PREVENTING CAR CRIME IN CAR PARKS

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The Home Office Police Research Group (PRG) was formed in 1992 to carry out and manage research relevant to the work of the police service and Home Office Policy Divisions. One of the major police department divisions which acts as customer for the PRG is the Home Office Crime Prevention Unit which was formed in 1983 to promote preventative action against crime. It has a particular responsibility to disseminate information on crime prevention topics.

The object of the present series of occasional papers is to present research material in a way which should help and inform practitioners, including the police, whose work can help reduce crime.

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Foreword

In his speech launching Car Crime Prevention Year in February, the then Home Secretary announced that the Home Office would be publishing research it was carrying out on car crime in car parks. This report is the outcome.

The car park, as a managed facility, provides a great deal of scope for controlling car crime. Nevertheless, as this and previous studies have shown, thefts of and from cars can be a serious problem in some car parks. Earlier work has largely focused on evaluating initiatives taken in single car parks. This study takes a wider look at the car park industry, examining the problem of car crime in many different sorts of public car parking environments commonly found in our city centres and towns, and at train stations.

The study shows that there is a great deal that car park owners and operators can do to control the problem of car crime, identifying operating methods which are inherently more secure than others. The task is how to encourage car park operators to take car crime into account in their management of car parks. The study discusses the merits of two issues currently receiving attention from the police and consumer groups – the development of a market for secure car parks, by providing motorists with more information about the security levels in car parks, and increasing car park liability for crime.

I M BURNS
Deputy Under Secretary of State
Home Office
July 1992

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1. Introduction

The development of off-street car parking

The number of cars on the road has increased dramatically over the last forty years. In 1950, there were 2.3 million private cars and vans licensed in Great Britain. In 1990 this figure had increased by nearly ten fold to 19.7 million. This phenomenon has brought with it associated problems of traffic congestion, parking, accidents, and crime – principally thefts of and from motor vehicles.

It became clear very early in the history of the motorcar that the control and provision of car parking had a key role m play in the management of these problems. As more and more cars came into towns and cities, unrestricted on-street parking began to obstruct traffic flow and became dangerous to other road users and pedestrians.

As early as 1925, regulations were introduced in London specifying a number of 'parking places', where cars could legitimately park on the street for up to two hours. However, it was clear that the demand for these places exceeded supply and that effective car parking management required not only the control of on-street parking but also the provision of sufficient off-street parking. In 1931 National Car Parks, now the largest private car park organisation in this country, was formed.

The post-war boom in car ownership served to focus attention much more sharply on the problem of urban car parking and traffic congestion. Traffic wardens and parking meters were introduced in 1960, and the amount of off-street parking available increased enormously. Bomb damage sustained during the war had left sites which could readily be used as parking areas during the 1950s. There was rapid growth in the construction of high capacity multi-storey car parks during the 1960s and 70s, largely encouraged by the planning system. Many planning authorities required new urban developments to include the building of car parks, which were either private or handed over to the local authority as 'planning gain'.

The car park construction and management industry had developed sufficiently by the end of the 1960s to sustain its own professional association. In 1967, the British Parking Association was formed, with the aim of representing organisations involved in the construction and operation of car parks, and to advance "standards of design, construction, planning, management, equipment and location of all types of vehicle parking facilities".

Concern that the growth in car parking provision was now encouraging people with cars to drive into town centres, and thereby increasing traffic congestion, led planners to focus on the development of out-of-town car parks. In the mid-1970s, the Greater London Council devised a strategy to encourage people traveling into central London to use public transport. The strategy included providing more car parking at

train stations in the outer London areas. Statistics published by the GLC on off-street parking in Greater London show 2,797 car park spaces run by British Rail in 1967. By 1985 the figure had risen to 10,086 spaces (Greater London Council, 1969; Greater London Council, 1986).

In the early 1970s, the first of the now popular out-of-town shopping centres was built in this country at Brent Cross in north London. The provision of large customer car parks free of charge was a crucial part of the development, to attract shoppers away from the congested town centres. Brent Cross provided parking for over 5,000 cars. The concept grew in popularity during the 1980s, and more developments appeared. These ranged from single store sites, typically a supermarket or DIY store, to massive retail complexes providing parking for as many as 12,000 cars.

Another popular measure to reduce pressure on town centre parking has been the introduction of 'park & ride' schemes. Cars are parked in large car parks located on the edge of town and people ferried to the shops via bus. These schemes have now become widespread.

The emergence of car park security as an issue

Public car parks have become common features of our environment, regularly used by millions of, often fee-paying, car owners. They have therefore begun to attract the attention of consumer groups and others concerned to improve the quality of car park design and management.

Design competitions

The last two years have seen the organisation of the first national car park design competitions in this country. These aim to improve car park design by highlighting what are considered to be examples of good practice. The first of these was launched in 1990 by the Department of Planning and Landscape at Birmingham Polytechnic and the Urban Design Group, in association with the magazine 'Planning'. The second was launched in 1991 by the English Tourist Board.

The assessment criteria in both competitions were very similar. They focused on planning context (how well the scheme fits into its surroundings), the quality of design detailing and construction, how well the car park functions (eg traffic flow, ease of parking, convenience of paying), and the provision of facilities such as toilets and information.

The issue of security featured to some extent in these awards. However, this has been specifically highlighted by consumer groups such as the Automobile Association, the Royal Automobile Club, and the Consumers' Association.

Consumer group action

In 1990, the Consumers' Association published results from a survey of 165 car parks in 12 towns and cities to "find out what you get for your money" (Which?, 1990). The article entitled 'Pay & Dismay' considered the main problems encountered by car park users. These were theft of and from cars, and personal injury resulting from either assault or accident. Ten tips for car security were suggested. These included parking in a well-lit car park, choosing one that is staffed, and parking near to the pay booth. Cars were thought to be safer in car parks which required drivers to produce a ticket on exit, providing the system for dealing with drivers who claim to have lost their ticket is efficient.

The article highlighted two key issues which it was felt acted against the interests of the consumer. The first concerned the common practice by car park companies of disclaiming liability for any loss or damage to vehicles or personal injury to customers. The article stated that the wording on some of the notices displayed on car parks may be illegal, and that victims of crime or accidents may be able to claim compensation if it can be proved that the car park staff and management were negligent. The second issue was the decision by the office of Fair Trading that car park owners are not considered to be supplying either goods or services, simply a licence to park. It was felt that this reduced the control of the development of long-term monopolies.

Car park security has also become an important issue for both the AA and the RAC. In 1991 the AA conducted a survey of 32 multi-storey car parks, assessing them on cleanliness, efficiency, security, and value for money. Poor security was considered to be the most crucial issue to emerge from the survey.

Efforts have been made by car park owners and operators to improve car park security. A number of car park schemes are included in Safer Cities projects, and the British Parking Association has held seminars on the subject. However, in a recent conference paper by the RAC's Director of Public Affairs, improvements in car park security were described as "too slow, and too grudging". Action on both the issues of liability and Fair Trading were advocated, to encourage car park companies to improve car park security.

> "We would like to see car park owners who have not provided adequate security measures held legally liable for compensation claims made as a result of theft in their car parks – where the motorist can prove that necessary precautions such as removing goods from view and securing the vehicle had been taken" (Worskett, 1991).

The RAC also holds the view that car parking should not continue to be exempt from Fair Trading legislation, on the grounds that this reduces the competitive incentive to improve the quality of car parking provision (RAC, 1991).

'Secured car parks'

An initiative to encourage improvement in car park security is currently being developed by police force crime prevention officers in a working group on car park security. 'Secured car parks' is a scheme where car parks meeting specified requirements are awarded distinctive plaques which can be displayed on the car park building. The intention is to provide a means by which the public can compare the level of security offered by car parks, thereby informing their choice of car park.

The scheme is intended to be launched in September 1992, and participation is voluntary. It is aimed at developers of new car parks as well as owners and operators of existing ones, and can include surface as well as multi-storey car parks. Two levels of award are possible – gold or silver, depending on how far the requirements are met. The scheme addresses many aspects of car park design, for example:

- a good deal of emphasis is given to design layouts that maximise natural surveillance of parking areas and pedestrian routes;
- the required lighting level is that specified by British Standard 5489 (1990);
- CCTV surveillance or permanent on-site security patrols are required;
- there should be controlled vehicular access/egress.

Other criteria concern the provision of signs, control of foliage, and use of fencing.

The focus of this initiative is on car park safety and security generally. There is little doubt that fear of crime can be a problem in some car parks, especially at night. Car parks can be the location for a range of criminal and anti-social behaviour such as theft from cash machines, robbery and other assaults on customers and staff, and vandalism. This report, however, is concerned specifically with the prevention of car crime in car parks.

Car crime and the parking environment

Problems of theft of and from vehicles have been documented in car parks in town centres (Laycock & Austin, forthcoming; Poyner, 1992), hospitals (Smith, 1987; Moore, 1990), shipyards (Eck & Spelman, 1992), a University campus (Poyner, 1992), industrial estates (Johnston et al, 1990), commuter parking lots (Mancini & Jain, 1987), schools (Wallis & Ford, 1980), and housing estates (Poyner & Webb, 1987).

The influence of design

Research studies show that the design of the parking environment can have a strong influence on the risk of theft of and from parked cars. In their study of residential crime, Poyner & Webb (1991) found that communal parking bays were most at risk from theft of and from cars. These bays are virtually surface public car parks, separate from the housing they serve. Housing layouts where parking was arranged on driveways and hardstandings in front of houses provided much more protection for cars, especially if the houses faced each other across the street. The presence of pathways passing through or alongside housing areas was an additional important factor in explaining the distribution of theft from cars.

Design can also help to maximise surveillance of cars parked in public car parks. Poyner (1992) found that of three 'pay & display' car parks in Dover town centre, there were considerably fewer thefts of and from cars in the two surface car parks than in a neighbouring multi-storey car park. Cars parked in the surface car parks were much more open to casual supervision from motorists parking their cars and passers-by, and this was thought to be an important influence on the distribution of car crime.

The local authority was able to reduce thefts of cars in the multi-storey car park through a number of design changes. Pedestrian access to the car park was restricted to the vehicular entrance / exit point and informal surveillance of this was increased by constructing an office at the entrance and leasing it out to a local taxi firm. These changes had much less of an effect on thefts from cars, however. Property stolen from cars were mainly bulky items such as suitcases, and it is thought these thieves entered the car park in cars, unlike car thieves who were more likely to be on foot. They would have appeared legitimate users of the car park at the entrance, and once inside they could steal from cars unobserved.

Car park management

Studies have also shown that there is an important role for management in controlling car crime in public car parks, mainly by providing formal supervision.

A manned security gate at the entrance to Surrey University campus was able to keep thefts of cars from the campus surface car parks down to low numbers. The introduction of CCTV surveillance of these car parks monitored by the University security department reduced thefts from cars (Poyner, 1992).

Thefts of cars in a multi-storey car park in Basingstoke seem to have been controlled by manned exit barriers, where motorists are required to produce parking tickets before they are allowed out. Thieves preferred to steal cars from a nearby unmanned 'pay & display' surface car park. This was a long stay commuter car park so there was little casual surveillance provided by people looking for a parking space. Thefts from

cars were more of a problem in the multi-storey car park (Laycock & Austin, forthcoming).

Thefts of vehicles from Hartlepool's shopping centre car parks were reduced from 84 in the nine months before any measures were taken to 18 in the nine months afterwards. This was achieved by the introduction of a 'pay & display' charging system monitored by ticket wardens (parking was originally free of charge) and a 24 hour CCTV camera surveillance system. It is thought that the introduction of parking fees also had an effect on car park usage, with less long-stay and more short-stay parking. Thefts from vehicles did not reduce, but these were much less of a problem initially (unpublished Safer Cities project evaluation).

In Nottingham, a supervisor was employed to patrol a multi-storey car park. An office was built for him at the car park entrance. Only small reductions in theft of and from vehicles followed, but it was felt that the presence of the supervisor had prevented the large increases in car crime that had taken place in other town centre multi-storey car parks (unpublished Safer Cities project evaluate.

This study

Most of the research studies which have examined car crime in public car parks have been evaluations of initiatives to reduce crime in particular locations. This study was conducted to examine more systematically the risk of car crime associated with the many different types of public car parking environments that are currently provided in this country.

The research was conducted in the London area. Three sites were selected for study:

- town centre car parks in Kingston-upon-Thames;
- central London car parks in Marylebone; and
- commuter car parks attached to British Rail and London Underground stations.

Figures from the Metropolitan police show that 85% of vehicles stolen from garage car parks (ie not open air surface car parks) in London are cars, the remainder being commercial vehicles (9%) and motor cycles (6%). 92% of thefts from vehicles parked in garage car parks involve cars. The data presented for the car parks examined in this study will show that the target in nearly all the thefts is a car. The preventive measures suggested by this study are, therefore, directed mainly at car crime in car parks and may not all be relevant to other vehicles such as motor cycles. The next chapter examines the scale of the problem of car crime in car parks, and this is followed by findings from each of the three case studies.

2. Car crime in car parks - the scale of the problem

According to the British Crime Survey, 22% of thefts of cars and 20% of thefts from cars in England & Wales take place in private or municipal car parks. However, local data shows that these figures can be much higher. In a survey of motor vehicle crime reported to the police in a one-week period in 1991, car parks were found to be the location for 40% of thefts of vehicles in Nottinghamshire and 39% of thefts from vehicles in Derbyshire.

In the Metropolitan police district, 14% of reported thefts of and 18% of thefts from motor vehicles took place in car parks in 1990. These figures include crime reported to the British Transport Police, who are responsible for policing British Rail and London Underground property. However, local figures again reveal very large differences in the proportion of motor vehicle crime taking place in car parks. For example, in the London Borough of Hillingdon 27% of thefts and unauthorised takings of vehicles and 41% of thefts from vehicles occurred in car parks in 1990. In Islington, the figures are 4% and 7% respectively,

When the proportion of thefts of and from vehicles taking place in car parks is shown for all the London Boroughs, a rather striking geographical pattern emerges, as figure 1 shows. Thefts of and from vehicles have been combined in this analysis since both types of crime show the same pattern – a greater proportion of the motor vehicle crime in the outer Boroughs takes place in car parks than is the case for the inner Boroughs. The shaded areas in figure 1 identify those Boroughs where more than 20% of motor vehicle crime takes place in car parks. Sutton has been omitted from this analysis since the Metropolitan Police cover only part of the Borough.

22% of thefts of and from vehicles in the thirteen Boroughs having a border with a home county occurred in car parks in 1990. The figure for the rest of London is 11%. Numerically, the outer Boroughs do not have much more motor vehicle crime in car parks than the rest of London. The pattern shown in figure 1 arises mainly because in the outer Boroughs much less motor vehicle crime takes place *in the street*, as table 1 shows.

Table 1. Location of thefts and unauthorised takings of, and thefts from vehicles in London, 1990

	Street	Car park
The 13 outer Boroughs	48,2.96	16,477
The remaining Boroughs	104,196	13,338

Source: Metropolitan Police

Figure 1. Proportion of motor vehicle crime taking place in car parks in London, 1990

Source: Metropolitan and British Transport Police Forces

There may be many reasons why more of the motor vehicle crime in the outer Boroughs than in the other London Boroughs takes place in car parks. One possibility seems to be that the greater provision of off-street parking in the outer Boroughs has taken more cars and car crime off the streets and into the car parks. Figures published by the Greater London Council show that the average number of car parks and car park spaces in an outer Borough is much higher than for other Boroughs. The last figures assembled by the GLC on car park provision were for 1985 – these statistics were no longer kept after that year. However, a small random telephone survey of local authorities did not suggest that the number of car parks had changed much since 1985. Table 2 shows the figures for car parking in the thirteen outer Boroughs compared with the rest of London.

Table 2. Off-street parking provision in London, 1985

	Outer Borough	Other Borough
Average number of car parks	41	25
Average number of car park spaces	5,869	3,804

Source: Greater London Council (1986)

Although there are no data available, it also seems possible that more residential parking in the less dense, suburban Boroughs will exist on private driveways or garages than on the streets. These arrangements are known to suffer much less from car crime than on-street parking (Poyner & Webb, 1991).

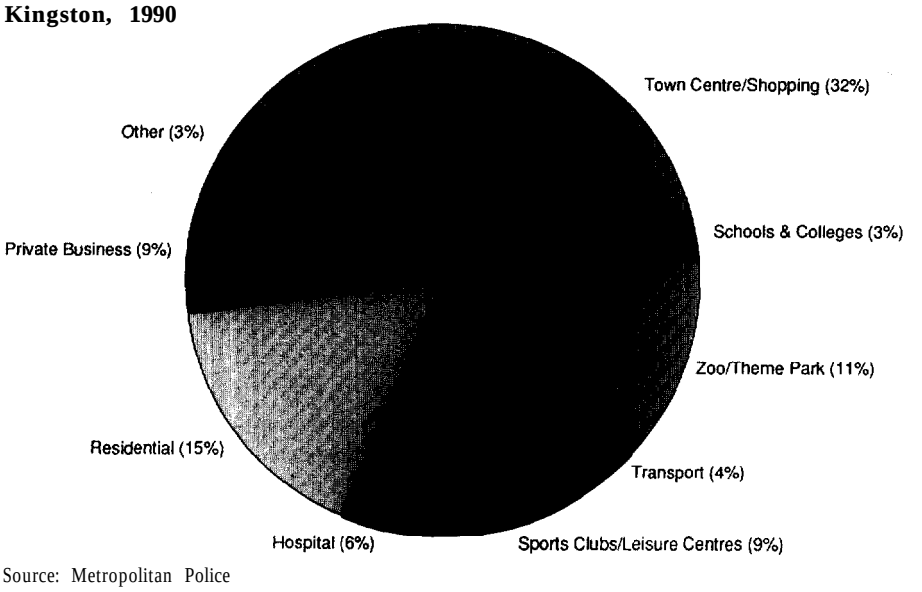
Clearly, car parks can be the location for a large proportion of motor vehicle crime. However, car parks can also be very beneficial from the crime prevention point of view. They take cars off the streets, where they are very vulnerable to crime, and provide a parking environment where there is much more potential for effectively controlling crime. The question which the rest of this report addresses is what sorts of car park realise this potential and provide parking which is free of theft of and from cars.

3. Town centre car parks in Kingston-upon-Thames

Kingston-upon-Thames is a well-established suburban town centre with a large number and variety of car parks representing all those commonly found in town centres. It is the major shopping centre in the Royal Borough of Kingston, an outer London Borough where a high proportion of car crime seemed to take place in car parks (see figure 1 in previous section). A great deal of information on the size, method of operation, opening times, design, and location of car parks was available from local tourist information leaflets provided by the local authority. For all these reasons, Kingston seemed to provide a useful site in which to examine the problem of car crime in town centre car parks.

Crime data for thefts and unauthorised takings of vehicles and thefts from vehicles parked in car parks in the Royal Borough of Kingston were obtained for 1990. Figure 2 shows the proportion of this group of crimes taking place in various sites in the Borough.

Figure 2. Location of car park motor vehicle crime in the Royal Borough of Kingston, 1990



Source: Metropolitan Police

Figure 2 does not take into account the number of parking spaces available in the different locations, so it is not possible to compare the risk of car crime. However, it does show where the car park car crime takes place. The largest proportion of car park motor vehicle crime (32%) takes place in town centre and other car parks attached to shops. These include the town centres of Surbiton and New Maiden as well as Kingston-upon-Thames. Residential car parks also emerge as a problem. The zoo/ theme park shown in figure 2 is one site – Chessington World of Adventures. Seventy-one incidents took place here in 1990, a problem clearly related to the size of

the site. There is parking space for 9,000 cars, the largest concentration of car parking in the borough. Other individual sites which emerge as locations for motor vehicle crime are the Charrington Bowl, a bowling alley where youngsters congregate late at night, and Kingston General Hospital. Hospital car parks have been found in previous research to suffer from problems of car crime (Smith, 1987; Moore, 1990).

This study focused on 19 car parks in Kingston town centre, providing parking space for 5,861 cars. Table 3 describes their design and method of operation.

Table 3. Number and type of car parks in Kingston town centre

		Number of car parks	Number of spaces
PAY & DISPLAY	Surface	9	1,185
	Multi-storey	2	1,207
	Underground	1	497
MANNED EXIT	Surface	3	400
	Multi-storey	2	682
PAY ON FOOT	Multi-storey	1	1,220
	Underground	1	670

Source: Directorate of Engineering and Transportation, Royal Borough of Kingston upon Thames.

All the 'pay & display' car parks are owned by the local authority. The surface car parks are unmanned, with patrols visiting periodically to check tickets and issue excess charge tickets. Tickets are checked in the multi-storeys by security guards who remain on site. The underground car park is sited below a surface car park, and is also regularly patrolled by security guards who remain on site. The multi-storey and underground car parks are closed at night.

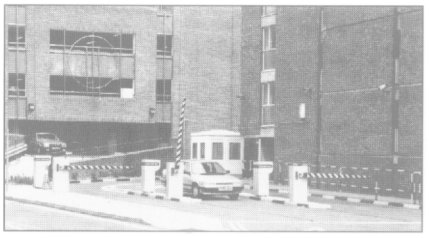
Figures 3a and b. 'Pay & display' car parks in Kingston town centre

NCP operate both the manned exit multi-storey and one of the manned exit surface car parks. Vehicular exits are controlled by an attendant who checks tickets and takes parking fees before raising a road barrier to let cars out. The other two manned exit surface car parks are large employee car parks, one operated by the County Council and the other by the Borough Council.

Figures 4a and b. Manned entrance/exit car parks in Kingston town centre

The two pay-on-foot car parks are owned and operated by department stores – Bentalls and John Lewis. The pay-on-foot system is an increasingly common method of operating town centre car parks. The car driver is issued with a ticket by barrier equipment on entering the car park. On returning to the car park and while still on foot, the driver inserts the ticket into a payment machine on the parking floor and pays the required parking fee. The ticket is electronically coded for use in the exit barrier equipment and returned to the driver. At the vehicular exit, the driver inserts the ticket into the automatic barrier equipment. The barrier arm rises and he or she can drive out of the car park. These car parks close at night.

Figure 5. Exit barriers at Bentalls 'pay-on-foot' car park are operated by tickets electronically coded by payment machines inside the car park. The kiosk shown in the photo is permanently manned to supervise the barrier equipment.



The John Lewis and Bentalls car parks are both fairly recent constructions. It was therefore decided only to use the most recent (ie 1991) data on thefts and unauthorised taking of vehicles, and thefts from vehicles for all town centre car parks. One hundred and fifty incidents occurred in the town centre car parks during 1991. They all involved cars, except for one theft of a moped.

Theft of cars

Sixty cars were stolen or driven away from Kingston town centre car parks in 1991. Ford Escorts were the single most common model taken (n=14). Others included Ford Cortinas and Fiestas, and Austin Minis. Older cars were targets as well as more recent models, with the average age of the stolen car being nine years. The risk to an older or newer car cannot be assessed, however, without knowing how many of each there are on the road. (see Houghton, 1992).

Table 4 shows the number of cars stolen or driven away from each of the different types of car park in Kingston. A rate of theft per 100 spaces has been calculated so that the risks in car parks of different size can be compared.

Table 4. Theft and unauthorised taking of cars from Kingston town centre car parks, 1991

		Number of offences	Rate per 100 spaces
PAY & DISPLAY	Surface	34	2.9
	Multi-storey	11	0.9
	Underground	6	1.2
MANNED EXIT	Surface	3	0.8
	Multi-storey	2	0.3
PAY ON FOOT	Multi-storey	2	0.2
	Underground	0	0

The location of two incidents was not known. Source: Metropolitan Police

The highest risk is clearly in the unmanned 'pay & display' surface car parks. There is more than three times the risk of a car being taken from these car parks than in car parks with manned exits. The rate per 100 spaces in these unmanned car parks does not reach the level of risk found in some of the very worst high density public housing estates. It is, however, comparable to the rates found in high risk communal car parks associated with low rise public housing (Poyner & Webb, 1991).

The opening times of these car parks varies considerably, and it is possible that the surface 'pay & display' car parks have more crime because they are open at night when many of the other car parks are closed. Data on the time these crimes occurred is very imprecise. All that is known is the time the car was parked and the time the owner returned and discovered the theft. However, it is possible to distinguish thefts which took place at night from those that took place during the day. Table 5 shows those thefts which took place between 7am-7pm Monday-Saturday when all car parks were open to the public.

Table 5. Cars stolen or driven away from Kingston car parks between 7am-7pm Monday-Saturday, 1991

		Number of offences	Rate per 100 spaces
PAY & DISPLAY	Surface	24	2.0
	Multi-storey	11	0.9
	Underground	6	1.2
MANNED EXIT	Surface	2	0.5
	Multi-storey	2	0.3
PAY ON FOOT	Multi-storey	2	0.2
	Underground	o	0

Source: Metropolitan Police

Only 11 (19%) of thefts of cars from these car parks took place during the night, Monday-Saturday. Ten of these occurred in the 'pay & display' surface car parks. Nevertheless, table 5 shows that during the day when all car parks are open, cars

parked in surface 'pay & display' car parks are still much more at risk of being stolen than in any other type of car park. The risk is much lower in car parks with manned and closely supervised exits. It is perhaps surprising to find that 'pay & display' multi-storey and underground car parks have a lower rate of theft than the surface car parks. Poyner (1992), for example, found that the 'pay & display' multi-storey car park in Dover suffered from much more car theft than neighbouring unmanned surface car parks. The rather different pattern found in Kingston may reflect the presence of security guards on site to patrol the 'pay & display' multi-storey car parks periodically and check tickets. Table 5 shows that this is not, however, as effective in controlling car theft as constant supervision and control of the vehicular exits.

Theft from cars

There were 89 incidents of theft from cars parked in Kingston car parks reported in 1991. Table 6 shows the type of property that was taken.

Table 6. Type of property taken from cars parked in Kingston town centre car parks, 1991

	Number of offences where this was taken	% of offences where this was taken
Radio/cassette	38	45%
Clothes	14	16%
Spare wheels and tools	17	19%
Bags and briefcases	11	12%
Tax Disc	3	3%
Sports Equipment	2	2%
Other	16	18%

Source: Metropolitan Police
NB. These figures add up to more than the 89 incidents because one incident can involve the theft of more than one type of property

Radio/cassettes were clearly the single most common item to be taken from cars. Most of the items taken appear to be portable, although stealing spare wheels may require a car. Twelve spare wheels were stolen, and these were all from Peugeots or Renaults, where spare wheels are commonly accornodated in a housing on the outside of the car. Table 7 shows the methods used to enter cars.

Table 7. Means of entry in incidents where property was stolen from inside cars, 1991

	Number of offences	% of Offences
Smashed window	36	47%
Force door	8	10%
No force used	14	18%
Not specified on the record	19	25%

Source: Metropolican Police
N=77

Force was used to enter cars in over half of these incidents, the most common method being to smash a window. Nevertheless, a significant number of thefts do not seem to have involved force.

67% of thefts from cars took place during the day between Monday-Saturday. Table 8 shows the number for each type of car park.

Table 8. Thefts from cars parked in Kingston town centre car parks between 7am-7pm Monday-Saturday, 1991.

		Number of offences	Rate per 100 spaces
PAY & DISPLAY	Surface	24	2.0
	Multi-storey	15	1.2
	Underground	2	0.4
MANNED EXIT	Surface	1	0.3
	Multi-storey	13	1.9
PAY ON FOOT	Multi-storey	5	0.4
	Underground	o	0

Source: Metropolitan Police

According to the British Crime Survey, only 40% of thefts from vehicles are reported to the police unlike thefts of cars which are nearly all reported (Mayhew, Elliott & Dowds, 1989). The data shown in table 8 is therefore likely to underestimate the scale of the problem. The pattern shown in table 8 is very similar to that found earlier for theft of cars, with unmanned surface car parks having the highest risk. However, while theft of cars was low in manned exit multi-storey car parks, the rate of theft from cars is as high as for unmanned car parks. Clearly, controlling vehicular exit in multi-storey car parks prevents thefts of cars, but not thefts from parked cars.

The manned exit surface and the pay-on-foot car parks show the lowest risks for both theft of and from cars. In the surface car parks, attendants controlling vehicular exits have a good view over the parking areas. Not only can they see most of the parked cars, but they can also be seen from most parts of the car park. These are employee car parks during the week, and are not open to the public on these days. This may also contribute to the low crime rates in these car parks. However, the next chapter will show that single-level manned-exit car parks which are open to the public also have very low crime rates.

In the pay-on-foot car parks, vehicular exits are controlled by automatic barriers which are very well supervised by attendants who need to ensure the equipment does not fail. Each car park has four staff on duty who are employed in a supervisory and security role. In the Bentalls car park, two attendants patrol the car park every half hour. A kiosk overlooking the exit barriers is constantly staffed (see figure 5), and CCTV cameras also cover the exit and entrance barriers. These are monitored from a

central control room. All staff are in radio contact with each other and the control room. Customers can also contact staff via an intercom system located at the entrance and exit barriers. The John Lewis car park is smaller with only two levels. Staff are accommodated in an office located on the main parking floor, and are clearly visible to customers as they enter the car park. The ticket machinery lies opposite the office on the other side of the car park, so that attendants have to cross the parking floor to check this equipment and deal with any problems. The pay-on-foot system also focuses more customer activity on the parking floor, since parking fees are paid at machines inside the car parks rather than at the exits.

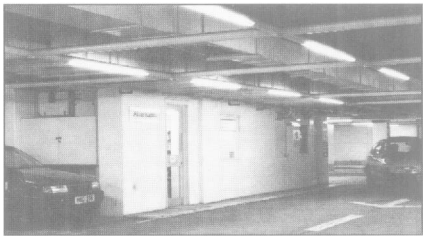
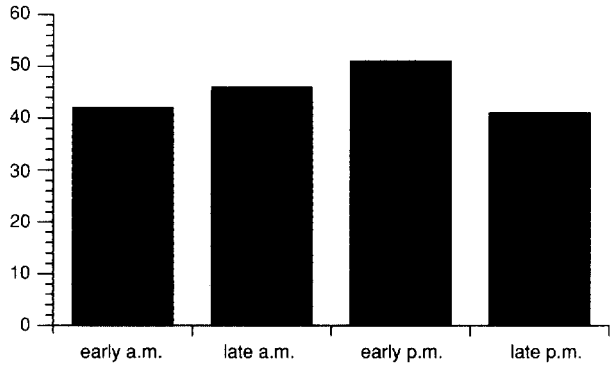


Figure 6. The attendants' office at the John Lewis car park is clearly visible to all cars entering the car park, and provides supervision over the parking floor.

Car park utilisation

Most of the town centre car parks appeared to be well-used during the day. Indeed, the research team were struck by how busy many of them seemed to be. A small survey was conducted to count the number of cars entering and leaving a selection of town centre car parks during the day. Ten car parks were involved in this survey – the two department store and eight 'pay & display' car parks. Routinely collected usage data for the two department store car parks was made available to the researchers. For the 'pay & display' car parks, cars were counted entering or leaving each car park in four 15 minute periods throughout the day. This survey was carried out on a Wednesday in April, 1992. Figure 7 shows the figures yielded by this survey.

Figure 7. The average number of cars entering or leaving a Kingston town centre car park in each of four 15 minute periods throughout the day.



On average, between 40 and 50 cars were found to enter or leave a car park in any 15 minute period during the day. This large number of people searching for parking spaces or passing through the car park provides a significant amount of natural surveillance of parked cars. This may explain why the risk of theft of and from cars even in the unmanned surface car parks is much less than in the long stay commuter car parks examined later in this study.

4. Car parks in Marylebone, central London

Figures published by the Greater London Council for 1985 show that the make-up of central London car parking is very different from the suburban outer boroughs. There is a very large concentration of car parks in the City of Westminster – 69 car parks compared with an average of 30 for other London Boroughs. 94% of these are either owned or operated by private companies. In fact, nearly one-third of all the car parks owned and operated by private companies in Greater London are located in Westminster. Half of the car parking space in Westminster is provided in underground car parks, with very little arranged in surface car parks (Greater London Council, 1986).

The Marylebone division of the Metropolitan police force covers the W1 area in central London. It is bounded on the south side by oxford Street, on the north side by Marylebone Road and Regents Park, with Tottenham Court Road and Edgware Road on the east and west sides respectively. Hyde Park, Mayfair, Soho, and the theatre district lie just across Oxford Street to the south of the division.

There are 14 public car parks in Marylebone, providing a total of 4,126 parking spaces. Five are owned by Westminster City Council, but all 14 car parks are operated by private companies – mainly NCP. The car parks range in size from 50 to 650 spaces, although there are only three car parks of less than 100 spaces. Seven are underground car parks, six are multi-storey buildings, and there is one surface car park. All are manned – mainly by attendants employed to check parking tickets and take fees at the exits, and let cars out by raising exit barriers. Some car parks operate 'block parking', either wholly or partially, where attendants park the cars and hold the keys. Table 9 shows the motor vehicle crime reported in these car parks for 1991.

Table 9. Motor vehicle crime in Marylebone public car parks, 1991

	Number of crimes
Theft from vehicle	430
Theft and unauthorised taking of vehicle	2
Attempted theft of vehicle	2
Attempted theft from vehicle	5
Criminal damage	35
TOTAL	474

Source: Metropolitan Police

These car parks are remarkably free of thefts of vehicles. Only two vehicles were reported stolen in the year. One was used in a bank robbery and later found abandoned. However, there were 156 thefts and unauthorised takings of vehicles from the streets in this division in 1991. These figures lend strong support to the finding from Kingston that manned car parks which supervise and control the exit of cars prevent the theft of cars from those car parks. It is possible that the traffic congestion

and complexity of one-way streets in central London also helps to deter thieves, since this makes it more difficult for them to escape if the attendant became suspicious.

Theft from cars

Thefts from cars, however, are a considerable problem. The average rate of theft from vehicle in these car parks is 10 per 100 car park spaces, which is a great deal higher than for any car park in Kingston.

Thefts in these car parks seem targeted on particular types of cars and property. The crime reports for the five largest car parks which had the most theft were examined in detail. Up-market cars were involved in most of these thefts. Mercedes, BMWs, and VW Golfs accounted for 60% of incidents, and other cars included Aston Martins, Porsches, Jaguars, Bentleys, Lotus, Audis, and Range Rovers. Car radio/cassette/CD players were taken in 55% of incidents, with car and mobile phones also being popular (table 10). Some of the items stolen were very bulky, for example boxes of clothing samples, sets of golf clubs (three sets were taken out of one car in one incident) and luggage, and even a photocopier in one case. However, most items seem to be portable and could have been taken away on foot.

Table 10. Property stolen from cars parked in five Marylebone car parks, 1991

	Number of offences where this was stolen	% of offences where this was stolen
Radio/cassette players	194	55%
Car/mobile phones	48	14%
Clothing	42	12%
Luggage	34	10%
Briefcases	36	10%

Source: Metropolitan Police
N=354

Nearly all cars were forcibly entered, with windows smashed in 84% of incidents (table 11). This suggests that there is no particular problem of drivers leaving their cars unlocked in these car parks. Most incidents took place during the clay. Clearly, thieves felt quitw able to make very determined and noisy entries into cars. These car parks appear to be used by local businessmen, and cars are parked for lengthy periods of the day. Half of the cars broken into were parked for five hours or more and only 6% for less than an hour, so there is little of the activity found in shopper car parks.

Table 11. Means of entry to cars parked in five Marylebone car parks, 1991

	Number of offences	% of Offences
Smashed window	296	84%
Forced lock	33	9%
Ripped soft top	5	1%
Open window/unlocked door	2	1%
Not known	18	5%

Source: Metropolitan Police
N=354

The risk of theft from cars varies considerably between the 14 car parks. Crime rates seem strongly related to the level of supervision provided over the parking floors. Table 12 describes the design and operating characteristics of each car park. Car parks are listed in rank order according to the rate of theft per 100 spaces, with the worst at the top and the car parks with no crime at the bottom. The double horizontal line half-way down the table separates the low and high crime car parks.

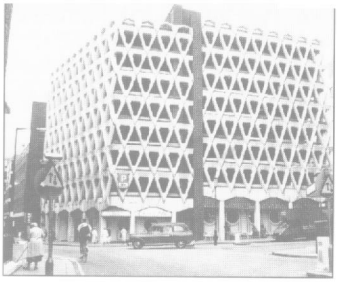
Table 12. Theft from cars and the design and management of car parks

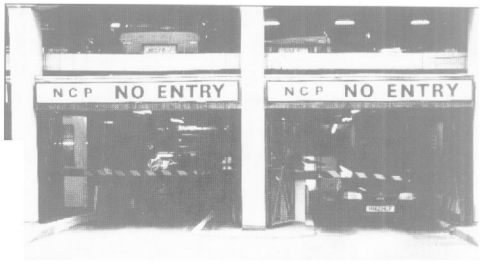
		Design characteristics						Operating	
car park	Crime rate	N of spaces	m/s	m/s + u/g	u/g	surf	N of floors	man exit barr	block park
Chiltern St	21.0	395	-	✓	-	-	6	✓	-
Portman Sq	16.3	443	-	✓	-	-	6	✓	-
Cavendish Sq	15.6	545	-	-	✓	-	3	✓	-
Bilton Towers	15.6	160	-	-	✓	-	2	✓	-
Welbeck St	15.6	392	✓	-	-	-	7	✓	-
Harley St	12.4	380	-	-	✓	-	3	✓	-
Bryanston St	10.6	310	✓	-	-	-	7	✓	-
Clipstone St	4.8	350	-	-	✓	-	1	✓	-
Cramer St	2.0	200	-	-	-	✓	1	-	✓
Carburton St	1.6	65	-	-	✓	-	1	✓	-
Selfridges	0.3	650	✓	-	-	-	7	-	✓
Berners St	0.0	110	✓	-	-	-	3	-	✓
Sanderson Hse	0.0	75	-	-	✓	-	1	✓	✓
Churchill Htl	0.0	51	-	-	✓	-	1	-	✓

Key: Crime rate – number of thefts from cars per 100 parking spaces
N of spaces – number of parking spaces
m/s – multistory building
u/g – underground parking
surf – surface car park
N of floors – number of parking floors, including split levels
man exit barr – manned exit barriers
block park - block parking, ie attendants park some or all cars

It is clear from the second to last column in table 12 that manned exit barriers do not control theft from cars parked in multi-storey car parks. The crime rates in the worst car parks are greater than, or at least equivalent to, any documented in high crime public housing estates. For example, Poyner & Webb (1987) found a rate of 7 thefts from cars per 100 dwellings on the Pepys estate in 1983. Nationally, thefts from motor vehicles have doubled since 1983 so the very severe crime problem experienced on that estate in 1983 is comparable to that shown for some of these car parks in 1991.

Figures 8a and b.The Welbeck Street car park. Manned exit barriers in multi-storey car parks prevent theft of, but not theft from parked cars.





Single level car parks with manned exit barriers have a very much lower risk of theft from cars, especially if they are also small car parks. In this environment, it is possible for attendants in their kiosks at the exits to supervise a great deal, if not all of the parking floor. Even if they cannot see all the parked cars, the attendants are much more likely to hear the sound of breaking glass and reach the location quickly than in a multi-level car park where it can be very difficult to locate the sound of even a car alarm.

Much more radical solutions seem to be required to prevent theft from cars in multi-storey car parks. Table 12 shows that the two multi-storey car parks operating 'block parking' were virtually free of such theft. One is the Berners Street car park, operated by NCP, and the other is Selfridges car park. Cars are parked by attendants who retain the keys, and extract the car when the owner returns and pays the parking fee. This system provides a great deal of supervision of the parking floors, especially since the car park operator is more responsible for the car. In both car parks, public access to the parking floors is very strictly controlled. Doors leading onto the parking floors are alarmed, to attract attendants' attention to anyone approaching the parked cars. In the NCP car park the one pedestrian access point to the upper parking levels is well-supervised from the attendants' kiosk on the ground floor. In Selfridges, there are two and sometimes three attendants on each parking floor supervising the 80-140 cars parked on the floor at any one time.

Figures 9a and b. Selfridges car park. The open layout of the parking floors facilitates block parking and supervision of cars by attendants working on each floor.

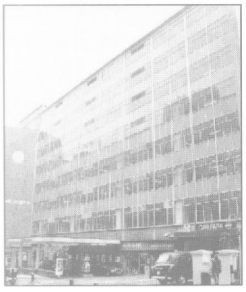


Table 13 below summarises the effect of these different car parking environments on theft from cars.

Table 13. The influence of the parking environment on theft from cars in Marylebone, 1991

	Average crime rate per 100 spaces
Multi-level car park with manned exit barriers	15.5
Single-level car park with manned exit barriers	4.3
Multi-level car park with attendants block parking	0.2

Source: Metropolitan Police

Car parks with attendants block parking cars are clearly virtually crime-free. Data on car park utilisation was not available, but visits to all car parks showed that all the block parking and single-level car parks were well-used. It therefore seems unlikely that the very large differences in crime rate shown in table 13 arise because block parking and single-level car parks are vastly under-utilised.

Block parking is a considerably more labour intensive system than employing attendants simply to operate exit barriers. It might be thought, therefore, that it is economically an unrealistic method of operating a car park. However, the block parking car parks do seem to provide an equally economic service, in the context of central London at least, as other more automated systems. Table 14 compares the parking fees in block parking car parks with other car parks and street meters in Marylebone.

Table 14. The cost of parking for two hours in various locations in Marylebone, 1992

	Car parks with block parking	Other car parks	Street meter
Average charge	£3.97	£3.71	£4.00
Cheapest charge	£2.60	£2.80	£4.00
Most extensive charge	£5.00	£4.00	£4.00

Block parking frees nearly all the space on the parking floors for car parking. Attendants can shift cars around, packing more cars onto the parking floor than would be possible in a conventional car park where a lot of expensive floor space has to be kept free for traffic. Block parking therefore increases potential revenue. The manager of one of the 'block parking' car parks estimated that revenue would reduce by 30% if the system were abandoned and the car park automated.

Block parking as the sole operating method may not be practicable in some car parks where there is a high turnover of cars. It is also most suited to car parks with wide-span parking floors and few columns. This open design not only facilitates the manoeuvering of cars, but also maximises supervision of parked cars by the attendants (see figure 9b). However, it does seem possible to operate a partial block parking system in a wider range of environments. Some car parks in this sample were found to operate primarily a conventional parking system, with attendants double-parking cars where this was possible.

5. Commuter car parks

Research studies have shown that car crime can be a problem in commuter car parks (eg Mancini & Jain, 1987; Laycock & Austin, forthcoming). However, the problem seems to have been rather neglected in this country. In 1986 a working group was set up by the Government "to establish the nature, incidence and costs of crime on the Underground system, the trends, the risks to passengers, staff and property and the areas and times of highest risk" (Department of Transport, 1986). The working group identified a number of crime problems which it felt were most in need of attention. These included robbery, theft from the person, and vandalism. The report made no reference whatsoever to car parks or motor vehicle crime. However, thefts of and from motor vehicles made up 15% of all crime reported to the British Transport Police in the year April 1991-March 1992. In 'L' division of the BTP, responsible for policing the London Underground, theft from a motor vehicle is second in size as a crime problem only to theft from the person – pickpocketing.

There are, however, indications that the problem of motor vehicle crime in station car parks is now gaining more attention. Some station and regional managers have asked for police advice or action to tackle local problems, and the British Transport Police have made recommendations on car park security m London Underground, Network South-East, and Inter-City. CCTV cameras have been installed in some London Underground and British Rail car parks, and some station car parks have been contracted-out to private management companies who in some cases have undertaken improvements such as increased lighting and better fencing.

Two geographical areas were selected for study – the east end of the central line on the London Underground and the BR Kent Link lines between London-Sevenoaks and London-Dartford (via Eltham and Sidcup). Most of the stations on these lines have car parks. Data from the British Transport Police showed that thefts of and from motor vehicles varied considerably between these car parks, often with low crime car parks neighbouring high crime car parks along the line.

All are open surface car parks. Vehicular access and exit is mainly controlled by coin-operated entrance/exit barriers (either an arm across the road or ramps set in the road), and a daily fee is charged – usually around £1.50 (see figures 10a & b). Car parks are predominantly unmanned, although an attendant collects charges at some car parks for a few hours a day either at the peak arrival or departure times. Analysis of the crime data assembled for the London Underground car parks for 1991 showed that all the victimised vehicles were cars, and that 89% of thefts of and 85% of thefts from cars took place between 8am-8pm. Victimised cars were parked on average for 7 hours. As in the Marylebone car parks, there is little problem of owners leaving their cars unlocked or insecure in some way. A survey of cars parked on London Underground station car parks in 1992 found that only 4% of 2,495 cars checked had an unlocked door or boot or an open window (Webb & Laycock, 1992).

Theft of cars

Table 15 shows thefts and unauthorised takings of cars from car parks of more than 100 spaces in 1991. The operating system used in these car parks and some other environmental features are also shown. Newbury Park and Sevenoaks have been omitted from this analysis since these stations have two or three car parks and it was often not known from the crime data in which car park the crime occurred.

Table 15. Theft and unauthorised taking of cars from station car parks, 1991

				Operating system			Environmental features		
Station	LU/ BR	N of spaces	Crime rate	Aut bar	P&D	Manned	Shops etc. in c park	Gd vis from plat	Paths
Redbridge	LU	186	16.7	✓	-	-	-	-	✓
Barnehurst	BR	150	16.7	✓	-	-	-	-	✓
Mottingham	BR	174	12.6	✓	-	-	-	-	✓
Chislehurst	BR	159	11.9	-	✓	-	-	-	✓
Orpington	BR	225	9.8	✓	-	-	-	✓	✓
Eltham	BR	149	9.4	✓	-	-	-	-	✓
Sidcup	BR	250	9.2	✓	-	-	✓	-	-
Crayford	BR	120	9.2	✓	-	-	-	-	-
Loughton	LU	322	7.4	✓	-	to 11am	-	-	✓
Leytonstone	LU	267	7.1	✓	-	1pm-9pm	-	-	-
Snaresbrook	LU	142	6.3	✓	-	-	-	✓	-
South Woodford	LU	140	5.0	✓	-	-	✓	✓	-
Woodford	LU	202	3.5	✓	-	-	-	✓	-
Epping	LU	592	2.9	✓	-	to 11am	✓	-	-
Dartford	BR	220	2.7	✓	-	-	✓	-	✓
Buckhurst Hill	LU	150	2.0	✓	-	-	✓	-	-
Debden	LU	207	1.9	✓	-	to 11am	-	-	-
Bexley	BR	250	1.6	✓	-	-	✓	-	-
Petts Wood	BR	255	0.8	✓	-	-	✓	✓	-

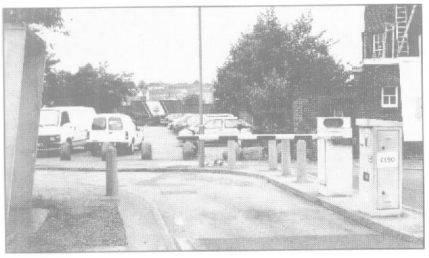
Source: British Transport Police

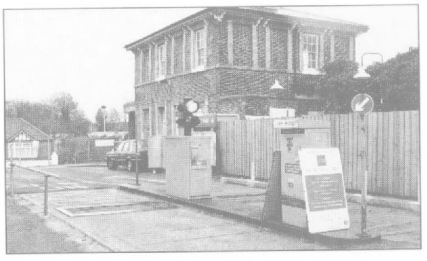
Key: LU/BR – London Underground or British Rail station
N of spaces – number of car park spaces
Crime rate – number of thefts and unauthorised takings of vehicles per 100 spaces
Aut bar – coin-operated road barriers or ramps at car park entrance/exit
P&D – pay & display car park
Manned – any attendants manning the car park entrance/exit
Shops etc in c park – shops and other businesses located in the car park or at the entrance
Gd vis from plat – good surveillance over the car park from the station platforms
Paths – paths providing pedestrian access to parked cars other than via the vehicular entrance/exit

As in previous sections, a crime rate per 100 spaces has been calculated to enable comparison of the risk between car parks. On this basis, the car parks have been rank ordered in table 15 with double horizontal lines separating high, medium and low risk car parks. Utilisation data were available for the British Rail car parks, and these were examined to check how far differences in car park utilisation contributed to the pattern shown in table 15. There was no evidence of any differences in utilisation large enough to affect the crime pattern in any significant way.

Table 15 shows the worst crime rates for theft of cars in car parks found in this study. Clearly, cars parked in unmanned car parks where there is little public activity during the day have a high risk of being stolen. Coin-operated barriers in themselves do not seem to control the problem greatly. Indeed, it was sometimes found by the research team on visiting these car parks that these barriers were broken, and had been so for some time – another reflection of the poor formal supervision provided over these car parks.

Figures 10a and b. Parking in these commuter car parks is controlled by coin -operated road barriers or ramps. The road ramps were sometimes found to be broken.





The risk of theft of cars from these car parks does vary considerably, however, and this seems related to other features of the car park. Seven car parks were found to have businesses operating from premises located in the car park itself or at the car park entrance (see column labelled 'Shops etc. in c park'). These included flower stalls, taxi and hire car offices, fast-food vans, BR offices, and vehicle servicing garages. It seems clear from table 15 that the presence of staff and customers associated with these businesses deters cars thieves. Five of the seven car parks all have low crime rates, and none appears in the high risk group. The influence of surveillance from the station platforms is less clear ('Gd vis from plat'), perhaps because there are few passengers using the station outside of peak rush hour times. At some of these stations, trains may also obscure the view of the car park from the platform.

Figure 11. The presence of businesses in these car parks, such as this fast-food van at Epping, increases super-vision of the car park and prevents car theft.

The presence of pathways on the perimeter of car parks seems to have an important influence on the risk of theft of cars (last column in table 15 – 'paths'). These pathways allow pedestrian access to the parked cars without having to use the main vehicular entrances and exits, reducing the chances of being seen from the station entrance. In some car parks where these paths exist, there is clear evidence that large holes have been made in the fencing which have had to be repaired. Six of the eight car parks which had paths on the perimeter are in the high risk group. The one in the low risk group at Dartford benefits from substantial natural surveillance provided by BR staff, who have offices in the car park, and from local authority staff working in the civic centre next to the car park.

Figure 12. Unsupervised paths around these car parks provide opportunities for car theft.

Table 16 below compares the risk of theft of cars in the two very different parking environments identified in this study.

Table 16. Theft and unauthorised taking of cars from two station car parking environments

	Number of spaces	Number of crimes	Risk per 100 spaces
No surveillance from local businesses, and paths on the perimeter providing access to car park (7 car parks)	1,365	157	11.5
Businesses and offices in the car park or at the car park entrance, and pedestrian access only via main vehicular entrance (6 car parks)	1,637	56	3.4

Source: British Transport Police

Theft from cars

Table 17 shows theft from cars in these station car parks.

Table 17. Theft from cars in station car parks, 1991

				Operating system			Environmental features		
Station	LU/ BR	N of spaces	Crime rate	Aut bar	P&D	Manned	Shops etc. in c park	Gd vis from plat	Paths
Redbridge	LU	186	22.0	✓	-	-	-	-	✓
Chislehurst	BR	159	21.4	-	✓	-	-	-	✓
Barnehurst	BR	150	20.7	✓	-	-	-	-	✓
Beckhurst Hill	LU	150	20.7	✓	-	-	✓	-	-
South Woodford	LU	140	20.0	✓	-	-	✓	✓	-
Eltham	BR	149	14.1	✓	-	-	-	-	✓
Sharesbrook	LU	142	14.0	✓	-	-	-	✓	-
Laytonstone	LU	267	13.1	✓	-	1pm-9pm	-	-	-
Loughton	LU	322	13.0	✓	-	to 11am	-	-	✓
Crayford	BR	120	10.8	✓	-	-	-	-	-
Bexley	BR	250	10.0	✓	-	-	✓	-	-
Selcup	BR	250	9.6	✓	-	-	✓	-	-
Nottingham	BR	174	9.2	✓	-	-	-	-	✓
Dartford	BR	220	6.4	✓	-	-	✓	-	✓
Woodford	LU	202	5.4	✓	-	-	-	✓	-
Petts Wood	BR	255	4.3	✓	-	-	✓	✓	-
Orpington	BR	225	2.6	✓	-	-	-	✓	✓
Epping	LU	592	2.4	✓	-	to 11am	✓	-	-
Debden	LU	207	1.4	✓	-	to 11am	-	-	-

Source: British Transport Police

Key: LU/BR – London Underground or British Rail station
N of spaces – number of car park spaces
Crime rate – number of thefts from vehicles per 100 spaces
Aut bar – coin-operated road barriers or ramps at car park entrance/exit
P&D – pay & display
Manned - any attendants manning the car park entrances/exits
Shops etc in c park – shops and other businesses located in the car park or at the entrance
Gd vis from plat – good surveillance over the car park from the station platforms
Paths - paths providing pedestrian access to parked cars other than via the vehicular entrance/exit

The figures in table 17 again demonstrate that managing commuter car parks only with automatic coin-operated barriers or 'pay & display' machines does little to control theft from cars. The risk of theft from cars in five of these car parks was as high as that found in the very worst central London multi- storey car park.

The environmental features found to influence theft of cars have a much weaker effect on theft from cars. Theft from cars, as found in previous sections, is a much more prevalent and difficult crime to control and requires more determined preventive effort. It may not be sufficient to rely on natural surveillance provided by local businesses and other activity. The weaker influence of paths on the car park perimeter also suggests that offenders are more likely to enter the car park in cars rather than on foot.

6. Conclusions

Staffing

There is little doubt that staffing is a crucial issue in the control of car crime in car parks. The highest risk of both theft of and from cars in Kingston was found in unmanned 'pay & display' surface car parks. The problem is considerably worse where cars are left for long periods during the day. The unmanned surface car parks at commuter train stations had the worst risk for both theft of and from cars found in this study, or indeed documented in any other environment. The automatic coin-operated road barriers by themselves seemed to contribute little to the control of car crime in these car parks.

The presence of people in and around car parks may help to deter thieves. In the busy Kingston town centre car parks, both surface and multi-storeys had much lower rates of theft of and from cars than the commuter car parks where there is little parking activity during the day. The level of customer activity during the clay can be influenced by pricing policy as well as the location of the car park. In the long stay surface car parks, the presence during the day of staff and customers associated with businesses and shops can help to reduce crime. It was not uncommon to find garage services, flower stalls, fast food vans, taxis, and BR staff offices in station car parks. Where these were found, the car crime rate was much lower, especially theft of cars. In this situation, it may be helpful to have most of the parking activity confined to the beginning and end of the day so that suspicious behaviour is more easily noticed during the day. It is important that there is no pedestrian access to these car parks other than through the main vehicular entrance.

Natural surveillance is not, however, as effective as constant formal supervision by a car park attendant. In Kingston, the risk of both theft of and from cars in surface car parks was considerably lower where the entrance / exit was manned by an attendant than when a 'pay & display' system was used, even though the unmanned car parks were very busy.

Multi-storey car parks present a rather different sort of problem. Manning the exits of multi-storey car parks is very effective at reducing theft of cars. It does not, however, prevent thefts from cars. This is a more difficult problem to tackle. Car parks which provide direct and constant supervision by staff of the parking floors suffer little theft from cars. Examples found in this study are the John Lewis car park in Kingston and those car parks in central London which 'block parked' cars, for example Selfridges car park and others operated by NCP.

The distinctive feature of these car parks is the presence of staff working directly on the parking floors. There is also much more of a 'customer service' quality to the work of car park attendants. Attendants in the John Lewis car park help people who cannot start their cars or who have locked their keys in the car, look out for problems such as

dogs or even children left in cars, and so on. In the block parking car parks it was not uncommon to find attendants washing cars during a lull in business. These tasks add much needed variety to the work of a car park attendant, and staff seemed bright, helpful, and interested in their work. The result of all this is active and constant supervision of parked cars.

One other characteristic of some of these car parks was their approach to the issue of liability for damage and theft involving parked cars. There was a much greater willingness to consider compensation in incidents of this kind. In the department store car parks, drivers were treated as store customers. Their custom was valued, and the image and reputation of the car park was important for the store as a whole. Indeed, the car park was managed as another department of the store. In the block parking car parks, the car park operator has more responsibility for the cars since the keys are handed over to the attendants.

Car crime and car park liability

The question of who bears the costs of car crime in car parks is a crucial one, since it identifies those with most incentive for tackling the problem. Currently, car park customers bear a substantial proportion of these costs, incurred through repairing or replacing property or increased insurance premiums. However, the scope for customers to reduce car crime in car parks is limited. The evidence from this study is that most drivers leave their cars properly secured in car parks, especially in long-stay commuter car parks. This is supported by an NOP survey commisioned by the Home Office and carried out in January 1992. Only 3.5% of the sample of 1,005 regular vehicle users said they might leave their car unlocked in a car park, compared with 27.8% who said they might do so outside their home during the day.

One other way in which car drivers might be able to influence the risk is through their choice of car park. By favouring 'secure' car parks, drivers would reduce the risk of crime to their own car and encourage car park operators m provide safer parking environments to meet this market. One of the reasons Dover District Council implemented crime prevention measures in the multi-storey car park was because the car park's reputation had become known to local people, and they had begun to use other car parks instead (Poyner, 1992). Drivers could be encouraged to use more secure car parks through the terms of their car insurance policy. For example, penalty clauses might be introduced making the driver liable for a certain amount of the loss if the car was parked in a sub-security standard car park.

However, there are two serious obstacles which currently prevent drivers from making these choices. First, car drivers have no knowledge of the risks of car crime associated with individual car parks and are therefore unable to judge which provide safe parking environments. This problem is currently being addressed by the police 'secured car park' scheme, which involves publicising those car parks which in the police's view are more secure. There are indications that the potential commercial benefit of being

designated a secure car park is recognised, with a number of car park operators already expressing their interest in participating in the scheme.

The second problem is that in many situations drivers have little if any realistic choice of car park. Station car parks, for example, often have a virtual monopoly on long-stay commuter parking. In busy city and town centres where there are more car parks, the demand for car park spaces may exceed the supply to the extent that drivers are only too happy to have found somewhere to park at all, let alone have a choice of car park. In unfamiliar locations, drivers may also not know where all the car parks are, although recent signing systems help in this respect.

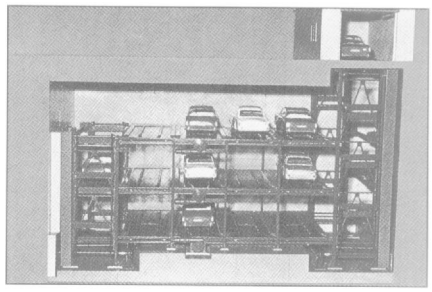
This and previous research has shown that there is a great deal that car park managers can do to reduce car crime in car parks. However, there is currently little incentive for them to take preventive action. They do not bear the costs of car crime, and in some areas have a virtual monopoly on parking – you either use them or you do not park.

The Consumers' Association and the RAC have both raised the issue of car park operators' liability for crime in their car parks. The RAC has called for car park operators to accept more responsibility for the safety of their customers and security of vehicles parked on their premises. The argument for making car park operators more liable to compensation claims from victims of car crime is attractive from the crime prevention point of view. By making car crime in car parks an operational cost, a strong economic incentive is created for car park managers to monitor the problem and take action if it gets out of hand.

One argument against increasing car park liability in this way is that it would result in increased parking charges. In some situations, this may displace parking from car parks to the street as drivers search for cheaper parking. The cost of providing off-street parking may become uneconomic for some, for example small businesses, who may have to close their car parks. Any scheme which increased demand for street parking would be undesirable since this reduces the scope for protecting cars, increases road congestion, and creates even more inconvenience for drivers trying to park their cars.

However, it has been shown in this study that there are situations where 'crime free' parking can be provided for the same price as car parks which suffer from a lot of car crime. Automated stacking systems of the kind illustrated in figure 13 where there is no public access to parked cars at all also appear to be receiving increased attention in this country as an economic solution to parking in city centres (Jabez, 1992). In these car parks, cars are driven onto a bogie which is then shuttled into a parking space by computer-controlled elevators and guidance systems.

Figure 13. Model of an automated stacking car park



There is limited evidence from two unpublished surveys that drivers might be prepared to pay more for secure parking. The British Transport Police carried out a survey of 738 drivers using a London Underground car park and found that 58% would be willing to pay more for parking in that car park if there was extra security. A survey of car park users conducted for Nottingham City Council reported there was "strong evidence from the survey that suggests people would be prepared to pay extra for improved security measures, especially at night". However, one has to be careful in interpreting these findings that respondents are not simply providing 'acceptable' responses.

Another complication in considering the liability issue is the relationship between car park owner and operator in the case of contracted-out car parks. For example, many local authority-owned car parks are contracted-out to private companies. It is unclear in this situation who should be responsible for ensuring that an adequate level of security is provided in these car parks and who, therefore, should be liable for any compensation claims. The terms of the contract may also limit the options open to the operator for managing the car park. Station car parks seem to be particularly confusing. It would need to be clear who is responsible for managing car parks at British Rail and London Underground interchange stations, or car parks used by Network South East and Inter-City customers.

The circumstances in which car park owners/operators could conceivably be held liable for compensation would also need to be specified. It seems clear that car park owners/operators could not fairly be held liable in all circumstances. Calder & Sipes (1992) have recently examined this issue in the US in the context of attacks on customers. There is no legal duty in the US for one person to protect another from sudden criminal attack, but businesses do owe a duty of reasonable care to their customers. Calder & Sipes review a sample of liability cases including a number involving parking lots and garages. The review identifies issues such as how much responsibility is deemed to lie with the victim and how much with the business; how much criminal activity there was in the location beforehand; whether the business had warned customers of the risks; and whether the business had introduced any security measures. Many of these issues also seem relevant to car crime. For example, the RAC suggests that drivers would need to prove that they had taken sufficient

precautions, such as locking the car and hiding its contents from view. In addition, it would also be important to protect businesses from fraudulent claims that a car had been stolen or broken into in a car park.

If car crime became an operational issue for car parks, operators would have to monitor it properly with the result that information on the problem would improve greatly. Police data on car crime in car parks can be very sparse, and suffer from problems identifying location. For example, a car park can be known by two or three different names. There may also be a number of car parks located on one road all referred to in the same way (eg car park in Acacia Avenue). More precise information on the location of the parked car in the car park was often not available from police records. If data on crime became collected as management information, the undoubted improvement in detail would enable much more detailed descriptions of particular crime problems, and generate a much wider and more precisely targeted range of crime prevention measures.

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