local Government

February 2008

CONTENTS

1. LEGISLATIVE CONTEXT

Vehicle Standard (Australian Design Rule 11/00 — Internal Sun Visors) 2006 Amendment 1 is made under the *Motor Vehicle Standards Act 1989* (the Act). The Act enables the Australian Government to establish nationally uniform standards for road vehicles when they are first supplied to the market in Australia. The Act applies to such vehicles whether they are manufactured in Australia or are imported as new or second hand vehicles.

The making of the vehicle standards necessary for the Act's effective operation is provided for in section 7 which empowers the Minister to "determine vehicle standards for road vehicles or vehicle components".

2. CONTENT AND EFFECT OF ADR 11/00 - INTERNAL SUN VISORS

2.1. Overview of the ADR

The function of this Australian Design Rule is to specify requirements for internal *'Sun Visors'* to reduce the injury potential of internal *'Sun Visors'* and the adjacent vehicle structure.

2.2. Changes to the ADR

The following changes have been made to the ADR:

- Some clauses have been renumbered and a number of corrections have been made.
- The Alternative Standard clause has been amended.

2.3. Documents Incorporated by Reference

This section lists documents referenced in the vehicle standard and how they can be obtained. The parentheses after the document title indicates where it is referenced.

- Australian Design Rules are available from the Department of Infrastructure, Transport, Regional Development and Local Government or can be downloaded from http://www.infrastructure.gov.au/roads/motor/design/adr_online.aspx.
    - Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories)
- UNECE Regulations are available from their website, http://www.unece.org/trans/main/wp29/wp29regs.html.
    - Regulation No 21

3. CONSULTATION

3.1. Specific Consultation Arrangements for this Vehicle Standard

The specific consultation for this standard involved a 90 day public consultation period including the Technical Liaison Group and agreement from Transport Agencies Chief Executives and Australian Transport Council Ministers. The regulation impact statement was approved by the Office of Best Practice Regulation.

3.2. Regulation Impact Statement

See attached.

Australian Government

Department of Infrastructure, Transport, Regional Development and Local Government

Regulation Impact Statement
for
Standards for Internal Sun Visors

FINAL December 2007

Prepared by: Vehicle Safety Standards
Department of Infrastructure, Transport, Regional Development and Local Government.

Contents

1. STATEMENT OF THE PROBLEM

1.1. Introduction

When a vehicle is involved in a crash, injury may occur to occupants if they make contact with objects in the interior compartment. Requirements to limit injury to occupants from interior sun visors have been in place in Australia for many years. Even with airbag, seatbelt and seat improvements, benefits would be gained by use of less injurious and less hard materials for the construction of sun visors.

1.2. Interaction of occupant protection countermeasures

A concept which is useful in estimating the effect of countermeasures is the fact that any road crash and its injury outcome is the result of a chain of events and if any one link in the chain can be broken, the outcome can be different. Occupant protection countermeasures reduce the extent of injury by reducing the progression from one event to the next. Two effects can arise from a group of countermeasures; one is a multiplicative effect, which applies when countermeasures can act in a sequential manner and the second an additive effect when the countermeasures act in a mutually exclusive manner. Occupant protection measures are inherently multiplicative in nature. If the occupant is restrained, seatbelts will provide some protection in the first instance, before a probable second event involving impact with the steering wheel/column or contact with a deployed airbag if available, followed by a third event possibly involving contact with the sun visor or other parts of the vehicle interior. For an unrestrained occupant, the steering wheel/column or deployed airbag (if available) would be the first line of defence and would have to compensate for the lack of a restraining seatbelt to provide a comparable level of protection.

This demonstrates the effect of occupant protection countermeasures in reducing the risk of exposure to injuries and/or fatalities. In case of the probability of an event where occupants are likely to impact the sun visor, the risk of injury is considerably reduced by a collection of countermeasures, seatbelts providing the initial restraint succeeded by supplementary restraint through inflation of the driver airbag and possibly the passenger airbag and again followed by limited displacement of the steering column. More discussion on this complex subject is provided in section 4.3.

1.3. The Extent of the Problem

Frontal collisions account for over 50% of Australian road trauma. In such collisions, front occupants are exposed to potential impacts with the steering column, sun visors and instrument panel. The risk of injury resulting from impact with a sun visor is substantially higher in case of unrestrained occupants. The current national seatbelt wearing rate is around 95%.

Injuries resulting from impacts with sun visors include head, neck and facial areas. In case of vehicle occupants injured seriously enough in a crash to be hospitalised or killed, head or neck or facial injuries make up about 79% of all injuries (McLean et al, 1997). In case of fatalities, head injuries occur in 66% of all cases and in about two thirds of these, the head injury was the sole cause of death. The upper windscreen header rail (the area protected by a sun visor) is a factor in 2% to 3% of these cases (McLean et al, op cit). It is not known whether these upper windscreen header rail

contacts relate to restrained or unrestrained occupants as both were included in the sample used by McLean et al. However as stated earlier, an unrestrained occupant is far more likely to contact the upper header rail than a restrained occupant.

The overall cost to the Australian community resulting from sun visor impact is difficult to assess due to the complex interaction of multiple safety features. Little research is available on the extent of injuries specifically attributable to sun visor impacts. Nevertheless sun visors remain a serious prospect of injury especially to the 5% of occupants that are unrestrained. If the vehicle is not equipped with energy absorbing sun visors, airbags, seatbelts and safer steering column, injury or death may result from impact with the wind shield header rail.

1.4. Why Is Government Action Needed

The Government provides consumer protection for new vehicle consumers through the *Trade Practices Act 1974* (TPA) and the *Motor Vehicle Standards Act 1989* (MVSA). The areas addressed by the TPA include product safety, product information and liability for defective goods. Consumer protection laws are important for they create a device for increasing equity in market place dealings between consumers and producers of vehicles.

The MVSA provides mandatory vehicle standards which suppliers of new vehicles are required to comply with. The mandatory standards are known as the Australian Design Rules (ADRs). It is important to note that consumers benefit from the functions of the two Acts, the MVSA providing a preventative effect, while the TPA providing both compensatory and preventative effects. The compensatory effect comes through its comprehensive coverage in most areas of consumer protection and the preventative effect through the prescriptions of codes by legislative means.

Australian Design Rule 11 specifies standards for internal sun visors fitted to certain motor vehicles. ADR 11 is intended to reduce the injury potential arising from internal sun visors. It is also intended to reduce the injury potential of the vehicle structure adjacent to or behind the sun visor by requiring the sun visor to be energy absorbing and thus form a padded layer between the occupant and the vehicle structure.

Determining the benefits and costs of using safety devices like sun visors is a complex task, where the relevant risk for any individual is likely to be driven by assumptions about the road environment and driving habits. Individuals will likely encounter serious difficulties in making a well-informed decision about the value of safety devices. In principle, this uncertainty about the benefits of protection could lead to greater or less than optimal societal utilisation of safety devices. It cannot be taken for granted that individuals will not err on the side of too little, rather than too much, protection.

Another basic source of market failure is the presence of market externalities. Road vehicle crashes that result in injuries or deaths because of the failure of individuals to use safety equipment impose costs on the community. In an unregulated market system, all these factors mainly ‘information problems’ and externality effects result in the sub optimal usage of safety devices. These are discussed in greater detail in the externalities section.

In sum, government intervention in the market for delivery of safer vehicles to consumers arises as a result of potential market failure from imperfect information and manufacturer myopia, and externalities.

Imperfect Information and Manufacturer Myopia:

Individual consumers of new and existing vehicles would be able to effectively exercise their safety preferences if they were in a position to accurately assess the safety level offered by different models. The typical consumer does not possess the engineering knowledge or information to make a comparative evaluation of safety devices in vehicles.

The issue of manufacturer myopia is important in regard to vehicle manufacturers who in the absence of standards or regulations could react to market pressures, to the general detriment of safety. In a market based non-regulatory environment it is likely that consumers may need to incur additional costs in an effort to assess manufacturers' claims about the safety of their vehicles.

The lack of sufficient or adequate information available to consumers coupled with the consumer's inexperience to test and/or inability to access vehicles for such tests may warrant government action. The lack of information on the protective features of sun visors for different car models, consumer inexperience and the inability to access vehicles for carrying out tests would lead to consumers making poor decisions if vehicles with inadequate levels of sun visor protection were available on the market.

Externalities:

When motor vehicle manufacturers introduce a vehicle into the Australian fleet, several negative externalities arise which tend to get enhanced in a market based non-regulatory environment. These include:

- Road trauma costs which are borne by the community and not the manufacturer. In a highly regulated environment, road trauma costs the Australian community $6.0 billion in terms of health care.
- Costs in terms of losses in utility to family and friends, losses in productivity to other workers in team oriented job tasks and also from the necessity of hiring and training temporary or permanent replacements,
- Other costs include property damage, and inconvenience to the community,
- The medical treatment of injuries and disability also draw scarce medical resources from other uses, and a significant part of the cost of these treatments falls on the public through increased taxes,
- Medical insurance programs can also introduce distortions and cause a potential problem on efficiency grounds to the extent that they lead to disincentives to the purchase and utilisation of safety devices because individuals do not have to bear the full costs of restoring their health and well-being after accidents occur.

Negative externalities are also likely to emerge when consumers make poor decisions in relation to an optimal level of vehicle safety. In the absence of government based regulation, vehicles with less than the minimum levels of safety requirements may become available to consumers. Such a situation would create a demand by risk takers for very low cost vehicles with few safety features. Although it is reasonable for

consumers to maximise their private benefits through such trade offs, the cost to the community is likely to result in a net cost rather than benefit.

The spill over costs driven by externalities arising from manufacturers introducing less than optimally safe vehicles and poor selection of vehicles by consumers are reflected in increasing expenditures on hospitalisation, a loss of quality of life, property damage, rehabilitation and others, most of which are borne by the community.

In sum, the principal reasons for the difficulties faced by market forces in allocating safer vehicles to consumers, which offer adequate protection from sun visor impacts, are:

- Insufficient/ inadequate information available to the consumer,
- Lack of consumer expertise to make decisions on adequate protection levels,
- Information asymmetries arising from buyer-seller relationship, and
- Negative externalities emitted on community welfare.

1.5. Government Treaties and Obligations

The Australian Government has undertaken to review the ADRs to ensure that they are relevant, cost effective and do not provide a barrier to importation of safe vehicles and components. These objectives are shared by the New Zealand Government, which has been reviewing its vehicle safety standards. The review is being carried out by the Vehicle Safety Standards Branch of the Department of Infrastructure, Transport, Regional Development and Local Government (the Department) together with the National Transport Commission (NTC) and New Zealand Land Transport.

The aim of the ADR review is four-fold:

- to identify whether existing standards are relevant in the light of on-going developments in automotive safety technology, given the fact that some of the standards are in a mature stage,
- if existing standards are relevant, to identify any refinements required to ensure their progression and positive contribution in the standards life cycle,
- to ensure standards do not impose excessive requirements on business, that they are cost effective and take account of community, social, economic, environmental, health and safety concerns, and
- to pursue where appropriate harmonisation with international standards, rather than with regional or national standards.

The review takes account of the provisions of the Trans-Tasman Mutual Recognition Arrangement (TTMRA) Annex 4 – Road Vehicles. While the main object of the TTMRA is that goods sold in Australia could be sold in New Zealand and vice versa, it was acknowledged that there would be difficulties with Trans-Tasman trade in road vehicles, given the different regulatory regimes of the two countries. Road vehicles were therefore granted a special exemption from the immediate application of the TTMRA until the regulatory systems could be aligned. In Annex 4 of TTMRA, the Parties undertook to embark on a cooperation programme aimed, where appropriate, at harmonising Australian and New Zealand standards with United Nations - Economic Commission for Europe (UNECE) Regulations or those national or regional standards that are agreed by the Parties. The Parties also agreed to seek to develop consistent

conformance assessment and certification requirements in both countries. The UNECE is regarded as the international standards setting body, meeting the provisions of the World Trade Organisation (WTO) Agreement on Technical Barriers to Trade, as standards development in the UNECE is open to participation by the international community.

New Zealand and Australia's accession to the 1958 Agreement is consistent with commitments by Asia Pacific Economic Cooperation (APEC) region economies to facilitate trade in automotive product by harmonisation of road vehicle regulations through the multilateral UNECE arrangements. Accordingly, the regional perspective of the TTMRA has been overtaken by APEC-wide developments. There is little to be gained at this juncture in pursuing a programme of bilateral coordination, and bilateral convergence will be a function of the pace at which Australia moves to harmonise its ADRs with UNECE regulations.

2. OBJECTIVES

2.1. General and Specific Objectives

The general and specific objectives of Commonwealth action are to establish the most appropriate measure (s) for delivering safer vehicles to the Australian community. These include:

General Objectives:

- reduce road trauma arising from any potential failure of the market to provide safer vehicles;
- ensure that community, social, economic, environmental, health and safety are not compromised;
- determine what form of action is required, either government intervention or the use of market based instruments.

Specific Objectives:

- eliminate any duplication and overlap arising from ongoing development of frontal protection countermeasures such as sun visors;
- ensure that the new measures provided for frontal impact occupant protection in the form of energy absorption requirements for sun visors do not provide a barrier to importation of safer vehicles.

This particular Regulation Impact Statement examines present Commonwealth Regulations for protection of occupants exposed to the risk of injury from impacts with sun visors. In essence the RIS assesses the relative costs and benefits of both the present, proposed regulations and non-regulatory alternatives.

2.2. Present Government Regulation

ADR 11 applies to all vehicles designed primarily for the carriage of passengers including three wheeled passenger vehicles (LEP category vehicles) but not to MD4 and ME category vehicles (medium and large buses). It also applies to goods vehicles up to 4.5 tonne gross vehicle mass (GVM) including three wheeled goods vehicles

(LEG category). The larger buses and goods vehicles are excluded as windscreens are higher and further forward in these vehicles. The surrounding vehicle structure is much less likely to be impacted by the occupants and sun visors often take the form of a roll down blind that does not lend itself to including energy absorption.

The ADR requires that any part of the sun visor that is statically "contactable" must be covered with energy absorbing material and all rigid material of a sun visor mount that is statically "contactable" must not have edge radii less than 3 mm. The sun visor mount and any rigid material required to support or maintain the sun visor shape shall be of such dimensions to limit the likelihood of injury. Specific requirements also apply to "contactable" mirrors attached to sun visors.

"Contactable" for the purposes of ADR 11 is defined as any part of the sun visor or mounts that can be touched by a 165 mm diameter sphere in any position that the sun visor can be placed when it is mounted in the vehicle. This includes both sides of the sun visor.

The test for energy absorption involves placing the sun visor (or a suitable sample) on a rigid anvil of at least 300 kg mass and impacting it at right angles with a head form of 6.8 kg mass at a minimum velocity of 3.5 m/s (12.6 km/h). In this test the head form shall not have any deceleration greater than 80 g for more than 3 milliseconds and no deceleration greater than 200 g.

The provisions of ADR 11 apply to any sun visor mounted above the inside of the windscreen no matter how far it is away, in the subject vehicle, it is from the occupants.

ADR 11 includes part of ECE R21 Interior Fittings, as an acceptable alternative. The ADR deems that the energy absorption test for sun visors in ADR 11 has been satisfied if the Energy Dissipation Test of Annex 4 of R21 has been met when the sun visor is mounted and correctly positioned in the vehicle.

While the ADRs apply to new vehicles, which must comply before they can be supplied to the market, once put into use the vehicles must comply with the in-service regulations administered by the states and territories. The general principle applied by the states and territories is that vehicles produced in compliance with ADRs applicable at the time of manufacture must continue to comply with those ADRs. In 1999, the NTC (National Transport Commission) published the Australian Vehicle Standards Rules (AVSRs) with the aim of providing a set of national uniform in-service vehicle rules and all jurisdictions agreed to implement the AVSRs.

The AVSRs have preserved the general principle of continuing compliance with the ADRs but also make particular provisions in areas not covered by the ADRs. There are also particular provisions relating to some areas that are covered by ADRs, in recognition that as vehicles age, continued compliance is not practicable. Another area where departure from the general principle is allowed is to accommodate established practices such as window tinting and alternative tyre selection. The AVSRs require that vehicles continue to comply with ADR 11. If ADR 11 were to be repealed, the states and territories may apply an in-service standard via the AVSRs as a replacement.

3. OPTIONS

The measures available to promote safer vehicles to consumers can be classified as government intervention or regulatory options and non-government regulatory options such as the use of market based instruments. This second group is also referred to as non-regulatory options as although they may regulate the market, measures are not imposed by a government regulator.

3.1. Regulatory Options

The five most obvious options for future legislation are:

- Option 1[1]: retain the present ADR 11 requirements with Annex 4 of ECE R 21 as an alternative standard for energy absorption requirements of sun visors,
- Option 2; adopt UNECE R21 in place of current ADR 11 requirements for sun visors,
- Option 3; delete ADR 11
- Option 4: adopt UNECE R21 as a complete interior impact protection standard.
- Option 5: allow American and Japanese standards as alternatives

UNECE R21 covers a range of interior fittings, including sun visors. The regulation applies different standards to objects in front of occupants depending on whether they are within the reference zone[2] or not. Objects outside the reference zone are generally not required to be energy absorbing so, in UNECE R21, a sun visor outside the reference zone does not have to be tested to Annex 4 to be considered acceptable (even some objects within the reference zone are not required to be energy absorbing if, in the Annex 4 test, other objects outside the reference zone are contacted in the test).

The current use of UNECE R21 as an alternative standard (ADR 11 clause 11.4) is conditional on the sun visor being tested to Annex 4 if, in any position, any part of it is contactable by a 165 mm diameter sphere pivoted on an arm from the "H" point such that the top of the sphere is up to 1000 mm from the pivot point. This 1000 mm appears to come from the provision in Annex 4 to extend the arm of the test machine up to 1000 mm if necessary to make contact with the object.

The Annex 4 test uses a 6.8 kg head form pivoting on an arm up to 1000 mm from the "H" point which has a velocity of 24.1 km/h (19.3 km/h for parts covering air bags) at the time of contact with the object under test. This velocity is almost double the ADR 11 impact speed but in the Annex 4 test the impact direction is tangential to the direction of travel of the head form at the moment of contact (not perpendicular to the surface being tested as in ADR 11) so the impact could be a much milder glancing blow. The same deceleration criterion as in ADR 11 is applied except that there is no absolute upper limit of 200 g as in ADR 11.

In UNECE R21, a sun visor could (and sometimes does) meet the Annex 4 test requirements as a result of the energy absorption properties of the structure behind it. In this situation the performance of the installation may be much better than an ADR 11

[1] Note: This option only accepts Annex 4 (Test procedure for energy absorbing material) of UNECE R21. Other parts of R21 do not form a part of the alternative standards for ADR 11.

[2] The reference zone or head impact area is defined as any surface that may be contacted by a 165mm diameter sphere when it is pivoted on an arm from the "H" point such that the top of the sphere is anywhere between 736 mm and 840 mm from the pivot point.

sun visor where the ADR 11 sun visor, when lowered, leaves a rigid windscreen header rail exposed. Conversely, the ADR 11 sun visor, when lowered, provides energy absorption for the upper part of the windscreen whereas the UNECE R21 one would not. However, this latter benefit of the ADR 11 system is likely to be very small as it is estimated that sun visors are in the up position over 99% of the time.

Despite the higher test velocity of UNECE R21 Annex 4, the real world crash performance of UNECE R21 sun visors may not be any better than ADR 11 sun visors. In fact, they may be worse as it is rare for a vehicle occupant to impact the sun visor or windscreen header in the direction used for the Annex 4 test. This test appears to assume pivoting around the "H" point more typical of a person in a lap belt (commonly most seating positions will have a lap-sash belt). Unrestrained occupants and those in lap sash seat belts are more likely to impact the sun visor or windscreen header in a generally horizontal forward direction in frontal impacts and perhaps even perpendicular to the surface in roll over crashes.

The fourth option is a comprehensive interior impact protection standard which encompasses sun visors, instrument panel and control items located in the interior compartment. Option 4 is perhaps the most effective way for complete harmonisation with UNECE R21. At this stage it is difficult to implement because UNECE R21 is itself under a review by the World Forum for the Harmonization of Vehicle Regulations (WP.29). The complete adoption of UNECE R21 is capable of generating superior benefits rather than the isolated adoption of sun visor requirements in ADR 11. This option is not considered feasible until WP.29 completes it review.

The fifth option involving the use of standards applying in the United States of America and Japan as alternative standards may seem like viable alternatives but closer examination proves otherwise. The allowance of alternative standards is only of real benefit where compliance with those standards can be easily verified by the issue of authoritative certificates of compliance or the standards are materially different and vehicles would need to be modified to comply with the chosen standard. In the case of sun visors, neither of these conditions applies.

The United States standard, FMVSS 201, is a head impact protection standard which, similar to ECE R21, covers a range of interior fittings such as the instrument panel (covered by ADR 21), seat backs, glove box and armrests in addition to sun visors. It appears that, despite attempts over the years to strengthen that standard, sun visors are only required to be covered with energy absorbing material (not defined) and have no sharp edges, a requirement already covered in Australian ADRs. The US full frontal impact standard is carried out with unrestrained test dummies therefore, if there is any contact within the zone including the sun visor, the effects will show up in the test result. In comparison, the Australian full frontal impact test is carried out with restrained dummies and does not afford the opportunity to test the energy absorbing properties of sun visors.

As the US government does not get involved in pre-market approval of vehicles, there is no approval certification available for vehicles claiming compliance with the US interior impact standard.

Japan is a contracting party to the UN ECE (as is Australia) and if it decides to adopt UN ECE R21, any approvals issued by Japan will be accepted in Australia without the

need for additional approval activities. Presently the Japanese domestic standard applies to vehicles destined for domestic and export markets. The Japanese government does not issue certificates of approval for vehicles built for export markets and it will be up to the Australian vehicle safety regulator to confirm compliance with a standard.

Maintenance of alternative standards is another issue that seriously erodes the regulator's efficiency to mange the administrative functions as a result of the need to continuously examine ADR amendment proposals to maintain the currency of the ADRs in relation to the alternative standards. The process for amending an ADR to allow compliance with an amended alternative standard typically involves assessment of the technical differences and preparation of a proposal for consideration by the advisory group responsible for ADR development. Following this stage, depending on the nature of the change, the proposal may need to be submitted to the Chief Executives of the State/Territory Departments of Transport for their consideration. If they agree with the proposal, the amendment needs to be approved by the Australian Transport Council and finally the amendment needs to be determined by the Minister for Infrastructure Transport and Regional Development and Local Government under section 7 of the *Motor Vehicle Standards Act 1989.*

The above process could take up to 3 months if all goes well. However, priorities of the day may not allow immediate processing of requests so the actual time taken could be up to 6 months. In the mean time, manufacturers would not be able to progress compliance of components and vehicles certified to the amended alternative standard. The total cost of this activity is difficult to determine as it involves people from many other organisations.

The three most obvious options for future legislation are to retain the present ADR, delete it or adopt the international standard UNECE R21. Viable alternatives appear to be:

- Option 1: Retain ADR 11 as is (including the Annex 4 requirement of the UNECE R 21 requirements as an alternative standard);
- Option 2: Adopt UNECE R21 in place of ADR 11; and
- Option 3: Delete ADR 11 in which case states and territories would introduce (1) uniform standards or (2) non-uniform standards.

3.2. Non-Regulatory Options

Non-regulatory options form an important part of the compensatory arrangements for consumer protection in addition to the prevention part provided by a design rule and possibly by the TPA. Non regulatory options can be classified into *three* categories: *one*, using market forces fully supervised with the use of the *Trade Practices Act 1974*, *two*, public information campaigns and *three*, use of an industry code of practice.

The following non-regulatory options in relation to sun visors have been examined. On casual inspection sun visors appear simple to inspect, however there are fairly detailed tests using precision equipment to determine whether sun visors meet the minimum levels of protection. It must be emphasised at this stage that sun visors would not be a limiting factor in guiding buyer behaviour.

3.2.1. Market Forces and *Trade Practices Act 1974*

Manufacturers delivering unsafe vehicles into markets in the absence of mandatory standards would suffer a loss of sales and reputation if the market has well developed market information systems. to advise consumers if a particular make or model of vehicle was unsafe.

Such information systems may be operated by competing manufacturers, motoring associations and insurance companies who would have an incentive to draw this information to consumers.

ADR 11 represents a relatively small but significant part of the occupant protection system for a motor vehicle that is generally acceptable to the market and meets consumer expectations. The introduction of airbags can result in a potential risk for unrestrained occupants as compared to that for unrestrained occupants in non-airbag vehicles. It is generally thought that the kinematics of unrestrained occupants under the influence of an inflating driver/passenger and side airbags is likely to be different from that without an airbag. This is because of the enhanced possibilities of unrestrained occupant movement resulting from a collection of inflating airbags leading to a higher risk of impact with a sun visor. The absence of ADR 11 could result in loss of assurance for consumers that sun visors fitted in vehicles and supplied to the market provide an appropriate and adequate level of vehicle safety. The spill over costs of non-intervention by the government in the market could potentially increase road trauma, property damage and community anxiety from the less safe road environment.

- Recourse under Section 65F – Compulsory product recall and Part VA – Liability of manufacturers and importers for defective goods of the TPA has a compensatory effect for consumer protection. The ADR or mandatory/voluntary code prescribed under the TPA has a preventative effect as it prevents a supplier from placing unsafe vehicles on the market. Given the high-risk nature of car travel and the community costs when fatalities or injuries occur, it may not be appropriate to rely on a compensatory measure but rather to have a preventative measure such as an ADR or code prescribed under the TPA.

- Part VA of the Trade Practices Act provides a well-defined right for consumers to sue for damages, which places pressure on vehicle manufacturers to avoid large compensation payouts by making their vehicles safer,

Full reliance on the consumer protection provisions of the TPA without the use of an ADR or code of practice prescribed under the TPA and state and territory government sponsored information programs are likely to result in the following effects:

- Most consumers do not possess the knowledge or means to assess the safety aspects of sun visors available in the market. As, a full-scale test is the only appropriate way to assess the effectiveness of sun visors, consumers would accept whatever the market had to offer. The externality arising from the placement and consumption of inappropriate sun visors is an increase in trauma for consumers and spill over costs to community from injuries and fatalities arising thereof. The advantage of an ADR for sun visors is that it prevents unsafe sun visors from making their entry into the market.

- Lack of a definitive regulation could result in modest cost increases (promoting safety aspects of sun visors) as responsible sections of industry would still incur

the overall cost of design, development, styling and testing whether or not there were regulations. The absence of a mandatory standard makes it difficult to apply the provisions of the TPA and which could lead to the threat of litigation which may cause manufacturers to improve safety standards and hence may be of benefit to the consumer or society

- In the absence of regulation, states and territories may introduce their own standards potentially leading to lack of uniformity, undue jurisdictional requirements for consumer standards. This would result in additional testing and assurance procedures and hence additional costs to industry and eventually the consumer.

While safer vehicles could be achieved by market forces acting together with information programs and the compensatory provisions of the TPA, of paramount importance is the need to prevent unsafe vehicles from entering the market. Use of the TPA is a reactive measure that will not prevent the introduction of unsafe vehicles.

3.2.2. Public Education Campaigns

Public education campaigns can be effective where the information being provided is simple to comprehend and unambiguous. If public information campaigns based purely on the ADR requirements were freely available, most consumers would be unable to comprehend the technical content and make decisions about the safety aspects of a specific vehicle's steering column. A campaign targeted to the typical consumer would be just as ineffective as without the technical content the campaign would be nothing but flashy advertising and an inefficient use of public money.

In these situations, where the majority of consumers are unable to make informed decisions regarding particular technical aspects of a product, such decisions are left to the manufacturer (if consumers trust the manufacturer) or to a government nominated regulatory authority (if the product is regulated). In the case of the automotive industry, the majority of safety related decisions reside with a regulatory authority. It is for the above reasons that public education campaigns on car safety have not enjoyed much success among vehicle buyers.

One simplification that would assist the consumer is the use of rating system. This allows complex technical information to be assessed by experts and then be presented in a way that the typical consumer will understand. The difficulty with a rating system is that the more important features such as crash protection would dominate and it is doubtful that consumers would be able to focus on individual components (for example, when compared with frontal crash protection, the quality of rear vision mirrors will seem less critical). Alternatively, each safety system would have to be rated separately and consumers would have to establish their own priorities as to which safety systems are more or less important in the final decision. It has already been stated above that most consumers are not in a position to make such decisions. It is unreasonable to expect consumers to assess the merits of each component and make an informed decision. A rating system, the Australian New Car Assessment Program (ANCAP), is currently being successfully used in conjunction with the existing ADR system.

Although ANCAP carries out tests similar to those presented in some of the ADRs, there are several major differences. Up until 1999 a full frontal collision (driving the

front of the vehicle into a stationary object) was also carried out at an impact speed of 56 km/h, 8 km/h higher than that required by ADR 69. The expectation was that the higher speed would magnify the differences between cars and provide consumers with a better picture of the relative performance of these vehicles (Explanation of ANCAP Test Procedures 2005).

ANCAP and the ADRs currently work in a complimentary fashion. While the ADR provided baseline performance requirements such that consumers are assured that all vehicles perform to a legislated level, ANCAP provides supplementary information to help consumers make informed choices in purchasing vehicles, if they care to consider the relative safety performance in making that choice.

The ADR provides consumers with the assurance that all vehicles will perform to a minimum acceptable level. In the absence of the ADR and in reliance on ANCAP alone, no such assurance would be available, as there would be no legal compulsion to perform well in the ANCAP tests. Manufacturers may well pursue a good ANCAP result but this cannot be guaranteed.

Furthermore, there is no guarantee that such programs will continue in their current form. Full frontal impact tests were originally carried out at a higher speed than the ADR required and ceased in 1999 in favour of offset frontal impact tests. This is a prime example that although the ANCAP can provide valuable information, it is prone to change from time to time and does not offer the stability and continuity of government regulation. Testing is further limited by the cost of carrying out tests. Each test involves the purchase of a vehicles which could be anywhere from $15 000 for a small car, up to above $60 000 for a four wheel drive. This financial constraint means that it is unlikely that all available vehicles would be tested, making ANCAP of limited use to consumers.

Organisations such as ANCAP are more suited to inform on overall vehicle safety rather than the safety provided by particular systems. It would be difficult to package the information in a manner that the average consumer would understand as in order to present safety data on individual features the current safety index would not be usable. On the other hand, consumers would not appreciate being inundated with detailed test results that are time consuming and difficult to comprehend.

3.2.3. Voluntary Code of Practice

Another alternative to direct government intervention for delivering safety outcomes is via a code of practice. These can be either mandatory or voluntary as provided for under the *Trade Practices Act 1974*.

Part IV B – Industry Codes, of the TPA allows the development of mandatory and voluntary industry codes. Under section 51AE of the TPA, regulations may prescribe an industry code or specified provisions of the code and the industry code may be declared mandatory or voluntary. Prescriptions will apply the remedies to those who contravene such codes. These remedies include: injunctions, damages, orders for corrective advertising and refusing enforcement of contractual terms.

Of course a mandatory code of practice is hardly a non-regulatory option because participation and compliance are mandatory and the TPA provides for prescriptions and

remedies including injunctions, damages and orders for corrective advertising for those who contravene such codes. Mandatory codes can be enforced under the TPA against all businesses in the automotive sector regardless of whether they are signatories to the code.

A feature of such prescribed codes is that they retain a high degree of industry involvement while providing the enforceability and coverage that can be ensured only through legislative means. However, breaches can only be revealed by failures in the field or by third party reporting and any savings through avoiding government intervention need to be balanced against the consequences of failures.

The use of codes prescribed under the TPA is an effective means of regulation in areas where government agencies do not have the expertise or resources to monitor compliance. In case of regulating the design and construction of motor vehicles, the responsible government agency (Department of Infrastructure, Transport and Regional Development and Local Government) has the expertise and resources to administer a cost effective compliance regime and a mandatory code of practice is unnecessary.

The arrangements for administering the compliance regime have recently been reviewed and endorsed as part of the review[3] of the *Motor Vehicle Standards Act 1989*. Among the options examined was that in place in the US which involves the regulator purchasing vehicles in the open market and conducting its own testing program. The task force noted that:

- This activity involves high costs. In the US for example a budget of approximately USD 25 million is provided, and
- In the event that vehicles are found not to comply with mandatory standards, action is taken by the regulatory authorities either in courts or through mandatory recall. Resolution in the courts can be a lengthy process during which potentially unsafe vehicles can remain in the market.

With voluntary codes of practice, given that there is no compulsion to participate or comply with the nominated standards, there needs to be some incentive to encourage operators to take part. A voluntary code would only apply to those agents who are willing to be bound by it. Industry associations could assume a supervisory role and persuade its members that participation and compliance is preferable to the more onerous alternative of direct government intervention, both in relation to setting mandatory standards and enforcing them.

Also, the associations would be in a position to negotiate special status for their members in recognition of their voluntary compliance with the code. This could include access to schemes to maximise productivity gains such as in the case of driving hours regulation, where bus operators complying with the code for sleeper berths can operate on longer routes and share the driving between two drivers. The same arguments that rule against adopting mandatory codes for regulating vehicle safety apply in the case of voluntary codes of practice. Despite the inappropriateness of codes

[3] Review of *Motor Vehicle Standards Act 1989*, Department of Transport and Regional Services, August 1999. The review analysed the use of self regulation and self-certification as alternatives to the current system and concluded that the costs of the new proposals outweighed the benefits.

of practice as a form for enforcement of standards, the possibilities of using a code of practice are explored further in the discussions below.

The motor vehicle industry delivers new vehicles and used vehicles to automotive consumers. New vehicles are delivered from domestic production as well as from foreign production carried out in overseas plants. Imported used vehicles are mainly sourced from Japan. There are two industry associations, which represent a large collection of manufacturers in the new vehicle industry; these include the Federation of Automotive Product Manufacturers (FAPM) and the Federal Chamber of Automotive Industries (FCAI). Membership coverage by FAPM would approximate 40% while that of the FCAI would be around 99%[4], which also includes importers.

For a voluntary code of practice to succeed, the relationship between business, government and consumer representatives should be collaborative so that all parties have ownership of, and commitment to, the arrangements (Grey Letter Law, 1997)[5]. In considering a code of practice, it is useful to note the following conditions, which exist in the automotive industry. These include:

- Universal application of standards is relatively difficult as numerous sectors exist and which in turn are represented by their own industry associations,
- It is not clear whether the industry associations can apply effective sanctions,
- Effective operation of a voluntary code of practice would require an enforcement system identical or similar to the one currently operated by the government regulator. This requires the members of the associations to provide evidence to their associations as currently required for obtaining an approval. It is quite difficult to envisage an environment where profit maximising companies would share information with their industry associations to enable the system to deliver certainty to consumers and governments.

An example of a code of practice applying in the automotive industry is the FCAI's code of practice for Electromagnetic Compatibility (EMC). This code of practice applies exclusively to FCAI members and while compliance with the nominated standards is mandatory, as prescribed by the Australian Communications Authority (ACA) for electromagnetic emissions from electronic devices under the Radio Communications Act, the Authority relies on the FCAI to ensure that its members comply. In this case it is understandable that the ACA has opted for a code, given the vast scope of its sphere of responsibility, as it covers all electronic equipment producers and the costs of direct Government supervision over all sectors would have been prohibitive.

Although it is called a Voluntary Code of Practice, there is no option but to comply with the nominated mandatory standards and while the ACA is willing to rely on the FCAI to enforce compliance by its members, the full weight of the law would come down on those who fail to comply. Therefore it would appear that this code fits in with the concept of a mandatory code of practice.

[4] Membership base of the FCAI includes vehicle manufacturers and the FAPM. It does not include sectors such as tyre manufacturing, vehicle distribution, transport logistics and after market supplies.
[5] Grey Letter Law, Report to the Commonwealth Interdepartmental Committee on Quasi Regulation, 1997

Since the issue of providing safer vehicles is high risk-high impact in nature, there does not appear to be any scope for adopting a voluntary code of practice. As discussed previously in relation to a mandatory code of practice, the standards setting component is no different to what is being examined in this RIS, while the enforcement component is beyond the scope of this RIS, having been previously determined under the review of the *Motor Vehicle Standards Act 1989*. The presence of mandatory standards is one of the main reasons why codes of practice do not operate and there would be great incentive for their development in the absence of standards.

4. IMPACT ANALYSIS

4.1. Introduction

Some 790 000 new vehicles to which ADR 11 applies are sold in Australia each year. These vehicles are produced by 46 different manufacturers and cover about 260 different models. In essence there are four domestic manufacturers which are subsidiaries of their American and Japanese parent organisations. These manufacturers – importers carry around 10 to 12 product lines which on an average accommodate 4 models and therefore account for over 50% of the new vehicle market which includes 180 models (including off road vehicles). Four large importers account for over 25% of the market (40 models) while the remaining 39 manufacturers account for 40 models.

Only impacts in Australia are considered.

4.2. Identification of Affected Parties

The parties affected by ADR 11 are:

- Domestic vehicle manufacturers who are also importers;
- Vehicle importers (includes foreign manufacturers and their representatives):
- vehicle owners;
- vehicle occupants; and
- Governments.

The affected parties are represented by several interest groups:

- the Federal Chamber of Automotive Industries, which is an all encompassing group representing the interests of the manufacturing sector. This includes vehicle manufacturers, vehicle importers and component manufacturers/importers;
- the Australian Automobile Association (AAA) which is considered representative of vehicle owners and vehicle users (passenger cars and derivatives) through the various automobile clubs around Australia (RAC, RACV, NRMA etc),
- Commercial vehicle owners/operators who are represented by the Australian Trucking Association (ATA);
- Australian Automobile Aftermarket Association (AAAA), Australian Road Transport Suppliers Association (ARTSA) and other interest groups, which represent economic agents operating largely in the after market industry,
- special interest groups that exist to represent specialist component and whole vehicle manufactures, and uses of various vehicle types.

4.3. Effect on Existing Regulations

This regulation forms part of an occupant safety package, which contains eight ADRs[6]. These vehicle standards need to be viewed in terms of the diversification of risk they bring about. Although it is difficult to demonstrate, the net result would be to produce a lower risk than would be possible if the regulations had an individual additive effect. The occupant protection safety ADRs operate in conjunction with other vehicle standards such as traction, structures and vision to reduce the overall risk of injury and fatality to vehicle occupants.

In considering the interaction between the occupant protection ADRs, including trauma resulting from inappropriate sun visors, steering column intrusions, ADR 69 with and without airbags and ADR 73, the following observations arise.

- ADRs 10 and 11 assume the occupant is not restrained;
- Even restrained occupants would benefit from ADRs 10 and 11 because seatbelts must incorporate some "give" under load, which could bring the occupant within the impact zone of a sun visor in a frontal impact.
- ADR 69 assumes the occupant is restrained
    - ADRs 10 and 11 would cover those occupants that are not restrained,
    - Airbag equipped ADR 69 complying vehicles are exempt from ADR 10,
- ADR 73 assumes the occupant is restrained,
    - ADRs 10 and 11 would cover those occupants that are not restrained,
    - Airbag equipped ADR 73 complying vehicles are exempt from ADR 10.

The benefits of ADR 11 are primarily to unrestrained occupants. While there are also some benefits for restrained occupants, the impact analysis only assumes benefits for unrestrained occupants.

An analysis of the three options meriting further consideration reveals the following;

- Option 1: retain the present ADR 11 with Annex 4 of ECE R 21 as an alternative standard for energy absorption requirements of sun visors,
- Option 2; adopt UNECE R21 in place of ADR 11, and
- Option 3; delete ADR 11.

4.4. Categories of Expected Impacts

4.4.1. General impacts

Option 1 would retain the present position, which involves:

- present compliance costs for vehicle manufacturers;
- provide present road trauma benefits for vehicle occupants.

Without real world crash data comparing the outcomes in UNECE R21 and ADR 11 vehicles the difference in performance of sun visors as a result of the different test

[6] ADRs 10, 11, 21, 29, 34, 69, 72, 73

standards are difficult to assess. However, it is likely that road trauma could increase under Option 2 because:

- ADR 11 is the most stringent present world standard; and
- sun visors in UNECE R21 do not have to be tested but may be contacted by unrestrained occupants.

Option 2 would increase compliance costs for some vehicle manufacturers because of the nature of the UNECE R21 test.

Option 3 would eliminate compliance costs for vehicle manufacturers but may increase road trauma. The extent of the trauma increase would depend upon the extent of change to present practices in sun visor design.

4.4.2. Quantification of impacts

No research has been undertaken into the safety benefits of padded sun visors. However, research by Kahane (1988) for the National Highway Traffic Safety Administration (NHTSA) concluded that changes to dashboards about the time FMVSS 201 was introduced reduced fatality and injury risk for unrestrained front seat passengers by nearly 25%. Padding was a major change introduced at that time. The research did not find benefits for unrestrained drivers, probably due to the predominance of the steering wheel as an injury cause. For restrained occupants, Kahane did not find any benefits. In low speed crashes, where padding and other changes are most beneficial, a restrained occupant will be unlikely to contact either the dashboard or the header rail.

If the findings from the research done by Kahane are applied to sun visors, it is likely that padding of sun visors would produce a 20% benefit. A 5% reduction in benefit for sun visors as compared to that for instrument panels is applied to account for a higher level of risk arising from the movement of the head against the sun visor as the header rail is first in the path traced by the head and upper body. The applied reduction would also depend upon the speed of collision.

The header rail is a factor in 2% to 3% of head injuries causing death, while head injuries cause 66% of all fatalities. Therefore, it can be assumed that the header rail accounts for between 1% and 2% of all fatalities and probably of all road trauma. If the padding produces a 20% benefit, the value of ADR 11 in road trauma terms is likely to be in the order of:

20% of header rail trauma = 20% x 1% of all trauma

With total trauma of about $6 billion annually, the benefit of ADR 11 is therefore 20% of 1% x $6 billion, i.e. $1,200,000 annually.

Concerns have been expressed about the energy absorbency of sun visors complying with UNECE R21. Apparently these relate to the possibility of a glancing blow rather than the perpendicular blow in the ADR 11 test. In a real world crash, with the sun visor in the up position, a glancing blow is more probable because of the angle of the sun visor. This is the situation in 99% of cases where the sun visor is up. With the sun visor down, the contact would be more perpendicular and therefore better controlled by ADR 11 but the header rail is left unpadded and exposed. At worst, about 5% to 10%

more trauma would be likely if the less stringent requirements were adopted, reducing benefits by between $60,000 and $120,000 annually.

Other NHTSA research (NHTSA 1992a and 1992b) suggests that even with air bags fitted to all vehicles there are still benefits from providing upper interior impact protection. This research related to padding of the interior, not just sun visors, and therefore may relate to side rail, roof and pillar contacts.

Benefits of Option 3 in relation to trauma will depend on the extent to which vehicle manufacturers modify sun visor design. Although not a high cost item, some manufacturers in highly competitive markets would likely consider changing to less costly sun visors, although legal liability issues may reduce the extent of any changes. It is estimated that about 40% of road trauma benefits would be retained, about $480,000 per annum.

In terms of industry compliance costs, it is estimated that a full ADR 11 test costs about $500 and submission of evidence would cost a similar amount. Certification to UNECE R21 is estimated to cost $9000 per model but UNECE R21 covers much more than sun visors and therefore an indicative cost of $3000 has been used.

Another aspect of UNECE R21 costs is that they are more specific, i.e. tests are required for each model. ADR 11 is a stand alone test and can be used for a variety of different and successive models. Therefore, while some 150 models require compliance with ADR 11 at any one time, only about 30 certifications per year are presently required. Under UNECE R21, it is estimated that about 50 models per year would require certification.

It is estimated that 30% of the certifications use the ADR 11 Alternative Standard allowing testing to Annex 4 of UNECE R21. This analysis therefore assumes that presently 21 ADR 11 test per annum are required and 9 models rely on UNECE certifications. If UNECE R21 was introduced, an additional 20 tests would be required each year.

Therefore, industry compliance costs of the 3 Options are as follows:

Option 1 (retain ADR 11)	4.4.2.1. = 21 x $1 000 + 9 x $500
	4.4.2.2. = $25 500
Option 2 (adopt UNECE	4.4.2.3. = 41 x $3 000 + 9 x $500
R21)	4.4.2.4. = $127 500
Option 3 (delete ADR 11)	4.4.2.5. nil

In addition, costs would be incurred for Government supervision of the compliance system.

4.4.3. Summary of impacts

The summary of relative quantified benefits and costs shown in Table 1 and the consequences for affected parties are shown in Table 2.

Table 1: Summary of Relative Benefits and Costs (per annum)

	Option 1 retain ADR 11	Option 2 adopt ECE R21	Option 3 delete ADR 11
Benefits			
road trauma	$1,200,000	about $1,100,000	say $480,000
Costs			
total compliance costs	about $27,000	about $130,000	nil
Net benefits (costs)	about $1,173,000	about $970,000	about $480,000

Table 2: Impacts on Affected Groups

Affected group	Option 1 retain ADR 11	Option 2 allow alternatives	Option 3 delete ADR 11
vehicle manufacturers (including importers)	present certification costs are retained	increased compliance costs for some manufacturers	no compliance costs
vehicle owners	present certification costs are recovered from owners	increased compliance costs likely to be passed on	no certification costs to pass on
vehicle occupants	no change in road trauma	possible increase in head strike trauma on the header rail by possible reduced trauma if ECE R21 produces other benefits	probably greater road trauma than at present
Governments	present compliance supervision costs are incurred	present compliance supervision costs are incurred	compliance supervision costs are not incurred

It is useful to consider the likely response of the market to occupant protection in the absence of a sun visor regulation. Several observations arise, some of which are summarised below:

- The demand for independent assessments of the injury reduction potential of sun visors in particular and vehicle safety performance in general is not high. This is likely as a result of the strong presence of vehicle safety regulations, which have enjoyed a high level of acceptance by consumers, manufacturers and community organisations.

- Consumers are particularly confident of current arrangements in delivering vehicles with safe sun visors to the market. In the absence of current arrangements, two possibilities emerge. If consumers value safe sun visors, there will be an incentive for manufacturers to make available safe sun visors. Consumers in the small car segment tend to be unwilling to pay for safety features and to remain competitive, manufacturers offer features which consumers have a willingness to pay. Recent advertisements featuring safety features in small cars launched by European car manufacturers in Australia indicate that small car consumers are gradually accepting the importance of safety features. However it will take some time before medium and large car consumer acceptance levels for safety are reached in the small car segment.

- New institutions may emerge to supply consumer with safety information while existing institutions may increase their activities in relation to information delivery. Institutions disseminating information may demand compensation for their services. If their services are available freely the issue of bias arises as some of these institutions could be sponsored or owned by vehicle manufacturers or other special interest groups.

- As discussed earlier, it is likely that market forces need to be supplemented by public education programs and government regulation to reduce the negative externalities imposed on the community.

4.5. Discussion of impacts

The quantitative and qualitative assessment of benefits and costs above indicates that options 1 and 2 are similar while option 3 has a lower overall benefit. The difference between the direct benefits and costs of options 1 and 2 are small but there is a clear indication that option 2 would increase compliance costs and possibly increase road trauma costs. The three non-regulatory options (3, 4 and 5) could not ensure that there would be no increase in road trauma.

5. Consultation

Development of the ADRs is the joint responsibility of the Vehicle Safety Standards Branch of the Department of Infrastructure, Transport and Regional Development and Local Government and the National Transport Commission and is carried out in consultation with representatives of the Australian Government, State and Territory Governments, representatives of the manufacturing and operating industries, road user groups and experts in the field of road safety.

In carrying out the ADR Review, a number of Single Issue Working Groups (SIWG) were established to consider proposals for the revised system. The Group that considered ADR 11 agreed that Australia should harmonise with UNECE R21. The Occupant Protection Single Issue Working Group was charged with reviewing existing and future performance requirements for enhancing occupant safety. A list of organisations that participated in the Single Issue Working Group is presented in Appendix 1.

5.1. Public Comment

The proposal was circulated for 90 days public comment from November 2000 to February 2001. The Motor Traders Association of Australia (MTAA), Australian Automobile Association (AAA) and the Federal Chamber of Automotive Industries (FCAI) accepted the proposal to retain ADR 11 and harmonise with UNECE R 21 (Option 2). However, in subsequent discussions with the FCAI, it became evident that they were not in favour of harmonising completely with UNECE R21, but only in respect of the sun visor requirements. While adopting UNECE R21 in total is expected to deliver a net benefit in this area, the sun visor requirements alone are inferior to the current ADR 11 requirements. The FCAI pointed out that UNECE R 21 was currently under review and indicated that members wished to postpone a decision on complete harmonisation until after the review was completed. They agreed that until then the

status quo should be retained for ADR 11, which is Option 1. The net benefits for sun visors alone are greater for Option 1 than for the other options.

The Australian Automobile Association suggested adopting ADR IIP[7] so long as there was no reduction in safety benefits with the withdrawal of ADRs 11 and 21. The Motor Traders Association also agreed to adopt ADR IIP with a phase in period of two years. The FCAI did not agree to the phasing out of ADR 11 in favour of the proposed ADR IIP/00.

5.2. TACE Comment and Departmental Response

Following public comment, the package comprising the draft RIS and draft amendments to ADR 11/00 was provided to Transport Agencies Chief Executives (TACE) for review. The package provided to TACE incorporated changes resulting from public comment.

All Australian states and territories and New Zealand supported Option 1 – Retain ADR 11/00 and accept Annex 4 of UNECE R21 as an alternative standard (see Appendix 2). Editorial errors as advised by the ACT Department of Urban Services where appropriate have been corrected.

5.3. Australian Transport Council

At the June 2005 Australian Transport Council (ATC) meeting, transport Ministers endorsed a recommendation that broadly supported, non-contentious, UNECE harmonised proposals could proceed directly to determination following public consultation. The public comment process is used to determine whether this proposal qualifies as a non-contentious item and whether further consultation would be necessary. As there was a desire expressed at the public comment stage to await the result of the review of UNECE R21 and support for retaining the existing ADR 11 requirements at TACE, amendments to ADR 11/00 will not be presented to ATC.

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This Regulation Impact Statement has considered both the regulatory and non-regulatory options available to reduce sun visor impacts arising from frontal crashes. The non-regulatory options appear to meet some of the secondary objectives but fall short of the primary objectives particularly in averting market failure and reducing any unnecessary cost to the community.

Option 1, retain ADR 11, has the highest apparent net benefits. However, UNECE R21 deals with the total interior including sun visors, which is covered in the present ADRs only by the general requirements of ADR 42. It is possible that road trauma benefits would result from adoption of UNECE R21 in total and that the cost differential between Options 1 and 2 would be reduced. In addition, greater benefits may flow overall by adoption of UNECE R21 than is apparent solely by considering sun visors.

[7] ADR IIP – Interior impact protection would to combine ADRs 11 and 21 which would achieve full harmonisation with UNECE R21. This is what option 4 intended.

If ADR 11 was deleted (Option 3), compliance costs would be avoided but it is likely that some increase in road trauma would result.

A proposal combining Options 1 and 2 by retaining ADR 11 but allowing compliance with UNECE R21 as an alternative standard without the need for doing the Annex 4 energy absorption test if the sun visor lies outside the UNECE R21 strike zone was circulated for public comment. This option opens the way for moving to complete harmonisation with UNECE R21, even for ADR 21 – Instrument Panels. Towards this end a new Interior Impact Protection ADR IIP/00 was proposed – Option 4, harmonised with UNECE R21 and manufacturers could choose to comply with the revised ADR 11 or the Interior Impact ADR. The FCAI and all state and territory regulators felt that an IIP ADR was not appropriate at this time.

6.2 Recommendation

It is recommended that option 1–retain ADR 11 and accept the relevant part – Annex 4 of ECE R 21 as an alternative standard.

7. IMPLEMENTATION AND REVIEW

The necessary amendments to ADR 11 will be given force in law in Australia by determining them as vehicle standards under section 7(1) *Motor Vehicle Standards Act 1989*. They will be implemented under the type approval arrangements for new vehicles administered by the Vehicle Safety Standards Branch of the Department of Infrastructure, Transport and Regional Development and Local Government.

Additionally there are arrangements for on-going development of the ADRs. This is the joint responsibility of the Vehicle Safety Standards branch of the Department and the NTC and is carried out in consultation with representatives of Australian Government, State and Territory Governments, manufacturing and operating industries, road user groups and experts in the field of road safety.

A manufacturer will be required to ensure that vehicles supplied to the market comply with the requirements of any package of regulations. Penalties for non-compliance with the *Motor Vehicle Standards Act 1989* are 120 penalty points for each offence.

For revised ADRs, which do not represent an increase in stringency, there is no need for lead-time. For those ADRs that are updates of existing ADRs, they will have the same applicability as the originating ADR currently has. There will be a seamless transition from the existing ADRs to the revised package.

8. REFERENCES

Primary sources of data and information were:

- *The Black and White Guide, 1999 Edition*, published by Glass's Guide.
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- Kahane, D J (1988). *An Evaluation of Occupant Protection in Frontal Interior Impact for Unrestrained Front Seat Occupants of Cars and Light Trucks*. NHTSA Technical Report, DOT HS-807 203. National Highway Traffic Safety Administration, Washington, DC
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- NHTSA (1992a). Docket No. 92 – 28; Notice 7. Federal Motor Vehicle Safety Standards; Head Impact Protection.
- NHTSA (1992b). Docket No. 92 – 28; Notice 8. Federal Motor Vehicle Safety Standards; Head Impact Protection.
- Information supplied by industry sources.

Appendix 1 – Occupant Protection Single Issue Working Group

The Producer Group
Australian Road Transport Suppliers Association
Commercial Vehicle Industry Association
Federal Chamber of Automotive Industries
Federation of Automotive Product Manufacturers

The Consumer Group
Australian Automobile Association
Australian Trucking Association

The Government Group
Commonwealth Department of Infrastructure, Transport and Regional Development and Local Government
Department of Transport , South Australia
Queensland Transport
Roads and Traffic Authority, New South Wales

Inter Governmental Agency
National Road Transport Commission

Independent
Dr Michael, Henderson, Road Safety Expert

Appendix 2 - Public Comment Responses

Name	Agree with RIS	Comments	Response to comments
Australian Automobile Association	Y	is concerned that the removal of the energy absorption test may reduce safety. Would expect that the ADR would be phased out with the introduction of an IPP standard.	
Federal Chamber of Automotive Industry	Y	does not agree with phasing out of existing ADR for proposed Interior Impact Protection.	
Department of Infrastructure, Energy and Resources (TAS)	Y	Harmonise with ECE	
Department for Planning and Infrastructure (WA)	Y		
Department of Transport and Works (NT)	Y	Indicated several typographical errors in draft ADR (title and clauses 4.7, 4.8, 4.8.2)	
Department of Urban Services (ACT)	Y		
Land Transport Safety Authority (NZ)	Y		
Motor Trades Association of Australia	Y	Phase out over 2 years and replace with IIP.	
Queensland Transport	Y	Retain ADR until ECE R21 review is complete	
Road and Traffic Authority (NSW)		Retain ADR and allow compliance with ECE R21	
Transport SA	Y	Supports the eventual introduction of an IIP standard.	
VicRoad	Y	Supports option 1	