Research Report

CARS

comprehensive auto-theft research system

Motor Vehicle Theft and Road Crashes in Queensland 2000/2001 - 2005/2006

APRIL 2009

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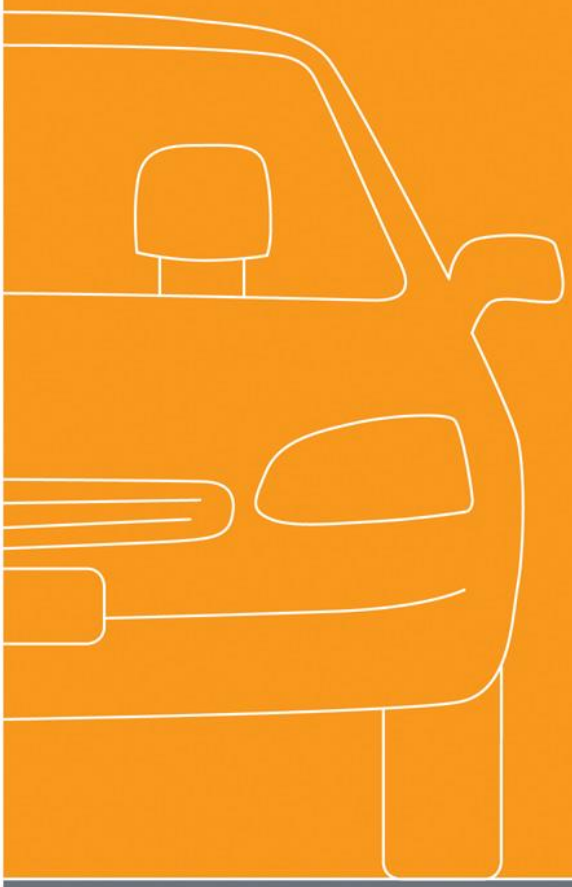

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National Motor Vehicle Theft Reduction Council
driving down vehicle theft

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ACKNOWLEDGMENT

The National Comprehensive Auto-theft Research System (CARS) is a statistical and research service funded by the National Motor Vehicle Theft Reduction Council (NMVTRC) to monitor theft trends and inform effective vehicle theft reduction strategies. The views expressed in this paper are those of the author and do not necessarily reflect the views of the NMVTRC. Particular appreciation is extended to Michael Stonell and the Data Analysis Unit from the Land Transport and Safety Division, Queensland Transport for providing the data for this study.

EXECUTIVE SUMMARY

Previous research into motor vehicle theft and road crashes on Australian roads is limited. This study, the third in a series conducted by the Comprehensive Auto-theft Research System (CARS) matched road crash data from Queensland Transport with vehicle theft data from the CARS database in order to identify crashes involving vehicles reported stolen at the time of the incident. The first study in the series examined motor vehicle theft and road crashes in South Australia between 1995 and 2006 while the second study analysed New South Wales data between 1999/2000 and 2006/2007.

This study analysed Queensland road crashes between the 2000/2001 and 2005/2006 financial years and found that over the six-year period a total of 1,635 crashes (an average of 273 crashes per year) involved stolen vehicles. In the 2005/2006 financial year there were 230 stolen vehicle crashes, accounting for 1.0% of all road crashes. In the same financial year, 89 casualties including three fatalities and 141 cases of property damage were recorded. The estimated economic cost of crashes involving stolen vehicles in 2005 was approximately $17 million with an average cost of approximately $77,000 per crash.

Where the stolen vehicle controller was considered to have caused the crash, all three contributing factors of inattention (37.6%), speed (21.2%) and fatigue (6.2%) were higher than that found in crashes not involving a stolen vehicle (30.5%, 5.6% and 5.5% respectively). These figures reveal the danger that these offenders represent on the road.

Stolen vehicles manufactured in the 1990s accounted for nearly half of the crashes (45.1%), followed by just over one quarter (27.4%) manufactured between 2000 and 2005. The majority of vehicles stolen were manufactured in the 1980s (42.9%) and 1990s (37.1%). The theft of vehicles manufactured in this decade is expected when you consider that nearly three-quarters of the vehicles which were stolen and crashed were not fitted with any form of immobiliser.

As with the two previous studies conducted in South Australia and New South Wales, the characteristics of the controller of the stolen vehicle involved in crashes was missing, possibly due to the offenders fleeing the scene of the crash and subsequently not being apprehended. Further qualitative research into the motivations of offenders and their offending behaviour after being involved in a stolen vehicle crash would provide a solid basis for the development of effective strategies and help reduce the impact of motor vehicle theft and improve safety on our roads.

INTRODUCTION

The complexity and ramifications of motor vehicle theft in both Queensland and nationally is often underestimated by members of the community. Whenever a stolen vehicle is driven there is a risk of a road crash which can cause property damage, injury, death, an array of costs and time.

Three studies conducted internationally have examined the incidence of road crashes involving stolen vehicles (Marshall, Boyd & Moran, 1996; Miceli, 2002; and Livingston, Merritt, Callori & Vanek, 1998). These studies used either newspaper clippings or hospital records to determine who was involved in the crashes and from that they measured the human and economic costs of the crashes, particularly on the medical industry. Until recently there has been no known research carried out in Australia on the incidence of road crashes involving stolen vehicles. It has been stated by Hughes (2002) that across Australia between 30-40 individuals will be killed each year as a result of a stolen vehicle crash. The present study is third in a series conducted by CARS which is unique in its methodology in that it links road crash data with vehicle theft data in an attempt to find a relationship.

The first study in the series which examined motor vehicle theft and road crashes in South Australia between 1995 and 2006 found that over the 12-year period 1.5% of road crashes involved a stolen vehicle resulting in 835 casualties, of which, 24 were fatal (Ziersch & Ransom, 2008). In comparison, the second study based on New South Wales data between 1999/2000 and 2006/2007 found that over the eight-year period 6,479 road crashes involved a stolen vehicle resulting in 1,869 casualties, of which, 55 were fatal (Ziersch & Hedayati, 2008). Both studies found common characteristics such as, stolen vehicle crashes were more likely to involve property damage only, and in nearly all cases the stolen vehicle was considered at fault in the crash and that crashes involving stolen vehicles decreased over the period.

Incidents involving stolen vehicles are often reported by the media, with headlines featuring stories of car theft by force, high-speed police pursuits, crashes and stolen vehicle assisted crime. Stolen vehicles are often driven in a reckless and illegal manner putting the lives of unsuspecting drivers and pedestrians at risk. In one particular incident in 2002 a 41 year old female driving a stolen vehicle sped from the scene after hitting a triathlete on the side of the Gold Cost Highway. The victim died the next day and the perpetrator received parole after 18 months jail, a decision which outraged the victim's family (Sydney Morning Herald, 2002). Incidents like these are examples of the tragic circumstances which can arise and can serve to educate the public about this often underestimated consequence of motor vehicle theft.

A safer road environment and the ongoing reduction in the level of road trauma are clear initiatives of the Queensland Government as evident in the Queensland Road Safety Strategy 2004-2011 (Queensland Government, 2003). A number of strategies were proposed, all of which could impact on the amount and severity of stolen vehicle crashes. These include: working towards eliminating dangerous driving by 2011 by identifying and reducing high-risk road use behaviours, achieving less than 5.6 deaths per 100,000 people by 2011 and increasing safe vehicles that reduce injury severity and reduce the level of trauma experienced in crashes.

The objectives of this current study are to:

- Examine the relationship between motor vehicle crashes and vehicle theft in Queensland
- Report on the number of fatalities and injuries for all crashes involving motor vehicle theft
- Assess the economic and social costs of motor vehicle crashes which involve stolen vehicles
- To compare the findings of this study to the New South Wales and South Australian studies

METHODOLOGY

This study was based on data obtained from Queensland Transport on vehicle crashes that occurred between the 2000/2001 and 2005/2006 financial years (the latest data currently available). This data comprised all crashes that:

- were reported to the police
- occurred on a public road, and
- a person was killed or injured, or
- involved at least one moving road vehicle, or
- the value of property damage, other than a vehicle, was $2,500, or
- at least one vehicle was towed away.

The data was matched with CARS data on motor vehicle thefts in Queensland and based on the following conditions:

- a match on registration plate, and
- a recorded crash date/time between the earliest possible theft incident date/time (minus 1 hour to allow for differences in time estimates) and theft recovery date/time (plus 1 hour), or
- a recorded crash date/time on or after the earliest possible theft incident date/time (minus 1 hour) where the stolen vehicle remained unrecovered.

Queensland transport provides CARS with data on all motorised vehicles currently registered in the state biannually. This study is based on vehicle registrations at 31st December 2005.

A total of 13 duplicate cases were manually verified and then removed from the stolen vehicle crash data. These accounted for 0.5% of records.

In order to be consistent with terminology that Queensland Transport provides in its Road Crash Glossary (2008), the word “controller” is used throughout this report and refers to a person who exercises control over their movements at the time of the crash (i.e. driver, rider or pedestrian). The term “vehicle at fault” is the controller involved in a road traffic crash who was determined as being “most at fault” by police.

FINDINGS

Crashes Involving Stolen Vehicles

Since the 2000/2001 financial year, the number of road crashes in Queensland has increased by approximately 11.4% (from 20,785 crashes in 2000/2001 up to 23,164 in 2005/2006). Over the same period the overall number of crashes involving a stolen vehicle declined by 27.7%. In 2000/2001, 1.5% of road crashes involved a stolen vehicle with the proportion falling to 1.0% by 2005/2006. Over the six-year period, an average of 1.2% of crashes involved a stolen vehicle.

Figure 1: Number of road crashes and percentage involving a stolen vehicle, 2000/2001-2005/2006

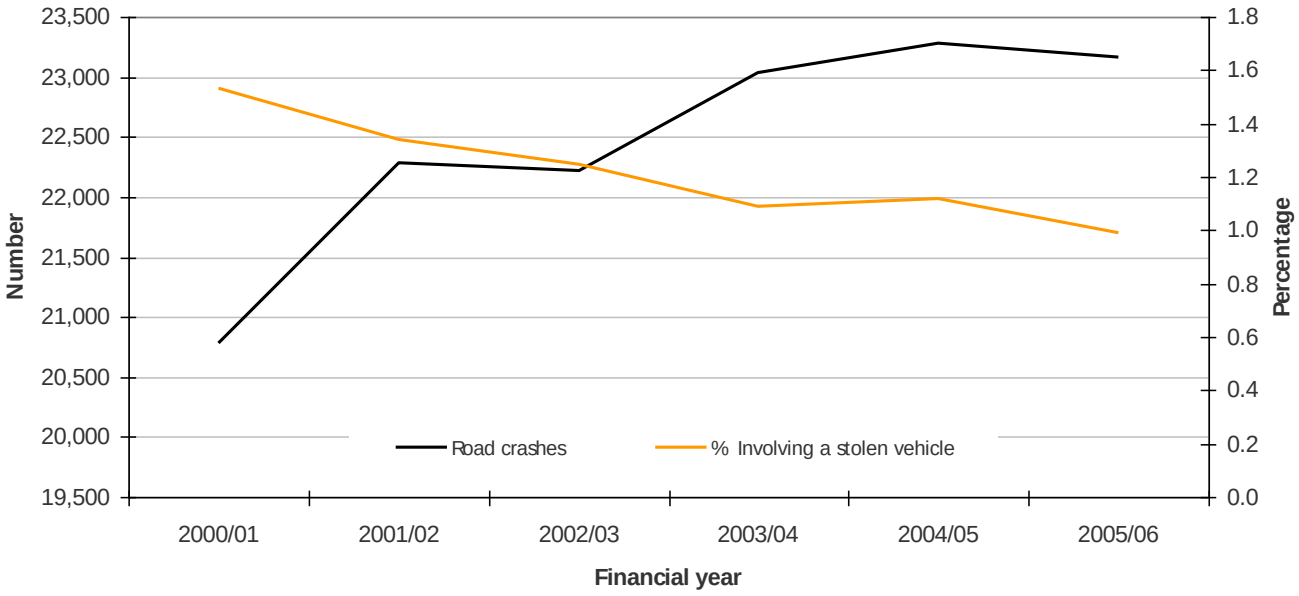
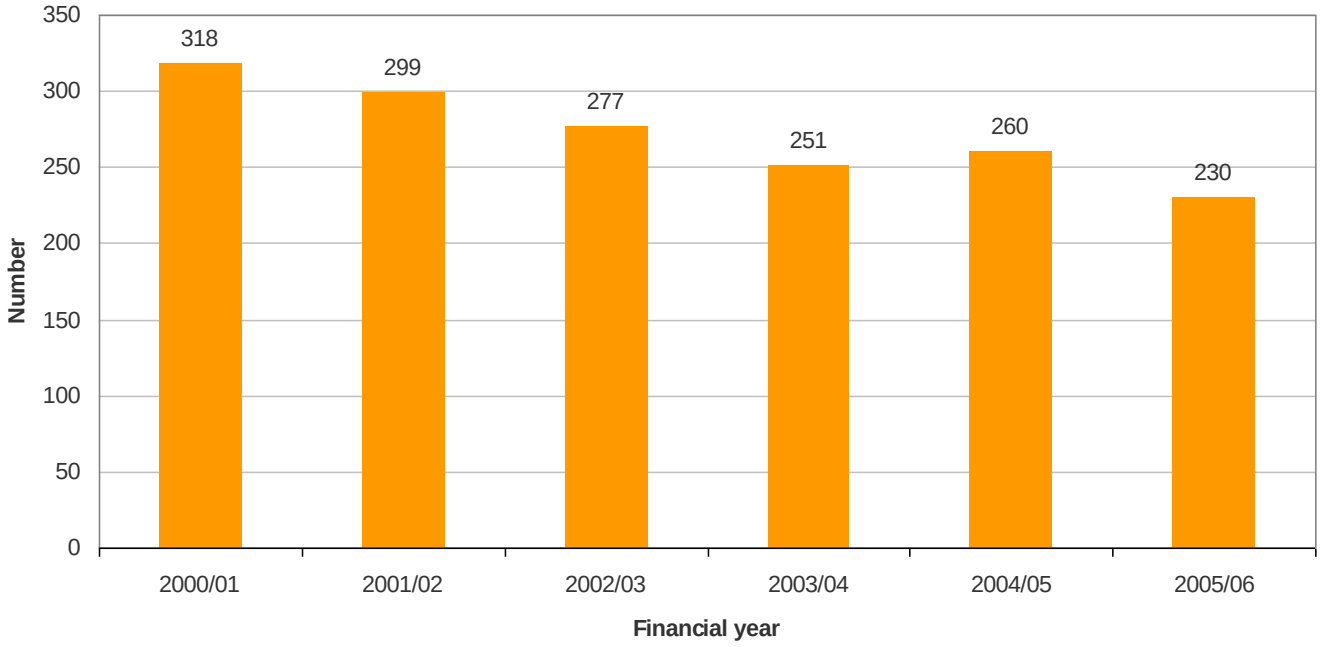


Figure 2 displays the number of crashes involving stolen vehicles per year since 2000/2001. Over the six-year period an average of 273 crashes per year involved stolen vehicles. In 2005/2006, 230 crashes occurred, the lowest number during the period. One in every 46 vehicles stolen in Queensland in 2005/2006 was involved in a road crash, compared to one in every 48 vehicles in New South Wales (in 2006/2007) and one in every 28 vehicles stolen in South Australia (in 2006).

Figure 2: Number of road crashes involving a stolen vehicle, 2000/2001-2005/2006



Severity of Crashes

The Data Analysis Unit Road Crash Glossary (Queensland Transport, 2008) classifies the seriousness of road crashes into five levels of crash severity:

1. Fatal crash
2. Hospitalisation crash (injury crash requiring hospitalisation)
3. Medical treatment crash (injury crash requiring medical treatment)
4. Minor injury crash (injury crash requiring no medical treatment E.g. minor injury, first-aid only required or extent of injury unknown)
5. Property damage only crash (no injuries)

The majority of all road crashes in Queensland resulted in property damage with no casualties, which is consistent with the findings in New South Wales and South Australia. Figure 3 illustrates that over the six year period 64.0% of crashes involving a stolen vehicle resulted in property damage only compared with 39.0% of crashes which did not involve a stolen vehicle. Crashes not involving a stolen vehicle recorded a higher proportion of minor injuries, medical treatments, hospitalisations and fatalities (61.0%) than stolen vehicle crashes (36.0%). While stolen vehicle crashes were less likely to result in casualties over the period, the proportion of casualties may be underrepresented as an offender or offenders may have been injured as a result of the crash but left the scene in order to avoid apprehension.

Figure 3: Crash severity rating of road crashes, 2000/2001-2005/2006

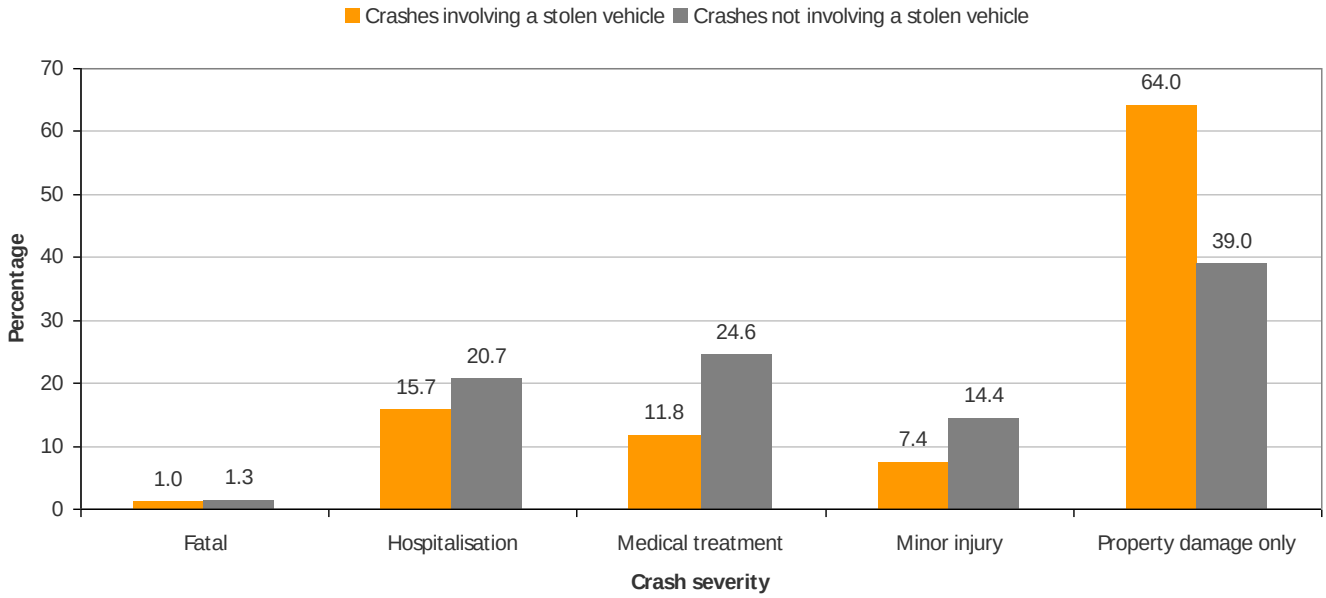


Table 1 shows that 34.8% of all vehicles involved in stolen vehicle crashes incurred major vehicle damage and had to be towed away. In comparison, 24.2% of all vehicles involved in crashes not involving a stolen vehicle incurred major vehicle damage and were towed way. The higher number of stolen vehicles having been towed away could be due to police seizing the vehicle in order to collect evidence or conduct further investigation. It could also be because stolen vehicle crashes generally involved older, less safe vehicles which lack certain safety standards (discussed later).

Table 1: Vehicle damage sustained as a result of road crashes 2005/2006

	Crashes involving a stolen vehicle		Crashes not involving a stolen vehicle	
Vehicle damage sustained	**Number**	**%**	**Number**	**%**
Major - towed away	80	34.8	5,545	24.2
Moderate - towed away	58	25.2	7,666	33.4
Extensive, unrepairable	59	25.7	2,529	11.0
Moderate - drivable vehicle	19	8.3	2,079	9.1
Minor	10	4.3	2,733	11.9
Nil	-	-	883	3.9
Not applicable	-	-	906	4.0
Unknown	4	1.7	593	2.6
Total	**230**	**100**	**22,934**	**100.0**

Figure 4 shows that over the six year period there were 588 casualties recorded in crashes involving a stolen vehicle. Casualties refer to road traffic crashes where there was at least one injured person or a fatality (not including property damage only crashes). Stolen vehicle crashes recorded 359 casualties per 1,000 crashes over the entire period, with the lowest period occurring in 2005/2006 with 89 casualties recorded. Casualty rates for crashes not involving a stolen vehicle were much higher but also remained relatively stable over the six year period with 613 casualties per 1,000 crashes recorded. This was also true for stolen vehicle crashes in New South Wales and South Australia.

Figure 4: Number of casualties in crashes involving a stolen vehicle, 2000/2001-2005/2006

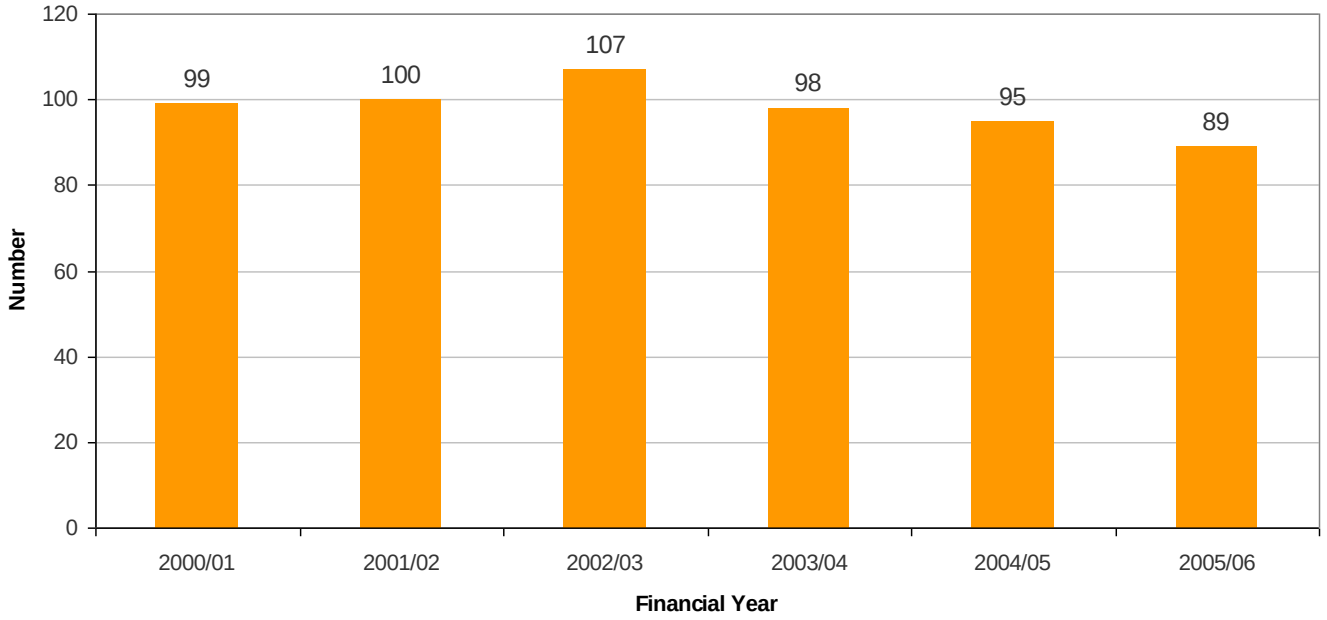
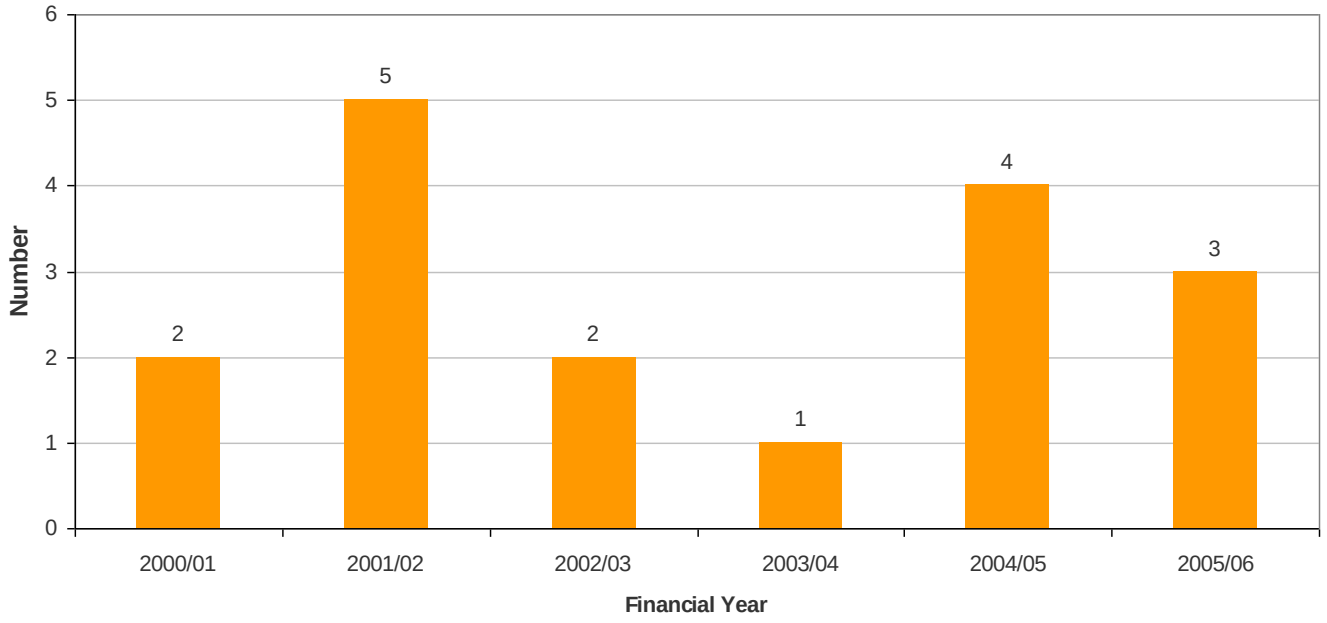


Figure 5 displays the number of fatalities resulting from a stolen vehicle crash over the six-year period in which time a total of 17 fatalities occurred. During the peak of 2001/2002 there were five deaths associated with crashes involving a stolen vehicle. After a low of one fatality in 2003/2004, the graph shows that fatalities increased up to four the following year (2004/2005). In comparison, overall New South Wales recorded 55 fatalities between 1999/2000 and 2006/2007 and South Australia recorded 24 between 1995 and 2006.

Figure 5: Number of fatalities in crashes involving a stolen vehicle, 2000/2001-2005/2006



Economic Cost of Crashes

The costs associated with stolen motor vehicle crashes have an impact upon a range of organisations and individuals, including victims of theft, the criminal justice system, the insurance and motor vehicle industries. The Bureau of Transport Economics (BTE, 2000) estimated the costs of road crashes based on the human costs (e.g. lost labour, ambulance and coroner), vehicle costs (e.g. towing and repairs) and general costs (e.g. police and property damage). Connelly and Supangan (2006) converted the BTE estimates which were based on the Australian dollar value in 1996 to the Australian dollar value in 2003. After converting Connelly and Supangan's 2003 dollar estimates to 2005 estimates Table 2 shows that all crashes involving stolen vehicles in 2005 caused approximately $17 million worth of human, vehicle and general costs in the state of Queensland. In comparison, the estimated cost of stolen vehicle crashes for New South Wales in 2003 was approximately $44 million, for 814 crashes.

Table 2: Total estimated cost of crashes involving stolen vehicles, 2005 calendar year

Casualty/crash type	Average cost in 2005*	Number of stolen vehicle crashes, 2005	% of crashes	Estimate of average costs (millions)
Fatality	$1,925,298	2	0.9	$3,850,595
Serious injury	$417,147	28	12.4	$11,680,125
Minor injury**	$14,903	42	18.7	$625,916
Property Damage Only	$7,701	153	68.0	$1,178,244
Total	**-**	**225**	**100.0**	**$17,334,880**

*Adapted from the Bureau of Transport Economics (2000) estimated crash costs. Estimates were calculated by inflating Connelly and Supangan's (2006) 2003 Australian dollar value to 2005 Australian dollar values by using the Reserve Bank of Australia inflation calculator and the Australian Consumer Price Index rates. ** Medical treatment and minor injury have been grouped together under minor injury.

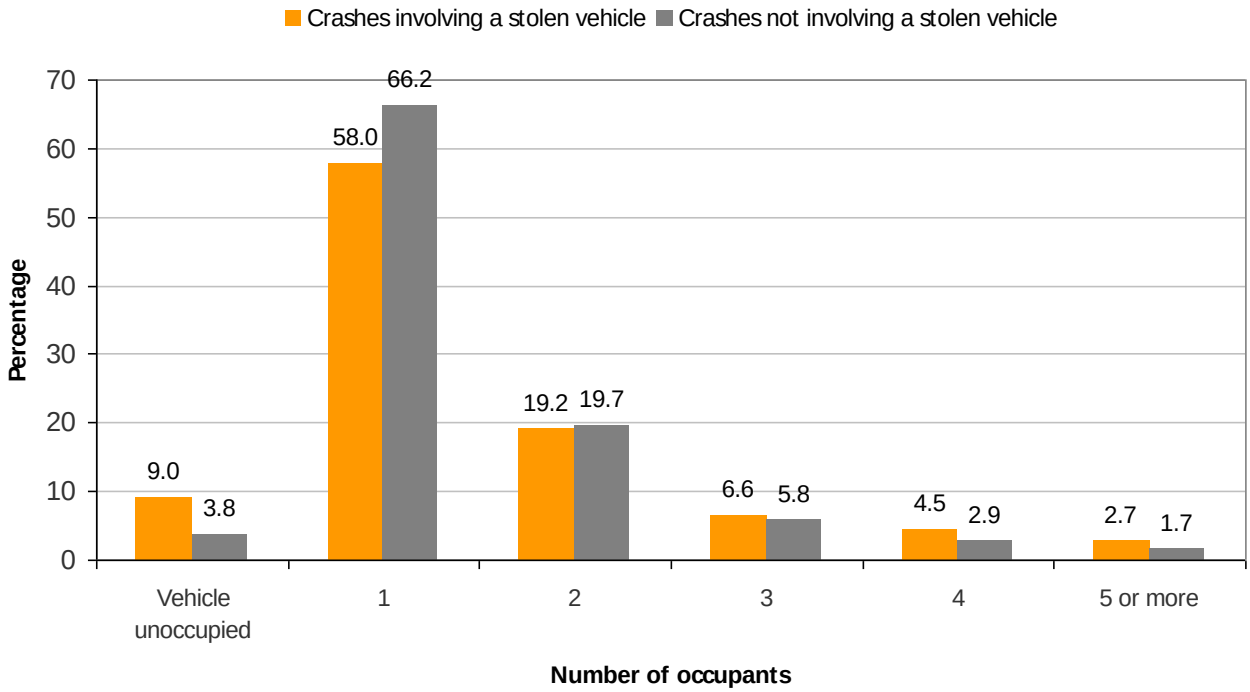
Multiple victims can result from a stolen vehicle crash and it has been stated by Whitrod (1987) that even the victims of the motor vehicle theft experience feelings of anxiety, helplessness and frustration. The greatest cost is not the economic costs but the 'human' costs of death, and injury which family, friends and the communities of both the victims and the offenders are left to deal with. As a direct result of the actions taken by a stolen vehicle controller a wide range of deadly consequences have and continue to occur.

An article published in the Sydney Morning Herald (Roberts, 2002) illustrates the impact that a stolen vehicle crash can have on a family. In the report a 24 year old triathlete training along the Gold Coast Highway was struck by a stolen vehicle being driven by a 41 year old woman with an extensive criminal record. The unlicensed controller, who was on bail at the time, sped from the scene leaving the victim with severe head injuries from which he later died. The family expressed their disappointment at the offender's sentence which allowed parole after 18 months. The sister of the victim stated; 'It's really hard, this lady can get on with her life after 18 months but Luke's life has been taken away from him'.

Individuals Involved in Crashes

Figure 6 shows that in 2005/2006 the majority (58.0%) of the vehicles involved in a stolen vehicle crash had only one occupant and a further 19.2% contained two occupants. This was also found in New South Wales (43.4% and 19.1% respectively) and South Australia (50.1% and 23.0% respectively). In comparison, crashes not involving a stolen vehicle involved a higher proportion of single occupants (66.2%), and a similar number involved two occupants (19.7%). It is possible that in some incidents one or more of the passengers in the stolen vehicle may have fled the scene, reducing the number of occupants identified at or after the crash.

Figure 6: Number of occupants involved in road crashes, 2005/2006



An analysis of the gender of the controller involved in all stolen vehicle road crashes revealed that in 2005/2006 the majority were being controlled by a male (62.6%).These figures should be considered with caution as one quarter (25.2%) of the gender details remain unknown. In the same year, the majority of crashes not involving a stolen vehicle were also being controlled by a male (65.5% with only 2.1% remaining unknown).

The age data of the stolen vehicle crash controller was largely missing (37.2%) but was followed by the 10-19 age group which accounted for 31.4% of stolen vehicle crashes. The missing age data related to the controller of the stolen vehicle may not have been possible to collect due to the offender's fleeing the scene of the crash. In comparison, the majority of crashes not involving a stolen vehicle were driven by those aged between 20 and 29 (28.3%), followed by those aged between 30 and 39 (17.2%).

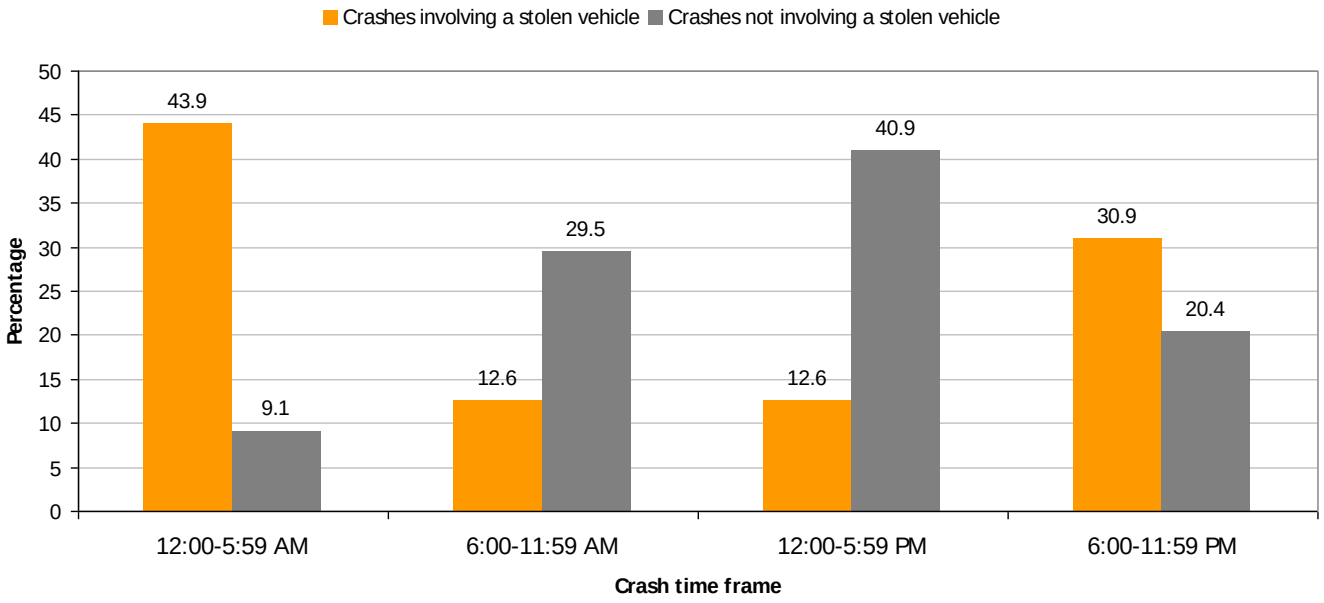
When Crashes Occurred

In 2005/2006 crashes involving a stolen vehicle occurred predominately on a Saturday (20.9%) and a Friday (17.0%) with vehicles most commonly stolen on these days (17.0% each). In comparison, both New South Wales and South Australian stolen vehicle crashes were more likely to occur on a Saturday and Sunday (despite their top vehicle theft days also being Fridays and Saturdays).

It was found that just over half (52.2%) of stolen vehicle crashes occurred within the same day as the vehicle theft, followed by those occurring between one and five days later (37.2%). Interestingly just over half (51.3%) of same day vehicle crashes occurred within the same hour as the vehicle theft. In comparison, in South Australia one in five stolen vehicles crashed within one hour of being stolen.

Figure 7 displays the time frames in which stolen vehicle crashes and crashes not involving stolen vehicles occurred in during 2005/2006. Stolen vehicle crashes occurred largely at night, between 6pm and 6am (74.8%). Interestingly crashes not involving a stolen vehicle were the opposite, with crashes occurring predominantly during the day, between 6am and 6pm (70.5%). These results may explain why stolen vehicle crashes resulted in more property damage than casualty numbers, presumably because less pedestrians and traffic would have been on the road at night for the stolen vehicle controller to crash with.

Figure 7: Time frame of road crashes, 2005/2006



Where Crashes Occurred

Stolen vehicle crashes occurred predominately in the Local Government Areas (LGA) of Brisbane (27.9%), Gold Coast (12.6%) and Logan (6.5%)[1]. Relatively similar (due to their large size), crashes not involving a stolen vehicle occurred mostly in Brisbane (27.7%), Gold Coast (10.1%) and Maroochy (4.3%).

Table 3: Top crash locations by Local Government Area 2005/2006

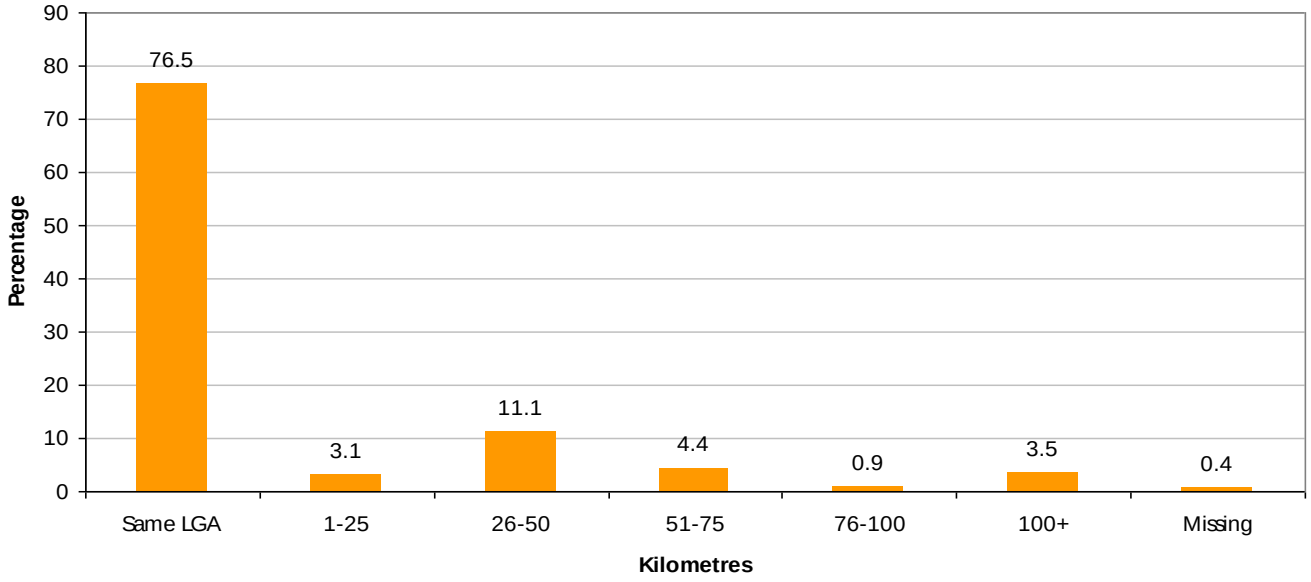
	Crash involving a stolen vehicle		Crash not involving a stolen vehicle	
LGA	**Number**	**%**	**Number**	**%**
BRISBANE (C)	62	27.0	6,408	27.7
GOLD COAST (C)	29	12.6	2,344	10.1
LOGAN (C)	15	6.5	919	4.0
TOWNSVILLE (C)	11	4.8	754	3.3
IPSWICH (C)	9	3.9	955	4.1
MACKAY (C)	9	3.9	601	2.6
REDLAND (S)	7	3.0	424	1.8
CAIRNS (C)	6	2.6	870	3.8
MAROOCHY (S)	6	2.6	991	4.3
TOOWOOMBA (C)	6	2.6	757	3.3

Figure 9 shows that stolen vehicles were most likely to crash a short distance from the LGA from which they were stolen, with 76.5% crashing within the same LGA. [2].

[1] LGA data based on the ABS ASGC 2004 for completeness.

[2] The analysis is based on the Euclidean (straight-line) distance between the centroid of the theft and the crash location LGA. Therefore a vehicle that has been stolen and which crashes within the same LGA will be recorded as having crashed 0 kilometres from the theft location. This gives a rough indication of the distance between the two locations, but it does not take into account any driving that may have occurred between the vehicle being stolen and the crash.

Figure 9: Distance between centroids of theft and crash suburbs, 2005/2006



These findings indicate a common pattern of behaviour whereby offenders have stolen a vehicle, driven around for a short period and crashed relatively close to where the vehicle was stolen from, all predominantly within the same night.

Why Crashes Occurred

In the 2005/2006 financial year the majority (98.3%) of crashes were caused by the controller of the stolen vehicle. These results are similar to the results found in both New South Wales (95.4%) and South Australia (97.0%).

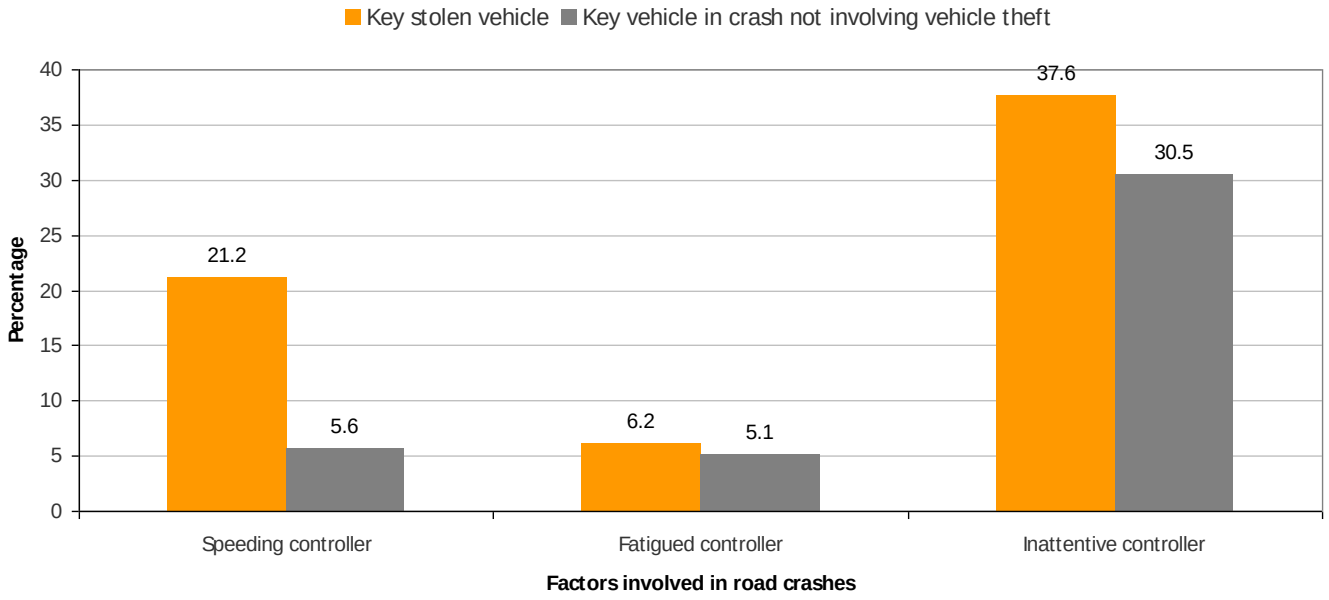
Figure 10 presents the most common factors that were involved in contributing to road crashes in 2005/2006. The stolen vehicle controllers were three and a half times more likely to have speed recorded as a factor in road crashes than vehicles in crashes not involving a stolen vehicle[3] (21.2% compared to 5.6%). Stolen vehicle controllers were also more likely than vehicles not involved in a stolen vehicle crash to have crashed due to both fatigue (6.2% compared to 5.1%) and inattention related factors (37.6% compared to 30.5%)[4].

Stolen vehicles are often driven in a reckless and illegal manner putting the lives of unsuspecting drivers and pedestrians at risk. The involvement of police pursuits in crashes is not recorded in the data so it is not possible to establish whether high-speed police chases were associated with findings on crashes amongst stolen vehicles.

[3] Queensland Transport defines a speed related crash as; all crashes where any controller of a unit involved was attributed with either; a) Violation-exceeding speed limit, or b) Excessive speed for circumstances. For fatal units speed related factors may be determined by extensive investigation by the Accident Investigation Squad, Police investigations and witness accounts.

[4] Queensland Transport defines fatigue as; a) a result of prolonged driving or being tired while driving. A fatigue related crash is applied if the reporting police officer identifies fatigue as a contributing circumstance. Fatigue related crash can also be applied in the case of a single vehicle crash in a speed zone of 100km/h or greater during the typical fatigue times of 2pm to 4pm or 10pm to 6am. Queensland Transport defines inattention as careless driving, listening to the radio and not concentrating. The contributing factor inattention is determined by the police investigations, or when the Police report the driver has lost control of the vehicle.

Figure 10: Involvement of speed, fatigue and inattention amongst vehicles at fault in road crashes, 2005/2006



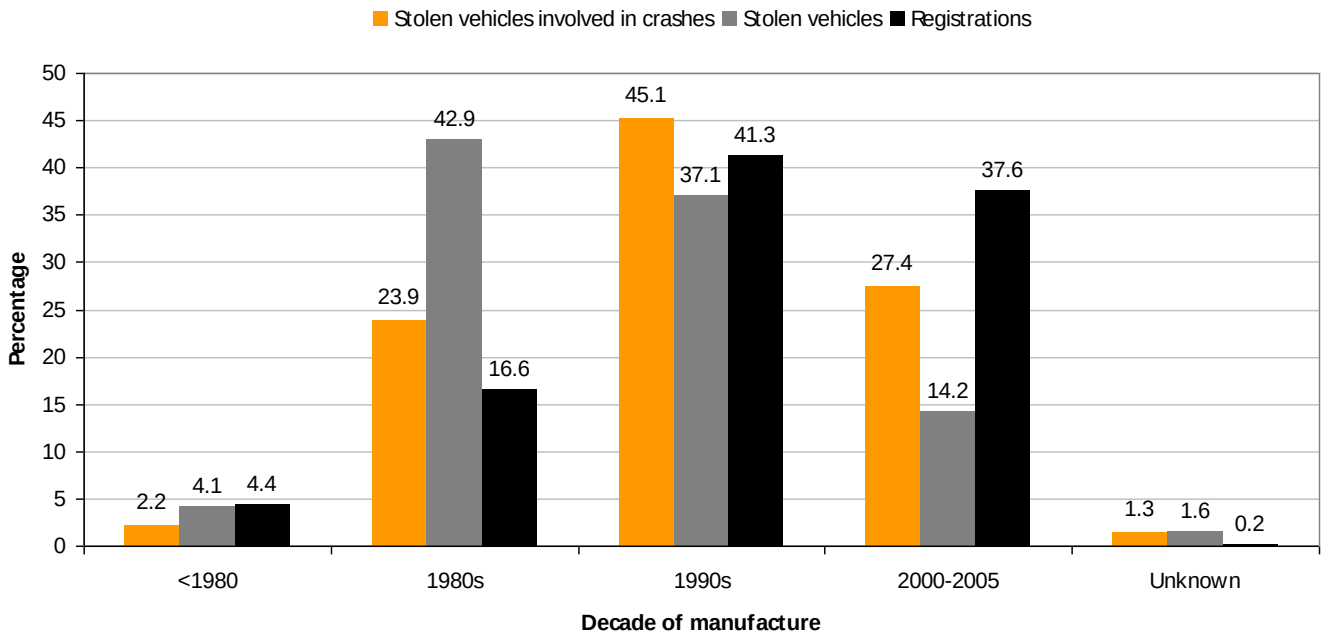
Vehicles Involved in Crashes

Of the 134,773 road crashes which occurred during the period the majority involved one stolen vehicle. Two crashes involving two stolen vehicles occurred in 2002/2003 and one crash involving two stolen vehicles occurred in both 2001/2002 and 2000/2001. The characteristics of the 230 stolen vehicle crashes are outlined below and where appropriate, comparisons are made to stolen vehicles not involved in road crashes and the registered vehicle fleet in Queensland. An analysis of vehicle characteristics revealed that the majority of the stolen vehicles involved in crashes were passenger light commercial vehicles (95.6%), followed by motorcycles (3.5%) and heavy/other vehicles (0.9%).

Of vehicle types, Holden Commodores were the most popular in 2005/2006 accounting for 91.0% of vehicles stolen and 23.0% of stolen vehicles that crashed. A greater proportion of motorcycles were stolen (9.0%) than were involved in a stolen vehicle crash (3.5%). This may be because stolen motorcycles are more likely to be transported rather than ridden away and because motorcycle theft is more likely to be profit-motivated. These findings were also true for New South Wales and South Australia, evidence once more of the commonality of certain characteristics across states.

Figure 11 shows that stolen vehicles involved in crashes were predominately manufactured in the 1990s (45.1%) which is similar to the registered fleet (41.3%). This was the same in New South Wales (47.4%), but not in South Australia where vehicles manufactured in the 1980s dominated (47.0%), possibly due to their older vehicle fleet.

Figure 11: Motor vehicles by decade of manufacture, 2005/2006



In Queensland a large disparity is evident amongst older vehicles with 23.9% of the stolen vehicles which crashed manufactured in the 1980s and yet this decade made up only 16.6% of registrations. The high number of thefts of vehicles built in the 1980s decade can be explained by their lack of security features. Very few of these models are likely to have any form of immobilisation to prevent a would-be thief from stealing the vehicle. In 2005/2006 over half (54.4%) of the stolen vehicles involved in crashes did not have an immobiliser. Very few vehicles were factory fitted with immobilisers until the early 1990s when Holden and Ford began fitting the devices in their passenger vehicles. Gradually, over time the proportion of immobilised vehicles in the fleet increased, and since July 2001 all new vehicles sold in Australia are required to be fitted with an Australian standard immobiliser under the Australian Design Rule (ADR).

Interestingly despite the majority of stolen vehicles having been manufactured in the 1980s, stolen vehicle crashes were more likely to occur in vehicles manufactured in the 1990s, followed by those manufactured between 2000 and 2005. As there was an over representation of older vehicles being stolen by offenders during the period, there was a greater potential of these older, less safe vehicles being involved in more fatal crashes. Ageing vehicles are far less likely to have associated safety features than more recently manufactured vehicles which meet more stringent safety standards.

DISCUSSION

This study found that over the six-year period 1,635 road crashes involved a stolen vehicle resulting in 588 casualties, 17 of which were fatalities. Stolen vehicle crashes may have made up a small percentage (1.2%) of all crashes in Queensland for the period, yet their impact on the community was significant. In 2005/2006 one in every 46 vehicles stolen was involved in a road crash. The estimated cost of crashes involving stolen vehicle theft (based on 2005 data) was $17.3 million with an estimated cost of $77,000 per crash. The often underestimated 'human costs' associated with motor vehicle theft was discussed using a tragic incident to convey the negative, sometimes disastrous ramifications that can result from this seemingly petty crime. Unfortunately the problem remains despite a significant decline in vehicle theft since 2000.

This study uncovered a number of distinctive characteristics of stolen vehicle crashes when compared to road crashes not involving a stolen vehicle. In virtually all cases, the controller of the stolen vehicle was considered to be driving the vehicle at fault and responsible for causing the crash (98.3%). Where this was the case in 2005/2006 it was found that all three contributing factors of inattention (37.6%), speed (21.2%) and fatigue (6.2%) were higher than that found in crashes not involving a stolen vehicle (30.5%, 5.6% and 5.1% respectively). Of particular concern is that compared to crashes not involving a stolen vehicle, stolen vehicle controllers were three and a half times more likely to have crashed because of speed related factors. These findings demonstrate the danger that these offenders represent on the road.

It was found that just over half (52.2%) of stolen vehicle crashes occurred within the same day as the vehicle theft and that stolen vehicles were most likely to crash a short distance from the LGA from which they were stolen, with 76.5% crashing within the same LGA. Three-quarters of crashes involving a stolen vehicle occurred at night which was completely opposite to road crashes not involving a stolen vehicle. The reduced volume of traffic and pedestrians on the road at night could explain why lower casualty rates involving a stolen vehicle occurred and why more crashes involved property damage. A possible reporting bias may also have been a factor with injured offenders less likely to remain at the scene of the crash for medical assistance, due to illegal nature of the incident.

Findings revealed that the majority of stolen vehicles were being controlled by males at the time of the crash (62.6%) however these figures should be regarded with some caution as 25.2% remain unknown. Males were also at fault the majority of the time (65.5%) in crashes not involving a stolen vehicle. The age of the stolen vehicle crash controller was largely missing (37.2%), however 31.4% of stolen vehicle crashes were controlled by those between 10-19 years of age. Such large numbers of missing age and gender details could be due to offenders fleeing the crash site before an arrest could be made. Apprehension data from South Australia (CARS, 2008) on motor vehicle theft revealed that the majority of offenders were young males, which support these findings. While these findings do not represent all vehicle thieves (only those who are caught) they could be used to educate and deter young males from this type of offending.

Stolen vehicles involved in crashes were manufactured principally during the 1990s with this decade accounting for nearly half of the crashes in 2005/2006 (45.1%). Interestingly, although 23.9% of the stolen vehicles crashes were manufactured in the 1980s, this decade made up only 16.6% of registrations. The danger of more crashes, casualties and fatalities occurring in vehicles manufactured in this decade could have been much worse as these vehicles were targeted the most by offenders during the period. These aging vehicles are a potential danger on the road as many do not comply with strict safety standards which now feature in newer vehicles.

It was also found that just over half of the stolen vehicles (54.4%) which crashed did not have any form of immobiliser which is similar to the findings in New South Wales (58.8%), with South Australia slightly higher due to an older vehicle fleet (74.0%). As with stolen vehicles in general, older non-immobilised vehicles were the most popular theft targets because they are very easy for thieves to steal due to their lack of security features.

In order to help reduce the amount of stolen vehicle crashes and its associated casualties, fatalities, costs and property damage, one must concentrate on continuing to reduce vehicle theft. Glenn Dawes (2000) from James Cook University purported that early diversionary strategies (e.g. education programmes) should be considered for reducing the motivations for stealing vehicles. Such educational programmes directed at both offenders and students in schools and colleges, it is suggested, could highlight the serious nature of vehicle theft, like the details of the harm suffered by the victims of vehicle theft.

In terms of reducing vehicle theft the Victorian Drugs and Crime Prevention Committee (2002) have praised the NMVTC's initiatives in helping drive down vehicle theft. The National Motor Vehicle Theft Reduction Council (NMVTRC, 2009) actively work with police, insurers, the motor trades, vehicle manufacturers, registration authorities and justice agencies to implement a range of theft reduction strategies. These include facilitating individual state-based compulsory immobilisation schemes where a clear cost-benefit exist, promoting effective security practices and supporting trials of best practice diversionary programs for young, repeat offenders.

This study identified distinctive characteristics of stolen vehicle crashes when compared to crashes not involving a stolen vehicle and uncovered a number of similar characteristics across Queensland, New South Wales and South Australia. It is hoped that these findings will help to inform and contribute to the development of a discourse surrounding motor vehicle theft, which inturn may help develop prevention strategies across Australia.

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