

**REDUCING CRIME ON THE  
LONDON UNDERGROUND**

**AN EVALUATION OF  
THREE PILOT PROJECTS**

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### **Crime Prevention Unit Papers**

The Home Office Crime Prevention Unit was formed in 1983 to promote preventive 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 analysis and research material in a way which should help and inform practitioners whose work can help reduce crime.

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## Foreword

The former Prime Minister's seminars on crime prevention held in 1986 continued an international recognition of the problems of crime on public transport systems. One of the outcomes of those seminars was the development of three experimental projects to reduce crime and fear of crime on the London Underground. This report describes the findings from the evaluation of those projects.

There are few published evaluations of crime prevention initiatives on public transport systems. This report is a second study conducted by the Home Office showing crime reductions on the London Underground. The first, published over ten years ago, examined the effects of CCTV cameras on crime. The projects in this study are more complex, incorporating CCTV in a strategy which includes the introduction of passenger alarm points and increasing the visibility of staff on stations.

This report contains clear evidence of reductions in robbery on the London Underground, and examines the contribution of the pilot projects as well as policing, publicity and organisational changes. The authors conclude that the project on the south end of the Northern line did help to reduce crime, but that the effort needs to be sustained if crime is to be kept down.

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*Deputy Under Secretary of State*  
*Home Office*  
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Home Office Crime Prevention Unit  
September 1991

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## **Introduction**

Crime on underground 'Metro' systems attracted increased attention during the 1970s. A number of studies of the problem were carried out in the United States (eg Schnell et al, 1973; Chaiken et al, 1974; Siegel et al, 1979); the RATP in Paris undertook a passenger security study, and implemented measures to reduce mainly robbery; and the London Underground began to introduce security measures at some high crime stations. The new Metro systems which opened in Hong Kong and Washington D.C. in the mid-1970s were designed and planned with crime prevention as a high priority.

It is difficult to make detailed comparisons of crime on Metro systems around the world because of differences in recording practices, and there have been few attempts to do so. However, there does seem to be evidence that the Washington and Hong Kong systems suffer less crime than most. In their comparison of US systems, Siegel et al (1979) note that on the Washington Metro there was "very little crime reported so far" (p.10). In a more recent study, Gaylord and Galliher (1991) describe the Hong Kong MTR as a "nearly crime-free transportation system" (p.17). Stations and trains on both these modern systems were designed to maximise the capacity for supervision. They are also small systems which are very heavily policed.

Older systems such as the New York subway, the RATP in Paris, and the London Underground seem to have more of a problem. These systems began operation in the late 19th and early 20th centuries, with most of their construction taking place during the 1920s and 1930s, well before the 1970s' ideas of designing out crime were developed. They have become very extensive systems which cannot be supervised by the police to the same extent as other smaller systems. For example, in 1986 there were 295 police officers available to police the 38 stations and 25 miles of track on the Hong Kong MTR (Gaylord & Galliher, 1991). A similar number of officers policed the 248 stations and 250 route miles of the London Underground.

The growing incidence of crime on the New York, Paris, and London Metro systems led to a number of new initiatives in the 1980s. Radical management policies dramatically reduced graffiti on New York subway trains (Sloan-Howitt & Kelling, 1990), a re-examination of its security policy led the RATP to plan increases in station staff, and a number of pilot crime prevention projects were implemented on the London Underground.

### **The London Underground crime prevention projects**

Public concern about crime and safety generally on the London Underground became sharply focused in the 1980s. Thefts from passengers continued to be reported in large numbers, while robberies increased by six-fold between the mid-



1970s and the mid-1980s. In 1985 London Underground engaged a firm of management consultants to develop a strategy for reducing crime and improving passengers' feelings of safety. Traffic levels were increasing rapidly at that time, and there was concern on the Boards of London Regional Transport and London Underground that reduced staffing of the system might lead to an increase in crime and public concern about safety.

In January 1986, the then Prime Minister held her much publicised seminar on crime prevention. One of the initiatives to emerge from this was a study to identify measures to reduce crime on the Underground. A working group, chaired by the then chairman of London Underground, was established to conduct the study under the supervision of a steering group chaired by the Department of Transport. Members of both groups were drawn from the British Transport Police, the Metropolitan Police, and the Home Office.

The working group's study was carried out in parallel with the management consultants' work. Both made use of British Transport Police crime records. The management consultants also conducted attitudinal surveys of passengers and staff, to examine perceptions of crime risk. The management consultants produced their final report in July 1986 (Best et al, 1986), and the Department of Transport published its report 'Crime on the London Underground' a few months later (Department of Transport, 1986).

The main thrust of both reports was that crime prevention and passenger security should become an integral part of operational management of the Underground system. Previously, London Underground had seen crime as largely a matter for the police, with management being mainly concerned with operational efficiency of the system. It was recommended that crime prevention should become a much more routine management activity, involving the identification of specific crime problems and locations, targeting measures on those problems, and evaluating their effectiveness.

Specific measures recommended by both reports included improving closed-circuit television surveillance of stations, improving radio communications for both police and staff, installing passenger alarms on stations, and making use of passenger information systems such as Public Address and dot matrix indicators. Both reports stressed the importance of improving the visibility of staff on trains and stations, and the more detailed proposals by the management consultants involved some staff increases. Neither study commented on the size of 'L' division of the British Transport Police (responsible for policing the Underground). However, a later inspection by Her Majesty's Inspector of Constabulary, made at the invitation of London Underground and the British Transport Police, did recommend an increase in police manning levels. In 1989, 'L' division was increased from 350 to 404 officers. Officers were seconded from the Metropolitan and City forces until sufficient numbers of new staff had been recruited.

Following the publication of the Department of Transport report, the Government decided that £15 million from the Undergrounds existing Investment Programme budget should be set aside for spending on crime prevention. A Passenger Security Steering Group was formed, chaired by a member of the London Underground Board, with the task of managing this expenditure. The Steering Group proposed three pilot crime prevention projects, based on the recommendations of the two previous crime studies. These projects were agreed by London Regional Transport and the Department of Transport in 1987 and implemented during 1988, They were:

- to reduce robbery at stations on the south end of the Northern line between Clapham North-Tooting Broadway
  
- to reduce theft and assault at Oxford Circus
  
- to reduce fear of crime at stations on the east end of the Central line between Leytonstone-Barkingside

The locations of these projects are shown on the map of the Underground system in the appendix at the end of this report.

### **This report**

The aim of this report is to consider the effectiveness of the three pilot projects, and any implications for future efforts to reduce crime on the Underground. Since the Department of Transport report was published, London Underground has kept its own records of crime using information supplied by 'L' division of the British Transport Police. These records are used to provide regular crime figures to the Department of Transport and the Passenger Security Steering Group, and are the source of data presented in sections 2 and 3. London Underground also commissioned attitude surveys to examine public reactions to the projects. There was particular interest in any change in fear of crime or willingness to use the Underground as a result of the projects. The findings from these surveys are presented in section 4.

## The project at Clapham North - Tooting Broadway

Crime has been recognised as a problem at the south end of the Northern and Victoria lines for many years. Stockwell, Clapham North, Clapham Common, and Brixton were among the first stations on the Underground to be equipped with closed-circuit television cameras (CCTV). These were installed in 1975 partly to deal with assaults on staff, with ticket collectors' boxes also being fitted with alarms. Thefts were also being reported at these stations in large numbers at this time, and a study concluded that the introduction of the cameras had helped to reduce this problem (Mayhew et al, 1978). By 1985, CCTV linked to a control room at Stockwell had been installed in all stations south of Oval. The incidence of robbery, however, grew considerably in this period. In the first year of CCTV operation at the original four stations (Dec 1975 - Nov 1976) there were 23 robberies on the 19 Northern, Victoria, and Bakerloo line stations south of the River Thames; in 1985 the British Transport Police recorded 227 robberies at 15 of these stations (excluding Waterloo, London Bridge, Borough, and Lambeth North).

### The measures

The aim of this part of the project was to reduce robberies between Clapham North-Tooting Broadway. The strategy was to improve supervision of each station by expanding the existing CCTV system, linking it to a network of passenger alarms, and monitoring the whole system from a continuously manned and conspicuously located kiosk on each station known as a focal point.

### CCTV

The number of cameras was doubled, to between seven and fourteen cameras on each station, with the new system incorporating the old cameras. Some new cameras had pan/tilt and zoom facilities. Cameras were conspicuously sited to overlook as much of the public area of the station as possible, in particular the Passenger Alarm Points. They are monitored on a single screen in the focal point, and an automatic video 'Krammer' recording system provides a record of the day's events on the station. These tapes are retained for one week. Continuous recordings can also be made from each camera, when necessary.



Figure 1. Conspicuous CCTV cameras cover as much of the station public areas as possible.

## **Passenger Alarm Points**

The Passenger Alarm Point allows passengers to talk to staff in the focal point for information, or to raise an emergency alarm. Each station was equipped with between four and seven alarm points, located mainly on platforms. These are linked to the CCTV system, so that when an alarm is activated, pictures from the camera overlooking it are automatically displayed on the monitor in the focal point and recorded on video tape. If staff do not respond to an emergency alarm within 10 seconds it is automatically routed to the British Transport Police 'L' division control room. The control room receives information on the location of the activated alarm point, and officers can then act to monitor the pictures from the relevant CCTV cameras.



Figure 2. Passenger Alarm Points allow Passengers to communicate with staff in the focal points, for information or to raise an emergency alarm.

## **Focal Points**



Figure 3. Focal points provide direct surveillance over station exit routes, and accommodate the CCTV and passenger alarm monitoring equipment.

Figure 3 shows the kiosks which were installed in all stations, known as focal points. Extra staff were recruited to enable these to be continuously manned. Focal point staff provide information to passengers as well as monitor the CCTV cameras and alarm points. An internal telephone link which allows access to the British Transport Police is provided in the kiosk. At all stations except Tooting Bec the focal point was positioned in the ticket hall, in full view of passengers as they enter and exit the station. The focal point at Tooting Bec was installed at platform level facing the bottom of the escalators, in an attempt to test the appropriateness of a platform location.

### Other measures

Station radio was introduced, allowing staff to maintain contact with the focal point through use of hand-held radio sets. Seats and train information indicators were provided near the focal points, creating supervised waiting areas. Mirrors were installed on subway comers, and there were lighting improvements at some station entrances.

The whole project became fully operational in November 1988.

### **Analysis of crime data**

Table 1 shows annual robbery figures for the whole Underground system, the six pilot stations, and for six stations at the northern end of the Victoria line over a six year period. When London Underground planned their evaluation of this project, the stations between Highbury & Islington and Walthamstow Central were selected as a control group with which to compare crime at the pilot stations. The data comes from London Underground's reports to the Department of Transport.

Table 1. Robbery on the London Underground, 1985-1990

	1985	1986	1987	1988*	1989	1990
The whole system	694	685	883	1,128	746	656
Clapham North-Tooting Broadway	94	62	45	52	8	35
Highbury & Islington-	nk	81	103	97	43	41
Walthamstow Central						

\* project became operational in November of this year

### Intensive policing

Table 1 shows crime reductions at the pilot stations in 1986 and 1987 so that when the crime prevention project was implemented in 1988 robbery was much less of a problem than it had been in 1985. This was almost certainly achieved by some intensive policing of the pilot stations.

In January 1985 a British Transport Police office was opened at Stockwell, with an establishment of 30 officers dedicated to policing the 15 stations at the south end of the Northern and Victoria lines. In 1986 a new Inspector altered the shift arrangements, so that many more uniformed officers were available to patrol stations between 6pm-2am, the shift when most robberies were taking place. The number of officers working this shift increased from six to eighteen.

At the same time, a crime squad was created to target problem stations. At that time, these were the stations between Clapham North-Tooting Broadway. A team of six officers worked undercover in plain clothes, stopping anybody who came through the ticket barriers without a ticket. In the first night of operation the squad made 27 arrests for fare evasion, possession of drugs, offensive weapons, and persons wanted. Targeting of the Clapham North-Tooting Broadway stations continued into 1987, with some operations involving the Metropolitan Police. In 1988 the crime squad reduced their activity at these stations, to focus on other parts of the district.

The Pilot project

Table 1 shows a very dramatic reduction in robberies at the pilot stations in 1989, after the measures were introduced. However, table 1 also shows large crime reductions in 1989 at the control stations and on the system as a whole. There are also signs that robbery is beginning to increase at the pilot stations in 1990. Figure 4 shows the monthly pattern of robbery at the pilot stations over a four year period. This data was not available for 1986.

Figure 4. Robbery at Clapham North-Tooting Broadway, 1987-1990

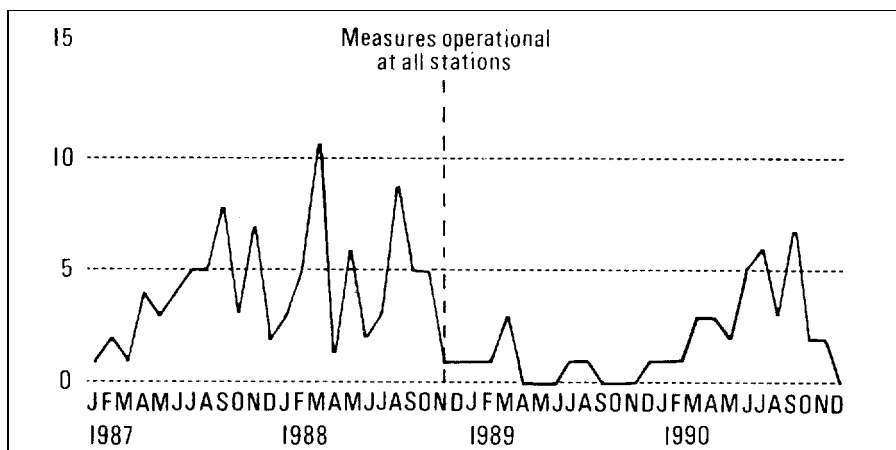


Figure 4 shows a very sudden drop in robbery immediately the surveillance and alarm systems became fully operational at the end of 1988. An extremely low level of robbery continues throughout 1989, with no robberies reported at all for six months of the year. The graph then shows robberies gradually building up during 1990, beginning to show signs of returning to the pattern seen in most of 1987 and 1988, but then dropping away again at the end of the year.

Figure 5 shows the monthly numbers of robberies reported at the stations on the north end of the Victoria line.

Figure 5. Robbery at Highbury & Islington-Walthamstow Central, 1987-1990

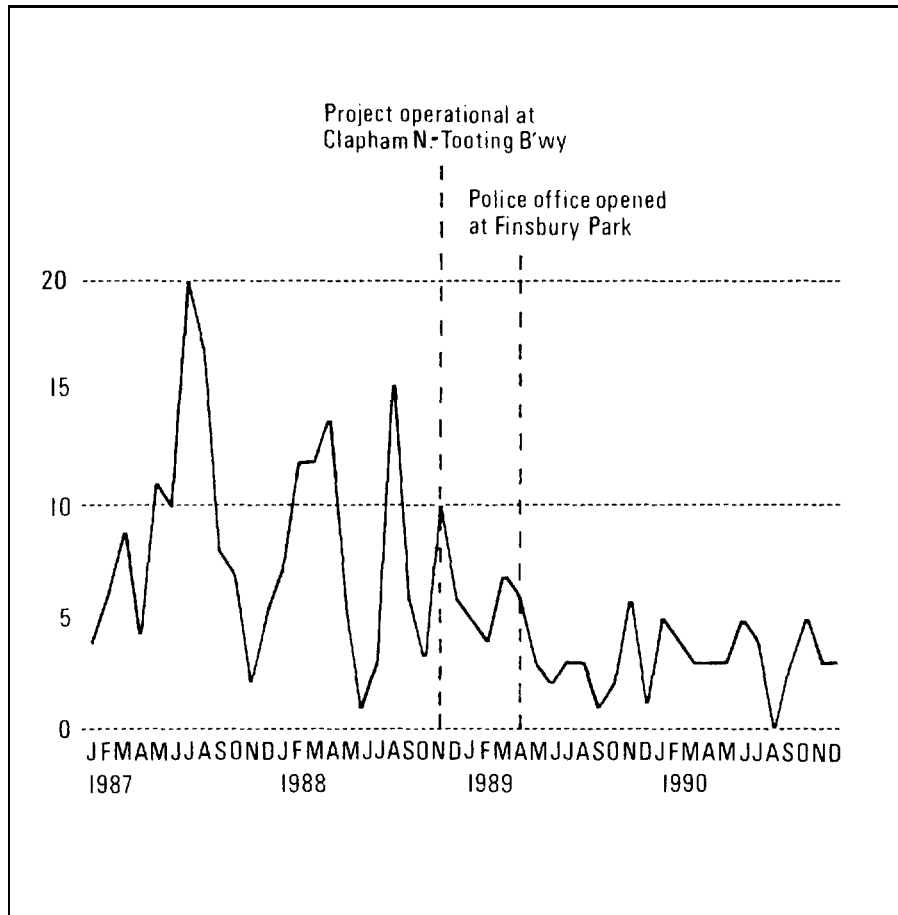
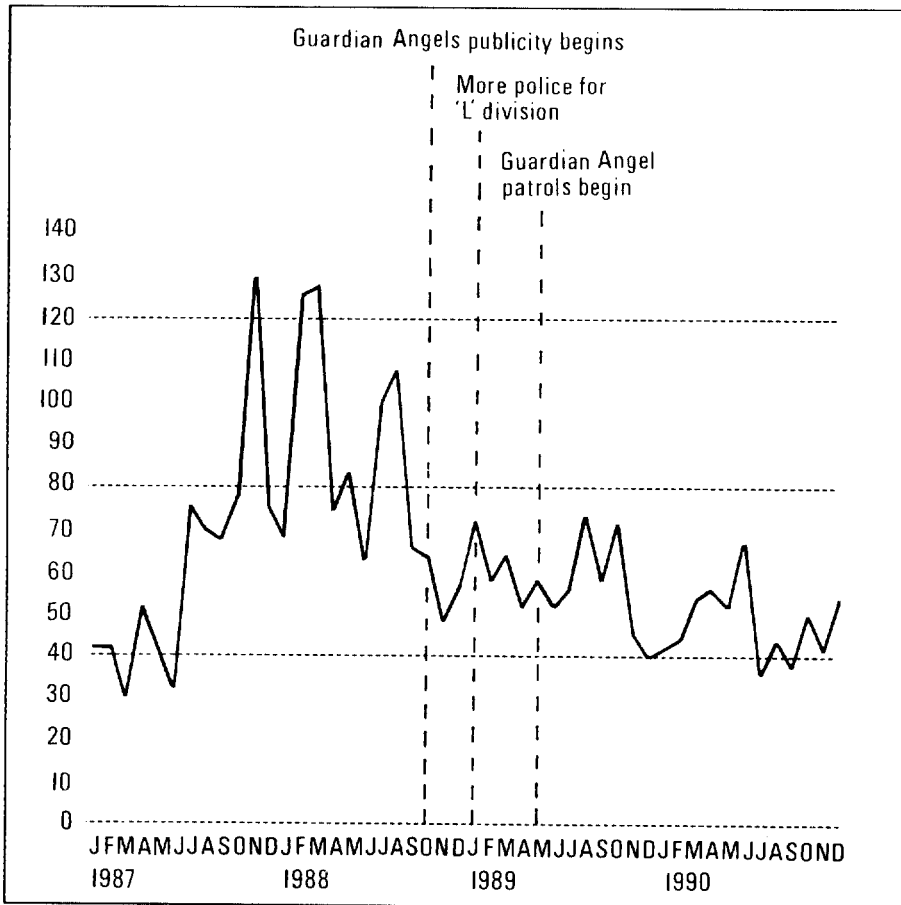


Figure 5 shows that the reduction of robbery at these stations took place at about the same time as the reduction at the pilot stations. The role of these stations as a control group was rather spoiled when the British Transport Police opened a local police office at Finsbury Park in April 1989. This was thought to have contributed to the robbery reduction at these stations, and there is some evidence for this from figure 5. However, the pattern in figure 6 for the remaining 236 stations on the Underground also reveals a reduction in robbery taking place at the end of 1988. This suggests that other events may have contributed to the reductions at Clapham North-Tooting Broadway and Highbury & Islington-Walthamstow Central.

On a public transport system as large and busy as the London Underground there will always be changes taking place to modernise and improve the operation of the system, 1988 and 1989 were particularly active periods, with the introduction of the new Underground Ticketing System (UTS) and the implementation of the

Figure 6. Robbery on the remaining 236 Underground stations, 1987-1990



recommendations of the Fennel Enquiry into the Kings Cross fire. Major changes in the management and staffing of the Underground were also initiated during 1989. Local managers were given much more responsibility for the running of individual or small groups of stations. Supervision and morale of station staff was considered, by some managers, to improve as a result of more intensive management. Staffing of the Underground system was also increased, in order to meet requirements arising from the enquiry into the Kings Cross fire. Many more revenue protection staff were also recruited during 1989, whose task was to reduce ticket fraud. This involved an increased number of staff traveling on trains. There was also a small decrease in passenger traffic on the system during 1989 and the result is that the staff-passenger ratio had been greatly improved by the end of the financial year 1989/90, as table 2 shows. The source of data shown in table 2 is the Annual Report & Accounts of London Underground Limited for the year ended March 1990. 'Passenger services' includes all employees other than engineering and business administration staff and the police.



Table 2. Number of 'passenger services' staff per million passenger journeys

March 1987	March 1988	March 1989	March 1990
17.6	15.9	14.4	17.1

**Guardian Angels**

In 1988 the Guardian Angels, the American vigilante group famous for its patrolling of the New York subway, came to Britain to set up a British chapter on the London Underground. Patrols were eventually started in May 1989 and do not seem to have made any impact on robbery, as figure 6 shows. However, an enormous amount of dramatic self-publicity was generated by the New York Angels in their first months in London, coincidental with the sudden drop in robbery shown in figure 6. In October 1988 both national and local newspapers in London announced the arrival of the Guardian Angels, showing photos of the red bereted Angels travelling on trains. There was TV and radio coverage as well. In January 1989 the Daily Mirror devoted the whole of its front page to a photograph showing three Guardian Angels intervening in a drunken skirmish on a train. This may have been a staged event, but the impact of the front page is powerful, as figure 7 shows. Other national papers such as the Daily Mail and The Sun also ran stories in the same month.



Figure 7. This front page article in the Daily Mirror provided some dramatic publicity for the Guardian Angels.

The newspaper coverage alone would have reached many thousands of people in the London area. The National Readership Survey indicates that nearly one million people in London and the Home Counties were reading the Evening Standard each day in October 1988. The Daily Mirror had a daily readership of nearly 9 million in the same month, although the figure for London would be much less.

### Police

In 1989 'L' division of the British Transport Police was increased from 350 to 404 officers. In January of that year officers from the Metropolitan and City of London Police Forces were seconded to work on the Underground until the extra staff had been recruited to the BTP. An increase of this scale is easily lost when dispersed on such a large Metro system. However, it was accompanied by some publicity. Also, the Metropolitan Police officers were used to focus on crimes of indecent assault and other sexual offences at specific Central area locations. It therefore seems possible that their presence may have been noticed more than might otherwise have been expected.

### **Conclusions**

A plausible explanation for the sudden reduction in robbery on the total Underground system in 1989 seems to be that the publicity generated by the Guardian Angels had the immediate effect of frightening offenders away from the Underground. This is, of course, very different from saying that the actual patrolling activity of the Guardian Angels has been effective. An evaluation of the impact of Guardian Angel patrols on the New York subway (Kenney, 1987) was unable to find any evidence of crime reduction, although this was partly due to the low amount of reported crime in the areas selected for study. Figure 6 in this report shows no sign that the Guardian Angel patrols begun in May 1989 have reduced crime on the London Underground. Furthermore, research has shown that local publicity can have dramatic effects on crime (eg Laycock, 1990).

One might expect the effect of this publicity to be temporary, and so it seems likely that robbery has been kept down by improved management and staffing of the system, including more revenue protection as well as station staff. The policing changes may also have been helpful. It is also possible that the substantial physical work involved in station modernisation and the introduction of automatic ticket barriers in central area stations contributed by creating the impression of a more controlled and safer environment.

### The contribution of the pilot project measures

Table 3 below compares the size of crime reduction for the pilot, control and remaining Underground stations. Robbery figures for the nine other stations at the south end of the Northern and Victoria lines and for the Metropolitan Police District have also been included in this table for the purpose of examining the possibility of displacement.

Table 3. Number of robberies on the Underground and in the Metropolitan Police District

	1988	1989	difference
Clapham North-Tooting Broadway	52	8	-85%
Remaining stations at the south end of the Northern & Victoria lines (n=9)	80	56	-30%
Highbury & Islington-Walthamstow Central (n=6)	97	43	-56%
Remaining stations (n=227)	899	639	-29%
Metropolitan Police District	17,868	17,315	-3%

The data in table 3 suggests that improved staff supervision provided by the additional CCTV cameras and the focal points has reduced robbery at Clapham North-Tooting Broadway in 1989 much further than might otherwise have been expected. There is no sign that robberies have been displaced to neighbouring stations, with these stations showing a crime reduction at a rate similar to that experienced by the rest of the system. The fact that a reduction of any size is shown in the Metropolitan Police figures when a reduction of 34% took place on the Underground as a whole also suggests that little displacement has taken place from the Underground to the streets of London.

The environment into which these measures were introduced is important in understanding why they apparently presented so much of a threat to potential offenders, at least in the first year. Each station has only two platforms, with the island design at Clapham North and Clapham Common being very open. There is only a single exit route from the platforms, only one ticket gate manned by a ticket collector, and only one or two exits from the ticket hall into the street. Figures 8 and 9 show the layout of the subway systems at Clapham Common and Balham, and the locations of the passenger alarm points, CCTV cameras and focal points. The focal points are located on the exit route, near to other staff areas, and are most conspicuous as all passengers have to approach the focal point face-on and pass close by it when using the stations. The CCTV monitoring equipment inside can be seen by passengers. In this environment, potential offenders may feel that the chance of avoiding detection and capture is slim.

Figure 8. Clapham Common Underground Station

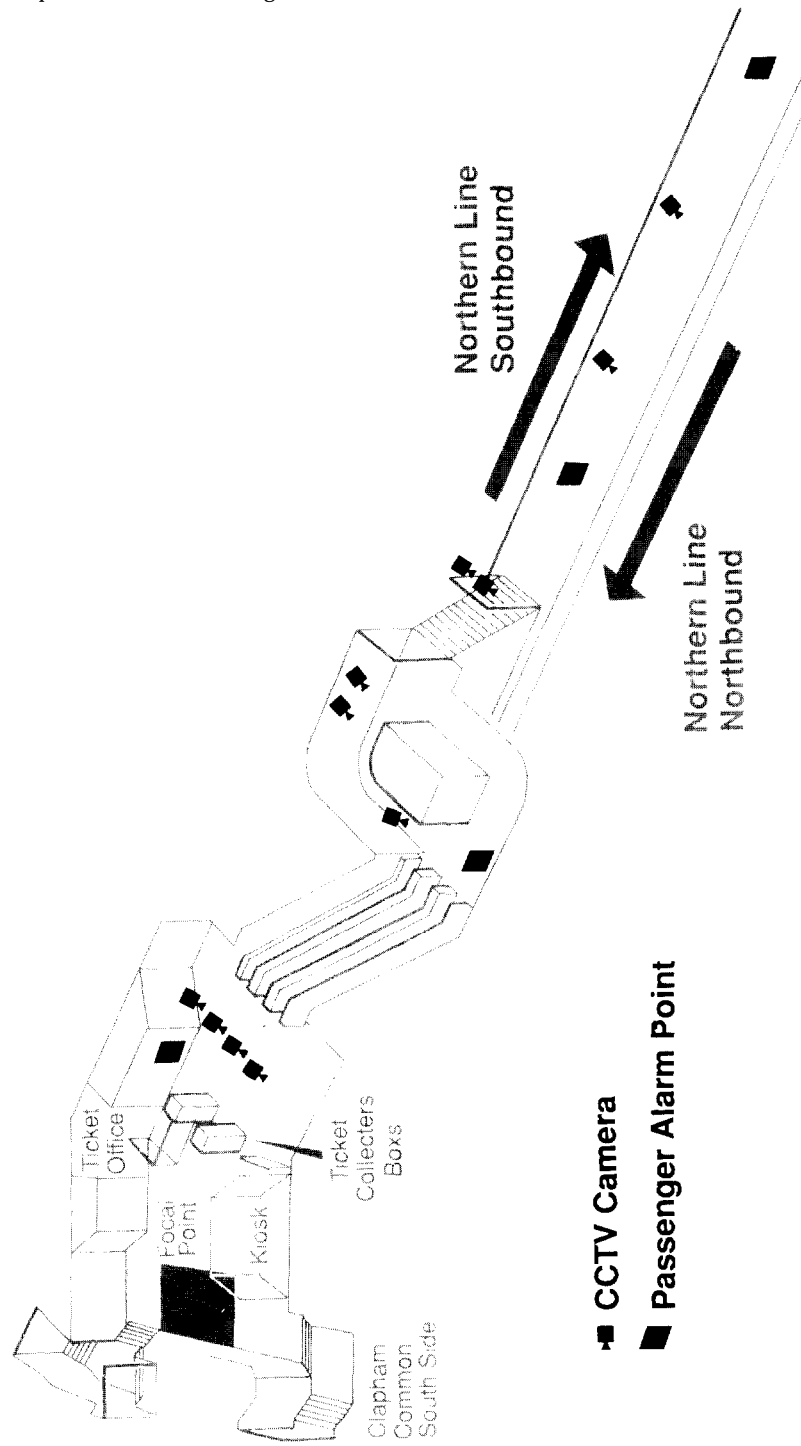
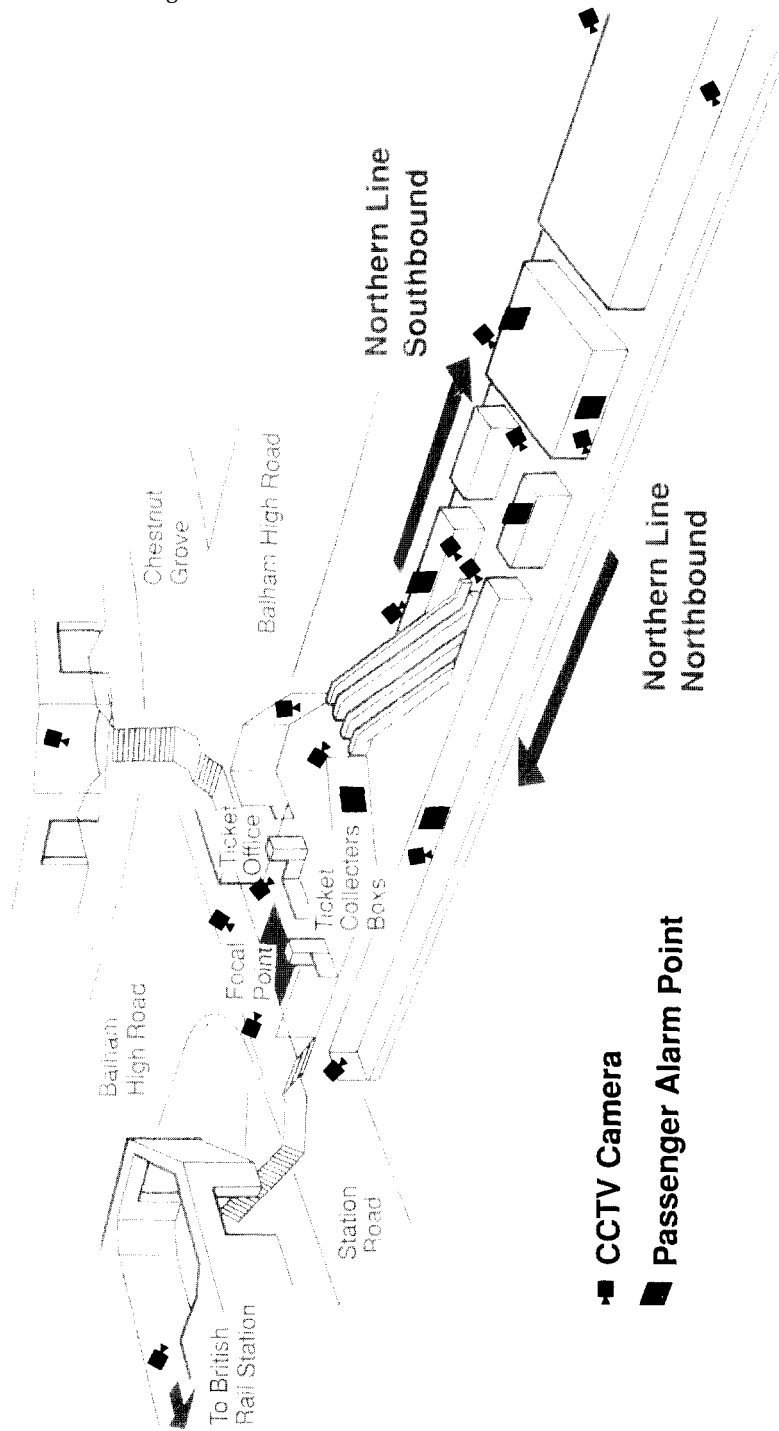


Figure 9. Balham Underground Station



It is also important to recognise that the measures were introduced in an area where it was known that the police were very active. Previous evaluations have shown that where CCTV has reduced crime it is associated with increased detection of offenders (Poyner and Webb, 1987; Poyner, 1988). The CCTV cameras that Mayhew et al (1978) concluded had reduced thefts on the south end of the Northern line were also introduced during some heightened policing of the area. It seems most likely that the policing and publicity surrounding the Guardian Angels would have contributed to perceptions that there was an increased risk of being caught.

The growth in robbery at the pilot stations during 1990 suggests that the effect of the project is wearing off, although further monitoring will be required to establish the significance of the drop in robbery at the end of the year. The most likely explanation for this increase in robbery is that offenders have discovered that the CCTV surveillance system and the focal points do not increase the risk of being caught, as first thought. This compares with results described by Austin (1988) who showed an initial increase in offenders wearing disguise following the introduction of CCTV into Building Society branches. This effect wore off, and although Austin has no clear explanation why this was so it is possible to speculate that this, too, related to offenders realising that the presence of cameras did not, in fact, increase risk.

Interviews with offenders convicted of robbery on the Underground, commissioned by London Underground, indicate that the effectiveness of CCTV surveillance and staff presence needs to be demonstrated by more arrests and convictions before there will be any lasting effect on criminal behaviour (Steer, Davies & Gleave, 1988). There are a number of possible reasons why this has not been achieved. First, it may be that incidents are taking place out of sight of the cameras, for example on trains or in blind spots on the station. Secondly, the task of arresting offenders is defined as a police, not a staff responsibility, so there may not be any immediate active intervention in those incidents which are witnessed by staff. Thirdly, there have been problems in maintaining the CCTV equipment and the quality of the video tapes has not been good enough to produce useful descriptions of offenders or evidence that can be used to bring a successful prosecution. This last point is currently being addressed by London Underground.

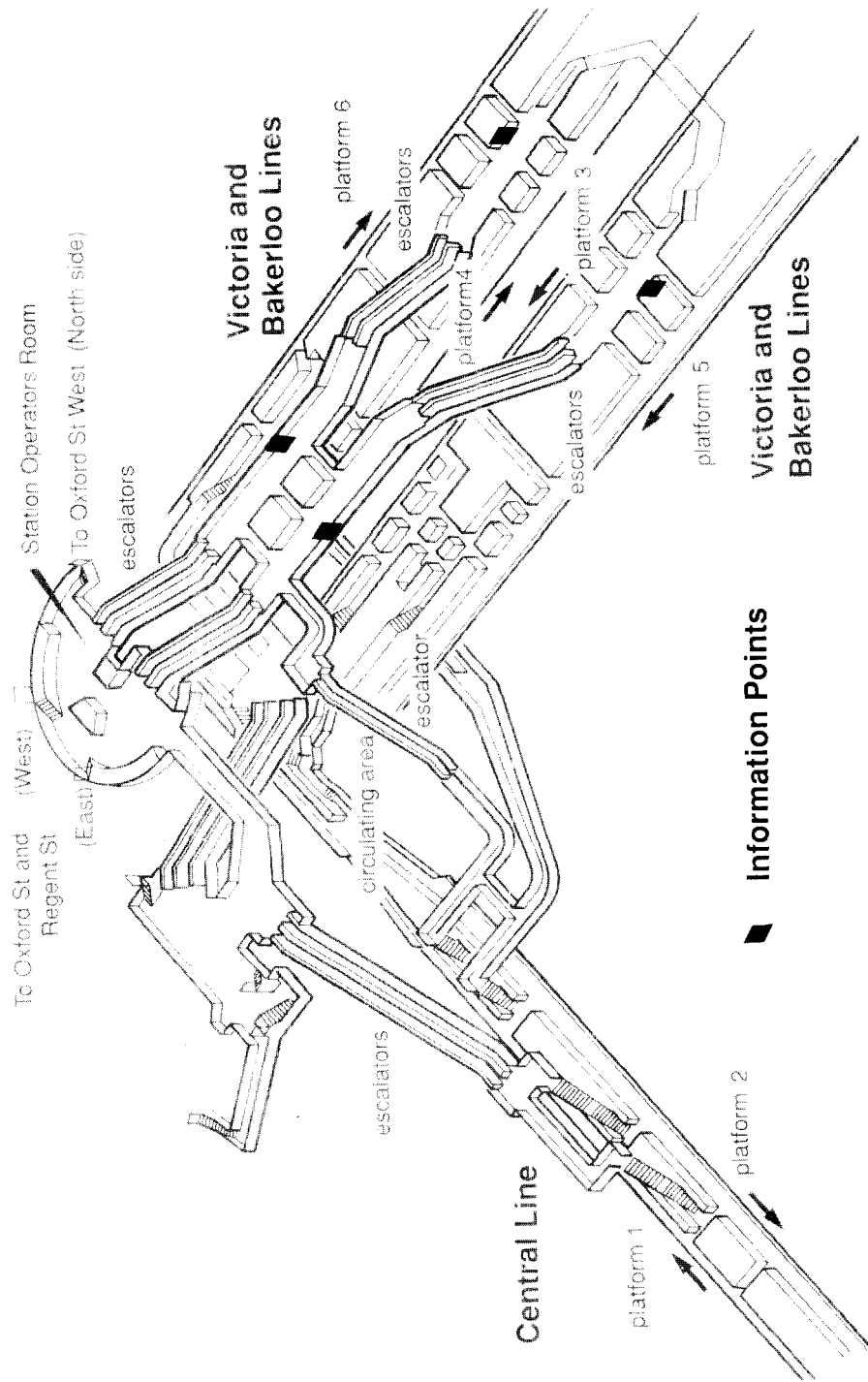


Figure 10. This diagram of Oxford Circus station illustrates the size and complexity of the station.

## **The project at Oxford Circus**

This central London station is one of the busiest and most complex on the Underground system. As well as serving one of the busiest shopping streets in the country, it is also an interchange station for the Victoria, Bakerloo, and Central lines. An estimated 250,000 people pass through the station each day. It has 14 escalators, six platforms, and eight entrances/exits. Figure 10 describes the network of passenger access routes throughout the station, showing the street entrance/exit points, the three pairs of platforms, and the interconnecting subways.

The Department of Transport study showed a very large number of thefts reported at Oxford Circus in 1985. The working group also felt that robbery and assaults on passengers were problems, although on a much smaller scale.

### **The measures**

The strategy in this project was to create a linked system of CCTV surveillance and passenger alarms similar to that installed at Clapham North-Tooting Broadway stations. Oxford Circus was already well equipped with 30 CCTV cameras monitored from a station operations room and station radio was also in use, so much less physical work was required to establish this project. Video recording facilities were not introduced into this CCTV system.

#### Passenger Alarm Points

34 passenger alarms, of the same design used at Clapham North-Tooting Broadway, were installed on platforms and subways. Not all points could be viewed from the existing CCTV cameras. Where this was possible the appropriate camera would be automatically activated when the alarm point was used. An additional station inspector was recruited to monitor these alarms from the station operations room between 11am-7pm.

#### Station Operation Room

The walls of the station operations room, located in the ticket hall at the top of the escalators (see figure 10), were replaced with clear glass above waist height so that passengers could see the staff inside.

#### Information Points

Four of the booths shown in figure 11 were installed on the station. Two were located on the concourse at the top of the escalators leading down to the platforms, and two were installed on the Victoria and Bakerloo platforms (one on each of the southbound and northbound platforms). Figure 10 shows the locations of these



booths on the subway system. Extra staff were recruited so that at least one booth would be manned between 10am-4.30pm and 6pm-10pm. Booths were equipped with a telephone and staff provided with a radio.



Figure 11. Information points were provided to increase staff presence on the subway system at Oxford Circus station.

### Police

It was arranged for two British Transport Police officers to be on duty patrolling the station at all times.

This project became operational in April 1988.

### **Analysis of crime data**

Table 4 presents annual crime figures for robbery, theft from the person, and assaults on passengers at Oxford Circus and Tottenham Court Road over a six year period. Tottenham Court Road was selected as the control station against which to measure any changes in crime at Oxford Circus. The data are again from London Underground's reports to the Department of Transport.

Table 4. Crime at Oxford Circus and Tottenham Court Road Stations, 1985-1990

	1988	1989	1987	1988*	1989	1990
<b>ROBBERY</b>						
Oxford Circus	27	20	12	32	29	29
Tottenham court Road	nk	6	24	25	24	14
<b>THEFT FROM THE PERSON</b>						
Oxford Circus	340	375	394	397	451	384
Tottenham court Road	nk	208	282	281	214	250
<b>PASSENGER ASSAULTS</b>						
Oxford Circus	13	17	28	35	32	16
Tottenham court Road	nk	16	7	20	19	16

\* project implemented in April of this year

Table 4 shows the very large numbers of theft consistently reported at Oxford Circus. There is no evidence from this data that the project has been able to reduce these and there seems no change in the incidence of robbery or assault on passengers. This is supported by the data in table 5, comparing crime in the 12 months before and after the project became operational.

Table 5. Crime at Oxford Circus 12 months before and after the start of the project

	April 1987- March 1988	April 1988- March 1989
Robbery	23	30
Theft person	380	407

## Conclusions

There is a problem in assessing the effect of this project on theft. The data in tables 4 and 5 are figures supplied by the British Transport Police to London Underground, and refer to incidents reported at Oxford Circus. Most of the theft is thought to be pickpocketing, and so in many cases victims may not know where the theft took place. It seems likely that some thefts reported at Oxford Circus will have occurred on another part of the Underground system or in Oxford Street and the West End stores, and thefts which did occur at Oxford Circus would be reported at home stations or to other police forces. It is therefore unclear from this data what the effect of this project has been on theft.

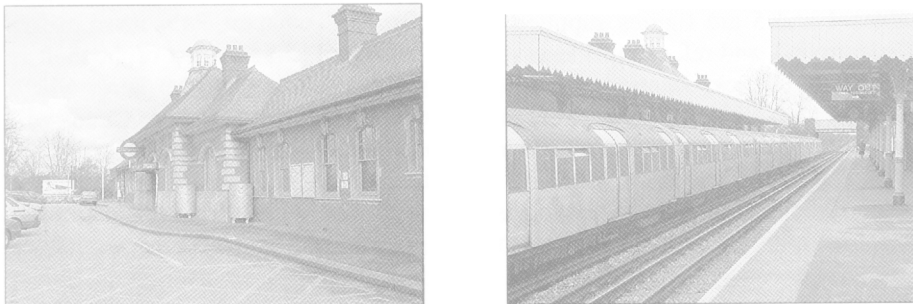
The robbery data is more reliable and shows no evidence that the project has been an effective crime prevention initiative. There are likely to be a number of reasons for this. First, there was very little visible sign that any attempt was being made to reduce crime at this station, unlike at Clapham North-Tooting Broadway stations where new and very conspicuous measures were introduced. The only new measures at Oxford Circus were the Information Points and the more visible station operations room. These were focused on the entrance routes into the station, leaving the vast network of connecting and exit subways untouched as figure 10 shows. Also, only one of the Information Points was manned at any time. The deterrent value of this project was therefore minimal.

Secondly, the nature of the problems and the complexity of the environment make it extremely difficult to use CCTV to detect and catch offenders at Oxford Circus. Pickpocketing is a surreptitious crime and robbery can be a very quick event, for example snatching a bag or personal stereo, and easily missed by someone trying to monitor a CCTV system of 30 cameras or more (there was no video recording facility at this station). Offenders can quickly escape into the maze of subways, and leave the station on a train from any of the six platforms.

## Fear of crime

The stations between Leytonstone-Barkingside on the east end of the Central line were selected for a project to reduce passengers' fear of crime. Crime is reported in very low numbers at these stations. However, it was thought that fear of crime would be more of a problem, based on the 1986 consultancy report that passengers exaggerated the risk of crime at quiet, suburban stations, and were consequently anxious about using them.

The environments of these six stations are extremely varied, with three stations being above ground and three underground. This part of the Central line was built partly on the existing LNER railway line, and three of these stations incorporate at least part of the original Edwardian station built above ground. The train travels in pleasant countryside between Newbury Park-Barkingside. The entrance to Gants Hill, one of the underground stations, is located in the middle of a complex subway network with nine entrances/exits. Staff presence at these stations, particularly those underground, seems to be relatively low.



Figures 12a and b. Three of the Underground stations selected for a fear reduction project were built at the location of the LNER railway stations. The photographs of Barkingside station illustrate the suburban location and the open air platforms.

## The measures

The main measures to be introduced at these stations were Passenger Alarm Points, with between two and five alarms installed at each station, mainly on the platforms. These are the same design as those used in the other pilot projects. Passenger alarms were to be monitored by the existing booking office clerks. No extra staff were recruited for this task and no extra payments were made, as at the other pilot projects, with the consequence that some staff were initially reluctant to operate the system. There was also some vandalism to a passenger alarm monitor.

Some other measures were also introduced, mainly at the three underground stations. New waiting areas were provided, under the supervision of the booking clerks, and some mirrors were provided at corners. An Oxford Circus style Information Point was installed on the platform at Gants Hill.

## Effects on fear

The effect of all three pilot projects on passenger attitudes and feelings was assessed by questionnaire surveys commissioned by London Underground. These examined passengers' perceptions of crime risk on the Underground, usage of the system, and opinions on station environments before and after the pilot projects became operational (Steer, Davies and Gleave Limited., 1989). The questionnaires were administered to passengers who regularly travelled on the Underground during off-peak periods (10am-4pm and 7pm onwards), when passengers were considered to be most anxious about using the Underground.

Respondents were selected by approaching at random households within 10 minutes walk of each station involved in the Clapham North-Tooting Broadway project, the Leytonstone-Barkingside project, and their matched control stations (Highbury & Islington-Walthamstow Central and Highgate-Totteridge & Whetstone respectively). Only one respondent per household was interviewed. The number of people interviewed from each of the four 'corridors' varied between 273-288 in the 'before' survey and between 290-385 in the 'after' survey. Data for Oxford Circus and Tottenham Court Road was obtained from passengers who said they often used these stations.

The survey team found limited evidence of change in passengers attitudes and feelings which could be attributed to the pilot projects. It was felt that this was due in part to the 'after' survey being conducted only a few months after the project measures had become operational. Also, it was thought that media attention given to the arrival of the Guardian Angels and to a murder on a Central line station would have affected opinions in a negative way. However, the survey team felt that there were a number of "positive indicators which can be taken to signal good initial response to the pilot measures" (Steer, Davies and Gleave Limited., 1989: 42). Some of these we described below.

One of the clearer effects of the projects seems to have been to improve passengers views of London Underground as an organisation. Table 6 shows responses to the statement "London Underground are doing as much as possible to make the Underground safer."

Table 6. "London Underground are doing as much as possible to make the Underground safer"

	% Agree		% Neutral		% Disagree	
	Before	After	Before	After	Before	After
Pilot Stations	19.5	29.8	15.4	29.2	65.1	41.0
Control stations	21.9	19.8	15.4	18.5	62.7	61.7

Following this item in the questionnaire, respondents were asked whether they thought the Underground in general was becoming more safe from crime or violence, staying about the same, or becoming less safe. The change in pattern of responses was very similar, as table 7 shows.

Table 7. "Is the Underground becoming more or less safe from crime or violence or staying the same?"

	More safe		About the same		Less safe	
	Before	After	Before	After	Before	After
Pilot Stations	5.2	13.0	31.4	38.6	63.4	48.3
Control stations	6.0	6.2	34.1	40.1	59.9	53.7

The data on how safe passengers feel when using their local stations shows less evidence of any beneficial effect of the projects. Respondents were asked to rate their local station along a five point scale ranging from very safe to very unsafe. Table 8 shows the mean scores for the pilot stations and the control stations.

Table 8. Means scores for personal safety/security

	Before	After
Pilot Stations	2.9	2.9
Control stations	2.7	3.0

## Conclusions

There does seem to be a certain logic to this data. They suggest that there has been some public relations benefit for London Underground as a result of these projects. Local users feel that London Underground are doing more to make the Underground a safer transport system. However, the survey reveals little change in how passengers feel when using these stations, although it could be argued that the 'after' survey was conducted before any such change might have been expected to develop. The same may be said of the survey's failure to find any increased usage of the Underground as a result of the projects.

The survey team concluded that there was a need to inform passengers about the security measures. It was found, for example, that even the focal points at Clapham North-Tooting Broadway had gone unnoticed by 40% of local users. It was thought that staffing increases were particularly important to publicise, as passengers seemed to be more reassured by staff presence than by security equipment.

## **Reducing crime on the London Underground**

These pilot crime prevention projects have met with variable success. The Oxford Circus project does not appear to have reduced crime. The Clapham North-Tooting Broadway project did reduce robbery, although the contribution of events which took place independently of the project such as policing and publicity has to be recognised. There is no evidence of any change in how safe passengers feel when using the pilot stations, although the projects have encouraged more positive views about London Underground's efforts to make the system safer.

### **CCTV and staff supervision**

CCTV is often installed in Metro systems for security and operational purposes. The findings from London Underground's pilot projects, and from other crime prevention research, show that CCTV can help to control crime under certain, well-defined circumstances. CCTV does not seem very useful in large, complex, and crowded environments to deal with more surreptitious behaviour such as pickpocketing or shoplifting. However, CCTV has been successfully used to reduce breaking into cars in an open car park (Poyner & Webb, 1987) and damage to top decks of buses (Poyner, 1988). These are more conspicuous behaviours and the environments are more easily supervised, so that offenders were either caught red-handed or tracked down later because they were wearing a distinctive school uniform. In both cases, the increased detection of offenders was well publicised locally.

It seems clear that the effectiveness of CCTV in reducing crime depends on how much potential offenders associate it with an increased risk of getting caught. The other elements of London Underground's strategy, particularly the improved visibility and accessibility of staff seem likely, therefore, to have made an important contribution to reducing robbery at the south end of the Northern line. The potential value of staff presence on stations has also now been recognised by the RATP in Paris. However, staff presence will not by itself be sufficient to maintain low crime levels if it is not accompanied by an increased capacity to catch offenders. This means either members of staff actively intervening to make arrests, or a very much swifter response from the police. The police emergency response time on the low crime Hong Kong MTR is usually 90 seconds, and no more than 3 minutes (Gaylord & Galliher, 1991).

### **The search for new measures**

There is already evidence that London Underground is having difficulty maintaining the pilot projects. Information points are no longer manned at Oxford Circus, and the extra police presence has been withdrawn. The increased staffing required to

man the focal points was initially funded from the grant set aside for the pilot schemes. Local managers now have the problem of maintaining this level of staffing from their own budgets, and this will need to be carefully watched to ensure continued operation.

There is clearly a need to maintain efforts to control crime on the Underground, and to develop alternative strategies which do not require such constant resourcing. This will require more detailed description of crime problems than has so far been carried out. London Underground's current approach, based on the Department of Transport report, involves rather general analyses of police categories, such as robbery and theft. The use of police categories in this way hides many different sorts of incident, which have different possibilities for prevention. For example, a manual search through the police records of robbery at Stockwell revealed the following incidents:

- armed hold-up of passenger on station
- gold chain snatched as train doors close, leaving victim stranded on train
- steaming (large groups of youths surge through train, grabbing what property comes to hand)
- school children pick on another school child and steal rings
- victim discovers gold chain missing after fight

It is particularly important to differentiate between offences on trains and those on station platforms or elsewhere when designing preventive measures. London Underground should therefore consider undertaking more precise descriptions of what behaviour is involved and the circumstances under which it arises. A good example of this process is provided by Poyner & Warne who produced a classification of assaults on London Underground staff (Poyner & Warne, 1988). Although this process involves a good deal of initial effort, it should give rise to new, more effective, and better targeted ideas for crime prevention.

The recommendation of both the Department of Transport and the 1986 consultancy reports that crime prevention and passenger security should become an integral part of Underground operational management has been implemented with the continued existence of the Passenger Security Steering Group and appropriate organisational support. The structure exists within London Underground Limited, therefore, to take receipt of detailed crime data and to act on it. There is, however, a need within the organisation for expertise in crime pattern analysis and crime prevention together with knowledge of the Underground system and its management. The creation of such a post within London Underground would assist in the ongoing development of a more effective preventive response to crime. It is perhaps worth mentioning that the development of a crime prevention programme within an organisation the size and complexity of London Underground Limited is not a one-off task. It is an ongoing process which needs to be sensitive to the organic nature of the system and the changing face of crime within it. The development of a

sound data base is the first step in developing a strategic approach to prevention.

### **Longitudinal evaluation**

This report shows the importance of monitoring projects over a long period. It was only by examining robbery over five years that the full contribution of the police at Clapham North-Tooting Broadway could be appreciated. Mayhew et al (1978) also pointed out the need to monitor the effects of CCTV on crime beyond the one year they were able to examine. They felt there was a possibility that the crime reduction was due to the novelty of the system which might wear off if potential offenders discovered there was less threat than they just imagined. This additional monitoring was never done.

### **Evaluation of operational changes**

It is important to recognise that operational changes may affect crime and other anti-social behaviour, as well as measures specifically intended to do so. Much more needs to be done to identify these effects, which may be very specific. For example, it has been suggested that the new Underground Ticketing System may, in the long term, reduce assaults on staff by passengers trying to avoid paying fares (Poyner & Warne, 1988). This should be examined further.

Staffing is another operational issue which needs further examination. The trend in many public transport systems in this country and elsewhere has been to reduce staffing levels, mainly through changes in ticket purchase and inspection processes. Staffing has not, therefore, been seriously pursued as a crime prevention measure in this country because it is seen as unacceptably expensive. However, little effort has been made to evaluate the cost-effectiveness of staffing compared with other responses to crime problems. In some situations, increased staffing may provide other benefits such as reduced ticket fraud and increased usage of the system (see, for example, van Andel, 1988). There may also be more or less cost-effective ways of managing and deploying staff. For example, van Andel concluded that random ticket inspections were equally effective in reducing ticket fraud as constant staff presence. There may also be particular locations where staff presence has most impact, for example on trains where it may even be possible to imprison offenders while the police arrive to make the arrest.



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# Appendix: Map of the London Underground System



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1. **Reducing Burglary: a study of chemists' shops**  
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