

A man in a white short-sleeved shirt is lying on his back, working on the interior of a car. He is looking up towards the ceiling of the car. In the foreground, there is a grey toolbox with various tools inside, including wrenches and sockets. The car's interior is dark, and the lighting is bright, suggesting a sunny day.

# Australian Competition Consumer Commission. Do-it-yourself (DIY) vehicle maintenance.

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# Contents.

<b>1. Executive summary.....</b>	<b>1</b>
1.1. Introduction .....	1
1.2. Key findings .....	1
<b>2. Introduction .....</b>	<b>9</b>
2.1. Background .....	9
2.2. Research objectives .....	10
<b>3. Methodology .....</b>	<b>12</b>
<b>4. Findings.....</b>	<b>16</b>
4.1. Understand who the target group is .....	16
4.2. Understanding the target group’s attitudes towards DIY safety .....	18
4.3. Examine and explore DIY vehicle maintenance behaviours and practices of the target group .....	32
4.4. Identify differences in risk level associated with segments and sub-groups of the target population .....	46
4.5. Identify appropriate strategies to mitigate risk to the target audience .....	47
4.6. Investigate opportunities to best engage with the target group utilising appropriate messages, incentives and communication channels.....	51
4.7. Investigate responsiveness of different segments (e.g. more “at risk” segments) to different communications .....	53
<b>5. Appendix B: Quantitative Questionnaire.....</b>	<b>54</b>
<b>6. Appendix C: Qualitative Discussion Guide.....</b>	<b>91</b>

# 1. Executive summary.

## 1.1. Introduction

Over the past 10 years a small but not insignificant number of Australians have been killed or seriously injured while undertaking Vehicle DIY work.

The Australian Competition and Consumer Commission (ACCC) has regulatory authority for a number of key pieces of equipment used in DIY work for lifting and suspending vehicles. Accordingly, the ACCC wishes to understand how it can modify and improve its influence over DIY practice to reduce the number of these deaths and serious injuries.

This is the first exploratory research into this area. A three stage research project was undertaken, with each stage providing some guidance to subsequent ones. Stage 1 was to complete three focus groups with users of ACCC regulated equipment to explore basic practices, to identify potential risks, and ascertain practitioners' use of and attitudes towards the warning labels currently used. Stage 2 was an on-line survey of N=200 users of this equipment. The survey content was partly informed by the focus groups, and focussed on identifying the consistency or otherwise of practices. Stage 3 was two further focus groups with practitioners who were identified in the survey as undertaking at least occasionally risky practices or as using incorrect equipment.

The research aims to provide a greater insight into the nature of vehicle DIY practice, and to identify possible opportunities for the ACCC to help make this a safer activity for Australians to undertake.

## 1.2. Key findings

### Understand who the target group is

The statistics on deaths and injuries identify males in the 30-60 year old age group as the main target group. This research shows limited change over the 18-60 age range – though the older practitioners feel more confident and in control than their younger counterparts.

### Understanding the target group's attitudes towards DIY safety

**DIY practitioners are aware of the risk from lifting and suspending vehicles, but fundamentally see the probability of death and serious injury as very low.**

The most common reasons for doing vehicle DIY are to save money (95% of survey participants indicated this was one of their reasons to do it) and as an enjoyable hobby (49%). In the focus groups, participants talked about the sense of pride and achievement they get, and that DIY offered

them relaxation and ‘me time’. The biggest downsides to DIY are that it is time-consuming (61%) and difficult (58%).

Although only 28% indicated that ‘danger’ is a down-side of DIY, safety is well embedded into the vehicle DIY population - almost to the point of becoming invisible. Only 11% of practitioners have been injured doing DIY, and less than 2% have been in a serious incident. This low incidence reinforces that safety is a low-visibility factor in DIY.

In some ways this is a positive, and probably accounts for the relatively low level of serious injuries and deaths. However, once a consideration gets to the point of being automatic, it can slip beneath consideration easily – and can be harder to influence. While implicitly being safety conscious, practitioners are more overtly interested in getting the job done, rather than safety per se.

**Warning labels are currently seen in a fairly disparaging light by practitioners** (they are full of common-sense information for the lowest common denominator, and for newbies), **and are probably little used**. If these labels are to be effective, they need to be changed to become more of a ‘push’ communication rather than relying on practitioners to refer to them in any detail.

Most practitioners hold safe attitudes and describe safe practices – but in all cases there are minorities of up to 1-in-4 people who report more dangerous answers. For example:

Statement	Safe response	Unsafe response
When lifting or suspending cars, it's not important to know the weight capacity of each piece of equipment before using it	57%	23%
I sometimes jack up my car outside on the grass or dirt	58%	20%
I never read warning labels, as I know how to do vehicle DIY work safely	61%	17%
I like to use bricks/blocks instead of stands	58%	17%
I sometimes do risky things when working on my vehicle(s) to save time or money	57%	17%
I work on hard level surfaces all of the time	77%	4%
I have read the instructions and warnings on my equipment at least once	74%	3%

Note: The balance of the respondents gave a neutral answer which did not fall at the safe or unsafe end of the spectrum

It is in these minority views that much of the risk of DIY appears to reside.

Three segments were observed amongst practitioners:

- Confident DIY’ers make up about 43%: they tend to be older and more experienced; as a group they have consistent strong views and practices.
- Variable DIY’ers make up about 39%: they feel only moderately confident and in control; they are quite willing to improvise if they need to; and their practice is less consistent as a group and individually.
- Macho DIY’ers make up about 19%: they are more socially oriented in their DIY, may be less risk averse, and demographically are more likely to be university educated and have middle incomes. Their survey responses suggest that they may have little interest in details and processes, and if this translates into their DIY practice could represent a level of risk.

## Examine and explore DIY vehicle maintenance behaviours and practices of the target group

52% of survey respondents do some form of vehicle DIY at least monthly. Maintenance (91%) and repairs (57%) are the most common type of work. 88% work on passenger cars, and less than 10% on heavy vehicles. Qualitatively, practitioners were clear that they mostly do fairly basic / simple work, which is limited by their skills, tools and available time.

The most common way to learn how to do DIY was to learn from family / friends. Manuals / books and instructions were also common – though less so for the Macho DIY segment. Nearly a third of DIY practitioners (29%) reported using the internet in some way for information – including YouTube videos and Forums as well as using Google searches for specific information.

DIY'ers are less likely to lift and suspend the whole vehicle than a part of it:

- 84% of practitioners will lift and suspend one corner when required
- 75% will lift and suspend one end when required
- 45% will lift and suspend the entire car when required

However, 94% are willing to get under the car when necessary. This means that any inherent risk in their practice immediately translates as a real risk.

DIY'ers mainly work on Saturday during the day, but also on Sunday (more afternoons than mornings on Sundays). Most work on hard, flat surfaces (about half work inside), but there appears to be more emphasis on the 'flat' part than the 'hard' part. Those who do not work on a hard, flat surface are more likely to be on a soft, flat surface than a hard, but sloped or uneven, surface. Those focus group participants who did not have a suitable location seemed willing to work in somewhat compromised locations if that was all that was available to them.

There are quite prevalent activities commonly associated with DIY. Most of these are more common for the Macho DIY segment than either of the others:

- 79% at least sometimes listen to radio (93% of the Macho segment)
- 49% at least sometimes have mates around (Macho = 81%)
- 42% at least sometimes show kids how to do DIY
- 23% at least sometimes consume alcohol (mostly beer) (Macho = 61%)

Overall, **DIY practitioners' practice is very consistent**. Less than 20% have lifted or suspended vehicles in ways other than their normal way in the last 12 months. Therefore, it is their normal rather than exceptional practice that is of most interest in terms of understanding risk. However, the exceptions are not totally without interest, as there is some indication that this exceptional practice is likely to be – if anything – slightly less safe. The main reasons for occasional variation are time, space and not having normal tools or equipment.

In terms of equipment used, it appears that as a greater proportion of the vehicle needs to be lifted or suspended, practices tend to become less clearly safe. This type of analysis can only be indicative, as the number of variations and the range within superficially similar practices are simply too high for them to be definitively classified. However, it was apparent that once DIY'ers got into lifting and

suspending the entire vehicle that the likelihood of using insufficient pieces of equipment or potentially unsafe combinations increased substantially.

	Store bought equipment only	Safe equipment / safe use	
Lifting one corner	96%	81%	n=168
Lifting one end	91%	84%	n=149
Lift whole vehicle	80%	58%	n=91
Suspend one end	77%	75%	n=146
Suspend whole car	73%	10%	n=92

Where bricks and other improvised materials are used to suspend vehicles, these are usually seen as sufficiently safe by those users (even if not by others) – especially if only to go quickly under the car for a short time.

Alcohol is an integral part of the experience for some practitioners

## Identify differences in risk level associated with segments and sub-groups of the target population

Overall, safety is the norm for most aspects of DIY practice, and at an individual level practice is quite consistent. This means that the focus is more on influencing the regular practice of those whose practice is sub-optimal rather than seeking to reduce the incidence of dangerous exceptions. In virtually every area – from locations, to equipment, to improvisation – there were small but detectable groups of practitioners whose responses suggest potential risk.

Of the three segments identified, the most obvious risks come from:

- Confident DIY'ers – being *over* confident in their knowledge and experience, and being able to judge what is safe and what is not
- Variable DIY'ers – not knowing what they don't know, and exposing themselves to risk through a lack of awareness of associated dangers
- Macho DIY'ers – through trusting their own judgement, and potentially not paying very much attention to due process and detail; and from alcohol consumption

## Identify appropriate strategies to mitigate risk to the target audience

Ultimately, to achieve a different outcome, the ACCC needs to encourage a behaviour change amongst DIY practitioners. Four strategic considerations are identified:

1. **Targeted awareness- raising to change the knowledge** of practitioners who are predisposed to respond to and action this information:
  - a. Primary target audience: Variable DIY'ers
    - i. Secondary target audience: Confident DIY'ers
  - b. Suitable messages:
    - i. Only use vehicle stands on hard surfaces.
    - ii. Trolley Jacks are for lifting vehicles, but are not safe for suspending while working underneath.
    - iii. Bricks, blocks and other such items are not a safe means of suspending vehicles to work underneath.

These last two messages may be supported by supplementary information that purpose designed vehicle stands are available, and are quite inexpensive.
2. More **sophisticated emotional messages will be required to alter the underlying behavioural exchange** that practitioners make (these might require further developmental research and concept testing). Areas which require more than just basic awareness- raising include:
  - a. That a suitable number of vehicle stands and / or ramps are a worthwhile investment if work is to be undertaken under the vehicle.
  - b. If a suitable place to do vehicle DIY is not available, then practitioners should not undertake it at all rather than do so in unsafe locations.
  - c. If there is a need to do vehicle DIY in a different or unusual place or way due to time or space constraints, or not having normal tools / equipment available, then it is especially important to continue to do it in a place where a hard, flat surface is available.
  - d. To limit alcohol consumption to a level that reduces risk (this message would be particularly aimed at the Macho DIY segment).
3. Several **current and potential communications vehicles** are available. While general promotional information may be beneficial, it is more advantageous to reach the target audiences at a time when they are engaged in one of two critical moments – purchasing equipment, and conducting DIY work.
  - a. Warning labels – currently appear to have little impact, but if key messages can be made highly visible and readable from a distance, they could become a 'push' rather than a 'pull' channel. Embedded right in the DIY work, they remain a potentially powerful tool.

- b. Radio:
    - i. Placement:
      - 1. weekend days;
      - 2. commercial FM + sport
    - ii. Primary target audience: Macho DIYers
      - 1. Secondary target audience: Variable DIY'ers
  - c. The electronic and mobile channel is already significant, and only likely to become more so. Flexible searching (even when under the vehicle), video and photos, and potentially interactive communications make this channel a rich, real-time one which will increasingly be part of some DIY practitioners' experiences.
  - d. Material at the point of sale for DIY equipment has the potential to increase the likelihood of appropriate equipment being purchased with correct expectations of how it should be used.
4. **"Influential others" may also be able to exert some influence on DIY'ers.** While this will probably not be a primary channel for the ACCC to use, nonetheless there are opportunities which could be considered:
- a. Mates – especially for the Macho DIY segment – are a potential influence. There are several points of interaction where influence is possible: when lending / borrowing equipment; when working together; and when directly learning from each other.
  - b. Sales people – can influence purchase of equipment in the same way as information at the point of sale may be able to.
  - c. Partners / family members – appear to have only a minor role in the DIY world, but could potentially be harnessed to encourage safe practice (eg: purchase of suitable presents; requesting safe practices, especially if children are involved around the work).
  - d. Mechanics – are a source of information for DIY'ers.



## Investigate opportunities to best engage with the target group utilising appropriate messages, incentives and communication channels

- **Make warning labels very visible.** Examples:
  - Trolley Jacks: “Do not go under a vehicle supported by this jack”
  - Vehicle stands: “Only use on hard surfaces”
- DIY’ers are interested in information on the lifting capacity of their equipment. **Placing safety information alongside capacity information increases its likelihood of being seen.**
- **Radio placements on Saturdays and Sundays** (especially Sunday afternoons) would be most effective in reaching DIY’ers while they are engaging in DIY work.
  - Commercial FM stations and sport coverage should be targeted.
  - Messages on radio should be designed with the Macho DIY segment most closely in mind.
- The **internet and social media** offer an opportunity to reach DIY’ers through their searching for solutions to DIY problems. In most cases searches will be quite specific and practitioners will be searching for information on how to do something, not anything to do with safety. The safety information needs to be integral to the technical solution, but embedding it in this context would make it more relevant. Possible avenues are:
  - Forums
  - YouTube
  - Internet searches
  - Apps (unlikely immediately, but may be more possible in the future)
- There are several **key moments** that could be used as trigger points for the recall of messages, or points where influential others could be encouraged to take action. These could be used in any creative executions developed, or as a call to action for practitioners to review their practice:
  - When a new car is acquired
  - When new equipment is purchased
  - When borrowing equipment
- **Emphasise the importance of working in a suitable place even if having to deviate from normal practice** because of time or space constraints, or if normal tools and equipment are not available.
- **Checklists** are a tool used by some of the more organised and experienced DIY’ers – notably the Confident segment. While these are mental checklists, both mental and physical checklists could be developed and promoted.

- Gregory and Haynes **manuals** are well respected. Including safety information within these manuals would put it in a place where DIY'ers would encounter it.

## Investigate responsiveness of different segments (e.g. more “at risk” segments) to different communications

- Embed safety into the 'how to' information available as an inherent part of doing the job.
- Most suitable voice is an older or mid-aged male who is into cars and sharing realistic experience in a peer-to-peer voice.
- A desire to avoid being embarrassed by breaking or bending things can be used to alter the sense of how likely and immediate negative outcomes could be – it isn't just avoiding having a car fall on them that they need to be concerned about..
- Give mates permission to talk about safety with each other.

## 2. Introduction

### 2.1. Background

The Australian Competition and Consumer Commission (ACCC) and the relevant state/territory fair trading agencies are responsible for administering four mandatory safety standards associated with tools used for vehicle maintenance: Vehicle jacks, trolley jacks, portable ramps, and vehicle stands.<sup>1</sup>

Mandatory consumer product safety standards aim to increase consumer protection from unsafe goods and resultant injury by establishing design and construction parameters to create a benchmark for safety when using these products. Each product has specific safety standards required to be met for manufacture and sale, as well as instructions for use. The ACCC enforces the mandatory standards through monitoring the market and taking action to remove those products which do not meet the mandatory safety requirements.

These products are always accompanied by instructions, limiting and specifying their use:

- With a specific vehicle or model (or model designation) of vehicle;
- For a specific purpose, e.g. changing tyres only, and *not* intended to lift a vehicle other than at specific engagement points;
- Of a specific method of operation and process;
- With a specific working load, in kilograms;
- On specific surfaces, e.g. hard, level surfaces;
- With appropriate supports and/or attachments;
- With appropriate safety gear and precautionary equipment.

However, it is difficult to monitor or enforce the use of protective equipment and/or instructions; and understanding of the level of consumer use (and awareness) of instructions, and attitudes and behaviours associated with DIY practices is limited.

Thus, while development and enforcement of manufacturing and sale standards are a key risk management strategy associated with the regulation of vehicle maintenance DIY activities, they may not be sufficient in and of themselves to minimise the risk of harm from vehicle DIY activities.

This is evidenced by the recording of a small but significant number of deaths and serious injuries from vehicle DIY activity. Over 40 fatalities were reported to an Australian coroner between 1<sup>st</sup> July 2000 and 30<sup>th</sup> April 2010. Other than one female, all deaths were of males, with the majority occurring in the 30-60 year old age group. Of the 1,992 unintentional deaths in the home reported to a coroner in Australia during 2003-2007, 4% (n=86) involved being hit/crushed by a vehicle.<sup>2</sup> Nineteen deaths

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<sup>1</sup> Without mandatory standards for these products, the pressure of market competition would progressively erode the level of product safety in favour of cheaper products that do not comply with safety standards. This would lead to the market regressing over time to low levels of standards compliance that existed prior to the introduction of the mandatory standards.

<sup>2</sup> NCIS, (2008). Fact sheet: Deaths in the Home (Australia 2003-2007). National Coroners' Information System, Issues of Interest Series (Edition 2).

(28%) occurred when people were crushed while working under a vehicle. Of those unintentional deaths from being hit/crushed by a vehicle, two-thirds were male.

## 2.2. Research objectives

The purpose of the current research was to understand more about the nature of risk associated with vehicle DIY activity, and to identify potential strategies or tactics that could be employed by the ACCC to reduce risk. While the research intends to document all potential avenues identified, the ACCC's immediate interest is quite clearly in those which fall within its own potential for action, and those which have low or no cost implications. Large scale above the line campaigns are not an option, and therefore the challenge for the research is to identify options which are likely to be effective, and which are also feasible and practical for the ACCC to pursue.

The specific objectives of the research are to:

1. Understand who the target group is:
  - a. Who is at risk of being injured or killed when undertaking vehicle maintenance DIY activities?
2. Understanding the target group's attitudes towards DIY safety:
  - a. What is the level of awareness of the target group in terms of safety procedures when undertaking vehicle maintenance DIY?
  - b. What are the target group's attitudes towards safety practices, e.g. wearing protective gear, reading and following safety instructions, not operating equipment under the influence of alcohol/drugs etc.?
3. Examine and explore DIY vehicle maintenance behaviours and practices of the target group:
  - a. What safety behaviours does the target group engage in when undertaking vehicle maintenance DIY activities?
  - b. What behaviours are at risk of resulting in injury or death when undertaking vehicle maintenance DIY activities, how often are these undertaken, and by whom?
4. Identify differences in risk level associated with segments and sub-groups of the target population:
  - a. Are there different levels of risk for some people compared to others? How is this risk quantified?
5. Identify appropriate strategies to mitigate risk to the target audience:
  - a. What effort is required by the ACCC / partnered organisations / commercial sector to promote the adoption of safe behaviours by the target audience when undertaking vehicle maintenance DIY activities?

- b. What is the level of self efficacy in terms of practising the safe behaviours among the target audience (that is, to what extent do people feel they are capable of adopting the safe behaviours, and what are the key barriers to adopting these safer behaviours?)
  
- 6. Investigate opportunities to best engage with the target group utilising appropriate messages, incentives and communication channels:
  - a. How best can the risk management strategies be communicated to the target audience?
  
- 7. Investigate responsiveness of different segments (e.g. more “at risk” segments) to different communications:
  - a. What does the most at risk group respond to best in terms of message and communication channel?

# 3. Methodology

## Overview

A three-stage methodology has been employed, following a qualitative-quantitative-qualitative sequence. As relatively little is known about the people and practices of vehicle DIY work, this is a largely exploratory and descriptive study, and this necessitates the three-stage approach.

The philosophy behind the methodology is:

Step 1: exploratory qualitative research with users of the four specific types of equipment which are the subject of ACCC regulation to understand how, when, where and why they are used; and to investigate the range of attitudes which relate to their use.

Step 2: quantitative research with users of this equipment in order to provide more robust data on the prevalence of attitudes and behaviours amongst this user group. The questionnaire for this stage was directly developed from the first round of qualitative research.

Step 3: targeted qualitative research with 'at risk' users to explore in more detail how to potentially communicate with and / or intervene in the behaviours of at risk vehicle DIY exponents. Participants for this second round of qualitative research were identified based on responses to the survey.

Due to scale and timeline constraints on the project, each of these steps was conducted at a relatively small size and with very fast transitions from stage to stage. However, while reducing the number of stages may have allowed included stages to be on a larger scale or provided more time to interpret and respond to the previous stage, the absence of any of these stages would have severely curtailed the capacity of those included stages.

This final report draws on the integrated data from all three stages to address the research objectives.

## Step 1: Exploratory Focus Groups

CBSR conducted three initial face-to-face focus exploratory groups with the target audience, specifically, those who have used vehicle jacks, stands and ramps in the past 12 months. Focus groups were recruited and run with users of this equipment in three metropolitan locations (see table below). Each group had 6-8 attendees, and attendees were also split out by age in order to better detect potentially meaningful experiential or generational differences.

**Table 1: Face-to-face step-1 qualitative focus groups**

Face-to-face focus groups	Target audience	Locations
Group 1: Monday 7 <sup>th</sup> March, 6pm	18-25 year old males who engage in DIY vehicle maintenance activities	Sydney
Group 2: Tuesday 8 <sup>th</sup> March, 6pm	46 – 60 year old males who engage in DIY vehicle maintenance activities	Adelaide
Group 3: Wednesday 9 <sup>th</sup> March, 6pm	26-45 year old males who engage in DIY vehicle maintenance activities	Melbourne

This initial exploratory qualitative research was designed to enable:

1. Investigation of the target audience in relation to their knowledge and awareness of current safety information associated with vehicle DIY maintenance equipment, and behaviours associated with use of this equipment;
2. Understanding of where people who undertake DIY vehicle maintenance are in terms of stages of behaviour (e.g. always doing the right thing, always doing the wrong thing, or a combination of both);
3. Understanding reasons behind behavioural stages, i.e. costs and benefits associated with behaviours, and barriers/incentives for moving towards safer DIY vehicle maintenance behaviours.

This was used to guide the content and structure of the online survey.

The discussion guide from these groups can be seen in Appendix B.

## **Step 2: On-line Survey of Vehicle DIY'ers**

The qualitative research provided a range of potentially important issues – including attitudes, behaviours and others. However, qualitative research alone is not able to tell us about the prevalence of these, nor their relative importance. For this, some form of quantitative data is required, usually from a survey.

In this case, an on-line survey was conducted with N=200 males who used at least one of the four pieces of ACCC regulated equipment in the last 12 months. Because there is no more objective profile of vehicle DIY'ers, no demographic quotas were applied to the sample, and nor was any *post hoc* weighting used. One of the benefits of an on-line survey for this research was that pictures of the types of equipment being referred to could be included in the survey, allowing respondents to be very clear what the names / descriptions related to.

The survey included several sections, broadly looking at:

The times and places that respondents do vehicle DIY;  
Reasons for conducting vehicle DIY work;  
Behaviours associated with the lifting and suspending of vehicles;  
Attitudes towards vehicle DIY processes; and  
Demographics.

The quantitative questionnaire can be seen in Appendix A.

### Limitations

The respondents to the survey are all members of Colmar Brunton's national research panel. By definition, these people are users of the internet, and have agreed to periodically participate in research, for which they receive a small form of incentive. While the nature of this sample does need to be recognised, and this should be borne in mind when interpreting the results, our experience is that the panel members are not significantly different from non-panel members who would agree to participate in a survey on this type of topic.

No survey data can be extrapolated to the wider community without some consideration of how participants in the survey reflect and represent the full population, but we are confident that this survey sample can be broadly extrapolated. Some specific issues may need to be considered more closely though, such as the reported level of use of the internet as a source of information – as this may be higher amongst respondents from the panel than in the general population.

### **Step 3: Target Focus Groups with At-Risk DIY'ers**

The ultimate purpose of the research is to provide the ACCC with some specific opportunities to make a difference in vehicle DIY practice. To facilitate this, a final stage of the research was to talk in more detail with practitioners who were identified as being at risk in some way from their survey responses.

Discussions with these people focussed on understanding:

- The benefits and costs to them of their current behaviours;
- Perceptions of the benefits and costs of more desirable behaviours;
- Other points of influence on DIY practices; and
- Potentially effective communications timings and channels.

The purpose of this research was to identify the messages and channels that are most likely to be able to influence those people who are conducting DIY in potentially unsafe manners.

Two groups were conducted in this phase. Both were conducted face-to-face, one in Melbourne and one in Sydney. Because the groups were done face to face rather than on-line, all participants for the



groups had to come from a relatively constrained geographic area and display the behaviours of interest – hence the choice of the two largest cities in Australia to conduct them.

**Table 2: Face-to-face step-3 qualitative focus groups**

Face-to-face focus groups	Target audience	Locations
Group 4: Wed 23 <sup>rd</sup> March, 6pm	18-60 year old males who show unsafe practices in terms of alcohol use or choice of locations for vehicle DIY at least some of the time	Melbourne
Group 5: Monday 28 <sup>th</sup> March, 6pm	18-60 year old males who show unsafe use of equipment for vehicle DIY work at least some of the time	Sydney

The discussion guide from these groups can be seen in Appendix B.

# 4. Findings

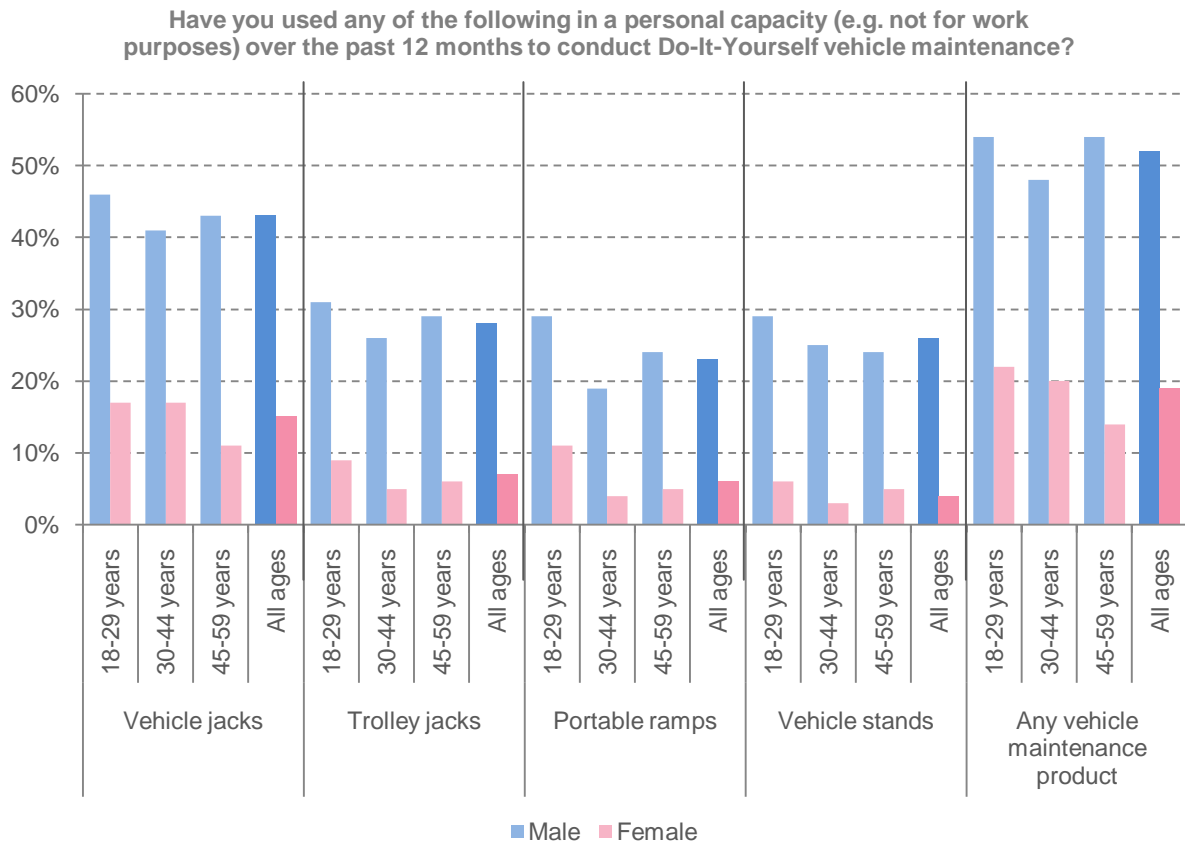
This report draws on the findings from all three stages of the research, and is structured around the research objectives.

## 4.1. Understand who the target group is

### *Who is at risk of being injured or killed when undertaking vehicle maintenance DIY activities?*

The statistics on deaths and injuries suggest that males aged 30-60 are the most at risk group. Initial research CBSR completed amongst our research panel strongly supported the gender bias, with males being much more likely than females to report using the ACCC regulated equipment. However, prevalence of use did not vary substantially with age across the 18-60 age range.

**Figure 1: Use of vehicle maintenance products, by gender**



Data sourced from Colmar Brunton's weekly Online Poll of our Research Panel [N=1,000]

Further information about people who are doing DIY vehicle work can be drawn from the survey stage. In the survey, a range of demographic variables were captured.

No quotas were applied to this sample, as there is no definitive data about this audience upon which to base them. Therefore, though it is possible that there are segments of the vehicle DIY population who are under or over-represented in the Colmar Brunton research panel from which respondents were drawn, nonetheless the profile of the sample should also provide a reasonable indication of the characteristics of the broader target audience.

To provide some structure to this demographic picture, we have provided overall totals, but also separated out three age groups, as some demographic variables naturally evolve over time.

**Table 2: Demographic profile of Vehicle DIY'ers [Source: Online survey]**

Attribute	Total Sample	18-30 yr olds	31-45 yr olds	46-60 yr olds
<b>Age</b>	<b>100%</b>	15%	40%	45%
<b>Married / De facto</b>	<b>56%</b>	34%↓	77%	66%
<b>Employed full or part time / self employed</b>	<b>79%</b>	82%	86%	72%%
<b>Speak only English</b>	<b>81%</b>	76%	78%	85%
<b>Income</b>				
<i>Under \$52K</i>	<b>34%</b>	26%	29%	40%
<i>\$52K - \$104K</i>	<b>41%</b>	44%	49%	34%
<i>Over \$104K</i>	<b>25%</b>	30%	22%	27%
<b>Education</b>				
<i>High school only</i>	<b>28%</b>	21%	22%	34%
<i>Trade / Diploma</i>	<b>38%</b>	32%	37%	41%
<i>University</i>	<b>34%</b>	46%	41%	24%↓
<i>Sample size</i>	201	29	81	91

Probably the two most meaningful demographic variations are:

- the relatively small proportion of 18-30 year olds who are married or in a de facto relationship. This is potentially important as it means there is potentially one less important influence which can be used with this age group; and
- The trend towards a lower education level seen amongst the older age group, as this may suggest a slightly different attitude towards information sources.

## 4.2. Understanding the target group's attitudes towards DIY safety

***What is the level of awareness of the target group in terms of safety procedures when undertaking vehicle maintenance DIY?***

***What are the target group's attitudes towards safety practices, e.g. wearing protective gear, reading and following safety instructions, not operating this equipment under the influence of alcohol/drugs etc.?***

It is assumed that deaths and injury from vehicle DIY are ultimately caused, or at least contributed to, by behaviours and practices undertaken by practitioners. The next section looks in some detail at these behaviours and practices.

It is further assumed that these behaviours are to at least some extent shaped by the attitudes and beliefs of the practitioners. However, it is also known that attitudes are only a limited predictor of behaviour. This is for several reasons. One is that *real* attitudes are pretty hard to accurately measure and quantify. Another is that people can behave in ways that are inconsistent with their attitudes by selectively interpreting situations – both consciously and more often unconsciously. Therefore, while attitudes are interesting, and not unimportant, they are not the ultimate target for research.

Rather, we consider most (possibly all) behaviours to be a form of “exchange”, where the person trades off certain things in the behavioural choices they make. In some cases this is quite a conscious and deliberate trade-off, while in others it is implicit and the person may not even really recognise that an exchange was being made. What is being exchanged is often hard to define – but ultimately it is this exchange which dictates the choice an individual will make. To complicate matters, different individuals might be making quite different exchanges when confronting the same choice or situation; and even two individuals who are considering the same basic elements might make different choices if they place different values on some or all of these elements. Even an individual's choice can change in different contexts if the value they ascribe to certain elements changes in different situations (eg: when alone versus with mates).

This concept is more easily visualised when thinking of concrete examples. When choosing to purchase a fast food burger instead of a gourmet sandwich, the exchange probably includes elements such as speed, choice, consistency, cost, convenience, self-image, others' perceptions, and taste. When deciding whether to drive a car after drinking alcohol, the elements might include factors such as the convenience of having the car at home in the morning, peer pressure, desire to conform with the law, desire to get to another party, perceived likelihood of having a crash and perceived likelihood of being caught. When choosing to short-cut a safety precaution people might think that they are trading off speed and effort or convenience, but not realise that safety is one of the elements of the choice they make.

What people *really* want is important in how they perceive the exchange – it changes the values that they ascribe to different parts of the exchange. Also, their perceptions of the probability of different elements have an important part to play – even if something has great value, if it is not considered likely to happen then it has relatively little weight in the decision made. This is where knowledge comes into the equation – because, by definition, the probability given to an unknown element or outcome is zero.

This is important to vehicle DIY and safety, because in making choices about safety when doing DIY, we need to understand the sorts of exchange that people are making. To do this, we need to first explore their reasons for undertaking DIY in the first place, and then their perceptions of safety behaviours. In this way, we seek to understand those attitudes which are likely to have some genuine influence in safety behaviour.

### Why do people engage in Vehicle DIY

There are a number of different reasons why people actually do DIY – these are the benefits that they get from doing it. From the qualitative research, these include:

- A sense of achievement
- Pride from seeing a car they like, even love, running well and knowing that they made it that way
- Saving money
- Knowing that a job has been done, and done properly (for some, there is a distrust of mechanics)
- Relaxation and enjoyment from a hobby
- Having ‘me time’ to withdraw from the stresses of life

The survey confirmed that saving money was the most common factor, with 95% of all survey respondents citing this as part of the reason for doing DIY. However, most respondents also cited at least one other reason, with the pleasure of a hobby being a factor for half the respondents, and nearly a quarter feeling that they can do a better job than a mechanic. In thinking about the exchange that people are making, these different factors have potentially subtle but important nuances.

**Table 3: What are the good things about vehicle DIY?** [Source: Online survey Q5]

Reason	%
It saves me money	95%
I enjoy doing it as a hobby	49%
I do a better job than a mechanic	23%
I do it as a social event, with mates	11%
Other	2%

Base = all respondents [N=201]

The survey showed no significant differences in the reasons that people first got into doing DIY work, and the reasons that they continue to do so.

There are some downsides to DIY work, though these seem to be quite minor for practitioners by comparison to the benefits, and are more related to the difficulties of doing DIY work rather than barriers to doing it. These include aspects like it being hard to get some parts; sometimes being cold, hot, wet or uncomfortable; and new cars being increasingly hard to work on.

Safety was not seen as a major concern, but rather an almost automatic consideration. Participants in the focus groups talked about knocks and cuts, but rarely about serious risks to life and limb. It was implicitly understood that cars are big, heavy pieces of machinery and that their falling would be a very serious event, but the *probability* associated with that seemed very low. This was reinforced in the experiences of survey respondents, where only 11% reported ever having been injured doing vehicle DIY work – and less than 2% by a vehicle or part of a vehicle falling. 11% knew someone else who had been injured.

This background 'latency' of safety risks is also reinforced in the survey, where only 15% of respondents disagreed that "*they never feel at risk of being injured*" and 39% disagreed that "*the risk of being injured lifting and suspending a vehicle is very low*". In combination with the focus group observations, it is clear that there *is* a strong recognition of the potential safety risk, but that it is not at the front of mind for practitioners a lot of the time.

The survey further complemented these observations, with respondents placing safety relatively low on a list of possible bad things about vehicle DIY, with the time-consuming and potentially difficult aspects of vehicle DIY more salient.

**Table 4: What are the bad things about vehicle DIY?** [Source: Online survey Q6]

Reason	%
It can be time-consuming	61%
It can be difficult	58%
It can be hard to get parts/equipment	30%
<b>It can be risky / dangerous</b>	<b>28%</b>
It can be stressful	32%
Other	6%

Base = all respondents [N=201]

Only small differences were observed in these factors based on demographic groups:

- Those respondents with a university education were significantly more likely to feel that DIY could be risky / dangerous (41% compared to 21% of high school and trade / diploma educated respondents).
- Those with higher household incomes were more likely to agree that DIY being time consuming was a bad thing (71% of those on \$104K+, compared to 64% of those on \$52K-\$104K and 43% of those on less than \$52K).

## Where does Safety fit in

Almost universally, the DIY practitioners in the focus groups were most interested in how to get the job done, and usually to get it done well. Many survey respondents indicated that the time-consuming nature of DIY was a bad thing, and though time was rarely of the essence for the focus group participants, they were not keen to waste time either. More than a few commented that towards the end of a session they often had to work to stay focussed and concentrate, and speed was one of the factors mentioned in some choices of tools and equipment (eg: trolley jacks over scissor jacks).

This focus on the outcome has a number of flow on effects, and presents both challenges and opportunities.

One effect is that the information they typically want relates to how to do something or how to use something – but they were not particularly looking for information on how to do it or use it safely. This means that with the exception of looking for information on load bearing capacity, **vehicle DIY practitioners probably do not really read safety or warning stickers on their equipment.**

These stickers or warnings are assumed to be basic information aimed at ‘the lowest common denominator’ or at ‘newbies’ to the equipment. They might look at them the first time they use a new piece of equipment (ie: of a style that they have not used before), and a number talked about photographing and filing manuals, warnings etc – but they basically do not read them. The following two quotes are illustrative of the typical attitude expressed.

*“I got a trolley jack last year. Just a GMC jobbie. Yes, there was the standard safety blurb on it. To be honest, I’ve started ignoring them, because they are just full of common sense. It’s obviously allowing for the lowest common denominator.”*

*Participant, Melbourne*

*“I didn’t read the sticker on the [trolley] jack – that is just the safety information, and what I wanted to know was how to use it.”*

*Participant, Sydney*

In the survey though, respondents were actually quite likely to claim to read the warning labels. 83% said they were aware of warning labels associated with vehicle DIY equipment (12% said they were not, and 5% were unsure), and of those who were aware 89% said that they read them at least most of the time (89% of 83% equates to 74% of all vehicle DIY’ers). In the focus groups there was a suggestion that younger vehicle DIY’ers might be more likely to look at warnings and safety information – but this was not observed even as a trend in the survey results.

The survey results therefore seem inconsistent with what was expressed in the focus groups. There are two possible explanations for this inconsistency. The first is that survey respondents are reporting accurately and that focus group participants didn’t want to admit in a group of other DIY’ers that they read the warnings. The other is that focus group participants were revealing the truth, and that survey respondents tended to give what they know to be the “right answer” and overstate their readership.

It is difficult to determine which of these is the correct explanation, and in truth it is probably a combination of the two. On balance though, the researchers feel that it is more likely that the focus groups reveal an important fact – which is that many DIY’ers generally do not look at the labels. In a best case situation, the survey suggests that it could be as few as a quarter of all DIY’ers who tend not to look at warning labels. In reality, the proportion is likely to be considerably bigger than that.

This is an obvious challenge, because the warning stickers are one of the primary channels by which relevant safety information could be communicated. If they are little used by DIY'ers, then that is a concern, and requires remedial action of some nature. Several opportunities to improve communications stem from this observation though. These include:



- If the current warnings are not effectively attracting attention and conveying their message, then their presentation needs to be changed. If practitioners are not actively reading the labels, then one option is to visually draw attention with large letters which can be read at a distance.



- If warning labels are also known to carry important information on how to use the equipment, in particular the capacity of lifting and suspending equipment, then this might attract greater inspection of the labels (especially by first time users), and greater opportunity to convey the safety information.



- Safety information should be embedded in the 'how to' information which practitioners are seeking out (both on equipment labels, but also in manuals, and in other sources of information).

When asked to look at actual warning labels in the first round of focus groups, most participants did not report seeing anything they didn't expect. However, one participant did say that he was surprised to read that vehicle stands should only be used on hard flat surfaces, as he used them on grass. This is illustrative of how the non-reading of these labels is potentially dangerous, and also that a small proportion of vehicle DIY'ers are undertaking dangerous behaviours unknowingly. This probably contributes to the fact that serious injuries and deaths do occur, but also why the number is low.

### **Breaking down Vehicle DIY'ers into sub-groups (segments)**

Very few populations, even quite specific subcultures like vehicle DIY'ers, are perfectly homogenous. What is normally seen is a number of sub-groups who differ from each other in consistent ways. These sub-groups are often called 'segments', and this is the language that will be used here.

In the context of the 'exchange' concept which is thought to underlie behaviour, these segments can be thought of as groups of individuals who make relatively similar exchange decisions.

Segments can be based on any number of factors, and using different factors will typically reveal different segments. Segments can be based on purely demographic variables, but are usually more insightful when they are based on attitudinal variables, and when these attitudinally-based segments are related to desirable and undesirable behaviours. The selection of a segment 'solution' is therefore one which is quite subjective, and the result of extensive exploration and testing.

The biggest value of segments is when they allow us to develop and target strategic and / or tactical interventions which are more effective than a blanket solution would be. However, even quite descriptive segments that don't suggest customised interventions can be useful as they get us thinking about the subtlety and variation within the target population.

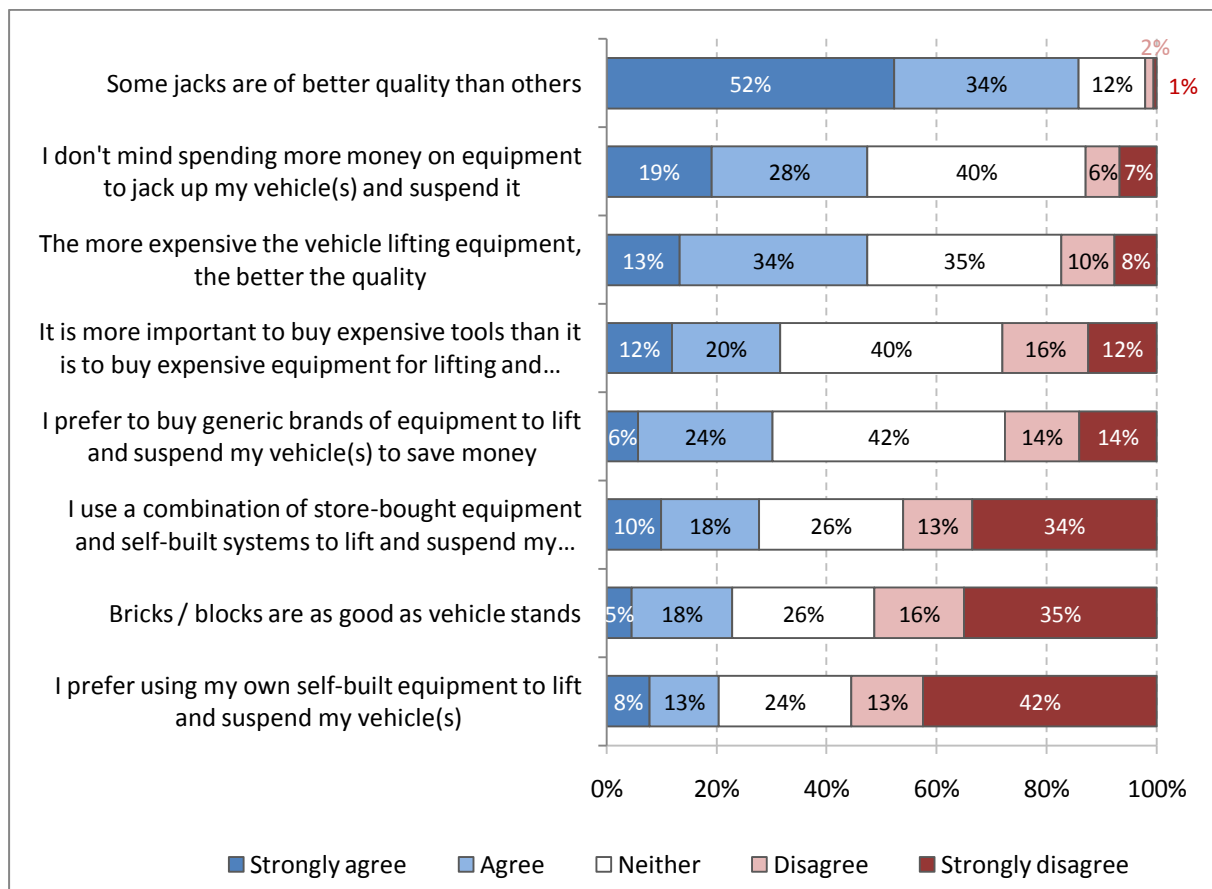


In this project, a range of relevant factors were observed in the initial focus groups that were hypothesised to relate to different segments. These were translated into the survey as attitudinal statements with which respondents were asked to indicate their level of agreement. The basic dimensions that these covered were:

- The cost versus quality exchange, and how it relates to lifting and suspending equipment
- Use of self-made or improvised equipment, including bricks and other objects for suspending a vehicle
- Confidence and sense of control
- Knowledge and learning
- Use of instructions and warnings
- Perceived level of risk
- Consistency of safe and unsafe behaviours

A total of 33 agreement statements were constructed across these broad domains. For each, respondents showed their level of agreement on an 11-point scale from 0 = totally disagree to 10 = totally agree. The following charts show the pattern of responses to each statement.

**Figure 5: Attitudes about the cost of DIY equipment** [Source: Online survey Q15]



Q15. On a scale of 0-10, where 0=totally disagree, and 10=totally agree, how much do you agree or disagree with the following statements:  
 Combined into 5 categories: Strongly agree = 9 + 10; Agree = 7 + 8; Neither = 4 + 5 + 6; Disagree = 2 + 3; Strongly disagree = 0 + 1.  
 Base = all respondents [N=191-197]

The strongest views relating to the cost / quality trade-off were for some jacks being better quality than others, with 86% agreeing with this statement. However, only 45% agreed that the more expensive the lifting equipment the better the quality, so clearly they do not see price as a particularly definitive indicator of quality.

Significant minorities – 21% to 28% - of respondents agreed that they prefer to and / or use a combination of bought and self-made equipment to lift and suspend vehicles; and that bricks and blocks are as good as vehicle stands.

Respondents aged 46-60 were significantly more likely to agree that some jacks are of better quality, and significantly less likely to agree that bricks and blocks are as good as vehicle stands or to use a combination of bought and self-made equipment. However, even in these cases, the pattern of results was fairly consistent.

Over the next two pages are charts showing the level of agreement with 25 further attitudinal statements. The first chart shows the 14 statements to which there was a moderate to high level of agreement – more than 45% agreed with each of these and no more than 18% disagreed. The second chart shows the remaining 11 statements which had lower (less than 31%) agreement, and higher (over 35%) disagreement.

The general pattern shown across this set of attitudinal statements is indicative of a DIY population who are quite strongly safety conscious. A perusal of the statements and levels of agreement largely shows the positively worded statements in the high agreement chart, and the negatively worded statements in the low agreement chart.

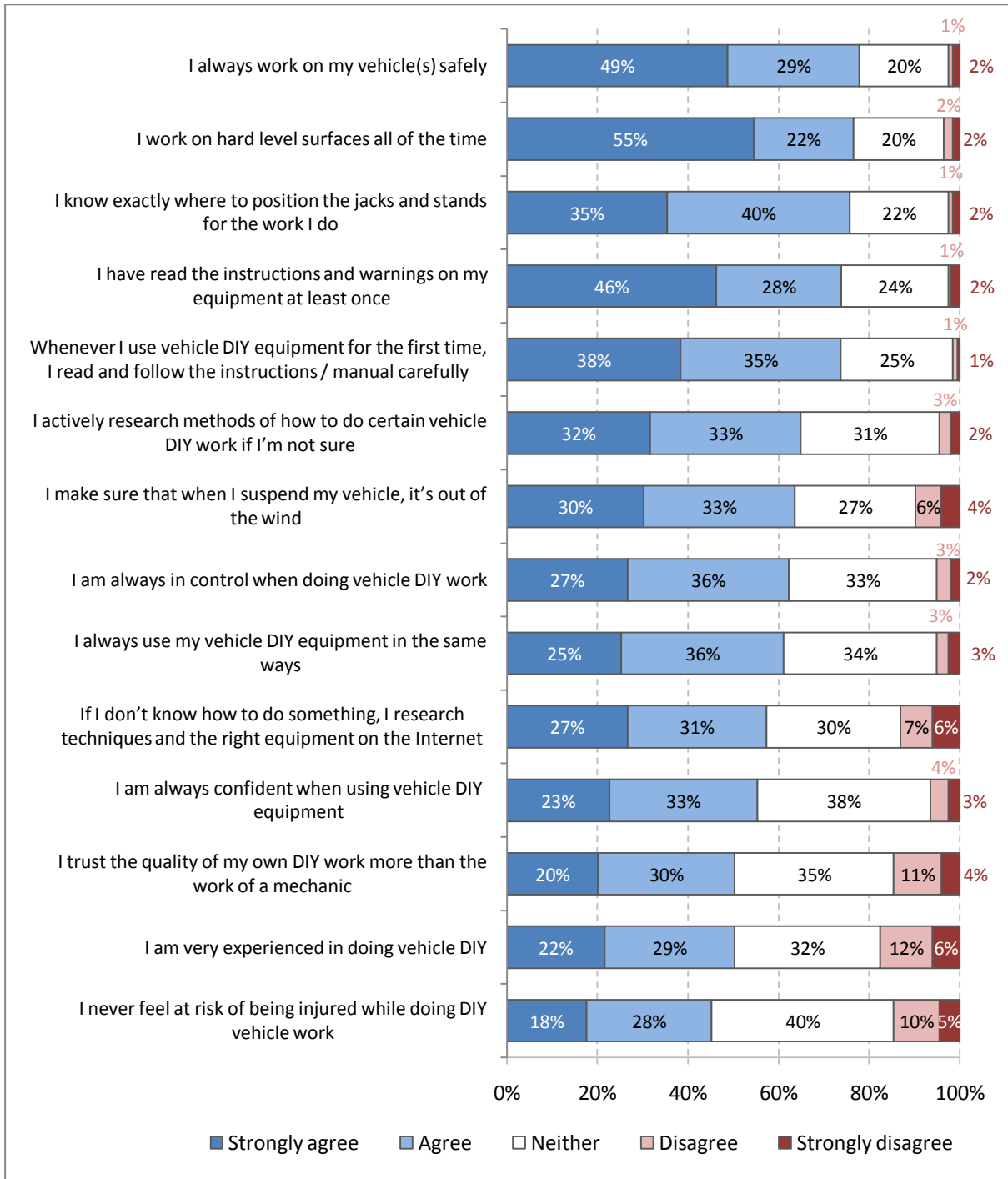
At the highest level, this is a desirable pattern, and probably explains to a large extent why the number of deaths and serious injuries from vehicle DIY are fairly low.

However, the existence of *any* deaths and serious injuries is probably accounted for by the minority positions on these statements. While the main pattern is for agreement with safe practices and disagreement with unsafe practices, **there are small proportions of respondents who** took the alternative position – which means that they **are exposing themselves to a consistent or intermittent risk**. For example:

Statement	Safe	Unsafe
When lifting or suspending cars, it's not important to know the weight capacity of each piece of equipment before using it	57%	23%
I sometimes jack up my car outside on the grass or dirt	58%	20%
I never read warning labels, as I know how to do vehicle DIY work safely	61%	17%
I like to use bricks/blocks instead of stands	58%	17%
I sometimes do risky things when working on my vehicle(s) to save time or money	57%	17%
I work on hard level surfaces all of the time	77%	4%
I have read the instructions and warnings on my equipment at least once	74%	3%

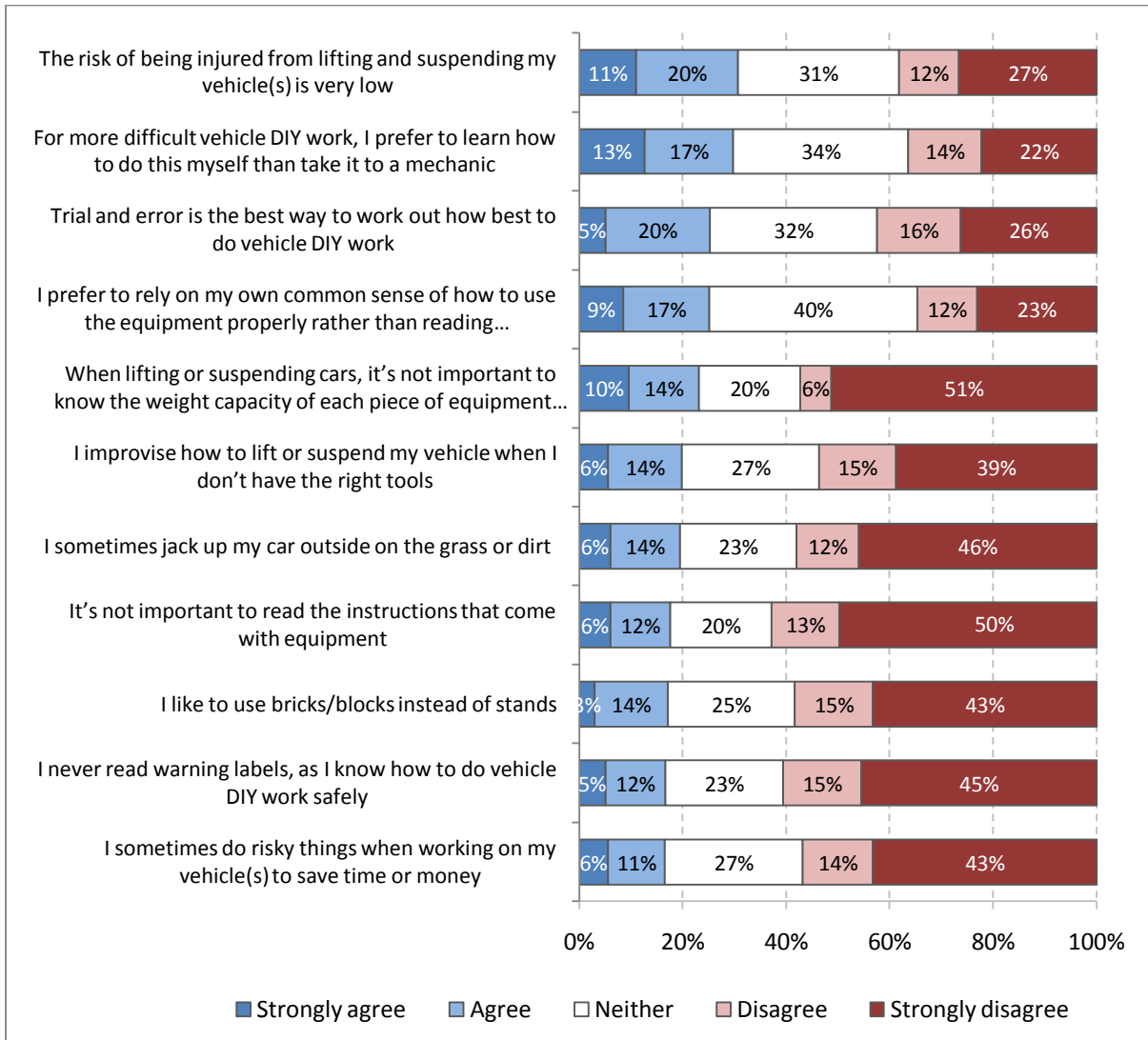
Note: The balance of the respondents gave a neutral answer which did not fall at the safe or unsafe end of the spectrum.

Figure 6: Statements that DIY'ers tend to agree with [Source: Online survey Q16]



Q16. On a scale of 0-10, where 0=totally disagree, and 10=totally agree, how much do you agree or disagree with the following statements:  
 Combined into 5 categories: Strongly agree = 9 + 10; Agree = 7 + 8; Neither = 4 + 5 + 6; Disagree = 2 + 3; Strongly disagree = 0 + 1.  
 Base = all respondents [N=191-197]

**Figure 7: Statements that DIY'ers tend to disagree with** [Source: Online survey Q16]



Q16. On a scale of 0-10, where 0=totally disagree, and 10=totally agree, how much do you agree or disagree with the following statements:  
 Combined into 5 categories: Strongly agree = 9 + 10; Agree = 7 + 8; Neither = 4 + 5 + 6; Disagree = 2 + 3; Strongly disagree = 0 + 1.  
 Base = all respondents [N=191-197]

There were several interesting age effects across these statements:

- Perceptions of confidence, experience and of always working safely increased with age
- The oldest respondents were the most likely to feel it was important to read warnings and instructions, and least likely to feel that they could rely on common sense instead, or that trial and error was the best way to learn how to do DIY. They felt more confident that they knew how to position jacks, and that they were less likely to improvise or to take risks.

Those with a lower household income were more likely to want to learn how to do complex DIY than to take their car to a mechanic.

## Segments

Given the earlier discussion of segments, the obvious question then is whether any useful segments can be observed in the DIY survey respondents. Segments can always be extracted statistically, but whether these are insightful is a more subjective issue.

The segmentation we settled on for this study is perhaps more subjective than most, as it requires an attribution to be made about the wider personality of the respondents. Based on the survey data alone, we could present this as a speculative hypothesis only. However, with the benefit of being able to conduct two further focus groups in which we were able to discern some supporting observations for these three segments, we feel more confident that the segments are a meaningful addition to our understanding of the DIY population.

The following table shows the average (mean) agreement rating for of each of three segments with the 33 attitudinal statements. An examination of the three segments' average agreement statements suggests:

- Segment 2 members perceive themselves as highly safety conscious, but also confident and experienced. They are unlikely to improvise or take risks. This segment has consistent strong views – on 22 of the 33 statements their average agreement was higher than 8 out of 10 or lower than 3 out of 10.

We conceive this segment to be **Confident DIY'ers**.

- Segment 1 members are less confident and experienced than segment 2, and are less consistent individually and collectively in their DIY practice. They are more willing to improvise, and less likely to be willing to spend money on good equipment. On almost all statements their collective average is in the same direction as segment 2, but never as consistently or as strongly. On only 1 of the 33 statements does their average agreement get above 8 out of 10 or below 3 out of 10.

We see this segment as **Variable DIY'ers**.

- Segment 3 members – about 1 in 5 of all respondents – gave an average agreement rating of between 6.6 and 7.6 out of 10 for every one of the 33 statements. This is not a logical pattern of responses, as some statements are positive and some negative, and so it is rather contradictory to answer about the same for all of them.

This is suggestive of respondents who have not closely considered the survey questions, and in many instances this data might be considered doubtful. However, in this case we found that this segment actually exhibited some differences in their behaviour – suggesting that it is not totally spurious. We suspect that what this may in fact be is a group of DIY'ers who, to a certain extent, 'can't be bothered' with details; or such 'uncool' things as a survey.

Observation in the focus groups helped us to characterise this segment in this way, and while it is a subjective interpretation, we strongly suspect that it really does tell us something about a certain segment of DIY'ers. The question is, how do they perceive safety behaviours?

We have labelled this segment as **Macho DIY'ers**.

**Table 8: Agreement of the three proposed segments with each statement**  
(mean rating from 0 = totally disagree to 10 = totally agree) [Source: Online survey Q15 + Q16]

		Segment	1 - Variable	2 - Confident	3 - Macho
		Size	39%	43%	19%
Q15	1	Don't mind spending \$ on equipment	4.7	7.1	7.3
	2	Some jacks are better quality	7.7	<b>9.1</b>	7.6
	3	Brick / blocks as good as stands	4.2	<u>1.6</u>	6.7
	4	Prefer to save money on equipment	4.8	4.1	6.6
	5	More expensive = better quality	4.7	6.4	7.1
	6	Prefer self-built equipment	<u>2.8</u>	<u>2.1</u>	7.0
	7	Combo of self built and bought	3.6	<u>2.8</u>	7.4
	8	Expensive tools more important than expensive lifting / suspend equipment	4.2	4.9	7.4
Q16	1	Always confident	5.5	7.4	7.5
	2	Always in control	5.6	<b>8.1</b>	7.6
	3	Never at risk	4.9	6.6	7.1
	4	Trust self over mechanic	5.2	6.7	7.6
	5	Experienced	4.8	6.8	7.6
	6	Common sense over manuals	4.7	<u>2.9</u>	7.4
	7	Trial and error is best learning	4.2	<u>2.7</u>	7.3
	8	Read and follow instructions first time	6.6	<b>8.9</b>	7.3
	9	Diff DIY, learn instead of mechanic	4.0	4.3	7.1
	10	Know how to position jacks and stands	6.5	<b>8.7</b>	7.6
	11	Actively research if not sure	6.2	<b>8.2</b>	7.4
	12	Research on internet	6.1	7.2	6.9
	13	Have read warnings instructions	6.7	<b>9.2</b>	7.2
	14	Never read warnings	3.4	<u>1.0</u>	7.0
	15	not important to read instructions	<u>2.8</u>	<u>1.3</u>	7.0
	16	Always work safely	7.2	<b>9.1</b>	7.5
	17	Sometimes risky to save time or \$	3.6	<u>1.1</u>	7.1
	18	Risk of injury is very low	4.3	3.3	7.4
	19	Always use equipment the same way	6.0	<b>8.0</b>	7.3
	20	Improvise if don't have right tools	4.1	<u>1.1</u>	7.4
	21	Like to use bricks or blocks	3.8	<u>0.7</u>	6.8
	22	Suspend out of wind	5.7	<b>8.0</b>	7.3
	23	Always work on hard level surfaces	6.8	<b>9.4</b>	7.5
	24	Sometimes jack on grass or dirt	3.5	<u>1.1</u>	7.0
	25	Not important to know weight capacity	3.3	<u>1.4</u>	7.2

**Bold Green** figures indicate an average agreement of greater than 8 out of 10  
Underlined italicised red figures indicate an average agreement of less than 3 out of 10

When considering segments, one of the first things to do is to look at their demographic profile to see if there are consistent differences that can be observed.

The table below shows limited differences between the segments. The Confident DIY segment is older than the Variable segment – matching the tendency for the older respondents to be the most confident. The Macho DIY’ers segment contains a higher proportion of university educated respondents, who are more likely to be aged 31-45 and to have mid-range household incomes. The confident DIY segment were also more likely to enjoy DIY as a hobby and to expect to do a better job than a mechanic, while the Variable DIY segment were low in terms of being better than a mechanic.

**Table 9: Demographic profile of Vehicle DIY’er Segments** [Source: Online survey]

Attribute	Total Sample	Variable DIY’ers	Confident DIY’ers	Macho DIY’ers
		39%	43%	19%
<b>Age</b>				
18-30	15%	16%	9%	24%
31-45	40%	40%	31%	60%↑
46-60	45%	44%	59%↑	16%
<b>Married / De facto</b>	56%	66%	70%	53%
<b>Employed full or part time / self employed</b>	79%	77%	77%	90%
<b>Speak only English</b>	81%	82%	85%	68%
<b>Income</b>				
Under \$52K	34%	33%	36%	27%
\$52K - \$104K	41%	39%	36%	58%↑
Over \$104K	25%	28%	27%	15%
<b>Education</b>				
High school only	28%	28%	28%	24%
Trade / Diploma	38%	40%	45%	22%
University	34%	33%	27%	54%↑
<b>Good things about DIY</b>				
Enjoy Hobby	51%	42%	64%↑	41%
Better than mechanic	24%	13%↓	33%↑	24%
Sample size	200	77	86	37

In the final focus groups it was observed that those participants who were, on the basis of observation, likely to be Variable DIY’ers were more white-collar people; while the participants who appeared likely to be Confident DIY’ers were from more blue collar backgrounds. This is based on a small number of observations, but has a certain plausibility. Those participants with a trades or practical background might be expected to have a better understanding of manual processes such as DIY than those with more office-bound professional experiences.

Throughout the remainder of the report, these segments will be used as one of the ways of looking at the survey results in more depth.

## Where does risk come in?

One of the key questions to assist in developing a strategy for reducing unsafe behaviours is to understand whether the risk exposure comes from some DIY'ers who always do risky practices, or whether it comes from occasional deviations from generally safe practices.

If the former, then the strategy needs to be to change the norm for some or all practitioners. If the latter, then the strategy might be more about consistency and avoiding occasional lapses. The next section will look at the survey data with respect to behavioural consistency to explore this question.

Another key question is whether practices are known to be unsafe, but still done; or whether unsafe practices are done unknowingly. From a behaviour change perspective, and from the perspective of necessary communications activities, this is an important distinction.

If unsafe behaviour is done unknowingly, then there is the potential to influence behaviour through simple awareness-raising communications – especially if the target audience is inherently keen to stay safe. However, if unsafe behaviours are knowingly undertaken, then this is a different and more difficult communications challenge – as a compelling argument to change behaviour must be constructed and delivered to an audience who has, to this point, rejected that proposition.

Several potentially or definitively risky behaviours were pre-identified for the research, and others from the initial focus groups. Risk was observed in two broad domains:

1. Inappropriate equipment use, such as:
  - a. Incorrect use of jacks as stands (both scissor jacks, which are inherently unstable from some directional movement; and trolley jacks which are harder to place correctly and vulnerable to being 'let down' with the bump of a single button).
  - b. Improvised solutions, such as the use of bricks / blocks / logs etc for suspending vehicles.
2. Inappropriate DIY practices, such as:
  - a. Conducting DIY work in unsuitable locations, such as on grass / dirt, on sloped ground, or on the roadside / verge where vehicles and people are potential impacts on the stability of the suspended vehicle.
  - b. Consumption of alcohol while doing DIY work.

Again, the next section will look at data from the survey on this topic. However, from the qualitative stage there was a suggestion that the Variable DIY segment were at some risk from many of these unsafe aspects – though alcohol consumption did not appear to be a major issue for this segment. Perhaps demonstrating the validity of this segment's lower confidence levels, it appeared in the qualitative research that quite often this segment was unaware of risks they were taking, such as the use of stands on soft surfaces or the use of improvised suspending equipment or the use of trolley jacks for suspension as well as lifting. Therefore, this segment may be a candidate for awareness-raising communications in the first instance.



The Confident DIY segment seemed the least likely to be at risk from any of the avenues described above. However, while this segment may well be more experienced and more confident, there is a question worth exploring further in terms of how well placed their confidence is. They may well be very safety conscious and confident in their knowledge and experience – but if this confidence is misplaced they may also be at risk from unknown risks.

In general terms, it is probable that individuals move from the Variable to Confident DIY segment over time. Certainly in the focus groups, participants who could be classified as Confident DIY'ers gave examples from their past that would be considered more typical of Variable DIY'ers, such as using vehicle stands on soft surfaces and having them sink into it. This type of experience may well assist in moving a person from one segment to the other. However, if they have not had all possible such experiences, then they may move into the Confident DIY segment while still having some knowledge gaps or weaknesses in their practice.

Given their strong safety focus, this segment again might well be open to raising awareness of risks and this being sufficient to improve their practice. However, compared to the Variable segment, this segment might be less willing to have their knowledge challenged in that way, and so in a general sense, might be somewhat less willing to accept such information and act on it than the Variable segment, which is less likely to see such a change as a threat to their self image.

The hypothesised Macho DIY segment participants appeared the most likely to consume significant levels of alcohol while doing DIY (especially if the work was being done in a social environment), though this was not exclusive to that segment. In some ways this segment seemed quite knowledgeable and skilled, but in others ways they were willing to improvise. They did not seem to deliberately take unnecessary risks, but were not afraid to trust their judgement that something was safe enough to be acceptable even if it was not totally technically correct. Combined with a possible higher risk tolerance, an obvious opportunity for risky practice emerges.

While they might not be making accurate judgements about safe practices, this segment seemed less likely to be influenced by simple awareness- raising. Where the Variable DIY segment seem to desire safety, this Macho DIY segment are not feeling at risk, and (as with related behaviours such as road safety) probably cannot be expected to change practices with no more intervention than information. Rather, a compelling change to the exchange they are implicitly making might be necessary to make progress with this segment.

### 4.3. Examine and explore DIY vehicle maintenance behaviours and practices of the target group

*What safety behaviours does the target group engage in when undertaking vehicle maintenance DIY activities?*

*What behaviours are at risk of resulting in injury or death when undertaking vehicle maintenance DIY activities, how often are these undertaken, and by whom?*

#### Type of DIY work done

There is a very wide range of specific work undertaken by DIY'ers, but broadly it falls into four categories. There were no significant differences in the prevalence of these categories across age or across the three segments. From most to least common, these categories are:

- Maintenance Done by 91% of DIY'ers
- Repairs Done by 57% of DIY'ers
- Improvements Done by 30% of DIY'ers
- Refurbishments / roadworthiness Done by 15% of DIY'ers

Similarly, there were no major variations in the types of vehicles DIY'ers work on across these groups. Passenger cars were by far the most common, with less than 10% working on commercial type vehicles.

**Table 10: Types of vehicles worked on** [Source: Online survey Q1]

Vehicle type	%
Passenger Car	88%
4WD / AWD / Ute	26%
Motorbike	11%
Trailer	8%
Light commercial, e.g. van, small truck	8%
Heavy commercial, e.g. large truck	2%
Other	<1%

Q1. What sort(s) of vehicle(s) have you done you do DIY work on in the last 12 months

Base = all respondents [N=200]

In the focus groups, most participants – even those who are probably from the Confident and Macho segments – are quite clear that they do not undertake major works. Their description often includes terms like 'simple' and 'basic' tasks and maintenance. Many feel that what they can realistically do is limited by their knowledge, skills, tools and available time. While some are prepared to learn about

and tackle more sophisticated tasks - and this increases with experience and confidence and so would be expected to be seen least often in the Variable DIY'er segment – even amongst these practitioners there was a recognition that some more major tasks are beyond their capability.

*“I rarely need to lift the whole car up. If you need to do that then you are probably looking at something pretty major, and I would take it to a mechanic for that type of work.”*

*Participant, Sydney*

Interestingly, in the focus groups DIY'ers discussed their frustrations with modern cars which are much harder for them to do work on. They have more computers, sealed components, require special (expensive or unattainable) tools, and have less and less space to get into.

### Lifting, suspending and getting under vehicles

One of the primary exposures to the risk of death and serious injury associated with vehicle DIY is when people are under the car.

The great majority of DIY'ers are at least periodically exposed to this risk. **94% of respondents to the survey say that they will get under the vehicle when they need to** – and this does not vary across the three segments. Although the number of variables in their DIY practice is huge, what this suggests is that whatever their practice, most DIY practitioners are at some point in a position where any *potential* risk of their practice becomes a *real* risk.

DIY'ers are less likely to lift and suspend the whole vehicle than a part of it:

- 84% of practitioners will lift and suspend one corner when required
- 75% will lift and suspend one end when required
- 45% will lift and suspend the entire car when required

The only segment difference was in respect to lifting and suspending the entire vehicle, which two thirds (67%) of the Macho DIY segment would do, compared to 45% of the Confident segment and 35% of the Variable segment.

## When DIY work is done

Saturday mornings and afternoons are by far the most common main time to do vehicle DIY.

**Table 11: When vehicle DIY is most often done** [Source: Online survey Q3]

	Morning	Afternoon	Evening
<b>Monday</b>	3%	3%	0%
<b>Tuesday</b>	0%	0%	1%
<b>Wednesday</b>	2%	1%	0%
<b>Thursday</b>	0%	0%	0%
<b>Friday</b>	0%	0%	0%
<b>Saturday</b>	<b>28%</b>	<b>38%</b>	2%
<b>Sunday</b>	6%	<b>10%</b>	2%

Q3. When do you most often work on your vehicle(s)?

Base = all respondents [N=200]

When adding in all the other times that DIY'ers tend to work on the vehicles, Sundays jump up in terms of prominence, especially Sunday afternoons. This type of information may be useful in placing radio communications, should they be a selected intervention strategy.

**Table 12: All times when vehicle DIY is done** [Source: Online survey Q3 Q3a]

	Morning	Afternoon	Evening
<b>Monday</b>	13%	12%	8%
<b>Tuesday</b>	8%	11%	8%
<b>Wednesday</b>	11%	12%	6%
<b>Thursday</b>	8%	10%	9%
<b>Friday</b>	9%	7%	13%
<b>Saturday</b>	<b>63%</b>	<b>89%</b>	16%
<b>Sunday</b>	<b>41%</b>	<b>63%</b>	15%

Q3. When do you most often work on your vehicle(s)?

Q3a. When else do you work on your vehicle(s)?

Base = all respondents [N=200]

A little over half of the respondents to the survey did vehicle DIY at least monthly, and only 7% did so no more than once a year.

These frequencies did not vary across the segments.

**Table 13: How often Vehicle DIY is undertaken** [Source: Online survey Q4]

Vehicle type	%
More than once a week	5%
Weekly	10%
Fortnightly	11%
Monthly	26%
<b>At least Monthly</b>	<b>52%</b>
Less than monthly, but more than once a year	41%
Once a year	4%
Less often	3%

Q4. On average, how often do you do DIY work on your vehicle(s)?

Base = all respondents [N=200]

### Associated activities

Vehicle DIY'ers in the focus groups talked about several different motivations for doing DIY. For some it was very much a time to withdraw and focus on something manual and physical that required their attention. For these people, the solitary nature of the experience was part of what they valued.

However, others saw DIY work as an opportunity for social engagement with their mates; while others did work with mates because they were learning from them or relying on their greater expertise.

The following tables look at the frequency of other activities happening around DIY – though only one of these is inherently dangerous per se. They show that listening to the radio was very common, which was consistent with the focus groups' observations. There were no dominant radio preferences, with commercial FM stations and sport being probably the two most common.

These tables make it very clear that the Macho DIY segment are the most likely to engage in additional activities – radio, mates and alcohol were all significantly more common for this segment.

## Radio

Overall, nearly 80% of vehicle DIY'ers listen to the radio at least sometimes while doing DIY – meaning that this channel is a potentially effective one for getting messages to them while they are actually engaged in the activity. This is especially true of the Macho DIY segment, with 93% of the respondents in this segment listening to the radio at least some of the time.

**Table 14: Prevalence of listening to the radio while doing DIY** [Source: Online survey Q17]

Listen to the radio	Total Sample	Variable DIY'ers	Confident DIY'ers	Macho DIY'ers
		39%	43%	19%
All the time	14%	9%	15%	22%
Most of the time	27%	26%	22%	41%
Sometimes	38%	42%	38%	30%
At least sometimes	79%	77%	75%	93%↑
Rarely	10%	10%	12%	5%
Never	11%	13%	13%	3%
Sample size	200	77	86	37

Q17. Please indicate how often you do the following when you're doing DIY vehicle work at home

Base = all respondents [N=200]

## Kids

Kids are clearly a part of the DIY scene, albeit not a ubiquitous part. Of the respondents to the survey, 2-in-5 indicated that they at least sometimes spend time showing their kids how to do DIY. That proportion doesn't vary significantly across the three segments.

**Table 15: Prevalence of showing kids how to do DIY** [Source: Online survey Q17]

Show kids how to	Total Sample	Variable DIY'ers	Confident DIY'ers	Macho DIY'ers
		39%	43%	19%
All the time	4%	3%	6%	3%
Most of the time	10%	9%	8%	16%
Sometimes	28%	33%	22%	30%
At least sometimes	42%	45%	36%	49%
Rarely	11%	4%	13%	19%
Never	20%	17%	22%	19%
No Kids	29%	35%	29%	14%
Sample size	200	77	86	37

Q17. Please indicate how often you do the following when you're doing DIY vehicle work at home

Base = all respondents [N=200]

## Mates

Overall, about half the DIY'ers in the survey reported at least sometimes having mates over at the same time. As a form of verification of the observation from the focus groups about the more social nature of the macho DIY segment's DIY practice, 81% of that segment at least sometimes have mates over, and 37% report mates being over at least most of the time (compared to less than 13% of the other two segments).

**Table 16: Prevalence of having mates over while doing DIY** [Source: Online survey Q17]

Have mates over	Total Sample	Variable DIY'ers	Confident DIY'ers	Macho DIY'ers
		39%	43%	19%
All the time	2%	0%	2%	6%
Most of the time	12%	4%	11%	31%
Sometimes	35%	39%	28%	44%
At least sometimes	49%	43%	41%	81%↑
Rarely	29%	28%	37%	14%
Never	22%	29%	22%	6%
Sample size	191	72	83	36

Q17. Please indicate how often you do the following when you're doing DIY vehicle work at home

Base = all respondents [N=191]

## Alcohol

As with having mates over, the Macho DIY segment was far more likely to consume alcohol than either of the other two segments – with nearly two thirds consuming alcohol at least sometimes, and nearly half of those who consume alcohol most or all of the time. There was also a difference between the Confident DIY segment and the Variable segment, with the Confident segment virtually eschewing alcohol, while nearly a quarter of the variable segment at least sometimes consume it.

The focus groups showed that the alcohol most often consumed was beers. A further discussion of alcohol can be seen later in this section.

**Table 17: Prevalence of drinking alcohol while doing DIY** [Source: Online survey Q17]

Have alcohol	Total Sample	Variable DIY'ers	Confident DIY'ers	Macho DIY'ers
		39%	43%	19%
All the time	1%	0%	0%	6%
Most of the time	6%	3%	1%	22%
Sometimes	16%	20%	5%	33%
At least sometimes	23%	23%	6%↓	61%↑
Rarely	16%	16%	17%	17%
Never	61%	61%	77%	22%
Sample size	189	70	83	36

Q17. Please indicate how often you do the following when you're doing DIY vehicle work at home

Base = all respondents [N=191]

## Learning about DIY

The most common way for DIY'ers to learn about vehicle DIY was for a friend or family member to show them. In the focus groups, this passing on of knowledge was a common thread of conversations on this topic, so it is no surprise to see this form of personal learning come up as the most common.

The next most common mechanisms in general were books and manuals, and equipment instructions. It is notable that the Macho DIY segment made significantly less use of both of these sources compared to the other two segments.

In total, 29% of DIY'ers surveyed reported using the internet for information, with 26% doing research generally and 13% who used discussion forums. While these are not insignificant proportions, they are lower than might be expected from the focus groups, where use of the internet appeared more common – particularly the use of forums. Another important internet channel was YouTube videos. Most internet searches were quite specific to the task and tend to include the make / model of the vehicle (eg: “how to change oil filter on 1998 Holden Commodore”). Participants mentioned that finding information that was pertinent to Australian conditions was important to them. Other ways they used to distinguish ‘good’ information was where it was repeated in multiple places, or when step-by-step photos were included.

*“If the bloke goes to the lengths of putting up all the photos, you assume he knows what he is talking about.”*  
Participant, Melbourne

**Table 18: How DIY'ers learned to do DIY** [Source: Online survey Q8]

	Total Sample	Variable DIY'ers	Confident DIY'ers	Macho DIY'ers
		39%	43%	19%
<b>A friend / family member showed me how to do it</b>	69%	66%	70%	70%
<b>I bought or borrowed books and manuals</b>	37%	35%	50%	8%↓
<b>I looked at the instructions that came with the equipment</b>	32%	40%	31%	16%↓
<b>I did some research on some internet sites</b>	26%	26%	26%	24%
<b>I logged onto an internet discussion forum</b>	13%	10%	13%	16%
<b>The store where I bought the equipment showed me / gave me information</b>	13%	14%	12%	11%
<b>I did a training course</b>	12%	8%	16%	11%
<b>I saw a product demonstration</b>	5%	4%	2%	11%
<b>Other</b>	6%	7%	8%	0%↓
<i>Sample size</i>	200	77	86	37

Q8. How do you know how to do home vehicle DIY work?

Base = all respondents [N=200]



## At risk behaviour

Defining at risk DIY behaviour is very difficult to do definitively. There are practices which are considered unsafe, but even these could be done in such a way that effectively reduces the risk to a negligible level. At the other end of the spectrum, there are behaviours which appear superficially safe, but which could in fact be done in such a way that they were actually creating a general or specific risk. This research cannot therefore attempt to answer every question about specifically risky activity.

However, there are a number of concepts which can be considered from both a qualitative and a quantitative perspective. As discussed previously, over 90% of DIY practitioners report getting under their vehicle when necessary for the work they are doing – which means that the inherent risk associated with their practice is a real risk, not a purely theoretical one.

We have also previously identified that alcohol consumption is a fairly consistent factor for some practitioners, especially those in the Macho DIY segment, but also amongst those in the Variable segment.

One of the main areas for consideration is the question of consistent risk versus occasional risk. Do DIY practitioners basically follow safe practice, but just occasionally expose themselves to greater risk when they deviate from best practice? Or do they show little variation, and thus the level of risk might vary between individuals, but remain fairly constant for a given individual?

Overall, **DIY lifting and suspending practice appears to be very consistent**. Certainly in the focus groups most participants indicated that they do not often (other than roadside repairs) lift and / or suspend vehicles in different ways.

This was borne out in the survey. Of those DIY practitioners who lift one corner of their vehicle when necessary, only 20% reported lifting a corner in a way other than their 'usual way' in the last 12 months. This figure dropped to 12% of those who will lift one end of their vehicle, and 6% of those who will lift their whole car. In terms of suspending a vehicle to work on it, only 5% of those who lift an end and 4% of those who lift the whole vehicle did so in a way other than their usual way in the last 12 months.

The most common reasons for doing things in a way other than the 'normal' method (across all examples of doing one of the different lifting or suspending operations) were:

- It was quicker this way (34%)
- I didn't have my usual tools or equipment (29%)
- I needed more space (25%)

Fundamentally what this means is that for the great majority of practitioners, it is their standard practice that is of interest.

Once the level of consistency has been considered, the next question is the degree of risk associated with 'normal' practice, and with any occasional practice.

## Where DIYer's work

About half of DIY'ers reported working in their sheds / garages, and about half in other locations.

The majority of DIY'ers usually work on the desirable hard, flat surfaces, and this did not vary significantly with segments, age or frequency of working.

The table below suggests that DIY'ers who do not normally work on a hard, flat surface place more importance on the 'flatness' of the surface than they do on the 'hardness' – especially for lifting one corner of a vehicle. This is further reinforced by the bottom table, which looks at 'other' places DIY'ers sometimes work. Though the sample sizes for this table are very small, it is clear that soft, flat surfaces are the main alternative to hard, flat surfaces that are occasionally used.

**Table 19: Proportion of DIY'ers normally working on hard flat surfaces** [Source: Online survey Q10-14]

	Hard flat surface	Hard uneven / sloped surface	Soft flat surface	Soft uneven / sloped surface	
Lifting one corner	85%	3%	11%	1%	n=169
Lifting one end	91%	3%	5%	1%	n=150
Lift whole vehicle	91%	2%	5%	1%	n=92
Suspend one end	90%	4%	5%	1%	n=150
Suspend whole car	92%	2%	3%	2%	n=92

Q10c / 11c / 12c / 13c / 14c. Please indicate the type of ground on which you usually lift one corner (only) of your vehicle

Base = respondents who do related activities [n=92-169]

**Table 20: Proportion of DIY'ers working on hard flat surfaces when away from their usual process** [Source: Online survey Q10-14]

	Hard flat surface	Hard uneven / sloped surface	Soft flat surface	Soft uneven / sloped surface	
Lifting one corner	84%	10%	2%	-	n=31
Lifting one end	78%	6%	17%	-	n=18
Lift whole vehicle	91%	-	9%	-	n=11
Suspend one end	88%	-	12%	-	n=8
Suspend whole car	86%	-	14%	-	n=6

Q10c / 11c / 12c / 13c / 14c. Please indicate the type of ground on which you usually lift one corner (only) of your vehicle

Base = respondents who have done this an alternative way in the last 12 months [n=6-31]



- This suggests that it is more important to emphasise the importance of hard surfaces than flat surfaces in communications to DIY'ers.



- Because 'alternative' locations do appear to be slightly more likely to be sub-optimal compared to 'normal' locations, the three main scenarios for doing things in an alternative way (for speed, space or tool-related reasons) should be used to contextualise messages emphasising the importance of using hard flat surfaces even under these circumstances.

## Equipment

It is not possible to definitively assess equipment and usage as there are too many inherent variables, but it is possible to look across the types and numbers of equipment used to assess how much obvious risk DIY'ers expose themselves to.

In the survey, respondents were asked to describe the way in which they normally lift and suspend a vehicle. The tables below summarise an indicative classification of these into superficially safe or potentially risky practices. These results cannot be treated as definitive, but rather must be interpreted as indicative of DIY equipment use.

As might be expected, DIY'ers lifting only a corner or an end of a vehicle predominantly use store-bought equipment, and make only limited use of improvised<sup>3</sup> or self-built equipment in conjunction with this. However, when lifting a whole car self-built and improvised equipment was used by around 1-in-5 respondents. The focus groups would suggest that this is largely self-built ramps and potentially the use of landscape features such as gutters or mounds. Breaking this down to the level of the individual segments does not reveal widespread differences, and nor do other demographic variables show any systematic major variation.

**Table 21: Use of bought and improvised equipment** [Source: Online survey Q10-14]

	Store bought equipment only	Improvised or self built equipment only	Combination	
Lifting one corner	96%	-	4%	n=169
Lifting one end	91%	-	9%	n=150
Lift whole vehicle	80%	1%	19%	n=92
Suspend one end	77%	7%	16%	n=147
Suspend whole car	73%	15%	12%	n=92

Q10c / 11c / 12c / 13c / 14c. Thinking about when you \_\_\_\_ your vehicle off the ground, please indicate what equipment you USUALLY use?

Base = respondents who do related activities [n=92-169]

In addition to the use of bought versus improvised equipment, some attempt was made to classify appropriate equipment use in terms of appropriateness (eg: using jacks for lifting, but not for suspension) and the numbers of tools used (eg: using more than one stand for suspending the end of a vehicle). This analysis sought to classify individuals' practices into one of four categories:

1. Safe equipment used safely
2. Safe equipment used unsafely
3. A combination of safe and unsafe equipment
4. Unsafe equipment.

This analysis is the most speculative, as there are numerous combinations of equipment and numbers of pieces that are used. The following table shows that the proportion of respondents who

<sup>3</sup> Improvised equipment includes the use of bricks, blocks, logs and other available materials.

appeared to be using only suitable equipment in sufficient numbers dropped as the whole vehicle was involved. This was especially the case for suspending the entire vehicle, with the analysis suggesting that as few as 10% of respondents who did this could be classified as truly safe in their practice. In many cases, for the whole vehicle lifting and suspending problems stemmed from insufficient numbers of equipment, but also the use of jacks as part of the suspending equipment was common.

Again, the segment and other demographic differences were not consistent or significant.

**Table 22: Inferred level of safety based on equipment used and how it is used**

[Source: Online survey Q10-14]

	Safe equipment / safe use	Safe equipment / unsafely used	Safe and unsafe equipment	Unsafe equipment	
Lifting one corner	81%	15%	4%	-	n=168
Lifting one end	84%	7%	9%	-	n=149
Lift whole vehicle	58%	22%	19%	1%	n=91
Suspend one end	75%	3%	16%	7%	n=146
Suspend whole car	10%	63%	12%	15%	n=92

Q10c / 11c / 12c / 13c / 14c. Thinking about when you \_\_\_\_ your vehicle off the ground, please indicate what equipment you USUALLY use?  
Base = respondents who do related activities [n=91-168]

### Specific practices and pieces of equipment

Across the research, and especially through the qualitative stages, a number of observations were made relating to particular practices and pieces of equipment. While these may not necessarily directly assist in promoting safe practices, nonetheless they further complete our understanding of the vehicle DIY world.

It was interesting to note that practitioners may not actually think of lifting and suspending equipment as 'DIY tools'. In discussions of tool purchases practitioners tended to focus much more on tools to be used once the car was lifted or suspended. In one group, this realisation was explicitly reached, and participants reacted in some surprise to the fact that they hadn't thought of jacks and other equipment as 'tools'.

#### Vehicle Jacks / Scissor Jacks

- Are seen as a little physically intensive and more time consuming to use than 'power' jacks, but not so much so as to prevent their use.
- As they come free with the car, there is no cost associated with them – which makes them a default and preferred choice for some.
- Because they are specific to the car:
  - They are assumed to be sufficiently strong to lift at least any corner of that vehicle.
  - There are specific placement instructions available and also markings.

## Trolley Jacks

- Are considered probably the best type of jack to use – fast, physically easy, strong.
- Are used by some DIY'ers to both lift and suspend a vehicle.
- Despite their potential to be 'the best jack', there are real and potential negatives as well:
  - They are more costly, which is a barrier
  - There is a risk of incorrectly placing them, resulting in:
    - Damage to the vehicle
    - Poorly balanced vehicles to work on
  - Because they can be let down quickly with a single button, they are risky to be used to hold up a car when working under it – especially in a place where other people are around.

Some of these comments relate to other sorts of jacks as well, such as bottle jacks. However, Trolley Jacks seemed far more common than these other types.

## Stands

- Were seen as a good tool for suspending a vehicle.
- Were relatively inexpensive.
- Were fairly simple to place correctly.
- Were well suited to work that required taking wheels off to complete.

Despite these largely positive views of stands, they did not appear as widely used as might be expected. Some DIY'ers who were inclined to use jacks for suspending as well as lifting their cars appeared unaware of the potential risk and the relatively higher safety afforded by stands.

Not all users of stands are aware that they should only be used on hard surfaces.

## Ramps

- In the focus groups ramps appeared to be the type of equipment most often self-built, with a number of participants talking about concrete ramps that they had constructed (sometimes in conjunction with pits or other garage facilities).
  - Because self-built equipment was classified as potentially risky, users of these facilities were not classified as fully safe practitioners. However, while it is possible that some constructions are inherently poor quality, it is also likely that many are very well constructed and safe facilities.

- Ramps are not suitable to use when wheels need to be removed.
- Some users of ramps have quite deliberate 'mental checklists' that they use when putting the car up, including as related to handbrakes, chocks and the like. However, they also then mentioned that "*sometimes you forget*".
- Some DIY'ers simulate ramps by the use of gutters and other landscape features to create space under the vehicle.

### Bricks, blocks and the like

- Are used because they are cheap, easy to get, fast to use
- While they are seen by many DIY'ers as inherently unsafe, those who use them seem to believe that they are actually quite safe. However, they do also use several strategies to mitigate any risk:
  - Only go under the car for a short time
  - Use "*lots*" of them



The strategy for reducing the use of bricks and other materials for suspending a vehicle will be to change the perceived probability of a serious failure. Many users of bricks etc are motivated to be safe in their practice and are using these materials under the impression that the risk of injury or death remains very small. Awareness- raising of the increased risk will likely have some impact on use. This message could be usefully supported by promotion of the relatively cheap alternative of vehicle stands.

### Hard surfaces

- Are widely used, but may be a secondary consideration to flatness for many DIY'ers.
- If hard flat surfaces are not immediately available to DIY'ers (eg: they do not have a suitable garage or driveway space), then some at least will improvise with the environment that they do have – using verges, roads and other available locations rather than not do DIY work at all.
  - This is a difficult problem to overcome, as environmental features are expensive and often impractical to change.

### Alcohol

- Is seen as an integral part of the experience by some DIY'ers, especially those in the Macho segment, and to a lesser extent the Variable segment.
  - For these DIY'ers, behaviour change is going to be a very significant challenge – much as safe road / driving behaviours are. It is conceivable that there is a link between potentially related activities such as drink driving and drinking while doing vehicle DIY.



There may be value in the ACCC considering co-sponsoring further research with road safety agencies to explore this possibility, as a combined strategy may be possible.

- Amounts of alcohol consumed vary. In the groups many practitioners reported that they indulge in moderate alcohol consumption to remain unimpaired. Others talked about needing to have a few drinks in order to be able to actually do it, as it made it seem easier. Still others talked about drinking with mates until they “*couldn’t remember whose round it was*”. At this stage they noted that they weren’t really getting much done, but safety still did not seem a major concern.
- Beer is by far the most common alcoholic beverage consumed.
- A number of ‘defensive’ statements were made by drinkers in the focus groups, such as drinking being “*personal choice*” or that they “*jacked the car up before they had any beers*”. These sorts of emotive, defensive statements are often an indicator that the speaker is deeply committed to the behaviour and that change is likely to be slow and difficult to achieve.
- If reducing drinking during DIY work is a major focus, then we recommend a very specific and targeted Behaviour Change Program be undertaken, including the specific in-depth developmental research with the target audience that it entails.

## 4.4. Identify differences in risk level associated with segments and sub-groups of the target population

### ***Are there different levels of risk for some people compared with others? How is this risk quantified?***

Overall, safety is a well embedded concept within the DIY population, and it is probably this that largely accounts for a relatively low rate of deaths and serious injuries from what is a potentially quite dangerous activity.

The previous sections have identified that risk is primarily embedded in the regular practices of practitioners, and that variations from their normal practice are not all that common. The willingness of over 90% of practitioners to get under their vehicle when required makes clear that any risk in the practice will be a real and not theoretical risk – but probably also accounts for the quite automatic consideration of safety that DIY'ers largely show.

However, while safe practice is probably the norm, there are also several avenues of risk.

1. While the majority of practitioners hold largely safe attitudes towards much DIY practice, there are small groups whose attitudes and behaviours place them at (potentially) higher risk. Where several such attitudes towards improvising, working in sub-optimal locations, or taking risks to save time or money coincide, then the direct risk may become quite significant.
2. Throughout the research it was clear that some practitioners did not know that some of their practices were unsafe. Examples of this included the use of Trolley Jacks for suspending as well as lifting vehicles; or the use of vehicle stands on soft surfaces. These types of knowledge gaps are relatively easy to target, and a logical first step for reducing localised risks.
3. Three segments within the DIY population were identified. Unlike some other contexts, the practical differences in the practice of these segments were relatively few. However, the 'style' of the different segments is a valuable mechanism for better understanding the range of people undertaking DIY and the different experiences that they have.

In particular, it was notable that the Macho DIY segment are more likely to be engaged in social activity with mates, and to consume alcohol while doing DIY. It is hypothesised that there may be a willingness to take some risks, to trust their own judgement, and to potentially cut corners that might place them at occasional risk.

The primary difference between the Confident and the Variable segments was in the consistency of their practice. Confident DIY'ers seemed to have more experience (as might be expected), and more knowledge of what was and was not good practice. The Variable DIY'er segment is likely at greater risk from making mistakes without even being aware of the risk they are taking. Both are motivated to be safe, but the Variable segment have a lower ability to execute that.



## 4.5. Identify appropriate strategies to mitigate risk to the target audience

**What effort is required by the ACCC / partnered organisations / commercial sector to promote the adoption of safe behaviours by the target audience when undertaking vehicle maintenance DIY activities?**

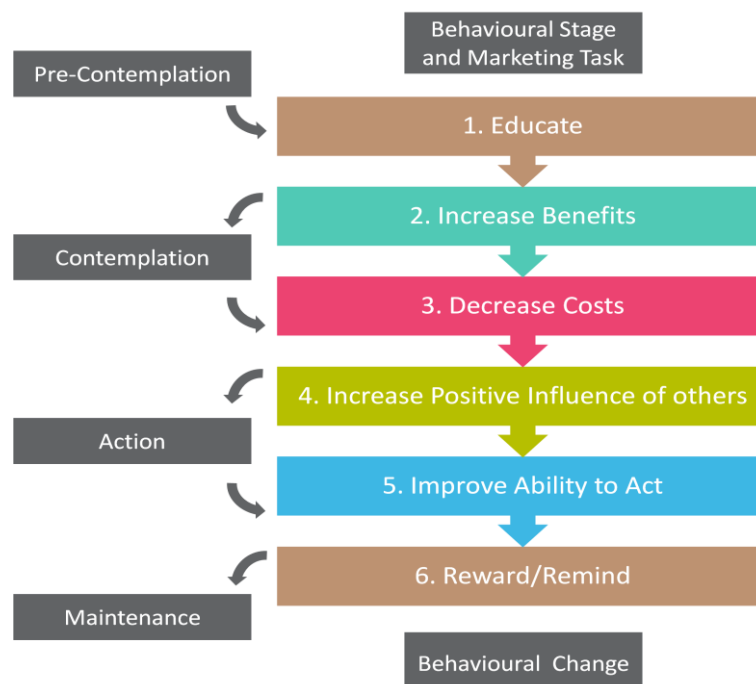
**What is the level of self efficacy in terms of practising the safe behaviours among the target audience (that is, to what extent do people feel they are capable of adopting the safe behaviours, and what are the key barriers to adopting these safer behaviours?)**

Ultimately, if DIY practitioners are to be more safe, then some form of behaviour change is required. The question and challenge is how to achieve this.

The simplest way to change behaviour is to provide information that the target audience is interested in (ie: they will pay attention to) and which they will immediately action. Many Government communications activities over many years have implicitly assumed that this situation did in fact exist. However, it was rarely the case that it did, and therefore many campaigns were less effective than hoped. As a result, agencies and their supporting partners such as researchers have become more sophisticated in their approach.

The Behaviour Change Model that Colmar Brunton Social Research uses is a stages of change model, and built into this model are a number of communications activities / marketing tasks that can be selected to address particular situations.

**Figure 23: Stages of Behavioural Change Model**



Sourced from Andreasen, A. R (1995) *Marketing Social Change*. San Francisco: Jossey-Bass.

In this model, the “traditional” Government communications campaign would be considered an ‘education’ campaign, and therefore suited to a context in which there were worthwhile proportions of the target audience in the “Precontemplation” stage. In this stage people are not even thinking about changing behaviour, which may be (at least in part) because they are unaware of the risks or options available to them. Certainly in this stage they have no desire or intention to change, and do not perceive the benefits of the desired new behaviour to be greater than those of their current behaviour.

Therefore, this type of campaign is suited to situations where there is new information, or that awareness of existing information is imperfect. As it happens, this is exactly the case for some of the risks associated with Vehicle DIY. Therefore, some **targeted awareness- raising activities are recommended.**

In particular, these should be aimed at the Variable DIY’er segment, with the Confident DIY’er segment as a secondary audience. It is unlikely that straight awareness-raising activities will be of value with the Macho DIY’er segment, but some care should be taken to ensure that they do not position safe practices as a type of ‘goody-two-shoes’ behaviour that is actively repelling to them.

Specific candidates for awareness-raising messages are:

- a. Only using vehicle stands on hard surfaces
- b. Trolley Jacks are for lifting vehicles, but are not safe for suspending while working underneath
- c. Bricks, blocks and other such items are not safe means of suspending vehicles to work underneath

Both these last two messages may be supported by supplementary information that purpose-designed vehicle stands are available, and are quite inexpensive.

As DIY’ers are largely motivated to behave safely, such awareness-raising may be sufficient to move at least some practitioners from Precontemplation directly to Action. For those practitioners who are already doing the right things, these messages will serve to reinforce / remind them to maintain their correct behaviours.

However, for other messages and other audiences information by itself will be insufficient. For these, **more sophisticated emotional arguments may be required** – in order to influence the underlying exchange that the person is making. This will require elements of changing the perceived values of the desired and undesired behaviours, changing (increasing) the probability they associate with negative outcomes, and finding influential voices to communicate these messages.

Examples of contexts where these more sophisticated communications are likely to be necessary are:

- d. That a suitable number of vehicle stands and / or ramps are a worthwhile investment if work is to be undertaken under the vehicle.
- e. If a suitable place to do Vehicle DIY is not available, then practitioners should not undertake it at all rather than do so in unsafe locations.

- f. If there is a need to do Vehicle DIY in a different or unusual place or way due to time or space constraints, or not having normal tools / equipment available, then it is especially important to continue to do it in a place where a hard, flat surface is available.
- g. To limit alcohol consumption to a level that reduces risk (this message would be particularly aimed at the Macho DIY segment).

While we have identified candidates for this type of behaviour change communication in this research, and in some cases been able to provide some guidance on potentially influential communications, it is important to note that this research has only scratched the surface of these topics. To fully understand how to develop an effective Social Marketing program, a specific Behaviour Change research project is required. We have identified where such a program might be targeted, but the scale of such a research program could easily be as large or larger than this entire exploratory project. Concept testing of some nature would also be recommended.

A third arm to this strategic consideration is **what types of communications vehicles should be used**. While information before a critical moment is important, the most influential communications are often those that are effective in touching the audience at the right moment. There are two moments which are potentially valuable to reach into – purchase of equipment and commencement of DIY activity.

A number of communications channels are potentially effective in reaching into these moments:

- **Warning labels:** while they are little used at the moment, their inclusion on the equipment makes them potentially important. As they are not often read, the most important information for safe use needs to be readable at a distance and in a moment's glance.
- **Radio** is a common element of the DIY experience, especially for the Macho DIY segment. While radio spend is much less expensive than TV, it is not insignificant. Nonetheless, should budget be available or if partners could be found to sponsor or part-fund such placement, then radio communications on weekends would reach at least some practitioners at a critical moment in their activity.
- **Electronic / mobile sources of information** are only going to become more common, and already in the focus groups we had participants talking about using iPhones to see how to do certain things while they were literally under the car. Forums, YouTube and even dedicated DIY Apps are all opportunities to deliver information directly into the critical environment.
- Information at **point of sale** about how to safely conduct DIY activity and / or how to safely use equipment is an opportunity to influence purchase behaviour and to inform later practice. For example, this could be used to target the use of Jacks for suspending vehicles – reducing the number of practitioners who buy an expensive Jack thinking that it can serve both purposes. [See note in next section about 'how to' information.]

The question of **influential others** is also worth consideration. While directly influencing DIY'ers is an important strategy, the use of influential others is also a supplementary tool which should be used where possible. There are several 'others' who exist in and around the DIY world.

- **Mates:** are important sources of information on how to do DIY, and also important sources of tools and equipment for some. They are often present in the Macho DIY'ers environment. Giving mates the tools and confidence to advise their mates on safe practice may increase the positive impact of these on each other.
- **Sales people:** sell the equipment to DIY'ers. Mostly the DIY'ers are going to want to know how to use the equipment to get the job done – but the sales people would be in a position to convey 'safe-use' material within this 'how to' information. Sales people could potentially influence both the purchase of correct equipment and its subsequent appropriate use.
- **Partners and family:** kids are commonly present in the DIY world, but partners are not. Nonetheless, DIY'ers did talk about their "*wife coming in to check I am OK every now and then*". The potential to inform partners and older kids about safe practice, allowing them to potentially influence the DIY'ers in their life should not be discounted.
- **Mechanics:** are a source of information for DIY'ers. Some watch their mechanics closely, others directly ask them how to do some things. It is not known how mechanics would feel about providing information to DIY'ers that increase their capacity to undertake DIY work – but again, like partners and families, they are people in the DIY environment who could potentially be positive influences.

The next sections look at more tactical considerations in the implementation of these strategies.

## 4.6. Investigate opportunities to best engage with the target group utilising appropriate messages, incentives and communication channels

### *How best can the risk management strategies be communicated to the target audience?*

There are several tactical approaches which can be considered for reaching DIY'ers:

- **Make warning labels very visible** reminders of the key safety message for particular equipment. They will not be read, so the challenge is to make it impossible not to see the key message. Examples:
  - Trolley Jacks: "Do not go under a vehicle supported by this jack"
  - Vehicle stands: "Only use on hard surfaces"
- DIY'ers are interested in information on the lifting capacity of their equipment. **Placing safety information alongside capacity information increases its likelihood of being seen.**
- **Radio placements on Saturdays and Sundays** (all day Saturday, but perhaps more focussed on Sunday afternoons) would be most effective in reaching DIY'ers while they are engaging in DIY work.
  - Commercial FM stations and sport coverage should be targeted.
  - Messages on radio should be designed with the Macho DIY segment most closely in mind.
- The **internet and social media** offer an opportunity to reach DIY'ers through their searching for solutions to DIY problems. In most cases searches will be quite specific and practitioners will be searching for information on how to do something, not anything to do with safety. The safety information needs to be integral to the technical solution, but embedding it in this context would make it more relevant. Possible avenues are:
  - **Forums:** these are often make / model specific, but active participation from ACCC sponsored practitioners or representatives may assist in teaching practitioners at an almost individual level.
  - **YouTube** is used by some DIY practitioners to learn how to do certain things. While overtly ACCC branded YouTube videos may not necessarily appeal to all segments, a credible source associated with the ACCC (or simply one invisibly sponsored by the ACCC) could easily become a source of good information which happens to also convey and reinforce good practice.
  - **Internet searches:**
    - Practitioners look for consistent information, so putting good quality information up several times may be more effective than having it in only one place.

- Practitioners are also attracted to information that is explicitly relevant to Australian conditions and regulations, and this should be immediately obvious in the search results.
- **Apps:** are increasingly used by smartphones, tablet computers and the likes. Apps to assist DIY'ers could conceivably be developed. These would need to have clear benefits to practitioners in order for them to use one before or during DIY work. In the current research focus group participants talked about Apps, and at least one suggested that an App related to 'checklists' could be valuable, but this received little overt support. While Apps are unlikely to be an immediate solution, the potential of developing an App shouldn't be discarded – but the right functionality and execution would be critical to gaining use.
- There are several **key moments** that could be used as trigger points for the recall of messages, or points where influential others could be encouraged to take action. These could be used in any creative executions developed, or as a call to action for practitioners to review their practice:
  - **When a new car is acquired** the techniques and equipment (eg: vehicle jacks) for lifting and suspending it may change. At that moment, DIY'ers may be more likely to seek out information about weights and lifting capacity for example, and in this opening safety information may also be taken on.
  - **When new equipment is purchased**, DIY'ers should be encouraged to read the instructions / safety material at least once.
  - **When borrowing equipment** both borrowers and lenders should be encouraged to use the exchange as a moment where both parties satisfy themselves as to the capacity of the borrower to safely use it.
- **Emphasise the importance of working in a suitable place even if having to deviate from normal practice** because of time or space constraints, or if normal tools and equipment are not available.
- **Checklists** are a tool used by some of the more organised and experienced DIY'ers – notably the Confident segment. While these are mental checklists, both mental and physical checklists could be developed and promoted.
  - If a catchy acronym could be developed as a reminder for practitioners to follow good practice, this could be utilised in a variety of ways from sticky notes to magnets to tool / fixing holders and the like that might be kept and used in the DIY workplace.
- Gregory and Haynes **manuals** are well respected. Including safety information within these manuals would put it in a place where DIY'ers would encounter it.

## 4.7. Investigate responsiveness of different segments (e.g. more “at risk” segments) to different communications

### ***What does the most at risk group respond to best in terms of message and communication channel?***

DIY’ers are rarely interested specifically in safety information – they are much more interested in how to do the job itself. Therefore, it is **essential to embed the safety information into the technical information**. For those who are not attracted to safe practice, this increases their likelihood of simply adopting it as ‘best practice’; while those who might choose to deliberately flout safety in order to maintain their self or peer image might use safe behaviours without even really being aware of it.

The **most suitable voice to talk to DIY’ers** is likely to be a middle-aged to older male who is into cars, experienced, and sharing their knowledge with their peers. DIY’ers, particularly those in the Macho segment do not want to be lectured to or talked down to – the peer-to-peer nature of this voice is critical. This person should be well equipped, but not a professional – as that could simply look unattainable and irrelevant to many DIY’ers.

Variable DIY’ers are unlikely to ask some questions as they don’t know what they don’t know – but this voice needs to be constructed in such a way as to be able to be asked any question without making the asker feel it is a ‘dumb question’.

Some DIY’ers have an emotional vulnerability in that **they do not want to have to go to a mechanic or store and admit that they bent or broke something on their car because they didn’t know what they were doing**. They would find this embarrassing and is something to avoid. This fear can be used subtly in messaging to change the emotional response to information by associating bad practice with an increased likelihood of having this negative experience.

In terms of the exchange associated with their practice choices, this is changing the probability they associate with an undesirable experience from a very low likelihood of a (more serious) bad outcome to a much higher and more immediate likelihood of a negative outcome.

Macho DIY’ers are potentially in a social situation. **Giving mates permission to talk to each other about safety** would be an important step. Confident DIY’ers also need to feel encouraged to explicitly address safety when they are assisting Variable DIY’ers.

# 5. Appendix A: Quantitative Questionnaire

## INTRODUCTION

We are conducting a NEW survey and you are invited to participate. If you choose to participate, please be assured that the information and opinions you provide will be used only for research purposes. In particular, no individual responses will be given to the organisation sponsoring this research; they will be combined with those from other participants of this research.

The research is about do-it-yourself (DIY) work on vehicle(s).

We are contacting people from the Your Source OpinionsPaid™ Panel.

### S1 INTRO

S1. Are you interested in participating?

1. Yes

2. No → ABORT

Thank you for agreeing to complete our new survey.

Please make sure you fill out all the questions on each page.

You can view all terms and conditions at <http://www.opinionspaid.com>

**To navigate within the survey, please do not use the web 'back' browser, but use the buttons below each question when needed.**



## SECTION B: INDIVIDUAL PROJECT REQUIREMENTS

### SCREENER

#### S2 GENDER

S2. Please indicate your gender: **SR**

1. Male
2. Female → **ABORT**

#### S3A VEHICLE MAINTENANCE EVER

S3A Have you ever done any “do it yourself” (DIY) vehicle maintenance or improvement work *OTHER THAN* roadside repairs (i.e. other than changing a tyre for example)? **SR**

1. Yes
2. No → **ABORT**

#### IF 2 at S3A ABORT

#### S3B VEHICLE MAINTENANCE WHEN

S3B When did you last do any “do it yourself” (DIY) vehicle maintenance or improvement work? **SR**

1. Within past month
2. Within past 3-6 months
3. Within the past year
4. Over a year ago → **ABORT**
5. Over 5 years ago → **ABORT**
6. Can't remember → **ABORT**



#### IF 4, 5 OR 6 AT S3B ABORT





## S4 VEHICLE MAINTENANCE TOOLS

S4 Please indicate which tools and equipment you have used within the last 12 months for *DIY (do it yourself) maintenance or improvement to a vehicle?* Note that this question relates to DIY vehicle maintenance only, and *not* whether you have used these products in your workplace. SR for each item

RESPONSE OF 1 ANY OF THE SHADED GREEN INDICATES OUR TARGET AUDIENCE

RANDOMISE THESE QUESTION ITEMS

	Yes	No	Don't know
<p>4.1 Vehicle jack (e.g. scissor jack, bottle jack)</p> 	01	02	99
<p>4.2 Vehicle ramp(s)</p> 	01	02	99

<p>4.3 Trolley jack</p> 	01	02	99
<p>4.4 Vehicle stand(s)</p> 	01	02	99
<p>4.5 Air jack</p> 	01	02	99
<p>4.6 A car hoist or car lift, for example:</p> 	01	02	99

IF 1 AT ANY OF S4.1, S4.2, S4.3, S4.4 → GO TO S5

IF 2 OR 99 AT ALL OF S4.1, S4.2, S4.3, S4.4 → ABORT

## S5 AGE

S5. Which one of the following age groups do you fall into? SR

Under 18 years	01 → <b>ABORT</b>
18-25	02
26-30	03
31-35	04
36-40	05
41-45	06
46-50	07
51-55	08
56-60	09
Over 60 years	10 → <b>ABORT</b>
I prefer not to answer	99 → <b>ABORT</b>

IF 1, 10 OR 99 IN S5, ABORT

## S6 LOCATION

S6. In which state / territory do you currently live? SR

1. NSW
2. ACT
3. VIC
4. SA
5. QLD
6. WA
7. TAS
8. NT

## S7 EMPLOY

S7. Firstly, could you please tell me if you, or anyone you know well, are employed by... **MR**

1. An ad agency or are involved in advertising in anyway
2. A company involved in public relations or marketing
3. A company involved in banking & finance
4. A company that makes or sells vehicle DIY equipment
5. A market research company?
6. A mechanic / car servicing / sales company?
95. None of the above

**IF 4, 5 OR 6 IN S7, ABORT**

## S8 LAST TESTED

S8. When was the last time that you went to either a group discussion or an in-depth interview or are you currently booked in for any other research with us? **SR**

1. In the last month
2. In the last 2 months
3. In the last 3-4 months
4. In the last 5-6 months
5. Not in the last 6 months
6. Already booked in

**IF 1-4 or 6 IN S8, ABORT**

IF UNSUCCESSFUL

Unfortunately for this particular survey, we need responses from people who suit specific criteria. Your account has now been credited with 50 Zoints.

Thank you for your participation and we will contact you again shortly for another OpinionsPaid survey!

Regards

OpinionsPaid.com

IF SUCCESSFUL, CONTINUE

## MAIN BODY OF QUESTIONNAIRE

### TYPES OF VEHICLES WORKED ON AT HOME

1. **What sort(s) of vehicle(s)** have you done you do DIY work on in the last 12 months? **MR**

Passenger Car	01
4WD / AWD / Ute	02
Light commercial, e.g. van, small truck	03
Heavy commercial, e.g. large truck	04
Motorbike	05
Trailer	06
Other vehicle, please specify: _____	96

**IF 05 AND/OR 06 AND/OR 96 ONLY AT Q1 → ABORT**

2. What type of work do you do on your vehicle(s)? **MR**

Maintenance	01
Repairs	02
Improvements	03
Refurbishments – getting roadworthy	04

WHEN, HOW OFTEN ENGAGE IN VEHICLE DIY

3. **When** do you *most often* work on your vehicle(s)? **SR across all options**

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

3a. **When else** do you work on your vehicle(s)? **MR**

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			
NA – I don't do this work at any other time			

4. On average, **how often** do you do DIY work on your vehicle(s)? **SR**

More than one time per week	01
Weekly	02
Fortnightly	03
Monthly	04
More than one time per year but less than monthly	05
One time per year	06
Less often	07



## BENEFITS AND COSTS OF VEHICLE DIY IN GENERAL

### 5. What are the good things about vehicle DIY? **MR**

It saves me money	01
I do a better job than a mechanic	02
I enjoy doing it as a hobby	03
I do it as a social event, with mates	04
Other, please describe: _____	96

### 6. What are the bad things about vehicle DIY? **MR**

It can be difficult	01
It can be risky / dangerous	02
It can be time-consuming	03
It can be stressful	04
It can be hard to get parts/equipment	
Other, please describe: _____	96

## MOTIVATIONS TO START

### 7. Why did you **first** get into doing home vehicle DIY work, and why do you still do it? **MR**

	How come I first got into DIY	How come I do DIY now
I enjoy it	01	01
I want/ed to be a mechanic	02	02
A friend / family member showed me how	03	03
To save money on getting my car serviced	04	04
I used to be a mechanic	05	05
Other, please specify: _____	96	96

8. How do you know how to do home vehicle DIY work? **MR**

A friend / family member showed me how to do it	01
I did a training course	02
I did some research on some internet sites	03
I logged onto an internet discussion forum	04
I looked at the instructions that came with the equipment	05
The store where I bought the equipment showed me / gave me information	06
I saw a product demonstration	07
I bought or borrowed books and manuals	08
Other, please specify:	96

TYPES OF BEHAVIOURS ENGAGED IN

**RANDOMISE ORDER**

9. Please indicate which things **you do** when doing DIY work on a vehicle (when required): **SR**

	<b>I always do this, when it needs to be done</b>	<b>I sometimes do this, when it needs to be done</b>	<b>I never do this</b>	<b>NA – someone else does this bit, e.g. mechanic / friend</b>
9.1 When required, I lift and suspend <b>one corner</b> of my vehicle off the ground to do work on it	01	02	03	04
9.2 When required, I lift and suspend one end of my vehicle off the ground to do work on it	01	02	03	04
9.3 When required, I lift and suspend my whole vehicle off the ground to work under it	01	02	03	04
9.4 When required, I get under my vehicle to work on it	01	02	03	04

**If 03 or 04 at ALL, ABORT**

LIFTING AND SUSPENDING VEHICLES USING KEY PIECES OF EQUIPMENT (DESIRABLE) / OTHER EQUIPMENT (INCLUDING UNDESIRABLE) & FREQUENCY

STAGES OF BEHAVIOUR CHANGE

A. LIFTING ONE CORNER OF YOUR VEHICLE

**ASK Q10 IF 01 OR 02 AT 9.1**

**RANDOMISE ORDER OF ITEMS IN TABLE FOR EACH PERSON IF POSSIBLE**

10. Thinking about when you *lift one corner* (only) of your vehicle off the ground, please indicate what equipment you USUALLY use (Note: please answer this question about when *lifting* the corner of your vehicle only, not *suspending* it to do work)... **MR**

	<i>Please mark which piece(s) of equipment you usually use to do this.</i>	<b>How many of these would you use each time?</b>
10.1 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.2 Trolley jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.3 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.4 Air jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.5 Jacking beam(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.6 Store-bought vehicle hoist(s) or vehicle lift(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.7 Self-built vehicle hoist or vehicle lift system (not store-bought)	<i>[check box]</i>	____ <i>[open alpha box]</i>
10.8 Something else, please specify what you use: _____	<i>[check box]</i>	____ <i>[open alpha box]</i>

- a. How many times have you done it **this way** in the past 12 months? \_\_\_\_\_ times (0-365 times)
- b. Where do you USUALLY work when you have to *lift one corner (only)* of your vehicle(s)? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

- c. Please indicate the type of ground on which you USUALLY *lift one corner (only)* of your vehicle: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

- d. Do you occasionally, (or have you ever) *lifted one corner (only)* of your vehicle off the ground in a DIFFERENT WAY, e.g. using different equipment? **SR**

Yes	01 → <b>CONTINUE</b>
No	02 → <b>GO TO Q11</b>

**ASK IF 01 AT 10d**

e. Thinking about the last time when you *lifted one corner* of your vehicle off the ground in a DIFFERENT WAY, please indicate what equipment you used to do this (Note: please answer this question about when *lifting* the corner of your vehicle only, *not suspending* it to do work)... **MR**

	<i>Please mark which piece(s) of equipment you last used to do this.</i>	<b>How many of these did you use on that unusual occasion?</b>
10.9 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.10 Trolley jack(s)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.11 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.12 Air jack(s)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.13 Jacking beam(s)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.14 Store-bought vehicle hoist(s) or vehicle lift(s)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.15 Self-built vehicle hoist or vehicle lift system (not store-bought)	<i>[check box]</i>	____ <i>[open numeric box]</i>
10.16 Something else, please specify what you use: _____	<i>[check box]</i>	____ <i>[open numeric box]</i>

f. How many times have you done it DIFFERENTLY in the past 12 months? \_\_\_\_\_ times (0-365 times)

g. Where did you do this work when you last did it DIFFERENTLY? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

h. Please indicate the type of ground on which you did this work when you last did this DIFFERENTLY: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

i. Thinking about the last time you did this work DIFFERENTLY, how come you did it this way? **MR**

I needed more space	01
I didn't have my usual equipment / tools	02
I wanted to try a different way out of interest	03
It was quicker this way	04
Someone told me this way was better than my usual way	06
I wasn't at home and I needed to work on my car	07
The place I usually work was not available	08
For a different reason, please specify: _____	96

B. LIFTING ONE END OF YOUR VEHICLE

ASK IF 01 OR 02 AT 9.2

RANDOMISE ORDER OF ITEMS IN TABLE FOR EACH PERSON IF POSSIBLE

11. Thinking about when you *lift one end (only)* of your vehicle off the ground, please indicate what equipment you USUALLY use to do this... (Note: please answer this question about when *lifting* an end of your vehicle only, *not suspending* it)... **MR**

	<i>Please mark which piece(s) of equipment you usually use to do this.</i>	<b>How many of these would you use each time?</b>
11.1 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.2 Trolley jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.3 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.4 Air jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.5 Jacking beam(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.6 Store-bought vehicle hoist(s) or vehicle lift(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.7 Self-built vehicle hoist or vehicle lift system (not store-bought)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.8 Something else, please specify what you use: _____	<i>[check box]</i>	____ <i>[open alpha box]</i>

a. How many times have you done it **this way** in the past 12 months? \_\_\_\_\_ times (0-365 times)

b. Where do you USUALLY work when you have to *lift one end (only)* of your vehicle(s)? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

c. Please indicate the type of ground on which you USUALLY *lift one end (only)* of your vehicle: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

d. Do you occasionally, (or have you ever) *lifted one end (only)* of your vehicle off the ground in a DIFFERENT WAY, e.g. using different equipment? **SR**

Yes	01 → <b>CONTINUE</b>
No	02 → <b>GO TO Q12</b>

**ASK IF 01 AT 11d**

e. Thinking about the last time when you *lifted one end (only)* of your vehicle off the ground in a DIFFERENT WAY, please indicate what equipment you used to do this... (Note: please answer this question about when *lifting* an end of your vehicle only, *not suspending* it to do work)... **MR**

	<i>Please mark which piece(s) of equipment you last used to do this.</i>	<b>How many of these did you use on that unusual occasion?</b>
11.9 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open alpha box]</i>
11.10 Trolley jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>



11.11 Bottle jack(s) (hydraulic jack)	[check box]	____ [open alpha box]
11.12 Air jack(s)	[check box]	____ [open alpha box]
11.13 Jacking beam(s)	[check box]	____ [open alpha box]
11.14 Store-bought vehicle hoist(s) or vehicle lift(s)	[check box]	____ [open alpha box]
11.15 Self-built vehicle hoist or vehicle lift system (not store-bought)	[check box]	____ [open alpha box]
11.16 Something else, please specify what you use: _____	[check box]	____ [open alpha box]

- f. How many times have you done it DIFFERENTLY in the past 12 months? \_\_\_\_\_ times (0-365 times)
- g. Where did you do this work when you last did it DIFFERENTLY? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

- h. Please indicate the type of ground on which you did this work when you last did this DIFFERENTLY: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

i. Thinking about the last time you did this work DIFFERENTLY, how come you did it this way? **MR**

I needed more space	01
I didn't have my usual equipment / tools	02
I wanted to try a different way out of interest	03
It was quicker this way	04
Someone told me this way was better than my usual way	06
I wasn't at home and I needed to work on my car	07
For a different reason, please specify: _____	96

LIFTING YOUR ENTIRE VEHICLE

**ASK IF 01 OR 02 AT 9.3 or 9.4**

**RANDOMISE ORDER OF ITEMS IN TABLE FOR EACH PERSON IF POSSIBLE**

12. Thinking about when you *lift your entire vehicle* off the ground, please indicate what equipment you USUALLY use... (Note: please answer this question about when *lifting* your entire vehicle, *not suspending* it to do work)... **MR**

	<i>Please mark which piece(s) of equipment you usually use to do this.</i>	<b>How many of these would you use each time?</b>
12.1 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open alpha box]</i>
12.2 Trolley jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
12.3 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	____ <i>[open alpha box]</i>
12.4 Air jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
12.5 Jacking beam(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>

12.6	Store-bought vehicle hoist(s) or vehicle lift(s)	[check box]	_____ [open alpha box]
12.7	Self-built vehicle hoist or vehicle lift system (not store-bought)	[check box]	_____ [open alpha box]
12.8	Something else, please specify what you use: _____	[check box]	_____ [open alpha box]

a. How many times have you done it **this way** in the past 12 months? \_\_\_\_\_ times (0-365 times)

b. Where do you USUALLY work when you have to *lift your entire vehicle(s)*? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

c. Please indicate the type of ground on which you USUALLY *lift your entire vehicle*: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

d. Do you occasionally, (or have you ever) *lifted your entire vehicle* off the ground in a DIFFERENT way, e.g. using different equipment? **SR**

Yes	01 → <b>CONTINUE</b>
No	02 → <b>GO TO Q13</b>

**ASK IF 01 AT 12d**

e. Thinking about the last time you *lifted your entire vehicle* off the ground in a DIFFERENT WAY, please indicate what equipment you used to do this... (Note: please answer this question about when *lifting* your entire vehicle only, *not suspending* it to do work)... **MR**

	<i>Please mark which piece(s) of equipment you last used to do this.</i>	<b>How many of these did you use on that unusual occasion?</b>
12.9 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	[check box]	____ [open alpha box]
12.10 Trolley jack(s)	[check box]	____ [open alpha box]
12.11 Bottle jack(s) (hydraulic jack)	[check box]	____ [open alpha box]
12.12 Air jack(s)	[check box]	____ [open alpha box]
12.13 Jacking beam(s)	[check box]	____ [open alpha box]
12.14 Store-bought vehicle hoist(s) or vehicle lift(s)	[check box]	____ [open alpha box]
12.15 Self-built vehicle hoist or vehicle lift system (not store-bought)	[check box]	____ [open alpha box]
12.16 Something else, please specify what you use: _____	[check box]	____ [open alpha box]

f. How many times have you done it DIFFERENTLY in the past 12 months? \_\_\_\_\_ times (0-365 times)

g. Where did you do this work when you last did it DIFFERENTLY? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

h. Please indicate the type of ground on which you did this work when you last did it DIFFERENTLY: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

i. Thinking about the last time you did this work DIFFERENTLY, how come you did it this way? **MR**

I needed more space	01
I didn't have my usual equipment / tools	02
I wanted to try a different way out of interest	03
It was quicker this way	04
Someone told me this way was better than my usual way	06
I wasn't at home and I needed to work on my car	07
For a different reason, please specify: _____	96

### C. SUSPENDING ONE END ONLY OF YOUR VEHICLE

#### ASK IF 01 OR 02 AT 9.2

#### RANDOMISE ORDER OF ITEMS IN TABLE FOR EACH PERSON IF POSSIBLE

13. Thinking about when you *suspend one end of your vehicle (only)* off the ground, please indicate what equipment you USUALLY use to suspend one end... (Note: please answer this question about when *suspending* an end of your vehicle only, *not lifting it*)... **MR**

	<i>Please mark which piece(s) of equipment you usually use to do this.</i>	<b>How many of these would you use each time?</b>
13.1 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	_____ <i>[open alpha box]</i>

13.2	Trolley jack(s)	[check box]	____ [open alpha box]
13.3	Bottle jack(s) (hydraulic jack)	[check box]	____ [open alpha box]
13.4	Air jack(s)	[check box]	____ [open alpha box]
13.5	Vehicle stand(s) / axle stand(s)	[check box]	____ [open alpha box]
13.6	Portable vehicle ramp(s)	[check box]	____ [open alpha box]
13.7	Jacking beam(s)	[check box]	____ [open alpha box]
13.8	Store-bought vehicle hoist(s) or vehicle lift(s)	[check box]	____ [open alpha box]
13.9	Self-built vehicle hoist or vehicle lift system (not store-bought)	[check box]	____ [open alpha box]
13.10	Brick(s)	[check box]	____ [open alpha box]
13.11	Paver(s)	[check box]	____ [open alpha box]
13.12	Besser block(s)	[check box]	____ [open alpha box]
13.13	Crate(s)	[check box]	____ [open alpha box]
13.14	Wood / Timber, e.g. logs, planks	[check box]	____ [open alpha box]
13.15	Something else, please specify what you use: _____	[check box]	____ [open alpha box]

a. How many times have you done it **this way** in the past 12 months? \_\_\_\_\_ times (0-365 times)

b. Where do you USUALLY work when you have to *suspend one end* of your vehicle(s)? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

c. Please indicate the type of ground on which you USUALLY *suspend one end* of your vehicle: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

- d. Do you occasionally, (or have you ever) *suspended one end (only)* of your vehicle off the ground in a DIFFERENT WAY, e.g. using different equipment?  
SR

Yes	01 → <b>CONTINUE</b>
No	02 → <b>GO TO Q14</b>

**ASK IF 01 AT 13d**

- e. Thinking about the last time you *suspended one end* of your vehicle off the ground in a DIFFERENT WAY, please indicate what equipment you used to do this... (Note: please answer this question about when *suspending* an end of your vehicle only, *not lifting* it)... MR

	<i>Please mark which piece(s) of equipment you last used to do this.</i>	<b>How many of these would you use each time?</b>
13.16 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open alpha box]</i>
13.17 Trolley jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
13.18 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	____ <i>[open alpha box]</i>
13.19 Air jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
13.20 Vehicle stand(s) / axle stand(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>

13.21	Portable vehicle ramp(s)	[check box]	____ [open alpha box]
13.22	Jacking beam(s)	[check box]	____ [open alpha box]
13.23	Store-bought vehicle hoist(s) or vehicle lift(s)	[check box]	____ [open alpha box]
13.24	Self-built vehicle hoist or vehicle lift system (not store-bought)	[check box]	____ [open alpha box]
13.25	Brick(s)	[check box]	____ [open alpha box]
13.26	Paver(s)	[check box]	____ [open alpha box]
13.27	Besser block(s)	[check box]	____ [open alpha box]
13.28	Crate(s)	[check box]	____ [open alpha box]
13.29	Wood / Timber, e.g. logs, planks	[check box]	____ [open alpha box]
13.30	Something else, please specify what you use: _____	[check box]	____ [open alpha box]

f. How many times have you done it DIFFERENTLY in the past 12 months? \_\_\_\_\_ times (0-365 times)

g. Where did you do this work when you last did it DIFFERENTLY? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

h. Please indicate the type of ground on which you did this work when you last did it DIFFERENTLY: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04



i. Thinking about the last time you did this work DIFFERENTLY, how come you did it this way? **MR**

I needed more space	01
I didn't have my usual equipment / tools	02
I wanted to try a different way out of interest	03
It was quicker this way	04
Someone told me this way was better than my usual way	06
I wasn't at home and I needed to work on my car	07
For a different reason, please specify: _____	96

D. SUSPENDING YOUR ENTIRE VEHICLE

**ASK IF 01 OR 02 AT 9.3 OR 9.4**

**RANDOMISE ORDER OF ITEMS IN TABLE FOR EACH PERSON IF POSSIBLE**

14. Thinking about when you *suspend your entire vehicle* off the ground, please indicate what equipment you USUALLY use to do this... (Note: please answer this question about when *suspending your entire vehicle only, not lifting it*)... **MR**

	<i>Please mark which piece(s) of equipment you usually use to do this.</i>	<b>How many of these would you use each time?</b>
14.1 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	_____ <i>[open alpha box]</i>
14.2 Trolley jack(s)	<i>[check box]</i>	_____ <i>[open alpha box]</i>
14.3 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	_____ <i>[open alpha box]</i>
14.4 Air jack(s)	<i>[check box]</i>	_____ <i>[open alpha box]</i>
14.5 Vehicle stand(s) / axle stand(s)	<i>[check box]</i>	_____ <i>[open alpha box]</i>

14.6	Portable vehicle ramp(s)	[check box]	____ [open alpha box]
14.7	Jacking beam(s)	[check box]	____ [open alpha box]
14.8	Store-bought vehicle hoist(s) or vehicle lift(s)	[check box]	____ [open alpha box]
14.9	Self-built vehicle hoist or vehicle lift system (not store-bought)	[check box]	____ [open alpha box]
14.10	Brick(s)	[check box]	____ [open alpha box]
14.11	Paver(s)	[check box]	____ [open alpha box]
14.12	Besser block(s)	[check box]	____ [open alpha box]
14.13	Crate(s)	[check box]	____ [open alpha box]
14.14	Wood / Timber, e.g. logs, planks	[check box]	____ [open alpha box]
14.15	Something else, please specify what you use: _____	[check box]	____ [open alpha box]

a. How many times have you done it **this way** in the past 12 months? \_\_\_\_\_ times (0-365 times)

b. Where do you USUALLY work when you have to *suspend your entire vehicle(s)*? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

c. Please indicate the type of ground on which you USUALLY suspend your entire vehicle: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

d. Do you occasionally, (or have you ever) suspended your whole vehicle off the ground in a DIFFERENT WAY, e.g. using different equipment? **SR**

Yes	01 → <b>CONTINUE</b>
No	02 → <b>GO TO Q15</b>

**ASK IF 01 AT 14d**

e. Thinking about the last time you suspended your entire vehicle off the ground in a DIFFERENT WAY, please indicate what equipment you used to do this... (Note: please answer this question about when *suspending* an end of your vehicle only, *not lifting it*)... **MR**

	<i>Please mark which piece(s) of equipment you last used to do this.</i>	<b>How many of these would you use each time?</b>
14.16 Vehicle jack(s) (i.e. a scissor jack, from boot of car)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.17 Trolley jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.18 Bottle jack(s) (hydraulic jack)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.19 Air jack(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.20 Vehicle stand(s) / axle stand(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.21 Portable vehicle ramp(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.22 Jacking beam(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.23 Store-bought vehicle hoist(s) or vehicle lift(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.24 Self-built vehicle hoist or vehicle lift system (not store-bought)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.25 Brick(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>
14.26 Paver(s)	<i>[check box]</i>	____ <i>[open alpha box]</i>

14.27 Besser block(s)	[check box]	____ [open alpha box]
14.28 Crate(s)	[check box]	____ [open alpha box]
14.29 Wood / Timber, e.g. logs, planks	[check box]	____ [open alpha box]
14.30 Something else, please specify what you use: _____	[check box]	____ [open alpha box]

f. How many times have you done it DIFFERENTLY in the past 12 months? \_\_\_\_\_ times (0-365 times)

g. Where did you do this work when you last did it DIFFERENTLY? **SR**

In the garage / shed	01
Outside, on a paved / concrete area	02
Outside, on the dirt or a grassed area	03
Other, please specify: _____	96

h. Please indicate the type of ground on which you did this work when you last did it DIFFERENTLY: **SR**

	Flat ground	Sloped or uneven ground (including slight slope)
Hard surface (e.g. concrete, paving)	01	02
Soft surface (e.g. grass, gravel, dirt)	03	04

i. Thinking about the last time you did this work DIFFERENTLY, how come you did it this way? **MR**

I needed more space	01
I didn't have my usual equipment / tools	02
I wanted to try a different way out of interest	03
It was quicker this way	04
Someone told me this way was better than my usual way	06
I wasn't at home and I needed to work on my car	07
For a different reason, please specify: _____	96

DECISION-MAKING REGARDING BALANCE BETWEEN QUALITY BELIEFS AND COST

**RANDOMISE STATEMENTS**

15. On a scale of 0-10, where 0=totally disagree, and 10=totally agree, how much do you agree or disagree with the following statements:

	Agreement rating (0-10)	Don't know / NA (98)
15.1 I don't mind spending more money on equipment to jack up my vehicle(s) and suspend it		
15.2 Some jacks are of better quality than others		
15.3 Bricks / blocks are as good as vehicle stands		
15.4 I prefer to buy generic brands of equipment to lift and suspend my vehicle(s) to save money		
15.5 The more expensive the vehicle lifting equipment, the better the quality		
15.6 I prefer using my own self-built equipment to lift and suspend my vehicle(s)		
15.7 I use a combination of store-bought equipment and self-built systems to lift and suspend my vehicle(s)		
15.8 It is more important to buy expensive tools than it is to buy expensive equipment for lifting and suspending the vehicle		

ATTITUDINAL BATTERY FOR SEGMENTATION RE ADHERENCE TO ACCEPTABLE SAFETY PRACTICES & SELF-EFFICACY

**RANDOMISE STATEMENTS**

16. Please indicate how much you agree with the following statements (on a scale of 0-10, where 0=totally disagree, and 10=totally agree) relating to when you're doing DIY work on your vehicle(s):

		Agreement rating (0-10)	Don't know / NA (98)
Perceived behavioural control and self-efficacy	16.1 I am always confident when using vehicle DIY equipment		
	16.2 I am always in control when doing vehicle DIY work		
	16.3 I never feel at risk of being injured while doing DIY vehicle work		
	16.4 I trust the quality of my own DIY work more than the work of a mechanic		
	16.5 I am very experienced in doing vehicle DIY		
	16.6 I prefer to rely on my own common sense of how to use the equipment properly rather than reading equipment manuals and instructions		

Knowledge about DIY and info-seeking behaviours	16.7	Trial and error is the best way to work out how best to do vehicle DIY work		
	16.8	Whenever I use vehicle DIY equipment for the first time, I read and follow the instructions / manual carefully		
	16.9	For more difficult vehicle DIY work, I prefer to learn how to do this myself than take it to a mechanic		
	16.10	I know exactly where to position the jacks and stands for the work I do		
	16.11	I actively research methods of how to do certain vehicle DIY work if I'm not sure		
	16.12	If I don't know how to do something, I research techniques and the right equipment on the Internet		
Reading instructions and warning labels	16.13	I have read the instructions and warnings on my equipment at least once		
	16.14	I never read warning labels, as I know how to do vehicle DIY work safely		
	16.15	It's not important to read the instructions that come with equipment		
Perceptions of safety and risk	16.16	I always work on my vehicle(s) safely		
	16.17	I sometimes do risky things when working on my vehicle(s) to save time or money		
	16.18	The risk of being injured from lifting and suspending my vehicle(s) is very low		
Practices	16.19	I always use my vehicle DIY equipment in the same ways		
	16.20	I improvise how to lift or suspend my vehicle when I don't have the right tools		
	16.21	I like to use bricks/blocks instead of stands		
	16.22	I make sure that when I suspend my vehicle, it's out of the wind		
	16.23	I work on hard level surfaces all of the time		
	16.24	I sometimes jack up my car outside on the grass or dirt		
	16.25	When lifting or suspending cars, it's not important to know the weight capacity of each piece of equipment before using it		

## CONCURRENT BEHAVIOURS

17. Please indicate how often you do the following when you're doing DIY vehicle work at home: **SR each item**

	All the time	Most of the time	Sometimes	Rarely	Never	NA
17.1 I listen to the radio while doing vehicle DIY work						
17.2 I show my kids how to do vehicle DIY work						
17.3 I have mates over when I do vehicle DIY work						
17.4 I have beers / alcohol while doing DIY on my vehicle(s)						

## INJURY HISTORY

18. Have you been injured during vehicle DIY work? **SR**

Yes	01
No	02
Unsure	03

### IF 01 AT q18

19. What was your injury associated with (mark as many as apply)? **MR**

Vehicle falling on self	01
Part of vehicle falling on limb	02
Burn from hot equipment	03
Fume inhalation and nausea	04
General minor scratches / scrapes / bruises	05
Other, please specify: _____	96

### IF 01 or 02 AT Q19

20. Was this injury associated with (mark as many as apply): **MR**

Vehicle slipped off equipment	01
Inappropriate ground, e.g. slope, wet, soft	02
Equipment broke	03
Didn't have correct equipment	04
Other, please specify: _____	96

21. Has anyone you know, been injured doing vehicle DIY work, specifically using a vehicle jack, stand, or ramp? **SR**

Yes	01
No	02
Unsure	03

#### WARNING LABEL AWARENESS AND ATTITUDES

22. Are you aware of warning labels that are associated with vehicle DIY equipment? **SR**

Yes	01
No	02
Unsure	03

**ASK Q23 if 01 at Q22**

23. Do you read warning labels? **SR**

Yes, all of the time	01
Yes, most of the time	02
Yes, some of the time	03
Rarely	04
No, never	05



## DEMOGRAPHICS

The answers you give will remain completely confidential.

### D1 MARITAL

D1. What is your marital status? SR

Never married	01
Widowed	02
Divorced	03
Separated but not divorced	04
Married	05
De facto	06
I prefer not to answer	99

### D2 EMPLOYMENTSTATUS

D2. What is your current employment status? SR

Employed, working full time (more than 35 hours a week)	01
Employed, working part time (less than 35 hours a week)	02
Self employed	03
Unemployed, looking for full time work (more than 35 hours a week)	04
Unemployed, looking for part time work (less than 35 hours a week)	05
Not employed, and not looking for work	06
Student	07
Beneficiary/welfare	08
Retired	09
Look after the house full time	10
Other – please specify	11
I prefer not to answer	99

### D3 ATS

D3. Are you of Aboriginal or Torres Strait Island origin? MR

No	01
Yes, Aboriginal	02
Yes, Torres Strait Islander	03
I prefer not to answer	04

### D4 ENGLISH

D4. Do you speak a language, other than English at home? SR

Yes	01
No, English only	02
I prefer not to answer	03

**If 01 at D4, ask D4A**

### D4A LANGUAGE

D4A. Which language(s), other than English do you speak at home?

---

### D5 EDUCATION

D5. What is the highest level of education you have attained? SR

Year 8 or below	01
Year 9 or equivalent	02
Year 10 or equivalent	03
Year 11 or equivalent	04
Year 12 or equivalent	05
Still attending school	06
Trade certificate or apprenticeship	07

Diploma, certificate etc	08
Bachelor or Honours degree	09
Post-graduate qualifications (e.g., Masters, PhD)	10
Other – please specify	96
I prefer not to answer	99

#### D6 HOUSEHOLDINCOME

D6. What is the total of all wages/salaries, Government benefits, pensions, allowances and other income that YOUR HOUSEHOLD usually receives (Gross – before tax and superannuation deductions)? SR

\$1-\$149 per week (\$1-\$7,799 per year)	01
\$150-\$249 per week (\$7,800-\$12,999 per year)	02
\$250-\$399 per week (\$13,000-\$20,799 per year)	03
\$400-\$599 per week (\$20,800-\$31,199 per year)	04
\$600-\$799 per week (\$31,200-\$41,599 per year)	05
\$800-\$999 per week (\$41,600-\$51,999 per year)	06
\$1,000-\$1,299 per week (\$52,000-\$67,599 per year)	07
\$1,300-\$1,599 per week (\$67,600-\$83,199 per year)	08
\$1,600-\$1,999 per week (\$83,200-\$103,999 per year)	09
\$2,000 or more per week (\$104,000 or more per year)	10
No income	11
Negative income	12
I prefer not to answer	99

## SECTION C: MANDATORY QMS REQUIREMENTS

### WE ARE REQUIRED TO OBTAIN IDENTIFIED INFORMATION:

#### Q98 FUTURE RESEARCH

Q98. We are conducting some paid face-to-face group discussions the next fortnight in Sydney and Melbourne, would you be interested in taking part in this paid research?

1. Yes

2. No

**IF 1 in Q98, CONTINUE**

**IF 2 IN Q98, ABORT**

#### Q99 NAME

Q99. Could you please confirm the following details? INCLUDE AREA CODE, NO SPACES OR DASHES & LEADING ZERO FOR PHONE NUMBER

Someone from Your Source may be in touch with you regarding this. Please be assured that your name and phone numbers for participation in future paid research will *not* be stored in conjunction with your responses to this survey.

NAME: \_\_\_\_\_

CONTACT NUMBER: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

POSTCODE: \_\_\_\_\_

DATE OF BIRTH: \_\_\_\_\_

### FINAL CLOSE/TERMINATION

# 6. Appendix B: Qualitative Discussion Guides

## Stage 1 Focus Groups: discussion guide

### NOTES FOR INTERVIEWERS:

- Do **not** prompt re what is considered a “safe” or an “unsafe” behaviour. We don’t want to “judge” people’s actions or use of equipment, or cue them to second guess what we’re talking about.
- Always probe for detail when they describe their vehicle maintenance habits – e.g. **what** equipment do they use? **How** do they use it? **How often**? Do they ever **do it differently** / use **different equipment**? **How often**? **How come**?
- Section on warning labels appears at the end; however, if this comes up before this point, discuss when appropriate.
- Injury-related questions – discuss this if it comes up. If it doesn’t come up – ask near to the end of the guide.

### Interviewer introduction

- *Statements about CBR and YS’s privacy and confidentiality; emphasise that individual comments and responses will not be reported, all participants’ identities will remain anonymous.*
- *Video recording; (Melbourne only: Viewing in the next room);*
- *Cash incentives at the end*
- **Ask for completed self-complete exercise to be handed in.**

## Today, we’re talking about “do it yourself” (DIY) vehicle maintenance and improvements at home...

Firstly I’d like for everyone to give me their filled out self-complete exercise please...

### WHAT DIY activities / capability & equipment used

6:00pm (5 mins)

1. We’re going to start by going around the table and asking everyone to give a brief introduction (our names) and description of what sorts of DIY work we do on our vehicles at home...

*Probe: What types of vehicles? E.g. cars, trucks, motorbikes, trailers – quick whip around the table*

2. Are we doing **repairs / vehicle maintenance**? Or are we doing **vehicle improvements**?

*Probe: Some people need to make cars road-worthy for safety checks / pink or green slips for rego – do we ever do this?*

*Maybe prompt with an example such as: “A friend of mine had his car defected and needed to downgrade his modifications (exhaust), has anyone done this?”*

**FREQUENCY of activities / and CIRCUMSTANCES**

**6:05pm (10 mins)**

*Q3-4=two quick questions.*

3. **How often do we** do vehicle DIY work?

*Probe: How many times over the past 3 months have we done this?*

4. **When** do we do this work? E.g. what days / times of day

5. **Where** do we **usually** do this work?

*We want them to tell us about where they do this work without prompting too much – e.g. in the shed, outside (where outside?)*

*Probes: Type of surface – hard/soft (concrete, paved, dirt, grass). If dirt or grass – ask ‘What about in the wet?’*

*We want to know if people adjust their behaviour depending on if it’s wet / been raining / is raining. E.g. Do ppl do things differently depending on differing circumstances, such as weather?*

6. Is there **anywhere else** where we have also done this work?

*We want to understand from this question if people are **usually doing “safe” behaviours** and **only occasionally doing risky behaviours**. That is, is the risk associated with the rule (usual work conditions), or the exception (occasional use)?*

*Probe: why have we done this work elsewhere? (What caused this unusual circumstance?)*

7. Do we do this **alone**?

*We want to know if people do this alone or with friends around; if their kids are involved – being shown the ropes.*

8. Do we do anything else at the same time?

Probe: Do we eat or have drinks at the same time?

E.g. if in the morning – coffee? Breakfast? Lunch? If in the afternoon, sociability /relaxation (hobby) aspect – ask if there’s any beers / alcohol being drunk at the time, e.g. with “mates”.

### KNOWLEDGE ABOUT DIY activities

6:15pm (15 mins)

9. How do we know how to do DIY on our cars / trucks / motorbikes?

This is an important question getting at whether they have had knowledge passed down from qualified mechanics, family members, friends, etc. **Lightly** touch on each of the probes at the end.

Probes at end:

- Learnt from a family member / friend?
- Training course on how to do vehicle DIY AND/OR use equipment?
- Direction / product demo / information from store purchased equipment from?
- Any research / Internet research? Where did we find the information? (Website / book – specify here if mentioned)
- Are people aware of the instructions / manual that accompany these pieces of equipment?

We want to know unprompted (if poss) whether they’ve been exposed to instructions. Listen for cues here, and probe if this isn’t mentioned.

10. How does it make us feel?

Probes: Is it difficult?

Is it dangerous?

How comfortable and confident are we doing this DIY work?

We don’t want too much of a safety connotation here. Aiming to get an honest response upfront, disguised by other questions around difficulty, confidence

11. What are the good things about vehicle DIY?

12. What are the bad things about vehicle DIY?

13. Are there any types work that we can’t or don’t want to do at home ourselves, e.g. take our cars / trucks / bikes to a mechanic? Or to a friend?

Probe: what for? E.g. any major mechanical repairs? How often does this happen?

14. How come we get this **done by a mechanic / friend / someone else**?

*Probe: need for a specialist for tools, car hoist*

## **EQUIPMENT USED**

**6:30pm (15 mins)**

15. What types of **equipment** are we using at home to do our DIY work on our cars / trucks / motorbikes?

*Very quick responses needed – not much time to spend here*

*e.g. jacks – what type? Ramps, stands, other equipment – ask participants to describe these if unclear*

16. **When we use or buy equipment**, how do we make a decision about which one to get? E.g. Are decisions cost or quality-related (e.g. generic equipment for some jobs, expensive equipment for other jobs)?

*Explore this question for around 10-12 mins.*

*We want to understand trade-off behaviours, e.g. cost for quality, and under which circumstances these decisions are made / change?*

*Probe: Does the type of job influence which quality/cost of product is bought? Generic vs top of the line? Could say E.g.: I might buy any kind of spanner (or the cheapest spanner), but buy an expensive high quality jack coz my car means a lot to me and I want it to be securely lifted off the ground. Or I might use the jack I already had at home and some other supports I've made myself as I trust this more than a flimsy aluminium jack.*

17. Do we **ever prefer to construct equipment / systems ourselves** or use what we already have?

*Probe: if self-constructed systems, how, and for what work specifically?*

- *Has anyone used their vehicle equipment in any other circumstances than at home doing vehicle DIY?*



18. So what kind of work requires under vehicle access?

We want to get a gauge of why people feel they need to get under the car. E.g. fuel line leakage.

This may link in with what they think they can do themselves, and what they prefer their mechanic to do (Q16), e.g. with a proper secure hoist that enables someone to **stand** under the car, not lie underneath.

Probe: How many times over the past 3 months have we done this?

19. How we prefer to lift and suspend our cars / trucks? e.g. what tools and equipment do we use? etc.

See if there's any differences within the group as to what they use to lift and hold the vehicle off the ground to work under it.

Probe in detail how this is done, using the following questions. These answers will be used to build the quantitative questionnaire, and we need a full list of behaviours engaged in, using jacks, ramps and stands.

Probes: **where do we do this? How come?**

20. What pieces of equipment do we usually use?

Get specific details of how, and what they use. **Note mentions of jacks, stands, ramps;**

Probe: Do we prefer **store bought vs self-constructed systems?**

This question gets at whether participants are using the correct equipment in the correct / an incorrect way, or the incorrect equipment. E.g. interested if vehicle jacks are being used to hold cars up (they're only intended to lift one side/part of the car, depending on the jack), etc.

However, we don't want to create judgements on what is or is not considered safe from a gov point of view – more exploratory.

21. Do we ever lift and/or suspend our cars / trucks in a different way? (i.e. occasionally in a different way)

Again, this gets to the issue of whether the risk is associated with how they **usually lift and suspend their vehicle**, or if it's associated with whether it's associated with only **occasional use** under different circumstances.

Probe: When and where do we lift our vehicles using store bought equipment **VERSUS** self-constructed / other tools? How come?

Probe: **when have we done this alternative way (how often in the past 3 months), where, how come?**

22. How does lifting and suspending our vehicle in our **usual way make us feel?**

*This question looks at self-efficacy of carrying out their chosen behaviour.*

Probe: *How comfortable / confident are we lifting and/or suspending our vehicle(s)?*

*Is it dangerous?*

23. What are the **good things** about doing it in our usual way?

*We want them to talk about the benefits of their own preferred method (be it considered objectively safe or not) – we want to know what makes them continue to do it this way – what are the drivers, advantages etc.*

24. What were the **bad things** of doing it in our usual way?

*What are the draw-backs of doing it this way? It can't be perfect!*

25. Could we have **done it a better way** maybe?

*This may require a brainstorm, and gets at alternative behaviours. We want to ask about sensible / workable / feasible other ways of doing this, (not silly ones they may think of).*

*Again, this is necessary for the quant survey instrument – probe in detail here for a list of alternative (better) behaviours in how to lift and/or suspend vehicles. Primarily note and prompt mentions of jacks, ramps and stands.*

26. If we were to do it this other way, can we think of some **good things of this different/better way?**

*Again, this may require a brainstorm, actively thinking about the advantages that could be associated with lifting, holding the car up another way / using different equipment.*

27. Can we think of some **bad things of this different/better way?**

28. How come we haven't done it this way before?

**IF NOT PREVIOUSLY DISCUSSED**

**INJURY HISTORY**

7:20pm (5 mins)

29. Have you been injured or anyone else you know been injured doing vehicle DIY work at home?

**IF NOT PREVIOUSLY DISCUSSED**

**WARNING LABEL ATTITUDES**

7:25pm (remaining 5 mins)

30. Are we aware of any warning labels associated with **vehicle jacks, trolley jacks, support stands or portable ramps?**

*Probes:*

*Where did we see these?*

*What did they say (get unprompted recall)? Record as accurately as possible.*

*Prompted recall – read out below statements.*

*Ask: Was any of this unexpected or surprising?*

31. Do we pay attention to these warning labels? Do we follow the instructions?

*Probe: If yes, how often? Just the first time? Every time?*

*What do we think about these warning labels?*

32. In your opinion, what would make warning labels better?

*Probes: What would make us look at them? e.g. format – how big? Colours? wording, etc.*

*Where should they appear?*

**FOR MODERATOR'S OWN INFORMATION:**

**Trolley jacks:**

Warning: The jack must be used only on hard level surfaces and be free to roll during lifting and lowering.

Do not get under a vehicle that is supported by a trolley jack – use support stands.

**Vehicle jacks:**

Warning: Do not get under a vehicle that is supported only by a jack – use vehicle support stands.

**Vehicle support stands:**

Warning: Use only in pairs and on hard level surfaces (e.g. concrete), ensuring the stand is positioned under a solid portion of the vehicle and that the locking mechanism is fully engaged.

**Portable ramps:**

Warning: Use only on hard level surfaces.

*Thank you for your time.*

*Reminder: Collect \$80 incentive from host (and self-complete form if not yet completed).*

**ONLY IF TIME**

**WHY DIY activities**

**(5 mins)**

33. How come we **first got into** doing vehicle DIY work?

34. How come we **are still doing** vehicle DIY work?

*This gets at motivations for starting, and continuing DIY, but is only worth 5 mins of time – not a priority.*

*Examples: To save money; as a hobby; friend/family showed me / family tradition; To help out friends / family*

### Stage 3 Focus Groups: discussion guide

Today, we're talking about "do it yourself" (DIY) vehicle maintenance and improvements at home...

#### **INTRODUCTION TO TYPES OF VEHICLE DIY WORK & VEHICLES** 6:00pm (5 mins)

1. We're going to start by going around the table and asking everyone to give a brief introduction (our names) and description of what sorts of DIY work we do on our vehicles at home...

*Probe: What types of vehicles? E.g. cars, trucks, motorbikes, trailers – quick whip around the table*

2. Are we doing repairs / vehicle maintenance? Or are we doing vehicle improvements?

#### **WORKING UNDER OUR VEHICLES – USUAL BEHAVIOURS** 6:05pm (25 mins)

We're all here today because we've conducted work that's involved lifting our vehicles off the ground within the last 12 months. Now we're going to talk about how we usually do this work, and the other occasions where we've done it differently...

3. What equipment are we USUALLY using to lift and suspend our vehicles?

***This is supposed to capture a mix of both safe and risky behaviours (varying degrees of risk).***

*Note – we don't want participants to treat this as a test – we want them to tell us honestly about their preferences of how to **lift and hold** their vehicle(s) off the ground.*

*Probe at end: for LIFTING: vehicle jacks, trolley jacks, other jacks. For SUSPENDING: vehicle ramps, stands, anything else you think reinforces this? E.g. using other home hardware such as bricks / wood as chocks or stands.*

*Probe: Are we lifting one corner / one end / entire vehicle?*

*Probe: any other types of equipment used in conjunction, e.g. self-constructed hoists and so on?*

4. I'd like us to describe how we USUALLY lift our vehicles – e.g. where we put the equipment, how many of each we use, and so on...

*Again – not a test.*

*This will highlight safe, **and** risky behaviours*

5. **WHERE** do we **USUALLY** lift our vehicles – garage vs outdoors

*Probe: What type of ground? This is important to get a gauge of grassed/dirt vs concrete, or slopy vs flat*

6. Do we **like to consume alcohol** while we do this work?

*Probe: How much? How often? How come?*

7. What are the **good things** about doing it your **usual** way?

*This is about benefits associated with the usual behaviours.*

8. What are the **bad things** about doing it your **usual** way?

*This is about costs associated with usual behaviours.*

#### **WORKING UNDER OUR VEHICLES – OCCASIONAL OTHER BEHAVIOURS**

**6:30pm (15 mins)**

9. Have we ever **lifted our vehicles A DIFFERENT WAY?**

*Trying to get to behaviours out of the ordinary, and descriptions of this...*

10. **WHERE** have we done this differently?

*Probe: What type of ground? This is important to get a gauge of grassed/dirt vs concrete, or slopy vs flat*

11. How come?

*Probe: What were the circumstances? e.g. didn't have appropriate equipment, wasn't at home, wanted to try a different way, not enough space to do new activity.*

*Probe: At what point are we choosing to do this different behaviour instead of the usual behaviour??  
WHEN does it become too hard to do the usual behaviour, and how come??*

*NOTE: REPEAT THESE QUESTIONS WITH ALL ADDITIONAL BEHAVIOURS*

12. What is the **BEST way** to lift and suspend our vehicles?

*WE NEED TO PROMPT HERE WITH SOME DESIRED BEHAVIOURS IF THEY DON'T COME UP WITH THEM. AT THIS STAGE WE NEED TO BE QUITE SPECIFIC – THIS IS NO LONGER EXPLORATORY RESEARCH, AND WE DON'T WANT TO WASTE TIME WITH THEM TALKING ABOUT THINGS THAT ARE TOTALLY IRELEVANT.*

- *E.G. instead of propping up a car with bricks, using two vehicle ramps at the front (chocking these so it doesn't roll) and two axle stands at the back*
- *Instead of jacking up a car on grass / slope – jacking it up on flat, hard ground*
- *Instead of holding up a car using a jack, securing it with vehicle stands / ramps*
- *Not consuming any alcohol*

*WHEN WE PROMPT THEM, WE NEED TO FIND OUT:*

- *DO THEY THINK THIS IS BETTER / SAFER?*
  - *AND TO WHAT EXTENT?*
- *DO THEY THINK THAT THEY COULD ACTUALLY DO IT?*

13. What are the **good things** about **ALWAYS** doing it this alternative way?

*This is about benefits associated with the better behaviours.*

14. What are the **bad things** about **ALWAYS** doing it this alternative way?

*This is about costs associated with the better behaviours.*

15. How come we don't do it this alternative way?

*This is about barriers associated with doing the better behaviours.*

*Probe: What would stop us from ALWAYS doing this behaviour?*

16. Who is someone who would do **ALWAYS** do this **best behaviour**? Look like? Act like? **Describe this person...**

*We need this imagery and description of the person who does the right behaviour. This will enable us to bridge the gap between how they see themselves, and how they see others doing the best behaviour.*

## COMMUNICATIONS AND MESSAGING CHANNELS

7:15pm (10 mins)

17. If we don't know how to do something to your car, how do we usually find out how best to do it?

*Probe: instructions, internet research, manuals, asking friends*

- *Learn from a family member / friend?*
- *Training course on how to do vehicle DIY AND/OR use equipment?*
- *Direction / product demo / information from store purchased equipment from?*
- *Any research, desktop*
- *Internet research? Where did we find the information? (Website / book – specify here if mentioned)*
- *Are people aware of the instructions / manual that accompany these pieces of equipment?*

18. Are we aware of any instructions for using DIY equipment, e.g. vehicle jacks, ramps or stands?  
Have we **read or used** any of these safety instructions?

*Probe: sourced from where? What did it say?*

*Probe: What about any brochures at the point of sale in car equipment stores? What are your views?*

19. If so, did we follow the instructions? How come?

20. What did the instructions say?

*Probe only at end: e.g. using jack under a certain part of the vehicle (axle / chassis), weight of vehicle for certain type of jack, type of ground (dirt/concrete), level ground, wet weather conditions if working outside?*

## PERCEIVED PERSONAL RELEVANCE OF NEGATIVE OUTCOMES 7:25pm (5 mins)

*Likelihood of negative outcome + degree of negative outcome + perceived control over outcome = likelihood of undesirable behaviour*

21. What do we believe could be the **negative outcomes / dangers** of working under your vehicle in this manner?

*Probe: How bad?*

22. Does anyone influence the work we're doing on our vehicles?

*ideally would want this to come up throughout discussions unprompted, so that we can probe subtly and gain as much honesty in responses as possible, without leading.*



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