

Crime Detection and  
Prevention Series  
Paper 88

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# The Nature and Extent of Light Commercial Vehicle Theft

Rick Brown  
Julie Saliba

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### **Police Research Group: Crime Detection and Prevention Series**

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## Foreword

This paper presents the findings of a study on the theft of Light Commercial Vehicles (LCVs). The research was commissioned by the Home Office Crime Prevention Agency and follows a number of smaller scale studies of this issue which highlighted LCV theft as a problem. The purpose of this research was to identify the extent of LCV theft nationally and to gain a greater understanding of how, when and where such thefts occur. When taken together with an earlier Police Research Group study of HGV theft, this research completes the picture of commercial vehicle theft in Britain.

The study revealed that 47,181 LCVs were stolen over a 12 month period in England, Scotland and Wales, although most of these were stolen in England. This equates to approximately one LCV being stolen for every 50 on the road. The research shows that these tend to be focused on just three types – car-derived, panel and pick-up vans – and suggests that tackling the theft of these types could result in a significant reduction in the overall crime rate.

There is much to be gained from reducing LCV theft, especially given the study's findings that businesses lose £152 million worth of assets each year as a result of these thefts. This is independent of other associated costs, such as increased insurance premiums, additional transport costs and lost business.

If LCV theft is to be effectively reduced it will need to be tackled from a variety of perspectives. While the police clearly have a role in tackling this crime, manufacturers, owners and drivers all have an important part to play in reducing LCV theft.

**S W BOYS SMITH**  
*Director of Police Policy*  
*Home Office*  
*February 1998*

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This research has only been possible thanks to the help and advice of many different individuals working in the light commercial vehicle industry. In particular, we would like to thank the manufacturers of LCVs we contacted who helped us to interpret the data we gathered. We would also like to express our gratitude to the staff of Experian for supplying the data upon which much of the initial research was based.

Most of all, we would like to thank those victims of LCV theft who took the time and trouble to provide us with valuable information on the circumstances in which these vehicles were stolen.

## The Authors

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PRG wishes to thank Professor Mike Maguire of University of Wales Cardiff who acted as external assessor on this report.

## Executive summary

The theft of Light Commercial Vehicles (LCVs) has been a concern to both the police and the owners of such vehicles. Earlier research by the Freight Transport Association and the British Vehicle Rental and Leasing Association has indicated that the theft of LCVs is a significant problem among their members. These studies provide only a partial indication of the true extent of the problem as not all victims of LCV theft are members of these organisations. This study was therefore commissioned in order to gain a more representative indication of the nature and extent of LCV theft in Great Britain.

### Methodology

The information presented in this report was collected in two stages. In stage one, 12 months of stolen vehicle data from the Police National Computer (subsequently reprocessed by a commercial organisation) were analysed in order to identify the scale of the problem. Distinguishing LCVs from other types of vehicle posed a considerable problem and required a great deal of processing before a reliable data-set of stolen LCVs could be established. Stage two of the research involved randomly selecting 2,000 individuals from the LCV database for participation in a victim survey. Questionnaires requesting further details of the theft were sent to these individuals and the survey received a 56% response rate.

### Numbers of LCVs stolen and recovered

Over the 12 month period, 47,181 LCVs were identified as having been stolen. LCVs accounted for one in nine of all stolen vehicles. When the risk of theft was analysed, 19 LCVs per 1,000 registered were found to have been stolen, compared to 21 thefts per 1,000 for all types of vehicles. Where the recovery rate of LCVs was concerned, the study estimated that 41% of LCVs were recovered. This was lower than the recovery rate for all types of vehicles which was 59%.

### Types of LCV stolen

Although 11 specific LCV body types accounted for 97% of thefts, just three types – car-derived, panel and pick-up vans – were found to account for 86% of all LCV thefts. However, this was largely a function of the numbers of these on the road. In terms of the relative risk of theft, tipper vans were most likely to be stolen, with 39 thefts per 1,000 registered, although in numeric terms they accounted for just two per cent of vans stolen.

Analysis of the type of engine used showed that 65% of LCVs stolen had diesel engines, which was higher than the proportion of diesel engined LCVs on the road (49%). The average age of LCVs stolen was six to seven years and the majority (62%) were built in the 1980s. Five year old LCVs also had the highest risk of theft, with 29 thefts per 1,000 registered. The theft rate declined for newer LCVs, with a rate of just four thefts per 1,000 for one year old LCVs.

## **Location and time of theft**

Greater London was the region most affected by LCV thefts, with a theft rate of 34 per 1,000 registered in this area. When added to the figures for the South East, these areas accounted for almost 30% of thefts. Similarly, the North West and North East combined to account for a further 28% of the stolen LCVs. In contrast, Scotland and Wales together accounted for just seven per cent of thefts.

Looking at the types of area where the thefts occurred, 66% were stolen from residential areas, while industrial estates accounted for 12% and shopping areas for 10%. When analysed in terms of the specific parking locations, 51% of LCVs were parked at the victims' home at the time of the theft. LCVs parked on the roadside at the drivers' home accounted for 36% of thefts, while 15% were stolen from the roadside elsewhere and 15% were stolen from car parks.

Examining the time of the thefts showed that there was a fairly even rate of theft during weekdays (approximately 17% on each day Monday to Thursday) followed by a decline at the weekend. Where time of day was concerned, 64% were discovered stolen in the morning, suggesting that a high proportion of LCVs are stolen during the night.

## **Vehicle security**

Stolen LCVs were seldom parked in secure locations. Indeed, approximately two thirds were parked in locations with no security. Security lighting was the most common form of security measure taken with 10% being parked in locations with this feature. Locations which accounted for the highest proportions of thefts were also the least secure. For example, road locations (accounting for 51% of thefts) were least likely to have any form of security.

The vehicles themselves were also relatively insecure at the time of theft. Indeed, 41% had no security installed on them, while those which did have security tended to use mechanical devices on the steering wheel or gear lever.

## **The effects of the theft**

The average value of the stolen LCV was £6,200. Grossed up across all LCVs, the total loss for unrecovered LCVs was estimated to be £122 million per annum. The loss of loads was calculated to account for a further £30 million. The total direct loss of assets was therefore estimated to be £152 million per annum. However, this figure ignores many of the other costs associated with a LCV theft. For example, 66% had the additional cost of buying a new vehicle, 49% had increased insurance premiums and 36% had the additional cost of hiring a replacement vehicle. In the most extreme cases, 29 (three per cent) companies ceased trading as a direct result of losing the vehicle.

## **Conclusions**

A number of action points were drawn for vehicle manufacturers, security device manufacturers, LCV owners, drivers, insurers and the police.

#### *Action points for vehicle manufacturers*

- **Improving vehicle security on LCVs.** In recent years significant improvements have been made in the type of security being offered (usually as additional extras) on new LCVs by manufacturers. The fact that these vehicles appear to be targeted by the more professional vehicle thief means that manufacturer fitted security needs to be of the highest possible specification to deter thefts.
- **Targeting high risk vehicles.** While improving the security of all new LCVs is important, it is recognised that some models are more at risk than others. These higher risk vehicles should be targeted for improvements in manufacturer fitted security as soon as possible. For example, car derived vans account for 40% of LCV thefts and have an above average risk of theft. Improving security on this one type of LCV could significantly reduce theft of LCVs in general.
- **Marking of components.** Manufacturers should consider extending the use of component marking whereby serial numbers can be cross-referenced with vehicle identification numbers. This practice can help the police to identify a stolen vehicle even once other markings have been erased or altered.

#### *Action points for security device manufacturers*

- **Improving the effectiveness of mechanical devices.** Almost a third of stolen LCVs had mechanical devices installed at the time of the theft. It is recognised, however, that some of these may not have been in use when the vehicle was stolen. This, in itself, may be a problem which mechanical security device manufacturers need to address. The security of these vehicles may be improved by reducing the effort required to activate these devices. Another problem is likely to be the effectiveness of these devices generally. Manufacturers should be satisfied that their security devices are sufficiently resistant to attack by vehicle thieves. Consideration should also be given to submitting such devices to Thatcham or Sold Secure for testing and approval before making them available to the general public.
- **Targeting high risk vehicles.** In marketing their security devices, manufacturers should, perhaps, target those models of LCV which have a higher than average risk of theft. The heightened awareness of those owning high risk vehicles may prompt them to improve the security of their LCVs, thereby helping to reduce the extent of LCV theft.

#### *Action points for LCV owners*

- **Installing effective security.** LCV owners should ensure that their vehicles are adequately secured. The fact that a theft can have a significant effect on a business shows that many owners cannot afford to run insecure vehicles, even if the initial outlay may appear expensive. In selecting an appropriate device, owners should consult the security device ratings provided by organisations like Thatcham and Sold Secure. Where possible, devices should be fitted by an approved garage, such as those recognised by the Vehicle Security Installation Board.

- **Targeting specific industries.** It was clear from the research that LCVs being used in the construction industry were being stolen most frequently. Those working in this sector should therefore be particularly concerned about ensuring their vehicles are adequately secured against theft. Owners of LCVs in the vehicle hire and leasing industry should also be concerned about vehicle security as the availability of their vehicles not only form part of their core business, but the average value of these vehicles was also higher than for any other industry.
- **Providing security advice to drivers.** Companies should ensure that their drivers are sufficiently aware of the risks associated with the theft of LCVs. Where possible, guidance should be issued on where to park vehicles, arming security devices, handling keys etc.

*Action points for LCV drivers*

- **Parking location of LCVs.** Drivers of LCVs should pay particular attention to the parking locations of their vehicles. When a vehicle is left at a driver's home, attempts should be made to park it off road, such as on a drive or, preferably, in a locked garage. If a public car park is to be used, drivers should, where possible, use those which are members of the Secured Car Park scheme.
- **Using vehicle security.** Where vehicle security is available, drivers should ensure that it is used every time they leave their vehicles. Even if the vehicle is to be left for just a few minutes, security devices should be used in order to reduce any opportunity a thief might have to steal a vehicle.

*Action points for insurers*

- **Review policy on insuring older vehicles.** LCVs which were ten years old or more were less likely to be recovered than more recently produced vehicles. While many of these vehicles will be used to supply a market for second-hand components, it is likely that at least some will have been a result of insurance fraud. Consideration should therefore be given to reviewing policy on insuring older vehicles and on how theft claims on such vehicles are investigated.

*Action points for the police*

- **Tackling the low recovery rate.** The fact that only 41% of LCVs were recovered suggests that LCVs are either particularly prone to insurance fraud, or are the target of professionally organised crime. In either case, the police should continue to take measures to tackle these issues. In the case of insurance fraud, consideration should be given to identifying fraudulent reports of LCV theft. Where actual thefts are concerned, the police should continue to target offenders involved in stealing LCVs.
- **Improving the recording of LCV thefts.** A considerable amount of research time was spent distinguishing LCVs from other types of stolen vehicle records stored on the Police National Computer. In order to ease the process of conducting exercises such as this in future, improvements should be made to the classification of vehicles used on the database. For example, identifying LCVs would have been simplified if information on the vehicles' weight had been available.

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## 1. Introduction

Light Commercial Vehicles (LCVs) form a major part of the nation's vehicle stock and perform an important function in the economy as modern day 'work horses'. Whenever comparatively small amounts of goods need to be transported, they are likely to be carried in a LCV. Given the fact that anyone with a full driving licence is eligible to drive one, they have become a popular and, indeed, essential type of vehicle in the commercial world.

Unfortunately, the popularity of LCVs does not seem to have been restricted to legitimate interests and there is evidence to suggest that LCVs have become a significant target for theft. According to the Freight Transport Association (FTA) (1994), over 30% of thefts from and of commercial vehicles reported by their members involved light vans. Further evidence has been received from the British Vehicle Rental and Leasing Association (BVRLA), who represent 90% of the rental/leasing industry. BVRLA use the term 'commercial vehicle' to describe both heavy goods vehicles (HGVs) and light commercial vehicles, although 80% of those registered are LCVs. The Association's figures indicate that 1,703 (4.4%) commercial vehicles belonging to their members were stolen in 1993. If the ratio of HGVs/LCVs remain the same in the theft statistics, this would suggest that 1,362 LCVs were stolen from BVRLA members, of which 70.9% were not recovered.

It should, however, be borne in mind that the majority of LCV owners do not belong to either the BVRLA or the FTA, so the actual number stolen is likely to be much higher than can be estimated from these sources. Nevertheless, these figures do provide a starting point for highlighting LCV theft as a possible cause for concern.

A more nationally representative picture of the extent of LCV theft could not be obtained from existing criminal statistics routinely produced by the Home Office because these figures only provide aggregate information on the total number of motor vehicles stolen. No breakdown was provided which would allow analysis of individual vehicle types – such as LCVs. It was therefore agreed that the current study should be undertaken to provide a clearer, national picture of LCV theft.

### **Objectives of the study**

The research was based upon an analysis of LCV thefts in England, Scotland and Wales and had three key objectives:

- to identify the number of light commercial vehicles stolen;
- to examine the characteristics of stolen light commercial vehicles; and
- to examine the circumstances surrounding the theft of light commercial vehicles.

### **Format of the report**

The report is divided into nine sections:

- Section 2 outlines the methodology used in conducting the study.
- Section 3 identifies the number of LCVs stolen and recovered over the 12 month period.
- Section 4 looks in more detail at the types of LCV being stolen.
- Section 5 examines the location and time at which the LCVs were stolen.
- Section 6 identifies the victims of LCV theft in terms of whether the vehicle was privately or company owned and examines the company profile of those suffering a theft.
- Section 7 examines security measures taken to prevent the theft of vehicles. Both the security of the vehicle and the security of the local environment are examined.
- Section 8 outlines the effects of the theft on the victim.
- Section 9 provides the main conclusions and recommendations arising from the study.

## 2. Methodology

### Stolen LCV data

This research utilised data obtained from a commercial organisation, Experian, who, on a daily basis, receive and retain details of stolen vehicles held on the Police National Computer (PNC)<sup>1</sup>. (The PNC database itself does not retain details of vehicles which have been stolen and subsequently recovered). Information is sent from PNC to Experian once a day, which means those vehicles which are stolen after the last down-load of data and recovered before the next (the following day) are unlikely to be included in the figures. A comparison to vehicle theft recorded in official criminal statistics suggested that these figures may be as much as 20% lower than the actual rate and should be treated as conservative estimates.

<sup>1</sup> 'Stolen vehicle' relates to any vehicle which is reported as stolen to the police and subsequently entered on to the PNC.

The analysis is based on LCVs stolen between October 1994 and September 1995 and these data were made available to PRG in early 1996. For the reasons explained below, these data required a considerable amount of 'cleaning', processing and analysis before a reliable estimate of LCV theft could be calculated. The amount of data preparation required means that these exercises are extremely resource intensive and this is likely to reduce the likelihood that studies of this kind will be undertaken on a regular basis in future.

Once the stolen vehicle data had been 'cleaned' and analysed, in late 1996 a sample of LCV theft victims was selected for participation in a survey. The purpose of this was to gain a greater understanding of the circumstances surrounding such thefts.

### Identifying a Light Commercial Vehicle

For the purposes of this research, a light commercial vehicle was defined as a commercial vehicle designed with a gross vehicle weight up to, but not exceeding 3.5 tonnes. The data used in this study did not specify the weights of vehicles stolen, which meant it was difficult to distinguish LCVs from other classes of vehicle, such as Heavy Goods Vehicles.

In order to identify the relevant LCVs, a systematic process of elimination was undertaken. At the first stage in this process, body types which were unlikely to be used on LCVs were deleted from the system. (For example, vehicles with saloon car bodies were deleted.) This left a core of vehicles which contained 18 different body types. However, many of these body types were shared by both LCVs and HGVs (e.g. Box Vans, Luton Vans etc.). Weight was the crucial distinction for LCVs because in order to qualify, a vehicle had to have a gross vehicle weight of up to (but not exceeding) 3.5 tonnes. Anything over this weight would be classified as a Heavy Goods Vehicle.

To identify the gross vehicle weight, it proved necessary to check each vehicle specification. This involved liaison with motor manufacturers in order to identify those ranges of commercial vehicles which were designed not to exceed the 3.5 tonne limit. A number of vehicles were found to cross this limit, with the same model being classed as a HGV or LCV depending on its use. In these cases, individual Vehicle Identification Numbers (VINs) were checked with the manufacturer, to discern which class they fell into. Those identified as HGVs were subsequently deleted from the database.

Once this process was completed, there was still a number of commercial vehicles whose weight could not be found due to missing, or incomplete VINs. These numbered 1,087 and accounted for 2.3% of the vehicles which could possibly have been LCVs. While many may have been LCVs, there was no means of verifying whether this was the case. These records were therefore deleted from the database in order to minimise the possibility of HGVs being erroneously included in the analysis.

<sup>2</sup> 'Vehicle parc' relates to the vehicle population and is usually expressed in terms of the number of vehicles on the road within a given geographical area.

### Vehicle parc<sup>2</sup> information

While the stolen vehicle data provided an indication of the number of LCVs being stolen over a year, it was possible that the number stolen was simply an artefact of the number of such vehicles on the road. In short, the more of a particular model there was on the road, the more there are available to be stolen. It was more important to know the risk of theft associated with each type of LCV. This was calculated as follows:

$$\frac{\text{Number of LCVs stolen}}{\text{Number of LCVs on the road}} \times 1000 = \text{Rate of theft per 1,000 on the road.}$$

Information on the number of LCVs on the road was taken from data supplied by the Society of Motor Manufacturers and Traders (SMMT). This gave a break-down of each make and model of LCV on the road at the end of December 1994. Where possible, these data were used to calculate the risk of theft of the LCVs presented in the following report.

### The victim survey

Once LCVs had been identified, a random sample of 2,000 stolen vehicles were selected for use in a victim survey. These were stratified by type of LCV in order to provide a broadly representative sample. A questionnaire was then mailed to the LCV owners towards the end of 1996. In total, 1,113 completed questionnaires were returned, giving a response rate of 56%. This was considered an average response for this type of survey and similar to that previously obtained from victims of commercial vehicle theft (FTA, 1994, 1997; Brown, 1995).

As only approximately half of all questionnaires were returned, there was the possibility that the sample was biased in terms of who had responded. However, when analysed in terms of the vehicle's body type, the sample was found to be similar to the population of stolen LCVs.

### 3. Numbers of LCVs stolen and recovered

#### Number of LCVs stolen

Analysis was undertaken to identify the number of LCVs stolen during 1994/5. During the year, 412,264 motor vehicles of all descriptions (from mopeds to saloon cars, LCVs and HGVs) were recorded as stolen nationally on the database used for this research. Of these, 47,181 (11.44%) were identified as LCVs. The fact that more than one in nine of all stolen vehicles is a LCV of some description helps to belie the commonly held assumption that all stolen vehicles are passenger cars.

In order to gain an indication of the relative risk of theft associated with LCVs, the theft rate per 1,000 vehicles registered was calculated. This showed that, over the twelve months in question, 19 LCVs in every 1,000 registered were stolen. In 1994, the rate of theft for all motor vehicles was 21.2 per 1,000 registered<sup>3</sup>, suggesting that LCVs were slightly less prone to theft than the average vehicle. Compared to other types of commercial vehicles, LCVs had a higher rate of theft. Indeed, the theft rate for HGVs was found to be only six thefts per 1,000 registered, suggesting that LCVs are three times more at risk of being stolen. These theft patterns were, however, markedly different to those found in the USA. For example, Clarke and Harris (1992, p.18) reported that the theft of 'light trucks' was considerably lower (564 per 100,000 registered vehicles) than that for heavy trucks and buses (1,853 per 100,000).

<sup>3</sup> 533,966 thefts in England and Wales divided by the total vehicle parc (25,231,000).

#### Number of LCVs recovered

The analysis undertaken in relation to LCV recovery was based on LCVs stolen in the first six months of the time period because this would allow for a suitable period for recovery after the vehicles were stolen. By choosing the six months time frame, all vehicles had at least a further six months in which they could be recovered. Over the first six months (from October 1994 to March 1995), 22,253 LCVs were stolen, representing slightly less than half (47.2%) of all LCVs stolen over the year. Of these, 6,139 were recorded in the research database as recovered during the remainder of the year. During the research, some doubts were expressed over the accuracy of the recovery data. Further analysis suggested that the recovery rates across all vehicle types significantly under-estimated recoveries. The LCV recovery rate was therefore weighted to account for this fact<sup>4</sup>. The overall rate of LCV recovery was estimated to be 9,209 (41%) for the vehicles stolen in the six months from October 1994 to March 1995.

<sup>4</sup> While the research database had a recovery rate of 38.7% for all motor vehicles for the period in question, Criminal Statistics for England and Wales (1994) showed a recovery rate of 59%. Using these figures, it was estimated that the recovery rate in the research data accounted for two out of three (or 66% of) recovered vehicles. The number of LCVs recovered was therefore increased in line with these proportions, thereby raising the estimated number of LCVs recovered from 6,139 to 9,209.

The estimated recovery rate of 41% for LCVs was found to be significantly below the recovery rate for all stolen vehicles in England and Wales (59%) obtained from Criminal Statistics. The lower than average recovery rate of LCVs is likely to reflect the organised nature of the crime, with vehicles being stolen for their parts or for re-use once their identity has been changed.

## NUMBERS OF LCVs STOLEN AND RECOVERED

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Another possible factor explaining the lower recovery rate of LCVs may be fraudulent reports of stolen vehicles. In some cases, owners of LCVs may have disposed of the vehicle themselves in order to make a claim on their insurance. Before making the claim they would need to report the (fake) theft to the police and, in so doing, these cases will be included within the figures analysed here. By the very nature of the clandestine behaviour involved, it is difficult to estimate the scale on which these fraudulent claims occur. However, research by Webb and Laycock (1992, p.9) estimated that eight per cent of all vehicles stolen in 1990 were cases of insurance fraud<sup>5</sup>. This was based on the assumption that older vehicles would be more susceptible to insurance fraud and therefore the recovery rate would be lower. Further analysis confirmed this to be the case, with older vehicles being significantly less likely to be recovered. While 35% of vehicles aged 10 years or more were recovered, 43% of younger vehicles were recovered. At least part of the reason for this difference in recovery rates is likely to have been a result of insurance fraud. However, another explanation is that some of these cases were the result of a demand for spare parts on older vehicles, with LCVs being stolen, dismantled and their components sold to supply a market for used parts. The recovery rate for LCVs is therefore likely to result from a number of quite different motivations.

The recovery rate for LCVs was found to be higher than that for HGVs, where only approximately 12% were recovered in 1994 (Brown, 1995). This raises the question of why stolen LCVs should be recovered three times more often than HGVs and suggests that thefts where the vehicle is temporarily used for transporting people and goods may be frequent.

On the basis of what is known about recovery rates, it is possible to devise a continuum of theft permanency, ranging from a scenario where all stolen vehicles are recovered at one end of the continuum, to a situation where none are recovered at the other end of the continuum. On to this, the likely motivation behind the theft can be transposed. For example, when the majority of vehicles are recovered, it can be concluded that joy-riding and thefts for temporary use are more prevalent, while lower recovery rates may indicate a greater prevalence of crimes for financial gain. By financial gain we mean those which are stolen for re-sale (either whole or in parts) and those which are fraudulent reports of theft so that an insurance claim can be made.

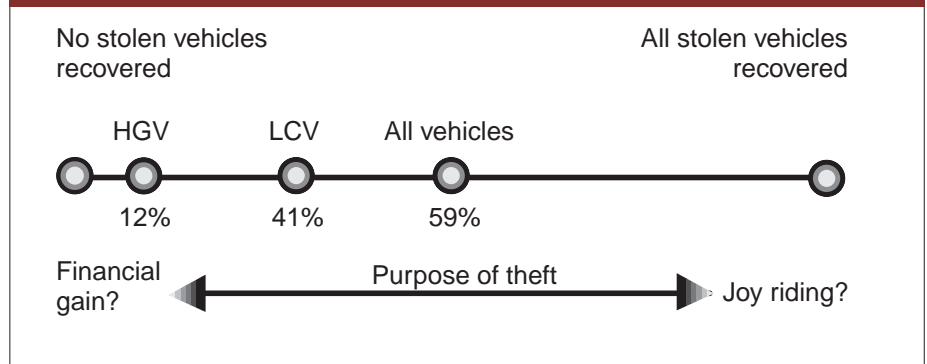
This continuum is presented in Figure 1 and plots recovery rates for LCVs, HGVs and all vehicles. There would appear to be a relationship between the purpose of the vehicle and its recovery rate. It can be hypothesised that the more specialised a vehicle becomes, the more likely the theft will be for financial gain and the lower its recovery rate will be. These figures suggest that LCVs may be more likely than the average vehicle to be stolen for financial gain, but less likely than are HGVs.

<sup>5</sup> This was calculated by taking the proportion of unrecovered vehicles on the Police National Computer which were ten years or older when stolen. In 1990 this figure was 25%, therefore a quarter of all unrecovered thefts were assumed to be cases of insurance fraud.

## NUMBERS OF LCVs STOLEN AND RECOVERED

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Figure 1: Theoretical vehicle recovery continuum



## 4. Type of LCVs stolen

An important part of the study was to identify the various types of LCV stolen during the year. Analysis was therefore undertaken to examine the various characteristics of the vehicles stolen.

### Body type

The multiplicity of purposes for which a LCV can be used means these vehicles come in an assortment of shapes and sizes. As table 1 shows, eleven specific body types were covered by the research. By far the most commonly stolen types were panel and car-derived vans, together accounting for over three-quarters (79.2%) of the total number stolen. Furthermore, the third most common body type to be stolen was the pick-up which accounted for 7.4% of thefts. Taking panel, car derived and pick-up vans together, the research found that 86% of thefts focused on these three types of LCV.

A somewhat different picture emerged when rates of theft were analysed by body type. Tipperers were found to have the highest risk of theft, with 39 being stolen for every thousand registered, yet, in numeric terms, these vehicles accounted for only two per cent of LCVs stolen. This high risk of theft is nonetheless interesting as it replicates the findings of HGV theft, where tipperers were also the most likely type to be stolen. By contrast, pick-ups, which were found to have a high number of thefts, had a low theft rate, with eight in every thousand stolen.

Table 1: LCVs stolen by body type

	Number Stolen	Percent	Theft rate per 1,000 registered
Car-derived van	18866	40.0	23
Panel van	18497	39.2	20
Pick-up	3494	7.4	8
Flat/drop-side van	1865	4.0	37
Luton van	1035	2.2	34
Tipper	973	2.1	39
Box van	797	1.7	32
Bottle float	96	0.2	29
Insulated van	93	0.2	26
Fitted van	15	0.0	5
Refuse disposal	3	0.0	10
Other van	1447	3.1	–
Total	47181	100.1	19

## TYPE OF LCVs STOLEN

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While car derived and panel vans were most often stolen, their risk of theft (23 and 20 per 1,000 respectively) was close to the mean average, suggesting their high number stolen was a result of being the most common type of LCV on the road. Nevertheless, their considerable impact on the overall LCV theft figures would suggest that theft of these two types are particularly important to combat. To take an extreme example, if the theft of all panel and car derived vans was prevented, the number of LCVs stolen would decline by almost 80% and the overall number of vehicles stolen nationally would be reduced by seven per cent.

In the short term at least, improving security on these two types of LCV would be unlikely to result in a high proportion of the crime being displaced to other types of van. The professional thief (who is likely to be responsible for the 59% of stolen LCVs never recovered), will probably require a certain type of vehicle for re-sale or for dismantling and will be sensitive to the demands of the market. It is recognised, however, that some displacement may occur to types which already have a high risk of theft (and therefore in relatively high demand), such as flat-bed, drop-side and Luton vans, although their much lower numbers on the road suggests that, in numeric terms, the extent of displacement would be minimal. Displacement towards insecure LCVs would be most likely for the 41% of LCVs which are subsequently recovered. These vehicles are more likely to be stolen by opportunist thieves who steal for their own temporary use and, as long as the vehicle they steal suits their purposes, they are likely to be less discerning in their choice of target. If the most frequently stolen vehicle types were made more secure, opportunist thefts on other types of LCV could increase.

### **Make of LCVs**

Overall, 27 different makes of LCV were found to have been stolen over the 12 month period. Perhaps the most striking finding, however, was that one make, Ford, accounted for almost 60% of thefts. Furthermore, almost 80% of thefts involved LCVs manufactured by just three companies – Ford (59%), General Motors (14%) and Rover (6%). The fact that these three makes are traditionally British built is part of a pattern which would seem to transcend vehicle type and is replicated whether one examines passenger cars (Houghton, 1992; Light et al., 1993; Broadbent, 1994), HGVs (Kent County Constabulary, 1994; Brown, 1995) or LCVs. The popularity of makes which are traditionally British built may be because these particular vehicles are easier to steal, or that knowledge of how to steal them is widely disseminated among vehicle thieves. These factors were identified in relation to cars by Light et al (1993). An alternative explanation may have been that there were simply more of these on the road. To control for the size of the LCV parc, the risk of theft was also calculated.

While vehicles produced by General Motors and Rover had theft rates close to the average (20 and 19 per 1,000 respectively), vehicles produced by Ford were more likely to be stolen than almost any other make (34 per 1,000) apart from Dacia (with a theft rate of 40 per 1,000). These figures generally tend to confirm the preference for traditionally British built LCVs. The 'exception that proves the rule' is LDV (another largely British built make) which was the sixth most common make of van stolen, yet only had a theft rate of nine per 1,000 registered – considerably below the rate for the average LCV.

### Model of LCVs

Analysis undertaken into the theft of specific models showed a wide range of LCVs stolen during the twelve months. In total, 91 different models of LCV were stolen during the period. Many of these were, however, stolen in small numbers. Indeed, 25 models constituted 90% of thefts. The majority of thefts appeared to be clustered on a relatively small number of models, with over three quarters of those stolen consisting of just eight models. Over half of all stolen LCVs consisted of two models – Ford Transits and Ford Escort Vans. This helps to explain why Fords had a particularly high frequency of theft as Transits and Escort vans constituted 93% of Fords stolen.

As models of LCV can have different body types (car derived, panel etc.), it is possible that theft rates could vary according to these types. Analysis was therefore undertaken of models by body type. As this was too extensive to present in its entirety, the following analysis concentrates on the three most frequently stolen types only – car derived, panel and pick-up vans. Within each of these types, the 20 most frequently stolen vehicles have been presented, giving a total breakdown of 60 models across three types of LCV. These 60 models were found to account for 83% of all stolen LCVs. To allow for meaningful comparisons between models, the theft rates presented in tables 2-4 have been classified into three groups – high, medium and low – and have been divided into separate years of registration<sup>6</sup>.

#### *Car-derived vans*

In terms of the actual number of car derived vans stolen, three models, Ford Escort Van, Vauxhall Astravan and Rover Maestro Van, accounted for 84% of thefts of this type of van. Overall, Ford Escort Vans and Vauxhall Astravans had the highest risk of theft, although as table 2 indicates, there was some variation by year. For example, Ford Escorts had a consistently high rate of theft for those first registered up to 1989-91, although there was a decline in theft for those registered in 1992-94. At the other end of the spectrum, the Volkswagen Golf/Caddy had the lowest rate of theft, although those registered between 1985 and 1988 had a medium rate of theft.

<sup>6</sup> The theft rate for any particular year is based on the proportion of LCVs stolen which were first registered in that year and still on the road in December 1994.

## TYPE OF LCVs STOLEN

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### *Panel vans*

Overall, the Volkswagen LT had the highest rate of theft among panel vans and this appears to have been fairly consistent over the different ages of vehicle, although the newest models were less likely to be stolen than their predecessors. Ford Transits also had a high rate of theft overall and the risk of theft appears to have been higher for the most recently built vehicles.

### *Pick-up vans*

The most frequently stolen pick-ups were the Nissan Cabstar and the Toyota Hi-Lux. While the Toyota Hi-Lux had an average rate of theft, the Nissan Cabstar had a fairly high theft rate. Indeed, as table 4 shows, this peaked for those registered between 1988 and 1991. The highest rate of theft was attributed to the Bedford KB, which had a consistently high risk of theft among vehicles first registered between 1980 and 1986, although there was a decline among the more recently built models.

Figure 2: Example of a car-derived van



Table 2: Theft rates of twenty most frequently stolen car-derived vans by year of registration

	1992-94	1989-91	1986-88	1983-85	1980-82	Pre 1980
Austin/Rover Maestro	Medium Risk	Medium Risk	Medium Risk	Medium Risk		
Austin/Rover Metro	Medium Risk	Medium Risk		Most at Risk	Lowest Risk	
Austin/Rover Mini				Medium Risk	Medium Risk	Medium Risk
Bedford Hav/Hae 6-10 CWT				Lowest Risk	Medium Risk	Medium Risk
Citroen C15	Medium Risk	Medium Risk	Medium Risk	Medium Risk		
Fiat Fiorino	Medium Risk	Medium Risk	Medium Risk	Medium Risk	Medium Risk	
Ford Courier	Medium Risk	Medium Risk				
Ford Escort	Medium Risk	Most at Risk	Most at Risk	Most at Risk	Most at Risk	Most at Risk
Ford Fiesta	Medium Risk	Medium Risk	Medium Risk	Medium Risk	Medium Risk	Most at Risk
Nissan Sunny	Medium Risk	Medium Risk	Medium Risk	Medium Risk		
Peugeot Talbot 205	Medium Risk	Medium Risk	Medium Risk	Medium Risk	Medium Risk	
Peugeot Talbot 305		Medium Risk	Medium Risk	Medium Risk	Medium Risk	
Renault Extra	Medium Risk	Medium Risk	Medium Risk			
Rover/Morris 440				Medium Risk	Medium Risk	Most at Risk
Rover/Morris 575				Medium Risk	Medium Risk	Medium Risk
Suzuki SuperCarry	Medium Risk	Medium Risk	Medium Risk			
Vauxhall Astravan	Medium Risk	Most at Risk	Medium Risk	Medium Risk	Medium Risk	
Vauxhall Combo	Medium Risk					
Vauxhall Nova	Medium Risk	Medium Risk				
Volkswagen Golf/Caddy	Lowest Risk	Lowest Risk	Medium Risk	Medium Risk	Lowest Risk	

Most at Risk (31.4 to 87.0 thefts per 1000 registered)

Lowest Risk (0 to 1.4 thefts per 1000 registered)

Medium Risk (1.41 to 31.39 thefts per 1000 registered)

No/too few vehicles of this type on the road

Figure 3: Example of a panel van



TYPE OF LCVs STOLEN

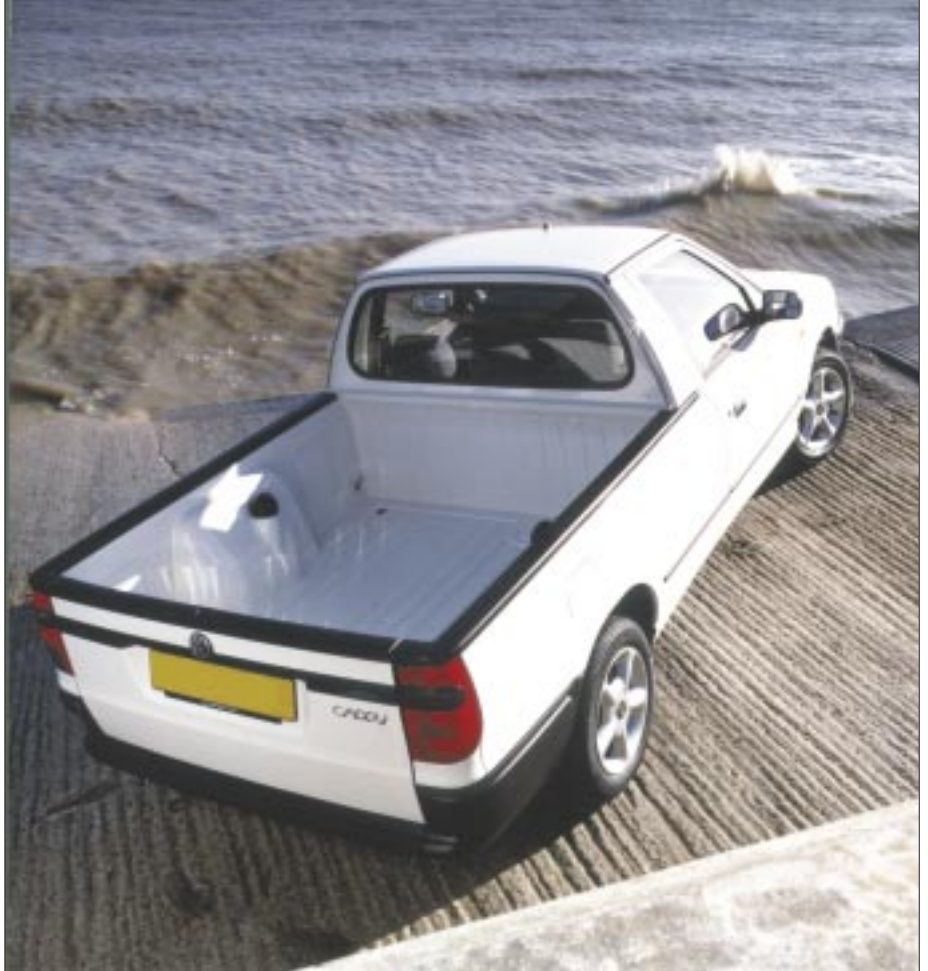
Table 3: Theft rates of twenty most frequently stolen panel vans by year of registration

	1992-94	1989-91	1986-88	1983-85	1980-82	Pre 1980
Bedford CF						
Bedford Midi						
Bedford Rascal						
Citroen C25						
Fiat Ducato						
Ford Transit						
LDV/Rover Sherpa 400 Series						
LDV/Rover Sherpa 200 Series						
Mazda E Series						
Mercedes 300 Series						
Mitsubishi L300 Series						
Nissan Urvan						
Nissan Vannette						
Peugeot Talbot Express						
Renault Master						
Renault Trafic						
Rover Sherpa 300 Series						
Toyota Hi-Ace						
Volkswagen LT						
Volkswagen Transporter						

<span style="color: red;">■</span> Most at Risk (31.4 to 87.0 thefts per 1000 registered)	<span style="color: orange;">■</span> Medium Risk (1.41 to 31.39 thefts per 1000 registered)
<span style="color: green;">■</span> Lowest Risk (0 to 1.4 thefts per 1000 registered)	<span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span> No/too few vehicles of this type on the road

Figure 4: Example of a pick-up van



**Table 4: Theft rates of twenty most frequently stolen pick-up vans by year of registration**

	1992-94	1989-91	1986-88	1983-85	1980-82	Pre 1980
Austin/Rover Mini				Lowest Risk	Medium Risk	Medium Risk
Austin/Rover Morris				Medium Risk	Medium Risk	Medium Risk
Bedford Brava	Medium Risk	Medium Risk				
Bedford CF			Lowest Risk	Lowest Risk	Medium Risk	Medium Risk
Bedford KB		Medium Risk	Most at Risk	Most at Risk	Most at Risk	
Ford p100	Most at Risk	Most at Risk	Medium Risk	Medium Risk	Lowest Risk	
Ford Transit	Medium Risk	Most at Risk	Most at Risk	Most at Risk	Lowest Risk	Lowest Risk
Honda TN			Most at Risk	Most at Risk		
Hyundai Pick-Up		Lowest Risk	Medium Risk	Medium Risk	Medium Risk	
Mazda B Series	Medium Risk	Medium Risk	Medium Risk	Medium Risk	Medium Risk	Medium Risk
Mitsubishi L200	Medium Risk				Lowest Risk	
Nissan Cabstar	Medium Risk	Most at Risk	Most at Risk	Medium Risk	Lowest Risk	Lowest Risk
Nissan Pick-up	Medium Risk	Medium Risk	Medium Risk			
Peugeot Talbot 504	Medium Risk			Medium Risk		
Subaru Pick-up	Medium Risk	Medium Risk		Medium Risk	Medium Risk	
Suzuki SuperCarry	Medium Risk	Most at Risk				
Toyota Hi-Lux	Medium Risk			Medium Risk	Medium Risk	Medium Risk
Toyota Hi-Ace					Medium Risk	Medium Risk
Volkswagen Taro	Lowest Risk	Medium Risk	Lowest Risk			
Volkswagen Transporter	Lowest Risk	Medium Risk	Medium Risk	Medium Risk	Lowest Risk	Lowest Risk

■ Most at Risk (31.4 to 87.0 thefts per 1000 registered)

■ Medium Risk (1.41 to 31.39 thefts per 1000 registered)

■ Lowest Risk (0 to 1.4 thefts per 1000 registered)

No/too few vehicles of this type on the road

### Type of engine

Analysis of the type of fuel used in the engine showed that 65% of LCVs stolen had diesel engines, while the remainder had petrol engines. This distribution was compared to that for the total population of LCVs. The data used for the comparison was based on a survey of small commercial vehicles (Department of Transport, 1994) which used a more restricted definition of an LCV. Nevertheless, it provides the most accurate information found to be available on this issue. According to this source, the proportions of petrol/diesel engines were fairly equal,

with petrol engines constituting 51% and diesel the remaining 49%. These figures would suggest that diesel engines are over-represented among those stolen.

One possible explanation for the high proportion of diesel engine LCVs being stolen is that these vehicles are actually stolen for their engine. To test this hypothesis, the rate of theft was correlated with the proportion of each model<sup>7</sup> which had diesel engines. The relationship between theft rate and engine type was not found to be significant ( $r=0.18$ ,  $p=0.28$ ). This suggests the choice of LCV is unlikely to be governed by the type of engine the vehicle has, but is likely to involve a range of vehicle related features.

However, one indication of the fact that LCVs with diesel engines were more likely to be targeted by professional thieves was obtained by examining the recovery rate for these vehicles. This analysis found that the recovery rate for LCVs with diesel engines was 50% lower than that for petrol engine vehicles<sup>8</sup>. This variation in recovery rate was also found to be significant (Chi Square = 879.1,  $p=0.00$ , d.f. = 1).

### Age of LCV

The age of the LCVs stolen was examined through an analysis of the date of first registration and found that the age of those stolen ranged over a 32 year time scale, from 1962 to 1994<sup>9</sup>. Despite the wide range in years, most of those stolen were produced in the 1980s. Indeed, almost two thirds (62.1%) were first registered between 1980 and 1989. Overall, the mean average year of registration was 1988, indicating that the average LCV was six to seven years old at the time of theft. Where the rate of theft was concerned, there appears to have been a considerable range, depending on the age of the vehicle. For example, 15 year old LCVs had a theft rate of 11 per 1,000 registered, rising to a peak of 29 per 1,000 for five year old LCVs. The figures then gradually decline to 20 per 1,000 for three year old LCVs and four per 1,000 for one year old LCVs.

### Age distribution of specific models

Analysis was undertaken to identify models of LCV whose age distribution varied significantly from the mean<sup>10</sup>. In total, 17 models were found to vary from the overall mean. The results displayed in Figure 5 show that seven models (LDV 400 Series through to Bedford Midi) had mean average ages younger than for the population as a whole. For example, while the overall average year of registration was 1988, the average year of registration for LDV 400s was 1991 (1988 + 3.2 years), or four years old at the time of theft.

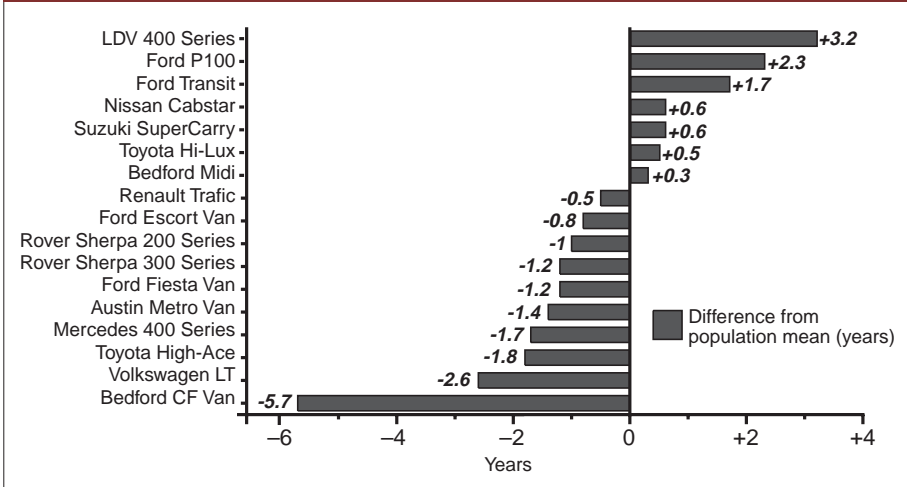
<sup>7</sup> Only models with greater than 100 vehicles stolen were included in the analysis.

<sup>8</sup> Diesel engine LCVs had a recovery rate of 21% compared to 33% for those with petrol engines. However, it is important to note that these recovery rates are under-estimates because the dataset used did not account for LCVs stolen and recovered in the same day. They should therefore be used to show relative differences between fuel types rather than as accurate rates in themselves.

<sup>9</sup> A number were also manufactured during 1995 but have been excluded from this analysis because the study period ended in September of that year. Showing the 1995 figures would therefore give a misleading low figure for that year because not all vehicles had yet been registered for that year.

<sup>10</sup> The analysis involved conducting a series of independent t-tests to compare the mean year of registration of each individual model with the population of all other stolen LCVs.

Figure 5: Difference between mean average year of registration for all stolen LCVs and mean average year of registration for selected models



At the opposite end of the scale, ten models were found to have significantly older vehicles than for the population of stolen LCVs as a whole. It should be noted, however, that 13 of the 17 models had average dates of registration within two years of the overall average. Of the remaining four, the Volkswagen LT and Bedford CF vans were older than the average LCV by more than two years. These findings were largely an artifact of the availability of these vehicles, with, for example, the population of Bedford CF vans being considerably older than LDV 400s. These figures highlight the fact that, while the average LCV was six to seven years old at the time of theft, some models differ significantly from this. Indeed, in the case of the Bedford CF van the average age of those stolen was 12 years old. This suggests that even some relatively old models can be vulnerable to theft.

## 5. Location and time of LCV theft

### The regional picture

The analysis of theft location was based on the police force in which the LCV was reported stolen and these figures were aggregated into regional groupings based broadly on those used by the Association of Chief Police Officers.

As Table 5 shows, Greater London was the region affected most by LCV theft in England, Scotland and Wales. While the South East of England had the third highest rate of theft, it was considerably lower than that found for HGVs (Brown, 1995) where this region accounted for 39% of such thefts. When the figures for Greater London and the South East were added together, this region still accounted for a sizable proportion of thefts, with almost 30% stolen from this part of Great Britain. This figure was still lower than Brown (1995) found for HGVs, but higher than that found in a survey of commercial vehicles (both light and heavy) by the FTA (1994). This latter survey identified 20% of thefts occurring in London and the South East. The FTA study also found that almost half (48%) of all commercial vehicle thefts occurred in the North of England. Combining our North East and North West Regions to provide a comparable area, 28% of LCV thefts were found to occur in this part of the country.

<sup>11</sup> This analysis excludes the British Transport Police because their remit is national and the available data could not identify the regional location of the LCV thefts reported to them.

	Number	Percent	Theft rate per 1,000 registered
Greater London	7622	16.3	34
North East	7401	15.8	32
South East	6387	13.6	16
Midlands	6243	13.3	21
North West	5591	11.9	25
Eastern	3340	7.1	18
South West	3143	6.7	16
Scotland	1742	3.7	12
Wales	1587	3.4	17
Force Unknown	3758	8.0	–
Total	46814	99.8	23

As with previous studies, both Scotland and Wales were found to suffer comparatively low levels of LCV theft. Together, these regions accounted for just seven per cent of all thefts. These figures may, however, merely reflect differences in the light commercial vehicle stock available in each region, with low levels of theft being a result of fewer LCVs on the road in those areas.

Attempts were therefore made to gain an indication of how many LCVs were registered in each region so that the likely risk of theft could be calculated for these areas. The figures used were based on an analysis of DVLA data. While the DVLA parc figures do not include all types of LCV found to be stolen, they do cover nine out of every ten. So as to compare like with like, the theft figures were based only on those body types for which DVLA data were available.

One limitation with the theft rate figures is the fact that LCVs are likely to move around from county to county and will not necessarily stay in the area of the address they are registered to. Furthermore, companies with large fleets of LCVs will often register their vehicles at a central location, even though many will be based throughout the country. These issues mean using the number registered in a region as an estimate of the population size of likely targets is flawed as it could under-represent the number of LCVs in some areas, while over-represent the number in other areas. Figures indicating theft rates for specific areas should therefore be treated with some caution.

LCVs in the Greater London area were found to have the highest risk of theft, suggesting that London is particularly prone to this type of crime. This was followed closely by the North East of England, which had both a high number of vehicles stolen and a high theft rate. At the other end of the spectrum, LCVs registered in Wales appeared to have the lowest risk of theft. The regional theft rates for LCVs broadly correspond to the regional theft rates for all vehicles, although the figures for Greater London were higher than might have been expected.

### **Specific location of thefts**

As well as analysing thefts by regional location, the specific place where the vehicles were stolen was also examined. This information was taken from the victim survey, which explored both the general type of area and the parking location of the vehicle at the time of the theft.

Where the general type of area was concerned, table 6 indicates that the majority of thefts occurred in residential areas (65.8%), while industrial estates accounted for 11.5% and shopping areas a further 9.6%. These figures suggest the nature of LCV theft is closer to car theft than it is to HGV theft. Indeed, while the majority of HGVs were stolen from industrial locations and few from residential areas, cars were most frequently stolen from residential areas. The British Crime Survey (Mirrlees-Black et al., 1996) found that 60% of cars were stolen from the victim's home. When analysed in terms of the specific parking locations, LCVs parked at the victim's home were found to constitute 51% of thefts. Overall, LCVs parked on the roadside at the drivers home were stolen most often, accounting for over a third of thefts. These were followed by LCVs parked on the roadside elsewhere (15.4%) and

## LOCATION AND TIME OF LCV THEFT

those parked in car parks (15%). These figures conform closely to those for cars, where 18% were found to be stolen from car parks (Mirrlees-Black et al., 1996). For LCVs, these car parks were most frequently in shopping areas (59.4%) although a further 14% were stolen from car parks on industrial estates. It should be noted, however, that these figures take no account of the length of time a vehicle was parked at a specific location, or whether the vehicle was stolen from a usual parking location, which means it is not possible to estimate the risk of theft associated with these locations (see Clarke and Mayhew (1994) for a discussion of this issue).

**Table 6: Type of area by parking location of stolen LCV**

	Industrial Estate	Shopping Area	Residential Area	Rural Area	Other	Total
In a garage at the driver's home	3 2.5%	0 0.0%	4 0.6%	2 2.4%	0 0.0%	9 0.9%
On a drive at the driver's home	0 0.0%	0 0.0%	131 18.8%	17 20.0%	0 0.0%	148 14.0%
On the roadside at the driver's home	3 2.5%	4 4.0%	351 50.4%	20 23.5%	2 3.8%	380 35.9%
On the roadside elsewhere	13 10.7%	22 21.8%	116 16.7%	7 8.2%	5 9.4%	163 15.4%
In a car park	17 13.9%	60 59.4%	45 6.5%	10 11.8%	27 50.9%	159 15.0%
In a company depot	28 23.0%	4 4.0%	12 1.7%	8 9.4%	2 3.8%	54 5.1%
In a factory/warehouse parking area	47 38.5%	5 5.0%	3 0.4%	6 7.1%	5 9.4%	66 6.2%
In a company warehouse/garage	4 3.3%	0 0.0%	2 0.3%	0 0.0%	1 1.9%	7 0.7%
Other	7 5.7%	6 5.9%	32 4.6%	15 17.6%	11 20.8%	71 6.7%
Total	122 100%	101 100%	696 100%	85 100%	53 100%	1057 100%

### Time of thefts

When analysed in terms of the day of week thefts occurred on, a fairly stable pattern was found, with approximately 17% of thefts on each day, Monday to Thursday. This was followed by a decline at the weekend, with 14% of thefts on Friday declining to

nine per cent on Sunday. One explanation for the low weekend figures might have been due to vehicles being parked up over the weekend and not being found to have been stolen until Monday morning. However, the figures for vehicles found stolen on Mondays were no higher than those for Tuesday, Wednesday or Thursday. This suggests that thefts actually decline at the weekend. This can be contrasted with the figures for HGVs, where almost a quarter were discovered stolen on Mondays.

Where the time of day was concerned, 64% of LCVs were found to have been stolen between midnight and 12.00 noon. This disproportionately high figure is likely to be a result of many vehicles being stolen during the night time and being discovered stolen the following morning. Indeed, in a quarter of thefts a LCV was parked up between 8pm and 8am and found to have been stolen during those twelve hours. Many others were parked before 8pm and found to have been stolen the following morning.

## 6. Victims of LCV theft

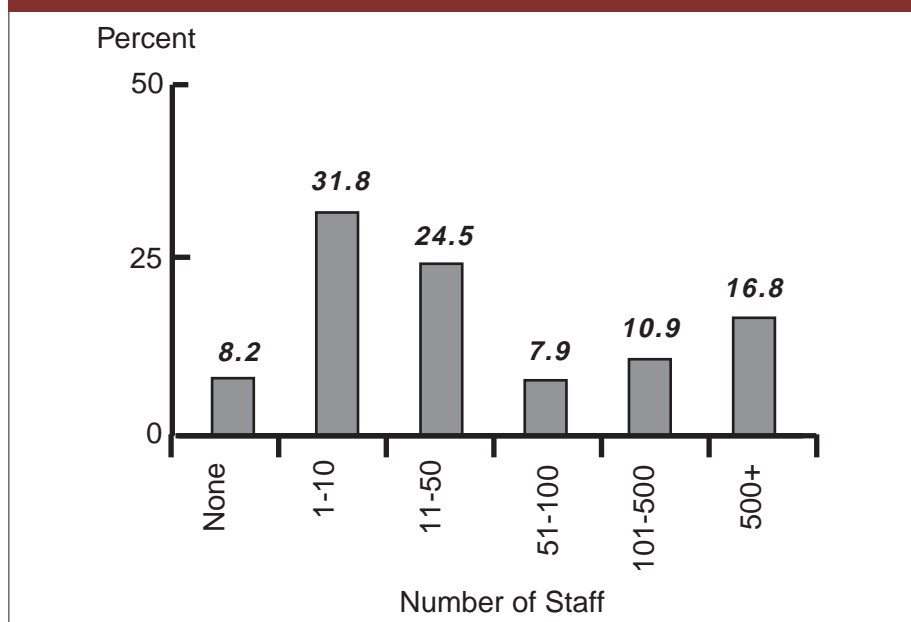
The research investigated the characteristics of the victims of LCV theft. This included examining whether the vehicle was privately or company owned and also explored in more detail the profile of companies which were victims of LCV theft. The survey found that 37% of stolen LCVs were privately owned or leased at the time of the theft, while 63% were owned or leased by companies.

### Profile of companies suffering from LCV theft

#### *Size of company*

As figure 6 indicates, companies which suffered from LCV theft were generally small in size. Indeed, 65% of companies employed 50 staff or less. A similar pattern was found when the number of vehicles owned or leased by a company was analysed, with 50% of companies having three vehicles or fewer. At the other end of the spectrum, 18% of companies owned or leased more than 100 LCVs. However, in the absence of figures on the size of companies using LCVs nationally, it was unclear whether these findings were disproportionately high. Nevertheless, the fact that the majority of LCVs are stolen from either private individuals or small businesses raises concerns because the loss of one vehicle is likely to constitute a significant proportion of that individual's/company's assets.

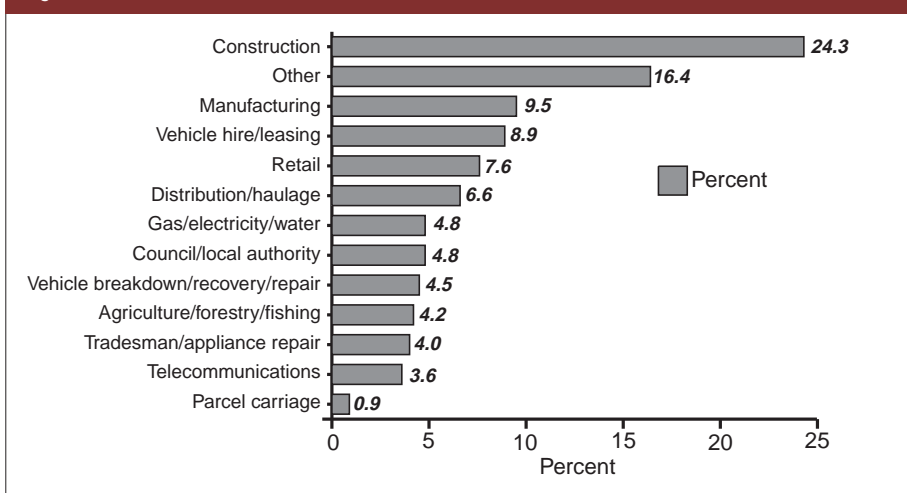
Figure 6: Number of staff employed



*Industrial sector*

Figure 7 shows that companies working in the construction industry were particularly affected by LCV theft, with almost a quarter of stolen LCVs coming from this sector. This would appear to form a familiar pattern in commercial vehicle theft, with the construction industry also accounting for the single largest proportion (31%) of HGVs stolen (Brown, 1995). Apart from the construction industry, LCV thefts were distributed across a wide range of industries, although three made up a further 26% of thefts – manufacturing, vehicle hire/leasing and retail. The spread of thefts across industries demonstrates the wide utility made of LCVs, with similar vehicles being used for many different purposes.

**Figure 7: Industrial sector**



### 7. Vehicle security

Analysis of vehicle security was divided into two types. Firstly, situational measures were examined in terms of the security present at the location of the theft. This was followed by an examination of the type of security installed on the stolen vehicles.

#### Situational security measures

Analysis of situational security measures showed that vehicles were often left in relatively insecure locations at the time of the theft. The most commonly used type of physical security in place at the parking location of the stolen LCV was security lighting. However, only 10% of stolen vehicles were parked in environments with this form of security, while 9% had perimeter fencing and 5% had a locked gate in the perimeter fencing (the next two most frequently used forms of security). Perhaps most pertinent to the discussion of situational security measures is the fact that two thirds of stolen LCVs were parked in locations with no physical security.

It is probably no coincidence that the locations which accounted for the highest proportions of thefts were also the least secure. For example, table 7 shows that LCVs stolen from the roadside outside the drivers home (accounting for 36% of thefts) were least likely to have any form of security. Their relative insecurity may mean these vehicles were particularly targeted by vehicle thieves.

Car parks, which accounted for 15% of LCV thefts, were also found to be relatively insecure, with 66% having no form of security. Measures which have been shown to reduce theft from car parks, such as manned access points (Webb et al., 1992) and closed circuit television (Tilley, 1993), were seldom in place. As with LCVs parked on the roadside, those parked in car parks would appear to have been easy targets.

Few vehicles were stolen from the victim's drive or garage, which underlines the relative security of these parking locations. Indeed, Clarke and Mayhew (1994) found that cars parked in a domestic garage at night were 20 times safer than those parked on a drive and 50 times safer than those parked on the road. It is also interesting to note that when vehicles were stolen from garages, those garages generally had no form of security – not even a locked door.

**Table 7: Security measures by parking location**

	One or more security measures present	No security present	Level of security not known	Total
In garage at drivers home	3 (33.3%)	5 (56.6%)	1 (11.1%)	9 (100.0%)
On drive at drivers home	58 (38.4%)	89 (58.9%)	4 (2.6%)	151 (99.9%)
On roadside at drivers home	47 (12.3%)	310 (80.9%)	26 (6.8%)	383 (100.0%)
On the roadside elsewhere	18 (11.0%)	128 (78.0%)	18 (11.0%)	164 (100.0%)
In a car park	53 (32.3%)	108 (65.9%)	3 (1.8%)	164 (100.0%)
In a company depot	45 (80.4%)	10 (17.9%)	1 (1.8%)	56 (100.1%)
In a factory/warehouse parking area	38 (56.7%)	29 (43.3%)	0 (0.0%)	67 (100.0%)
In a company warehouse/garage	7 (100.0%)	0 (0.0%)	0 (0.0%)	7 (100.0%)
Other	42 (59.2%)	28 (39.4%)	1 (1.4%)	71 (100.0%)

*Subsequent security measures*

Victims of LCV theft were also asked to indicate whether they had introduced new or additional security measures at the vehicle's usual parking location following the theft. In total 323 (29%) of those surveyed had improved the security of the parking location. The most frequent measures taken were improvements to the perimeter security of the parking location, such as upgrading fencing and locks on premises (54 cases). A considerable number had also started parking their vehicles off road and in garages (42 and 49 cases respectively) which would appear a sensible approach, given the fact that few LCVs appear to be stolen from such locations.

## VEHICLE SECURITY

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### Vehicle security installed

A range of security devices were also found to have been installed on those LCVs which were stolen. As table 8 indicates, the most frequently used devices were mechanical locks used on the steering wheel or gear lever. The fact that so many of these devices were fitted to vehicles which were subsequently stolen suggests they may not be particularly effective in preventing thefts. In some cases, however, these devices may not have been in use at the time of the theft as many involve the driver actively setting the device, which increases the likelihood that the security will not be employed on leaving the vehicle. A similar argument could be made of manually set alarms, which were installed on 11% of stolen LCVs.

On a more positive note, few stolen LCVs had deadlocks on doors, automatically set alarms or immobilisers. While it is unclear how these figures relate to the overall number of LCVs with these devices installed, it is likely that fewer than expected were stolen with these devices fitted. However, the fact that 13% of stolen LCVs had immobilisers installed suggests that vehicle thieves are finding ways to overcome these devices and should therefore not be considered a panacea of vehicle security.

<sup>12</sup> Percentage will total to more than 100% because some vehicles had more than one form of security

**Table 8: Type of vehicle security on stolen LCV<sup>12</sup>**

	Number	Percent
No security	454	40.7
Mechanical device on steering wheel/gear lever	330	29.6
Manually set alarm	119	10.7
Manually set electric/electronic immobiliser	75	6.8
Automatically set electric/electronic immobiliser	71	6.4
Automatically set alarm	65	5.8
Deadlock on door	61	5.5
Other form of vehicle security	42	3.7
Vehicle recovery tracking system	16	1.4

### Improvements made in security

Victims of LCV theft were asked whether they had made any improvements to the security installed on replacement, or other vans following the theft. In total, 687 (62%) of victims had made improvements to their remaining vehicles, suggesting that once a theft has been experienced, owners of LCVs are keen to prevent future thefts.

As table 9 shows, although mechanical devices are often installed on LCVs when they are stolen, they are still the most popular form of device, with almost a third of victims installing these on other/replacement vehicles. Automatically set immobilisers also appear to be a popular choice, with one in five victims installing such devices. As many

victims owned more than one vehicle, these figures may be misleading because such devices may only be installed on a small proportion of LCVs. This was not found to be the case. When victims of LCV theft install security on replacement or remaining vehicles, they normally install it in the majority of the vehicles they own. For example, while 29% have installed mechanical devices, they have generally installed these devices on three quarters (76%) of their LCVs. Overall, when a decision is made to improve vehicle security, approximately two thirds of a vehicle fleet are installed with the chosen device. An exception to this would appear to be vehicle recovery tracking devices. Few victims of LCV theft appear to be opting for such devices and, when they do, they generally install them on a third of their LCV fleet.

**Table 9: Type of vehicle security devices being installed by victims following the theft**

	Number of victims installing type of device		Average proportion of victims' vehicle fleet installed with device
	N	%	
Mechanical device on steering wheel/gear lever	325	29.2	76%
Deadlock on door	61	5.5	57%
Automatically set alarm	130	11.7	66%
Manually set alarm	167	15.0	69%
Automatically set electrical/electronic immobiliser	207	18.6	66%
Manually set electrical/electronic immobiliser	119	10.7	68%
Vehicle recovery tracking system	48	4.3	33%
Other	71	6.4	62%

## 8. The effects of LCV theft

Given the fact that LCVs are commonly used for work purposes, a theft of such a vehicle can have a serious effect on a business. A range of factors relating to the effects of the theft were therefore analysed, including an estimate of the overall value of theft.

### Value of stolen LCVs

#### *LCV value by type of LCV*

As table 10 shows, the average value of the stolen LCV varied according to the type of vehicle. The most expensive vehicles to be stolen were LCV box vans, with an average value of £6,200. These were over twice the value of the least expensive LCVs – car derived vans.

Using these body types to weight the overall calculation, it was possible to produce an estimate for the total value of vehicles stolen. For example, 797 box vans were stolen (see table 1) at a value of £6,208 each, giving a total value of £4,947,776 for this type of LCV. Using this approach, the total value of stolen LCVs was calculated to be £207,131,150 per annum. This is an over-estimate of the total value of loss as this figure includes both recovered and unrecovered vehicles. Based on the 59% of unrecovered vehicles, it was estimated that the total loss for unrecovered LCVs was £122.2 million per annum. This figure excludes the costs of repairing damage caused to vehicles which were subsequently recovered.

	Sample Number	Mean Average Value (£)
Box van	18	6,208
Tipper	22	6,107
Panel van	440	5,540
Flat/drop-side van	12	5,175
Luton van	28	4,964
Pick-up	96	4,579
Car-derived van	466	2,836
Other van	29	5,729
Mean average value	1,111	4,333

*Note: 'Other van' also includes those with less than 10 cases.*

### *LCV value by industrial sector*

The value of stolen LCVs was also analysed by the industrial sector in which they were used and considerable variation was found between industries. For example, the vehicle hire and leasing industry had the highest value vehicles stolen (£7,164 per LCV), followed by distribution/haulage (£6,616) and parcel carriage industries (£6,348). At the other end of the scale, LCVs stolen from the breakdown/recovery/repair industry (£4,059) and tradesman/appliance repair (£3,635) had the lowest average value. These differences were partially a function of the average age of vehicles used by each sector. For example, vehicles stolen in the vehicle hire and leasing industry were, on average, first registered in 1993. By contrast, vehicles stolen from the tradesman and appliance repair industry were, on average, registered in 1989.

Another issue affecting the average value of the vehicles stolen was the difference in the types of vehicle used. For the hire/leasing, distribution/haulage and parcel carriage industries, panel vans constituted over half of the LCVs stolen and the average value of these ranged from £6,911 to £8,064 (considerably higher than the average panel van shown in table 10).

The value of the vehicle at the time of theft was, however, only one element of the total cost of LCV theft. Other costs were also incurred, such as the value of the stolen load, the cost of buying a new vehicle, and increased insurance premiums.

### **Loss of loads**

The responses from the victim survey indicated that 38% of vehicles which were stolen had loads on them. This most frequently took the form of tools and work equipment (77%), which underlines the LCV's role as a working vehicle. It would also suggest that stealing the load was probably not the motivation behind the thefts, but was an added bonus for the thieves. Besides work equipment, however, there was a range of other types of load stolen, including, for example, ladies fashion wear, bags of coal and white goods (fridges, washing machines etc.). It should be noted that the theft of these loads probably account for only a small proportion of goods stolen from LCVs. Indeed, many thefts will involve a vehicle being broken into to steal their loads, without the vehicles actually being stolen. Once a LCV with a load is stolen, however, the owner seldom sees it again. Only one per cent of loads were found to have been recovered complete, while a further 3.5% recovered part of the load.

The average value of these loads was calculated to be £1,752, although one load of mobile disco equipment was estimated to be worth £35,000. Many of the loads were worth considerably less than the average, with 56% valued at under £1,000. Using these figures, the total value of the loads stolen was estimated at £31,411,222. As 95.5% were unrecovered, the total loss of loads was valued at £29,997,717.

## THE EFFECTS OF LCV THEFT

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By adding together the value of those vehicles which were unrecovered with the value of the unrecovered loads, it was possible to estimate the value of the immediate loss of assets for the victim (notwithstanding the longer term costs of increased insurance premiums, cost of replacement vehicle etc.). This loss of assets was calculated to total £152.2 million per annum.

### Other effects of LCV theft

In addition to the costs of vehicles and their loads, a range of other effects of theft were also examined. As table 11 shows, the most commonly mentioned effect was the cost of buying a replacement vehicle. In many cases, there was likely to have been a significant difference between the insured value of the vehicle and the cost of a replacement one and this cost will have fallen to the victim. As a result of claiming on their insurance, many also found their insurance premiums increased the following year.

**Table 11: Effects of LCV theft**

	Number	Percent
Cost of buying a new vehicle	736	66.1
Increased insurance premiums	548	49.2
Cost of hiring replacement vehicle	396	35.6
Loss of revenue/business	318	28.6
Increased security costs	258	23.2
Reduced output of business	190	17.1
Unable to replace vehicle	103	9.3
Loss of customers	83	7.5
Reduced business growth	76	6.8
Business ceased trading as a result	29	2.6
Had to make redundancies	9	0.8

There were also a number of consequences of LCV theft which had a longer term effect on business. For example, 29% lost revenue or business as a result of theft and 17% had reduced business output. Even more serious were the 7% of victims who suffered reduced business growth and, in extreme cases, 3% ceased trading as a result of the theft.

LCV theft would therefore appear to harm not only the pocket of those from whom they are stolen, but also effects the UK economy. Indeed, these thefts would appear to be both increasing costs for businesses and reducing competitiveness.

## 9. Conclusions

It is clear from this research that the theft of light commercial vehicles is a significant problem. With over 47,000 LCVs being stolen each year at a total cost of over £152 million per annum, this type of crime would appear to have a considerable effect – especially on small businesses. To help combat this problem, there are a number of recommendations which, if successful could help to reduce both the extent of LCV theft and the overall rate of vehicle theft nationally.

### Action points for vehicle manufacturers

- **Improving vehicle security on LCVs.** In recent years significant improvements have been made in the type of security being offered (usually as additional extras) on new LCVs by manufacturers. The fact that these vehicles appear to be targeted by the more professional vehicle thief means that manufacturer fitted security needs to be of the highest possible specification to deter thefts. As few vehicles with manufacturer fitted immobilisers were stolen, this may suggest that this is a relatively effective method of vehicle security, although this finding may simply be a result of few LCVs having such devices fitted at the time of the thefts. If immobilisers are found to be an effective method of security, manufacturers should consider installing such devices on all their models as a standard item. It is recognised that immobilisation of diesel LCVs requires a different approach to petrol driven vehicles. However, a number of methods suitable for immobilising diesel engines are now available.
- **Targeting high risk vehicles.** While improving the security of all new LCVs is important, it is recognised that some models are more at risk than others. These higher risk vehicles should be targeted for improvements in manufacturer fitted security as soon as possible. For example, car derived vans account for 40% of LCV thefts and have an above average risk of theft. Improving security on this one type of LCV could significantly reduce theft of LCVs in general. Indeed, as previously noted, if the theft of car derived and panel vans was eliminated, the vehicle crime statistics would fall by seven per cent per annum. Tables 2, 3 and 4 show the risk of theft associated with 60 specific models and manufacturers should take note of these in determining which vehicles should be targeted for improved security in the first instance.
- **Marking of components.** Manufacturers should consider extending the use of component marking whereby serial numbers can be cross-referenced with vehicle identification numbers. This practice can help the police to identify a stolen vehicle even once other markings have been erased or altered.

### Action points for security device manufacturers

- **Improving the effectiveness of mechanical devices.** Table 8 indicates that 30% of stolen LCVs had mechanical devices installed at the time of the theft. It is recognised, however, that some of these may not have been in use when the vehicle

## CONCLUSIONS

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was stolen. This, in itself, may be a problem which mechanical security device manufacturers need to address. The security of these vehicles may be improved by reducing the effort required to activate these devices. Another problem is likely to be the effectiveness of these devices generally. Manufacturers should be satisfied that their security devices are sufficiently resistant to attack by vehicle thieves. Consideration should also be given to submitting such devices to Thatcham or Sold Secure for testing and approval before making them available to the general public.

- **Targeting high risk vehicles.** In marketing their security devices, manufacturers should, perhaps target those models of LCV which have a higher than average risk of theft. The heightened awareness of those owning high risk vehicles may prompt them to improve the security of their LCVs, thereby helping to reduce the extent of LCV theft.

### Action points for LCV owners

- **Installing effective security.** LCV owners should ensure that their vehicles are adequately secured. The fact that a theft can have a significant effect on a business shows that many owners cannot afford to run insecure vehicles, even if the initial outlay may appear expensive. In selecting an appropriate device, owners should consult the security device ratings provided by organisations like Thatcham and Sold Secure. Where possible, devices should be fitted by an approved garage, such as those recognised by the Vehicle Security Installation Board<sup>13</sup>.
- **Targeting specific industries.** It was clear from the research that LCVs being used in the construction industry were being stolen most frequently. Those working in this sector should therefore be particularly concerned about ensuring their vehicles are adequately secured against theft. Owners of LCVs in the vehicle hire and leasing industry should also be concerned about vehicle security as the availability of their vehicles not only form part of their core business, but the average value of these vehicles was also higher than for any other industry.
- **Providing security advice to drivers.** Companies should ensure that their drivers are sufficiently aware of the risks associated with the theft of LCVs. Where possible, guidance should be issued on where to park vehicles, arming security devices, handling keys etc.

### Action points for LCV drivers

- **Parking location of LCVs.** Drivers of LCVs should pay particular attention to the parking locations of their vehicles. When a vehicle is left at a driver's home, attempts should be made to park it off road, such as on a drive or, preferably, in a locked garage. If a public car park is to be used, drivers should, where possible, use those which are members of the Secured Car Park scheme. These car parks will

<sup>13</sup> Thatcham and the Vehicle Security Installation Board can be contacted on Tel. 0990 502006 and Sold Secure on Tel. 0800 192192.

have met certain standard security criteria before being eligible to join the scheme. As such, the risk of theft in these car parks may be lower than in other car parks in the local area.

- **Using vehicle security.** Where vehicle security is available, drivers should ensure that it is used every time they leave their vehicles. Even if the vehicle is to be left for just a few minutes, security devices should be used in order to reduce any opportunity a thief might have to steal a vehicle.

### Action points for insurers

- **Review policy on insuring older vehicles.** The research found that LCVs which were ten years old or more were less likely to be recovered than more recently produced vehicles. Although the received wisdom among insurers seems to be that many of these vehicles will be used to supply a market for second-hand components, it is likely that at least some will have been a result of insurance fraud. Consideration should therefore be given to reviewing policy on insuring older vehicles and how theft claims for such vehicles are investigated.

### Action points for the police

- **Tackling the low recovery rate.** The fact that only 41% of LCVs were recovered suggests that LCVs are either particularly prone to insurance fraud, or are the target of professionally organised crime. In either case, the police should continue to take measures to tackle these issues. In the case of insurance fraud, consideration should be given to identifying fraudulent reports of LCV theft. Where actual thefts are concerned, the police should continue to target offenders involved in stealing LCVs.
- **Improving the recording of LCV thefts.** A considerable amount of research time was spent identifying LCVs from other types of stolen vehicle records stored on the Police National Computer. In order to ease the process of conducting exercises such as this one in future, improvements should be made to the classification of vehicles used on the database. For example, identifying LCVs would have been simplified if information on the vehicles' weight had been available.

## Conclusions

It is clear that real gains can be achieved by reducing LCV theft. For example, if the number of LCVs stolen each year was halved, the total number of vehicles (of all kinds) stolen would be reduced by approximately five per cent. This would be a significant result given the fact that vehicle theft in general declined by 0.4% in the 12 months from July 1995 to June 1996.<sup>14</sup> Through a concerted effort by manufacturers, owners and drivers it may therefore be possible to reduce the extent of this problem in future years.

<sup>14</sup> These figures were used for comparison as they covered a similar time period to that dealt with in this report. It should be noted that the most recent figures (July 1996 to June 1997) indicate a 13.2% decline in vehicle theft over the previous year. However, concentrating on LCVs could still reap rewards in the form of further decreases in vehicle theft.

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