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VANDALISM, TERRORISM AND SECURITY IN URBAN PUBLIC PASSENGER TRANSPORT

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VANDALISM, TERRORISM AND SECURITY IN URBAN PUBLIC TRANSPORT

EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT (ECMT)

The European Conference of Ministers of Transport (ECMT) is an inter-governmental organisation established by a Protocol signed in Brussels on 17 October 1953. It is a forum in which Ministers responsible for transport, and more specifically the inland transport sector, can co-operate on policy. Within this forum, Ministers can openly discuss current problems and agree upon joint approaches aimed at improving the utilisation and at ensuring the rational development of European transport systems of international importance.

At present, the ECMT's role primarily consists of:

– helping to create an integrated transport system throughout the enlarged Europe that is economically and technically efficient, meets the highest possible safety and environmental standards and takes full account of the social dimension;

– helping also to build a bridge between the European Union and the rest of the continent at a political level.

The Council of the Conference comprises the Ministers of Transport of 43 full member countries: Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, FYR Macedonia, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Serbia and Montenegro, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and the United Kingdom. There are six Associate member countries (Australia, Canada, Japan, Korea, New Zealand and the United States) and one Observer country (Morocco).

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The ECMT's Documentation Service has extensive information available concerning the transport sector. This information is accessible on the ECMT Internet site.

For administrative purposes the ECMT's Secretariat is attached to the Organisation for Economic Co-operation and Development (OECD).

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SUMMARY

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1. PUBLIC SAFETY AND PUBLIC SPACES: THE CITIZEN'S FEAR OF STRANGERS

Over the past few years, increasing importance has been attached to the subject of public security in public places, in the streets and open spaces and particularly at stations, bus stops and any other places where people come into contact with strangers. Inspired by developments in New York and the "zero-tolerance" strategy followed there, urban and district authorities have begun to pay particular attention not only to public security but also to what is referred to as the "subjective sense of security", marred by the often groundless but all too common subjective fears and anxieties of citizens. Empirical studies in this field have shown that there is usually no correlation between the crimes reported in surveys (by the victims themselves), police records of crime and individuals' subjective sense of security. In the case of Germany, for example, it has been possible to show that there is no connection between the levels of criminality in a city, region or federal state and the fear of crime and subjective sense of security revealed by surveys. The situation is clearly depicted in Picture 1 (in annex), based on the results of a survey conducted in Germany in 1996, in which 20 000 citizens were questioned[1].

These findings have significant consequences: public discussion focuses more closely on the citizens' subjective sense of security – hardly considered until now – and on the associated problem of unknown cases that are not reported. The essential theoretical and practical considerations related to the problem are presented below.

Public security, like individual security, is increasingly seen as an important feature of post-modern society, both in the "private" and in the "public" domains, of which local transport is a part. The democratic state has a duty to guarantee the security of its citizens in public spaces and it is increasingly judged by its success in fulfilling this duty. The same is true of local transport: important factors in public transport include not only punctuality, value for money and quality, but also the feeling that it is safe to use. Security is of considerable importance as a locational factor both for firms and service companies and, increasingly, for private individuals.

Generally speaking, security depends on the intangible infrastructure of all social groups, though mainly that of the sections of society who use local public transport. Here, the perceived quality of life need not be identical to the actual quality of life and the subjective sense of well-being. As early as the seventies, though to a greater extent in the eighties, criminological research was able to show that special as well as routine preventive measures had their limits. The problem of criminality could not be solved either by treatment/therapy or by deterrence/repression. Even conventional wisdom on police measures had to be abandoned, including the idea that it was possible to increase the probability of detection only to a limited degree and that, even where it was increased (by a massive police presence, for example), the problem was not solved but merely transferred to another place or made to assume a different form.

Even the declining opportunities for crime and the protective measures taken by individuals do not lead to a real reduction in crime, at least not always and not permanently. It has thus been impossible to implement the "defensible space" scheme or the "social engineering" scheme involving control networks. Moreover, security achieved through an excessive police presence may lead to a far

stronger feeling of insecurity and a greater perception of lawlessness, which counteract the moves to instil a greater sense of security.

The example of New York has shown the following: recorded crime undeniably fell there and many citizens and visitors reported that they now felt safer in certain areas of the city. Bratton, the chief of the New York police, had taken the so-called "zero-tolerance strategy" from the field of public transport. He and his successor, Safir, wanted to apply the strategy that had been effectively implemented there to city streets and open spaces. The success of the initiative was nevertheless highly controversial, not least because of the often brutal behaviour of the New York police, mainly towards marginal groups and minorities. While the New York model[2] and the fall in crime in the USA may have attracted world-wide attention[3], New York's Mayor Giuliani and his chief of police were also the object of severe criticism up until 11 September 2001. Thus, as early as 1997, 54 per cent of New Yorkers were of the opinion that the police lied, broke laws and falsified evidence in order to increase the number of convictions. By 1998, the number of complaints against the police had risen by 40 per cent on the 1995 figure and in 1997 the City of New York had to pay around 27 million dollars in compensation for unlawful police action. At the beginning of 1999, two-thirds of New Yorkers believed that the use of violence against minorities was very widespread in the police and the proportion of the population that supported the policing strategy of Bratton and Giuliani fell from over 80 per cent to 42 per cent. Three-quarters of black New Yorkers and at least a third of the whites rated their police as "unsatisfactory" and more than half of the population as a whole believed that most police officers used more force than was necessary when on duty[4].

Moreover, comparable falls in crime levels have been noted throughout the USA and in states that have not adopted the "New York model". In Boston, where the police have followed a quite different course from that of their New York counterparts, co-operating closely with citizens and community institutions, the decline has been even sharper. Homicides there have fallen by 77 per cent over the same period[5], despite the fact that the Boston police force has not taken on more officers or adopted the New York line. Indeed, relations between the police and the ethnic groups in Boston have visibly improved with, for example, black councillors meeting regularly with the police to discuss appropriate strategies. The "ten-point coalition" may have been the real key to success, together with a clear separation between the police leadership and the police authority and rigorous prosecution of police misconduct. Other models, such as that of Chicago[6] have also shown that co-operation with citizens is the decisive factor and that there are lessons here for local public transport.

The American experience and various European projects show that a communal security plan, like a communal transport plan, needs to be tailored to the situation. Such a plan calls first of all for a precise and comprehensive assessment, taking stock of the problems and difficulties as well as the opportunities in a given municipality or a given area. Just as the fit of a made-to-measure suit depends on accurate measurements, a customised security plan can only be as good as the assessment of the framework conditions it is designed to deal with.

This means:

First of all, it is necessary to analyse the known security situation, as revealed, for example, in the crime statistics or in the records of the local transport operator. Recognised limitations, such as the problem of unknown cases that are not reported and any factors that may affect reporting behaviour, are to be taken into account in the process.

Second, it is necessary to analyse the subjective sense of security of the citizens or the customers as well as the general problems cited by them.

The modus operandi is therefore important since it is necessary to change the subjective perception and the objective situation. It also provides a better focus on the difference between the subjective sense of security and the objective situation. This analysis draws attention to the situations and circumstances that disturb individual citizens or customers and might otherwise go unnoticed. The analysis may be made on the basis of a representative but selective survey (e.g. a survey of experts or a series of interviews with opinion formers). If these surveys lead to perceptible change, their consequences are not limited to the information they yield: citizens and customers feel that they and their problems or needs are being taken seriously. Here, the value of the analysis lies in the way in which it identifies the problems and fears experienced by citizens and customers and provides for common remedies.

Of particular importance is the task of determining when a problem directly concerns (for example) the operator, when it is a "mixed problem" concerning various institutions and when the problems that arise or become manifest in the local public transport sphere are actually the responsibility of other authorities and institutions (vagrancy at railway stations, for example). These problems can only be solved in co-operation with other bodies or by other bodies.

In short, an analysis of this kind may have various consequences, including more rigorous control and surveillance measures, further preventive measures (including technical ones) and even completely new approaches. It is important to involve all persons and institutions with responsibility in the district from the outset, both in the analysis and in decisions on the conclusions to be drawn from it.

Whenever measures are adopted, it should be borne in mind that the fear of criminal acts *per se* (i.e. of being the victim of such acts) is actually a secondary concern for most citizens and is often overestimated. If citizens are asked to speak frankly of the problems that threaten them or lower the quality of their lives, only a small minority actually say they feel threatened by crime. If, however, the subject of crime is raised explicitly, the majority of people questioned will acknowledge that it is a problem. They will respond as they would when asked specific questions about particular places or situations. Crime is seen as a problem, not only by older people, but also increasingly by younger people. Various surveys in Germany have revealed a marked fear of crime amongst males aged 14 to 20 and women below 25, together with an associated trend towards behaviour designed to avoid it, particularly on the part of women. These trends point to a decline in the quality of urban life, even in municipalities with rich historical traditions, reflecting as they do the change in the function of the inner city (predominance of the commercial function with the loss of the residential and communications functions).

The perceived threat of crime is only one (and by no means the dominant) aspect of the development of the urban environment. One need only consider the much greater importance the public attaches to the problem of transport. Thus in all surveys in which citizens are asked "open-ended" questions – i.e. without multiple-choice answers – about the most serious problems in their district, transport problems always come out top[7].

Why then, even though from a strictly objective standpoint there is often no cause for concern, is the public afraid? A survey the author conducted at the beginning of 2000 in four Swiss cities on the subject of victimisation, fear of crime and assessment of the police yielded the following results. As regards the fear of crime and the sense of personal insecurity, the respondents who had themselves been victims of crime were no different from those who had not been victims. However, those who knew somebody who had been a victim of crime exhibited far higher levels of fear and anxiety – and this was true for all areas and in all places, even in the individuals' own homes, despite the fact that they themselves had not been victims of crime. It is thus clear that "the sense of victimisation

resulting from hearsay" has more serious negative effects on the individual's sense of security and hence quality of life than actual victimisation (this applies in the case of less serious crimes that are not repeated)[8]. This means that the communication of insecurity is more important or more threatening than insecurity or security itself. It is well known that a poor image (even in the case of local passenger transport operators) can be acquired very quickly, but can only be shed very slowly and at great expense.

In this and other surveys we focused more closely on precisely what makes the public afraid and what they are afraid of. The public feel afraid wherever it is dark, wherever it is, in the broadest sense, "disorderly" and wherever there are "strangers". This fear is an indirect expression of the primordial fears which originally served to help and protect man: it was impossible to know whether the intentions of an approaching stranger were good or bad. But this fear has since become more of a burden, paralysing the individual, and is increasingly exploited for socio-political ends.

What lies behind these, objectively speaking, largely unfounded fears? Empirical investigations indicate that a transference occurs, whereby abstract and normal existential fears are channelled into the specific fear of crime. Many citizens see both their own future as individuals and the future of society as something threatening and not as a refuge or a "promised land". A "political economy of insecurity", as Bourdieu terms it, is spreading; it is "tormenting the conscious mind and the subconscious[9]". But to get through life safely, you need firm ground under your feet and because the ground is becoming more and more shaky, unstable and unreliable, confidence – in the State and its organs, and also in other people – is evaporating[10]. People withdraw, cut themselves off, deplore the growing egotism, nihilism and cynicism of their contemporaries and call upon strong government, the criminal law and the police to deal with the problems which (so they allege) are caused by others and which (so they believe) can be specifically identified. If the global economy, the struggle for power against a background of organised state terror, the decline of the health service and the uncertainty surrounding pensions are found to be too complex, insufficiently transparent and beyond their control, people will dwell upon the most obvious threats and the "usual suspects", delivered directly to their homes. At this point the asylum-seeker, the black African drug dealer or the foreigner will generally become a scapegoat for those whose fears are not specifically defined and are therefore uncontrollable. And their attitude receives strong support from politicians inasmuch as they foster the notion that one need simply expel all foreign criminals as quickly as possible (or better still, not let them into the country in the first place), and the problems will be as good as solved.

Sociologists, like Jürgen Habermas, say that modern societies are marked by increasing individualism in lifestyles, more and more searching for the meaning of life down various avenues, more marginalisation and more "filtering-down", the impoverishment of communication and a consequent fall in the level of interaction, lower tolerance thresholds, less willingness to settle conflicts informally and, finally, the increasingly inhospitable nature of cities, as described by Alexander Mitscherlich as early as 1969[11]. Furthermore, there are many signs that the social contract that has prevailed for years, indeed centuries, is being rejected, power relationships are hardening and an arrogant liberalism is being proclaimed, which dismisses or even justifies unemployment. Pierre Bourdieu has called this the return of social chauvinism[12].

This development gives rise to insecurity, mistrust, fear and greater isolation. Certain visible groups or phenomena (young people, foreigners, disorder) are held to be the cause of developments that arouse negative feelings in the individual, with the result that scapegoats for the changes in society are sought and found. Moreover, the subjective sense of being afraid of them can lead to a sense of victimisation, to an excessive preoccupation: everything centres on this one point, both when other causes of fear and anxiety (illness, age, unemployment) are not present and, more especially, when they are, and are expressed through the fear of crime. Whereas people somehow feel personally

responsible for illness and health, age and social status, crime has to do with "other people", "foreigners", and originates with them. This "scapegoat function" of crime was identified by criminologists a long time ago, but its significance as a factor in people's sense of security is still not sufficiently recognised.

If people are asked precisely what it is they fear, about public transport for example, the same old themes resurface – "strangers" and "young people". "Strangers" are strangers to the locality and to the culture, and young people are considered a particular problem if they are not "local". Accordingly, where the majority of people are strangers, the sense of personal security is lowest; conversely, in small localities where "everybody knows everybody else" people feel particularly safe. Whether people feel secure or insecure, well or unwell, may well depend on whether they know the other people or not. The question in their minds is: "Can I categorise the people I encounter, and do I know what to expect from them?" In local transport, people are faced with a situation in which they are bound to encounter a very large number of strangers, and to an increasing extent. It follows that the situation is bound to be conducive to fear, and we must set out to reduce this fear. To do so it is necessary to learn more of what lies behind these fears and anxieties, so that they may be properly understood. Counter-measures may then be taken, where appropriate. If a person knows the people he has to deal with or the people he encounters, he feels able to categorise the situation in which he finds himself and bring it under control. To the extent that a person is prepared, he is able to adapt his behaviour to make sure he provokes only foreseeable reactions, for "feeling safe" is sometimes just another way of saying "having everything under control". Encounters with groups of (unknown) youths or young adults demonstrate this point: as soon as a familiar face is identified in the group, the sense of strangeness and uncertainty is lifted and fear is banished.

Particularly unsettling are unfamiliar youths or young adults in gangs who may be behaving in an unusual way. The sense of insecurity is increased by the fact that people are normally alone when they encounter these gangs, because adults usually travel alone (especially on public transport). They therefore feel they are outnumbered by the others and hence insecure. Furthermore, a connection is made, consciously or unconsciously, between "hanging around" and deviance and criminality, even if there is no objective proof or suggestion of such a connection. Many of those questioned in the course of the survey the author conducted in Switzerland in 2000 said that the reason why they were afraid in certain places in their town (e.g. the station) was that "(they believed) there were assaults around there[13]", although this was not necessarily borne out by official statistics.

On the other hand, only a fraction of the respondents said that they themselves had been victims of criminal offences in the places they feared. Hearsay, referred to above, clearly plays a more important role here than their own experience. Incidentally, these "victims of hearsay" tend to judge security in their cities more harshly than those who have actually been victims and they demand more police patrols, while at the same time judging the work of the police far less favourably than others. For this reason as well, greater attention should be given to this group.

In addition to individual fears, signs of insecurity or signs of incivilities play an increasingly important role in this discussion, as does the key factor: "social disorder". In the course of the survey conducted in Swiss cities, more than 50 per cent of all respondents cited the city stations as places where they felt insecure or at any rate ill at ease. The usual reason given was the presence of "dubious characters", mainly foreigners whose appearance set them apart from the "natives". People feel ill at ease in places that are dark and dirty and wherever these particular "strangers" are to be found[14]. This point also emerged from several surveys conducted some years ago by a research group of which the author was a member[15].

In one survey the author conducted in southern Germany in 2000, the problems (cited in the questionnaire) were rated as follows: of the "other problems", the ones chiefly identified were dangerous drivers (by up to 53 per cent of the respondents), foreigners or asylum seekers (up to 48 per cent), young people (up to 47 per cent), litter (up to 47 per cent), vandalised telephone booths, drunks and drug addicts (up to 25 per cent each) as well as door-to-door salesmen, house walls covered with graffiti and hostility towards foreigners or right-wing extremism[16].

If any group has a sense of being under threat and of having the quality of its life impaired, it is the elderly, though also -- and increasingly -- children and young people, as mentioned above. This fear can affect everyday behaviour: in the evenings, elderly people either stay in their homes or avoid certain places; young people feel afraid both on the way to school and in school. In Great Britain, a study by the Home Office in 2001 established that vandalism, graffiti and other damage to property were "serious" or "fairly serious" problems for 32 per cent of the respondents; this figure has risen in recent years and the problem now ranks amongst those most commonly cited, alongside "drug addicts or drug dealers" (33 per cent) and "young people hanging around[17]", with young people in particular worrying about anti-social behaviour or the prospect of falling victim to it[18]. The study shows that respondents all agree that litter and graffiti have a negative impact on the sense of security. In the conclusions to this study, the UK Home Office clearly establishes a statistical connection between disorder, crime and the sense of insecurity; it points out, with reference to a study by the US National Institute of Justice, that the connection is not causal, but that disorder and criminality are particularly rife in areas where social control is minimal and poverty levels are high[19]. This study addressed the question whether public disorder led to crime[20]. In the conclusions, the authors show that there is certainly a connection between crime and public disorder, but that disorder is not a direct cause of crime. Rather, the socio-structural conditions of a neighbourhood encourage both at the same time. There is, therefore, little point in getting rid of disorder if the structural conditions are not also addressed.

These factors detract from the quality of life in specific ways, but they are also of more general significance in that they may create a spiral that transforms roads, paths and squares into places of fear. If, for example, more and more people avoid a certain place after nightfall, the general atmosphere of the place will deteriorate, precisely because it is being deserted -- which in turn means that others avoid it, until finally it becomes a no-go area. Fear of crime, whether justified or not, therefore has immense consequences; people avoid certain streets, paths or squares and, as a result, they actually do become more empty and more frightening. This is the beginning of a "spiral of fear": because fewer people are around, the person who happens to be in the area feels more afraid; because he feels more afraid, he avoids the place in future, etc. Many of those surveyed in Switzerland said that the reason they were afraid was that there was nobody around who could come to their aid in an emergency or if they needed help. Other fears play a crucial role here; thus, elderly people rarely go out alone since they are afraid of falling and lying helpless on the ground.

"Transport", whether individual or public transport, is an important factor in the problems faced by urban and district authorities. If citizens are asked to name the most serious problems facing their district, this subject invariably comes near the top of the list. In the annual surveys conducted across the USA, "Development/growth/traffic" and "Roads/infrastructure/transportation" are ranked 5th and 6th, after "Education" (ranked 1st), "Crime/violence" (2nd), "drugs/alcohol" (3rd) and "unemployment" (4th)[21].

Public transport comes out rather badly in terms of security, at least in the USA. According to a Gallup poll taken in 1998, only 12 per cent of the respondents felt "very safe" and 24 per cent "fairly safe" when using local transport services. On the other hand, 42 per cent or 29 per cent felt very safe or fairly safe, respectively, when moving around their own residential district and 59 per cent or 25 per cent when driving around in their own cars[22]. It is worth noting here that, according to this

US study, the sense of security in public transport has clearly deteriorated in recent years, but has improved in other areas (moving around or driving around in one's own district) and, at the same time, the sense of security in the USA as a whole has plainly risen (in 2000, 46 per cent of the respondents were of the opinion that there was less crime in their district than in the previous year; in 1990 the figure had only been 18 per cent, in 1981 a mere 8 per cent[23]), and this is especially true of inner-city areas, that is to say, the areas where public transport plays a particularly important role (Picture 2).

Public order in a particular district presents a number of different facets and is the result of steps taken by various institutions. The subjective sense of security is a more important -- if not the most important -- element in what is loosely termed "quality of life" in the post-modern era. The sense of being able to live without fear of crime and to use public streets and squares and public transport without a care is most marked in periods when basic social provision is best guaranteed and most citizens are not experiencing problems that threaten their very existence. Breaking down subjective fear of crime is an important task and it demands the co-operation of all the institutions in the municipality. These include the local public transport authorities: they too have a special responsibility to address the subjective needs and fears of their customers. Both the police and the public transport operators should not shrink from giving clear information on adverse trends or problems in the district, even if they do not fall within their own area of responsibility.

As to the change in the function of the inner cities, with the increasing dominance of supermarkets and snack-bars and the simultaneous loss of the residential and communications function, the perceived threat of crime is admittedly only one aspect of the adverse trend in the urban environment, though an important one. It is necessary to arrive at a fundamentally different understanding of the problems by considering the root causes. The structural egotism of a fragmented society poses a threat to democratic structures, since democracy means living with and for others. Withdrawal into individualism will lead in the medium term to the erosion of democracies, even those that have hitherto been stable. Without a revival of communication and neighbourliness, no lasting change for the better is possible. It is important that all the institutions in the community be directly involved in dealing with the problems of citizens and that the latter have direct contact with them. If the community is to work together to find flexible answers to the challenges posed by local threats, a new understanding of communal responsibility and entrepreneurial activity is required.

A reliable analysis of the problems is particularly important here since it provides information about situations and circumstances that unsettle the customer and make him feel insecure, even if the problems are not directly related to public security and public order. If information is presented in a way that is impossible or difficult to understand, adding to the difficulty of obtaining the right ticket for the chosen means of transport, the individual's sense of insecurity will increase and the way will be open to other factors deemed to be "dangerous".

By way of local security diagnoses or general reviews, it is possible to refer to studies whose object is to examine the subject of "security and confidence" in a specific, localised context. Two points are of central importance here: first, the realisation that immediate surroundings have a particularly important role in shaping the perceptions of the customers (and affecting their behaviour accordingly); second, the recognition that positive change can only be achieved locally and on a small scale. A "multi-agency approach" to a problem is likely to achieve more than an individual approach. It is particularly important to break with the long-standing philosophy of "more of the same" (Watzlawick); we often find that more of something is not necessarily a guarantee of more success. Sometimes less familiar paths must also be trod, if a problem is to be solved. More security personnel, for example, is not always the right solution. It would seem to be more important to convey a realistic picture of the specific threat through public relations work and confidence-building measures. The deployment of security forces -- suggestive of the military -- in public transport is not suited to the

purpose, as it gives the impression of a permanent, massive threat. Thus, in one study on the police presence, it was established that the subjective sense of security first increased, as expected, as the police presence intensified and subsequently declined as it became excessive[24]. In other studies, it has been possible to show that the awareness of a police presence tends to be associated with a greater fear of crime[25]. It may be true that the effect of a police presence is not the same in familiar places as in unfamiliar ones[26]. Moreover, there is clearly a threshold beyond which it is counterproductive to the citizens' or customers' sense or security.

2. PUBLIC SECURITY, VANDALISM AND GRAFFITI: CONNECTIONS AND ASSUMPTIONS

The subject of "graffiti" is so complex, that only fragments of it can be addressed here. The literature on the subject is immense, even though most of the books are on the artistic aspects of graffiti. The term "graffiti", from the Italian "*il graffito*", was introduced into American English at the end of the sixties to denote daubings and inscriptions emanating from the subculture. But graffiti had existed as a means of communication much earlier on (Picture 3). It has been found on the walls of churches, prisons and castles[27]. The National Socialists daubed the slogan "don't buy from Jews!" as a way of spreading their propaganda, but the resistance also used the medium. The Scholls, for example, called for resistance against the Nazi regime mainly through so-called "template daubings". The "*Solidarnosc*" graffiti on walls at the Gdansk shipyard went all over the world[28]. This clearly shows that graffiti is a communication medium, which is – or can be – used by certain groups for the purposes of agitation. Today the "verbal" form of graffiti has rather been pushed to the background and "American graffiti" has come to the fore. The latter takes the form of sprayed or painted writing and pictures, referred to in sprayers' jargon as "tags" and "pieces". Tags first saw the light in New York at the end of the sixties, when gangs used them to mark out their territory (Picture 3a). From the original "writers", however, there emerged an increasing number of "artists", who wished to stand out from the mass and win fame with larger pictures or objects. Then, as now, "getting fame" was the key to understanding graffiti. The lavish, pictorial displays, called pieces, have always been a particularly good way of becoming known, since they are bigger and more colourful and attract more attention than simple tags. Whether the so-called "graffiti films" (such as George Lucas' "American Graffiti"), books like "Subway Art" by Martha Cooper or the hip-hop culture were responsible for graffiti reaching Europe relatively quickly and taking hold mainly in western European towns, is a matter of debate. It must be acknowledged, however, that the major graffiti movements were to be found in the western European capitals. In Paris, for example, the use of templates produced a quite independent style, which contrasted with the original American graffiti[29]. In the meantime the academic world has been examining the phenomenon of the graffiti scene very closely and has described its special features. As early as 1962, Bruno Bettelheim described graffiti as "symbolic wounds" to cities and civilisation[30], and the attempts to interpret the phenomenon psychologically and sociologically have since been legion[31], as has the number of books on graffiti in particular cities.

The following points are of particular relevance to our own study of graffiti in the context of public transport, particularly rail transport. Nearly all sprayers belong to a group, known as a crew, and sprayers who operate autonomously are the exception. Neither the nationality nor the social status

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of a member is accorded any importance within the group, the decisive factor being the quality and merit of the finished pictures. The common culture of the scene is reflected notably in its clothes, hairstyles and language. Pieces are sketched out beforehand and noted down in individual "black books". These black books are the most carefully guarded items of any sprayer; each one contains a documentary record of his "fame", and can be brought out if, for example, he seeks to join a different group. The tags of other sprayers should not be copied and the tags and pieces of other sprayers should not be painted over.

An essential element for the sprayers is the illegality of graffiti. Special "fame" is attained by "bombing", the illegal spraying of walls or objects. Legally sprayed pictures are regarded as boring, regardless of their quality, since their production involves no danger and therefore holds no attraction. In the graffiti scene this outlook is fundamental to the notions of "fame" and "respect", which are central to an understanding of the graffiti phenomenon.

If this initial point is taken into consideration, it is understandable that the spraying of a train rates fairly highly in the sprayer's scale of achievements. The risk of being caught is particularly high here, as is the risk associated with the actual production of graffiti if the sprayer has to work on a railway track or on a moving train. On the other hand, the public profile of a "bombed" train is very high and fame and respect are always guaranteed. The most exquisite experience for a sprayer is to see a train running the morning after he has been working on it and there are books devoted exclusively to graffiti on trains[32.] Train graffiti is seen as an urban crisis and as the basis of feelings of insecurity[33], but it is also treated as an art form[34] (Pictures 4 and 5).

Graffiti and those who spray it normally have a non-violent, even pacifist character, although a higher propensity to violence has been noted in isolated cases (towards train guards, for example, and even inside the graffiti scene), together with a higher incidence of train spraying and an increase in "criminal energy" (use of disguise, greater strategic planning, etc.)[35]. The depiction of violence is admittedly very much in evidence in individual pictures, but violence is not glorified. Sprayers thus regard themselves as non-violent; damage to somebody else's property is seen as perfectly justified, being associated with the demarcation of territory, a phenomenon that was investigated and described by academics quite early on[36]. Consumption of hard drugs, such as heroin or crack, or the excessive consumption of alcohol, is frowned upon by sprayers, since it makes them unfit for work.

The Internet is gaining increasing importance as a means of communication for sprayers as well as a forum in which to document their "fame". Groups of sprayers, as well as individuals, show their work on the Internet (Pictures 6 and 7), crews are formed, information on places where spraying can be safely carried out (yards) is disseminated and views are exchanged (Picture 8).

The Internet is also used for the purposes of advertising (e.g. spray-cans, Picture 9, and suitable clothing, Picture 10), like the magazines in which train graffiti, for example, is exhibited (Picture 9a).

2.1. Possible preventive and punitive measures: What works? What does not work?

In considering preventive measures, it is particularly important to recognise that any moves to make the daubing of certain walls, trams or trains legal, or even to pay people for doing it, are clearly doomed to failure. They would not lead to a reduction in the amount of illegal graffiti because sprayers who work predominantly or exclusively where graffiti is allowed or in exchange for money are held in contempt in the graffiti scene. In the same way, the provision of special surfaces on which graffiti may be painted is not the right way to prevent the practice.

The use of an anti-graffiti lacquer has proved to be effective, however. This is a transparent paint, which provides a protective coating and prevents the enamel paint from penetrating the paint below, thus making cleaning very much easier. In nearly all the major German cities, protective coatings of this kind are now applied to surfaces that are especially targeted by sprayers.

The fast and simple removal of tags and pieces has also proved to be effective, with the sprayer not always achieving the success he seeks and becoming involved in a "war of attrition" with the authorities that remove the paint. Also worthy of note here is a certain "displacement effect": the districts or areas that are either protected or immediately cleaned of graffiti are avoided and the sprayers switch to other areas.

However, preventive measures to hinder the sprayers may be best implemented in conjunction with certain aspects of community crime prevention, and also with crime prevention measures in schools.

As to punitive measures, so-called "restitution", whereby sprayers are required to remove their own illegal graffiti as a punishment, has proved its worth, in Germany at any rate. Some cities even make their own "anti-graffiti" vehicles, containing the necessary cleaning materials, available for this purpose (Picture 37).

The rigorous prosecution of graffiti sprayers, involving fines, custodial sentences and compensation payments, must always be considered in the light of the possibility that it will exacerbate the situation in which a young person finds himself, with the risk that he will be driven still further into the graffiti scene.

The research projects that focus on the problem of youth subculture in the inner cities should be given more attention than they have received hitherto and should be taken into account when preventive measures are devised[37]. These studies may at least help us gain a better understanding of the behaviour of young people (and not only in relation to graffiti) and to find a measured response to it.

Research projects, studies and seminars on the role of urban authorities in dealing with crime and urban insecurity should also be explored and their findings implemented in the cities concerned[38].

On the other hand, preventive activity by the police, if properly thought out and rigorously pursued, makes a lot of sense and is very successful. Thus the Saxony State Office for Criminal Investigation, which was very successful in using preventive measures and sanctions to deal with right-wing extremism, has shown that a combined approach, in which leaflets are issued, parents are informed, sprayers and wounded parties are involved and offensive police action is taken, is an effective way of clamping down on unwanted graffiti (Picture 11). With the establishment in Berlin of a supra-regional, interstate joint task force on graffiti, in which state and federal police co-operate, information can now be exchanged and co-ordinated action taken against sprayers (Picture 12).

3. SECURITY IN PUBLIC TRANSPORT: RESULTS OF A SURVEY

Between April and December 2001, the author conducted a survey in a total of 19 European countries and 29 major cities[39]. The mayors were sent a letter (Picture 13) asking them for information on the subject of security in local public transport. Contact was also made with transport operators in Geneva, where a computerized documentation and analysis system is in place[40].

Of the countries canvassed, answers were received from a total of 17 cities from 12 countries[41] (or the corresponding transport operators). These were:

Belgium:	Brussels
Germany:	Berlin, Bochum, Chemnitz, Frankfurt, Hamburg, Munich
England:	London
Finland:	Helsinki
France:	Paris
Ireland:	Dublin
Netherlands:	Rotterdam
Austria:	Vienna
Sweden:	Stockholm
Switzerland:	Geneva
Czech Republic:	Prague
Hungary:	Budapest

In some cases, the mayor passed on the questions to the city transport authority or the local passenger transport operator, so that there were no answers from the municipality as such. This illustrates the fact that many municipalities still fail to realise that questions related to problems of security and public order in public transport must also be the particular concern of such organs of local government as the mayor's office and the city council. As in the general area of crime, where the municipalities refused responsibility for a long time and the police were regarded as the sole competent institution, a shift in thinking on the part of the city fathers is required: even where public transport is no longer the direct responsibility of the municipality (as a result of privatisation or the establishment of state enterprises), the problem of actual security and the subjective sense of security in buses and trains, at bus stops and stations is a problem for the city and the local authority.

The fact that some cities did not respond at all may be interpreted in a number of ways. It is certainly true that some cities still believe that by reporting on problems connected with security and public order in public transport they run the risk of damaging their image. It must, however, be acknowledged that this is a short-sighted attitude; those cities that take the matter up in an active and committed way (in Germany, Berlin and Bochum, for example) show that they take the fears and anxieties of their citizens and customers seriously and are prepared to respond to them. But it may also fall to the workshops or the European Conference of Ministers of Transport to request that municipalities deal more openly and more decisively with these problems.

3.1. The range of problems

The range and the importance of problems of security and public order are viewed differently. Some cities have sent illustrative pictures on the subject of graffiti and vandalism (Pictures 14-32).

The RET, responsible for public transport in Rotterdam, writes as follows: *"The kind of problems in our passenger transport system relevant for public security vary greatly. In general, these problems are a reflection of the problems in today's society and unfortunately they also occur frequently in our public transport system."*

In Frankfurt, around 1.5 million euros are spent annually on repairing damage to stations and vehicles, and the transport operator in Helsinki reports: *"The costs of vandalism and graffiti to Helsinki City Transport is about euro 530 000/year. This amount covers the cleaning of graffiti inside and outside trams, trains and buses, broken seats, scratched windows and walls. There is also misuse of the emergency brakes of lifts and escalators. In addition, some trams and trains have to be taken off the line because of graffiti. The cost of unused lines is difficult to calculate."* In Stockholm, the annual cost of graffiti and vandalism is around 10 million euros, the problem being more serious in commuter trains and in the underground. In Berlin, the annual cost for the city trains and the underground is assumed to be over 12 million euros. Picture 33 illustrates the trend in graffiti and vandalism in one federal state (Saxony) in recent years. It is clear that, despite rigorous preventive and punitive action, there has been a definite increase, which must also be apparent in other places.

In Prague, the level of vandalism has risen sharply in the past ten years. Only about eighty offenders are caught in any one year and most vandals are never traced. The offenders who are caught are aged between 12 and 20.

Dublin reports*: "Graffiti is an ongoing problem, and occurs in general on vehicles working in socially deprived areas."* On the subject of vandalism, Dublin also reported: *"Vandalism occurs both inside and outside the vehicle. Inside, it usually involves tearing cushions and back rests with knives, pulling seat frames from the floor, kicking out windows and damaging light shades. Outside the vehicle, vandalism is usually confined to stone-throwing incidents, resulting in window breakage and panel damage. On-bus video cameras can assist in identifying on-bus vandals. Vehicles working in high-risk areas, particularly at night, are fitted with this equipment. The presence in the area of a mobile Inspector, who has contact with Gardai (the Irish police force, TF), ensures that there is a rapid response to a call for assistance from the driver. In one depot, the windows on all double-deck buses are fitted with a plastic film. This is designed to reduce the risk of a missile penetrating the glass and endangering the driver or our customers. This procedure is very successful in reducing injury to customers and driver. However, it is expensive to maintain, as it can be scratched with a knife or sharp object."* Chemnitz (D) also reported that "scratching" was very widespread and that the unsettling effect of dogs in public transport was a particular focus of attention, since it added to the passengers' sense of insecurity.

3.2. Preventive measures

Helsinki submitted the following report: *"In co-operation with Helsinki City Public Works Department, we have initiated a 'Stop to graffiti and vandalism' project. The purpose of this project is to minimise the costs caused by removing the graffiti and scratches on windows and to prevent them. An attempt has been made to solve the problems by increased co-operation with police, communication and control. The most important measures in this project are the following:*

- *Additional control in trams and trains;*
- *The graffiti will be cleaned immediately, 'graffiti causes more graffiti';*
- *If the trams and trains are clean, the follow-up control is easier, because the guards often know who produced the graffiti;*
- *Before cleaning, the graffiti is photographed for later reference.*
- *The media will not be informed of graffiti.*

The concrete target of the project is to cut the cleaning costs by 20 per cent. In addition, the inconvenience to the passengers will decrease. Other solutions -- outside this project -- are to cover the walls and windows with film, because it is easier and cheaper to change the film than the window or the wall. Where the criminal was caught, trials have been conducted in co-operation with social authorities, in which he (or she) was made to clean the tram he/she painted. This solution has not been used very often and it has not been very successful for Helsinki City Transport."

Rotterdam reported the following: *"The solutions to these problems are as diverse as the problems themselves. At the moment, we are working on a fully closed boarding system, which is considered a basic facility in public transport. The necessary organisational, constructional and technical measures increase public security both for passengers and employees. In addition to the excellent effects of these measures on prevention and enforcement, an adequate scheme for the observance of safety should result in an optimum number of measures to increase safety in public transport. This approach was largely applied during the European Football Championship 2000 with very promising results. In addition to the responsibility of the RET itself, close co-operation with the other relevant partners in this process (police, the legal and municipal authorities) is laid down under a public transport enforcement arrangement. Unfortunately, incidents cannot always be prevented, so all parties involved have set up a 'violence protocol', which should lead to an adequate settlement after an incident."*

Brussels wrote: *"In order to clamp down on this activity as much as possible, the STIB is cleaning these vehicles itself. As for the metro stations, a private cleaning company is required under the terms of its contract to get rid of graffiti within 72 hours. A protective coating is applied to the walls of the metro stations. In 1999, following an upsurge in acts of vandalism and assaults on drivers, a further operations and investment programme, intended to improve security, was adopted. It provided in particular for:*

- *A stronger security presence on the network with the deployment of inspectors, stewards, guards and dog-handlers;*
- *Greater security in fixed installations and dead-end sidings through intruder-detection systems;*
- *Video-surveillance systems on metro carriages, trams and buses".*

Paris reported the following: *"As to the security of people and goods, the most serious problem for our passengers is the increased incidence of pick-pocketing on the rail network. As to vandalism, two matters are of concern to us: first, the throwing of objects at buses serving the suburban zones, which causes damage and, more importantly, increases our drivers' sense of insecurity and, second, the daubing of graffiti tags and the scratching of windows on the rail network.*

For tags and graffiti, apart from the human surveillance exercised by various officials, technical measures are taken to protect rolling stock and fixed installations: surfaces are covered with film or coated with varnish. Moreover, the efficiency of the procedures means that the cleaning work can be done as quickly as possible so that passengers may be given the quality of service they expect.

Damage resulting from scratching (windows, lower body work) is still our principal concern, since the RATP can find no satisfactory solution."

Other cities [e.g. Stockholm (S), Berlin, Frankfurt, Hamburg and Chemnitz (D)] also report that the use of new, vandal-proof materials and anti-graffiti coatings on surfaces likely to be sprayed, together with tightened security measures, have helped bring about a reduction in the amount of damage done by vandals and in the cost of making it good. The products used include the so-called "sacrificial" wax coatings. These measures are part-financed (Chemnitz) by public grants. The object is mainly to remove graffiti quickly (in Brussels within 72 hours, in Frankfurt and Munich within 48 hours, in Berlin within 24 hours) or to withdraw uncleaned trains from service immediately (e.g. in Berlin, Geneva and Stockholm). In Dublin, "non-porous roof and side-wall panelling" is used, which is easy to clean. *"Moquette seat covering is chosen (dark colours) which masks felt tip pen, etc. Cleaning programmes and reporting of graffiti ensure that graffiti is maintained at a manageable level."*

Nevertheless, the reduction in criminal offences achieved by such measures is not always clear. The statement by the Hamburg transport authority to the effect that such a reduction led to a greater sense of security is rather contradicted by an answer to a question put on 3.7.01 in the Hamburg Senate[42]. It read as follows: *"On 30 May 2001, Mayor Runde made the following statement to councillors on the question of security in public transport facilities in so far as it affected citizens: 'In the matter of security in public transport, a great deal has happened in the past few years. Considerable progress has been made. Unfortunately this progress has not been reflected in any change in the subjective sense of security.'"*

According to a special survey, the number of criminal offences in Hamburg's public transport did indeed fall from 1 984 in 1997 to 1 537 in 1999; though it rose again to 1 768 in 2000[43]. It must, however, be borne in mind that several million passengers use Hamburg's trains and buses every year. In Munich, the transport operators maintain that a mere 4 per cent of all offences happen in the underground, which carries 800 000 people every day. The Berlin authorities were admittedly able to achieve a massive reduction in the number of offences recorded in the urban railway and the underground between 1992 and 1998 (theft fell from 638 to 124 and assault from 947 to 403[44]); nevertheless, the sense of security in the daytime has not improved and at night-time, in the underground and on the buses, it has even deteriorated[45]. Even in Stockholm, the possibility of reducing graffiti by such methods is viewed rather sceptically. In fact, the problem has rather worsened there in recent years, despite these measures.

3.3. Security personnel

Security in trains and buses is mainly the responsibility of people directly employed by the transport operator, though it is often the responsibility of private security firms (in Stockholm, for example, where these firms also collect information about, inter alia, the graffiti milieu) and sometimes of a combination of different officers (for example, in Berlin, where the transport operator's own personnel patrol with the police and Federal Border Guard and where private security firms are also used; in other cities, the police and the security firms patrol together). It is always emphasized that this work is carried out in close co-operation with the police. In Paris, around 1 000 people are employed by the transport operator (RATP) in the *Groupement de Protection et de Sécurisation des Réseaux*. Brussels (Belgium) has its own *Police Fédérale du Métro* to watch over the buildings and grounds of the *Service Contrôle et Gardiennage de la STIB*. In Copenhagen (DK), it is reported that a "private company" has been very successful in deploying young people "who speak

like the vandals" in the urban rail network. In an automated metro, due to come on-stream in Copenhagen at the end of 2002, "metro stewards" are to be employed (Picture 40).

In Frankfurt, a third of the trains operating after 9.00 p.m. are accompanied by security personnel. In addition, "meeting points" surveyed by cameras are equipped with intercom systems. Munich uses plain-clothes investigators to catch offenders: *"In this way we were able to catch as many as 4 (sic) offenders in 2001 (by the end of September, TF)".*

3.4. Video surveillance and electronic monitoring

In Copenhagen (DK), the local operators reported that video-surveillance in buses and trains was "very successful". Cameras have now been installed in practically all city stations to differing degrees as well as in city trains, trams and buses (in London and Brussels, for example).

3.5. Expulsions, etc.

In Frankfurt, *"a comparatively high number of people are expelled from transport facilities every day because they infringe regulations. They include those selling and looking for drugs, beggars and people sleeping rough."* This is certainly the case in many, if not all stations and, to some extent, even in outdoor areas (as in Stuttgart, for example), though this is rarely stated explicitly by respondents.

3.6. Other matters

In Copenhagen, the abolition of the sale of 10-ticket carnets on buses, which means that the bus driver handles less money, has proved to be very successful.

In Chemnitz (D), the seating arrangements in the parts of buses further away from the driver have been changed, so that the driver is able to have a better view of the rows towards the rear.

In Berlin, only such trains are procured as allow access from the first coach to the last. Call-boxes for passengers and transparent security screens have also been introduced.

Human contact and passenger control is deliberately employed in Berlin to increase the feeling of security on short trains during off-peak periods. It is only possible to get onto buses after 8.00 p.m. by going past the driver, who inspects the tickets.

In Frankfurt, the end walls of the passenger compartments have been made transparent so that the driver can easily see into them.

In Dublin, the introduction of "Autofare" has led to a fall in the number of robberies: *"Since the introduction of Autofare, attacks on drivers, with robbery as the motive, have all but disappeared. However, aggressive customers continue to be a problem, and to protect drivers from attack, we have security screens fitted to all our vehicles. As in the case of vandalism, on-bus video cameras are positioned above the driver, which will assist in identifying an assailant. Cab radio gives contact with inspectors, and an assault siren attracts attention in the event of attack."*

In Stockholm, events are staged in schools by the transport services for the information of 11-12 year-olds; similar events also take place in London.

Stockholm also reports a number of joint projects with industry, organisations and the municipality, though without providing specific information about them.

In Prague, increased surveillance by police and security personnel of areas where the risk of crime is particularly high is regarded as an effective measure.

Also in Prague, the courts increasingly sentence people to community service, the work being to remove graffiti. However, the authorities there have still not had much experience of this "restitution", which is used more often in Germany to very good effect (Picture 37)[46].

Prague magistrates have also made certain public places freely available to sprayers (walls, underground passages, industrial buildings), though this measure has not solved the problems or brought about a reduction in illegal graffiti.

It was expressly pointed out, by Stockholm for example, that the actual objective effects of punitive and preventive measures cannot be proven, or only with great difficulty; the measures are nevertheless being implemented more and more in order to raise the subjective sense of security of citizens and the public. *"The greatest problem caused by graffiti and malicious damage is that it contributes to insecurity and reduces the appeal of public transport"*. Berlin also writes on this point: *"The number of offences against the person on public transport must be rated as fairly low compared with the number in other public places, even though the public assumes the danger to be greater there. Increasing the subjective sense of security is therefore a priority in passenger security"*. Accordingly, a "security scheme for public transport" has been drawn up by the Berlin Council in collaboration with the local transport operators.

4. POTENTIAL FOR CRIME PREVENTION AND PROPOSED MEASURES: A PUBLIC TRANSPORT SYSTEM THAT MEETS CUSTOMERS' REQUIREMENTS AND PROVIDES A SERVICE

A security scheme that meets with the agreement of all concerned should be worth recommending to cities that wish to wage a focused and intensive struggle against the problem of insecurity and unlawfulness in public transport. Meeting customers' needs and providing a service are, without doubt, the overriding goals of a modern, service-orientated local public transport service. This is true for both privately and publicly-owned undertakings and for any mixed forms in the sector. But catering for public need must also involve recognition of the fact that the subjective feeling of security plays an important role in the customers' choice of transport. As long as the citizen prefers his own car, and hence individual transport, not only for reasons of comfort but also for reasons of security, public transport will have difficulty in competing. The solution to the problem therefore consists in actively addressing problems connected with security and public order, never ignoring them and attempting to deal adequately with the fears and needs of customers. A combination of security and order, cleanliness and comfort are the key to an attractive public transport system.

The following factors are important here:

- Technical modernisation in stations (information systems, sale of tickets, etc.) and on buses and trains;
- Awareness of customers' requirements regarding frequency and ease of transport (less changing, more frequent connections);
- No overloading of coaches or vehicles (as a prevention against pickpocketing);
- An adequate degree of comfort;
- Value for money;
- Service (guidance, brochures, etc.);
- Security;
- Cleanliness.

By way of example, the measures adopted in Berlin and Bochum (D) are presented in conclusion[47]. Intensive work has also been undertaken in the former eastern bloc countries, as is shown by the example of Budapest (Picture 34), where the transport operators commissioned an extensive report on the problems faced; unfortunately, it is only available in Hungarian[48].

Just how the available data can be processed, so that a regional approach to security might be worked out, is shown by the example of the Geneva transport operators (Picture 36). They "intuitively" recognised that there was a connection between painted or sprayed vehicles on the one hand and the sense of security and the level of fare-dodging (!) on the other and they set out to investigate this connection using statistical and diagrammatic methods (comparable to "crime mapping"). In this way, it was possible to build up a visually impressive picture of the problem areas, and then devise targeted (and hence effective and low-cost) preventive strategies. Moreover, the following point was taken up at an ISO 1400 environmental protection project in Geneva[49]:

NUISANCE: visual nuisance	Graffiti, uncontrolled posting and vandalism at bus stops and on vehicles.

The subject is also an integral theme in the Geneva transport operator's plan (*Charte Qualité & Environnement*, Picture 41).

4.1. Berlin

The "security plan for local public transport", worked out by the Berlin Senate (the Berlin popular assembly) in collaboration with the transport operators, proceeds on the basis of the following assumptions:

"According to a special survey conducted in the traditional way by the police crime statistics office, the number of offences in public transport fell to 8 043 in 1998 compared with 13 739 in 1997. In 1998, the Berlin transport operators (BVG) and the urban railway (S-Bahn Berlin GmbH) transported a total of 1 030 million passengers; in the light of this figure, the risk of being the object of a threat or the actual victim of a crime is very remote. In 1998, the ratio of the number of recorded crimes in public transport (police input statistics) to the number of passengers transported was 0.000008. The Berlin public transport system is therefore safer than people think... . Willingness to use public transport is influenced by individual judgement, and negative assessments are frequently based on fear of harassment, assault and other crimes. The latter are held to be characteristic of the

public transport system and this perception fosters its negative image. Dirt, vandalism and social problems such as drug-taking and vagrancy, which are also found in public transport, may reinforce the assumption that the public transport universe is anonymous and uncontrolled."

Of particular interest is an analysis of this question which shows how low the risks incurred in public transport are. For Berlin, a comparison of the total number of crimes recorded by the police with the number of crimes against passengers on public transport yields the following figures (offences per 100 000 inhabitants) for 1998:

Crime	Berlin Total	Public Transport
Total theft	250.1	0.01
Pick-pocketing	556.8	0.59
Physical injury	1 182.9	0.04
Sex offences	94.0	0.002

Whereas 95 per cent of customers feel "safe" on the urban railway in the daytime, only 47 per cent feel the same in the evening and at night (after 8.00 p.m.). In other words, more than half of the customers no longer feel safe in the evening and at night.

The report infers from the survey that the public mainly judges the hours of the evening and the night to be unsafe. *"Fear is rooted primarily in the individual's own experience and the experiences he has witnessed, but also in what he hears in his own personal circle and in the media. Crime and violence are given spectacular coverage by the media. Because most people do not have precise information about the prevalence of crime and the danger presented by particular places and situations, individual perceptions are of great significance. The media influence personal opinion and kindle anxieties."*

From a survey conducted on behalf of the transport operators, a breakdown of different people's experience of crime in public transport shows that only a fraction of the respondents had had first-hand experience (personal experience/victimisation). Others had heard about an incident from relatives/acquaintances or had witnessed an incident and the rest had had no personal experience of any incident. *"Reports about incidents in public transport in newspapers and on television may also be regarded as second-hand experiences. The respondents admittedly felt these reports to be exaggerated but many were nevertheless unsettled by them."*

About two-thirds of the respondents said that they sometimes had an unpleasant feeling when travelling in the underground, although nothing actually occurred. Very often this unpleasant, insecure feeling was not due to events that had anything to do with security; however, certain situations were cited, which may be categorised as follows. They include a feeling of insecurity caused by:

- particular persons/groups (58.8 per cent);
- structural factors, such as blind passageways, inadequate lighting, the lack of surveillance equipment (34.0 per cent);
- the actual or apparent absence of staff (11.2 per cent).

According to the report, the current approach to security in public transport assumes *"that passengers' sense of security is both determined by subjective factors (such as being alone at empty stations, actual or supposed vulnerability to attack, agoraphobia, lack of trust in the running of the transport operation, loss of direction) and unfavourably affected by actual shortcomings (such as insufficient surveillance, absence of staff, inadequacy of procedures for helping passengers in emergencies or lack of knowledge about them, blind spots and dark areas in railway stations, lack of cleanliness, insufficient information for passengers)."*

In order to improve the passengers' real and subjective sense of security, the main effort in Berlin is now to be concentrated on the following areas:

- Deployment of personnel;
- Structural/technical and operational measures;
- Improving outward appearances;
- Support for railways, sponsorship, Streetball-Night for young people;
- Improving information resources and data distribution;
- Increasing the number of security personnel (by employing beneficiaries of social benefit, unemployed persons, etc.);
- Introduction of a ban on transporting goods (this measure has already been adopted in other cities, to good effect);
- Ban on smoking and drinking alcohol;
- Payment of compensation as punishment for breach of contract in the framework of a transportation contract.

The report goes on to say: *"In recent years, new, effective strategies have been worked out to improve customer care and security; these strategies call for mobile customer care and security personnel, whose flexibility allows them to control not only the platforms, but also the vehicles and the whole station area; the personnel will be very well placed to learn about the security requirements of passengers by listening to the customers themselves. The checker, who until now never moved from his office, will be superseded by the mobile passenger service team. The care of the station will be ensured through a flexible deployment strategy. ... When this measure is implemented, emergency-call/ information columns (NIS) will also be installed. In this way a combination of technology and personnel will be in place for the greater security of passengers."*

Another priority in all measures pertaining to the urban rail network is to increase passengers' subjective sense of security. There are plans to fit surveillance cameras in trains in the future, and emergency intercom systems that could link passengers to security centres are also envisaged.

Under the heading "Public relations work and promotion of social responsibility", the following is written: *"An improvement in the social atmosphere might encourage respect for authority in public transport. To effect such an improvement, passengers should identify with their public transport service, regarding it as their own means of transport. Young people in particular should be involved here; attractive offers should be introduced to appeal directly to problem groups. ... The passenger should know how to behave in conflict situations, so that he can protect himself and exert a calming influence on others. The mutual mistrust and prejudice that exists between the passengers and the transport service employees or security forces must therefore be diminished. The transport operators are accordingly increasing their public relations effort. ... For example, suitable BVG employees are visiting schools at different points in the region, where they are able to talk to the teaching staff and the pupils with a view to encouraging a common appreciation of other people's needs. Through activities such as the BVG Club, an attempt is made to engage with young people on their own ground,*

to converse with them and convey a different notion of the value of public transport. Young people should be encouraged to feel that public transport is their personal concern, so that they realise that their own interests are affected if trains are unable to run because they have been damaged. In addition, there is a constant flow of information targeted at specific groups, there are open days, works tours and lectures, particularly for schools and kindergartens, which aim to promote a better appreciation of public transport."

The Berlin transport operators, working in collaboration with the IHK (chamber of commerce and industry), the Technical University of Berlin (university sports centre) and the Berlin State Police School, also devised a scheme to train "specialised service and security staff for public transport", which was tried out in a pilot project conducted in September and November 1998. Thirteen members of the BVG staff, employed in the passenger security field, were given further specialist training. The course combined theory and practice to develop communication, conflict resolution and self-defence skills. The object of the training was not to enable staff to take on the work done by the police, but to equip them to defuse critical situations and ease conflicts.

4.2. Bochum

Rather than take such lavish, wide-ranging measures, which are clearly not feasible in all cities, the city of Bochum adopted another, more flexible approach. Germany's first regional centre for security and prevention (ZeRP) was established there. The object of this centre was to co-ordinate and further improve the arrangements for security and public order in Bochum and the neighbouring cities and districts. Here too, the authorities note: *"There is no objective risk to security. The public nevertheless see things in stations or on vehicles which, when taken in conjunction with the frequently alarming news reports, have a negative impact on their sense of security[50]."* The ZeRP co-ordinates general measures -- against graffiti, alcohol, etc. -- and has devised a set of "preventive instruments": police and service personnel patrol together, moveable emergency telephone booths have been made available, police officers have been granted the same rights as service officials, a Schalke 04 supporters' club has been established, "black spots" at certain stops have been removed, employees are trained in the defusing of conflicts and in the prevention of crimes against foreigners, events on security are staged for elderly persons and children, bus stops are sponsored by schools, constantly updated travel-information boards have been introduced, the authorities talk to young fare-dodgers instead of punishing them, etc. The "pupils as transport stewards" scheme seems particularly interesting. Pupils in the 8th grade (15 to 16 year-olds), who have been given appropriate training by the police and transport operators and issued with service passes, act as stewards in school buses, settling conflicts, preventing vandalism and serving as a contact (Picture 35). At present, there are more than 200 transport stewards in place.

The following achievements are cited:

- – A fall in vandalism;
- – Greater safety on the way to school;
- – Better quality transport;
- – Considerably fewer complaints from parents, pupils, teachers and drivers;
- – A higher level of general contentment and better communication between all those concerned;
- – The clear enhancement of moral courage and sense of responsibility in the pupils actively involved.

5. TERRORISM AS A THREAT IN PUBLIC TRANSPORT?

The terrorist attacks of 11 September 2001 in the USA have raised the question of the threat to public transport posed by terrorism. A detailed answer to this question cannot be given at this point for the following reasons:

- The term "terrorism" is not clearly defined, despite the fact that it is used so much at present, or for precisely that reason;
- In any case, there is no "terrorism" as such; there are different groups, motivated by religious, political and other concerns, who operate both at local and at trans-regional level.
- At the present time (end of 2001), there has been no official warning that local public transport is likely to be targeted by "terrorists"[51];
- Concern over "terrorist" threats to public transport must be distinguished from concern over "everyday" problems of security and public order in this area. Otherwise it will not be possible to do justice to either topic.

Despite these reservations, it must be acknowledged that local public transport is particularly vulnerable and susceptible to "terrorist" attack; it would be impossible – as attacks in Japan (Tokyo) and in Germany have shown – to give it blanket protection, but at the same time, a considerable amount of damage can be done at relatively little cost. It cannot therefore be ruled out that terrorist groups, or indeed individuals, will attempt to seize the opportunity it offers to arouse attention and bring their objectives to public notice. The assumption that used to prevail – namely that such groups would not carry out attacks of this kind because "ordinary people" would suffer and those responsible would therefore have to reckon with a collective condemnation of their action – can certainly not be sustained after 11 September 2001, indeed it had already ceased to be valid after the attacks on the Tokyo underground. For this reason it is necessary to draw up a properly substantiated analysis of the threat posed to public transport by such action. Like other analyses of security, it will have to be tailored to a specific situation, i.e. it must take account of factors in a particular region.

6. CONCLUSIONS

Security in public spaces is increasingly becoming an important and topical theme in the debate about society. Communal responsibility (in relation to the security of streets and open areas) is a factor in the debate, as is the responsibility of the bodies in charge of local public transport.

These responsibilities cannot be separated in the modern community, even if public transport is in private hands. Streets and open areas on the one hand, and bus stops and stations on the other, are inextricably linked and often represent important centres of communication in a district. The drafting of a modern security plan for public transport therefore calls for close co-operation between the local authority, local businesses (shops, restaurants, entertainment centres, etc.) and the transport operators.

In view of the general significance and sociological implications of such a security plan, overall responsibility for it must fall to the local council.

A suitable security plan depends on a sound analysis of the security issues, which must take account of the actual security situation and of the citizens' and customers' subjective sense of security.

Security and public order are essential considerations if local transport is to be customer-orientated and service-orientated; in modern enterprises this point is taken for granted. The whole range of services offered must accordingly be examined in the light of these considerations and, where necessary, adapted.

A security plan must be drawn up in such a way that no section of the population is systematically excluded or disadvantaged. Public transport must fulfil its special responsibility by ensuring that appropriate provision is made for marginal groups, members of subcultures and the socially needy.

Measures to improve security and order in public transport must be harmonized and co-ordinated. If not, they may be dysfunctional and the effects of one may invalidate those of another.

Responsibilities for security and public order in a public transport undertaking must be clearly regulated; to that end it is recommended that the undertaking sets up its own "task force", which should also take account of the subjective sense of security. Such a "task force" should include sociologists and psychologists.

The analyses, solutions and conclusions of the work on security and order in public transport must be openly available to citizens and customers, this being in the undertaking's own interest.

The studies carried out in many cities and districts in Europe, like the draft solutions and projects, do not lend themselves to publication, exchange and public discussion as easily as they used to. An attempt should be made to establish Europe-wide standards for security and public order in the form of "best practice models". The European Union should be asked to sponsor innovative projects, as it does in other fields. In particular, it is important to step up communication and the exchange of information between western and eastern European cities.

NOTES

1. Cf. Forschungsgruppe Kommunale Kriminalprävention: Untersuchungen zur Kommunalen Kriminalprävention. In: *Kriminalistik* 1, 1999, pp. 54-56; *ibid*.: Viktimisierungen, Kriminalitätsfurcht und Bewertung der Polizei in Deutschland. In: *Monatsschrift für Kriminologie und Strafrechtsreform* 2, 1998, pp. 67-82; Feltes, Th. (Ed.), *Kommunale Kriminalprävention in Baden-Württemberg -- Ergebnisse und Erfahrungen*, FELIX-Verlag, Holzkirchen, 1995.

2. Cf. contributions in Dreher, Gunther and Thomas Feltes, *Das Modell New York. Kriminalprävention durch "Zero Tolerance"?*, FELIX-Verlag, Holzkirchen, 2. 1998 edition (out of print; but available for downloading from: www.Felix-Verlag.de).

3. For a critical view, see Feltes, Thomas (2001), "Das Zero-Tolerance-Konzept: Gartenzwerge aus New York?", in *Kriminalistik* 2.

4. Dan Barry, Marjorie Connelly (1999), "Poll in New York finds many think police are biased", in *The New York Times,* 16.3.99.

5. O. Patterson, C. Winship (1999), "Boston's Police Solution", *The New York Times*, 3 March.

6. Cf. Skogan, W. (1998), Community Participation and Community Policing. In: Brodeur, J.-P. (Ed.), *How to Recognize Good Policing*, Thousand Oaks, London, New Delhi, p. 88 ff.

7. Most recently in a poll conducted by the Vienna *Kurier* in October 2000; cf. Feltes, Th. (2001), Im Namen des Gesetzes: Über Polizei und öffentliche (Un-)Sicherheit. In: *Die Bundespolizei* (Österreich) 3, pp. 52-60. Moreover, given the high risk of being a road accident victim, considerably higher than the risk of being a "traditional" crime victim, the problems of road safety, for example, merit particular attention. In Germany, the likelihood of being the victim of a road accident is three times higher than that of being a crime victim, and the risk of being injured in a road accident is ten times higher than the risk of being mugged.

8. Feltes, Th. (2002), Die Angst des Opfers vom Hörensagen: Warum sind Nicht-Opfer ängstlicher als Opfer? (Ms.).

9. Quoted from Bauman, Zygmunt (1999), Freiheit und Sicherheit. In: *Die neue Ordnung des Politischen*, edited by Anselm, E., A. Freytag, W. Marschitz and B. Marte, Frankfurt/Main, New York, p. 23 ff.

10. Baumann, *loc cit*.

11. Mitscherlich, A. (1965/1996), *Die Unwirtlichkeit unserer Städte. Anstiftung zum Unfrieden*, Frankfurt.

12. Bourdieu, P. (1998), *Gegenfeuer*, Konstanz, p. 11.

13. Feltes, Thomas and Otmar Wigger (2000), Benchmarking Schweizer Polizeien. Interner Abschlussbericht, TC TeamConsult, Geneva/Zurich, July.

14. Feltes, Th. and T. Langguth (1999), Kommunale Kriminalprävention im Schwarzwald-Baar-Kreis, Auswertung der Expertenbefragung, unpublished manuscript, Villingen-Schwenningen; Feltes, Thomas (2000), Bevölkerungsbefragungen im Schwarzwald-Baar-Kreis, press file 30 June, Villingen-Schwenningen.

15. Forschungsgruppe Kommunale Kriminalprävention, *op. cit.* (1994); ibid., Opfererfahrungen, Kriminalitätsfurcht und Vorstellungen zur Delinquenzprävention. in: Trenczek, Th. and H. Pfeiffer (1996), *Kommunale Kriminalprävention*, Bonn, p. 118 ff.

16. These figures must, however, be interpreted very carefully, since experience shows that these items are cited more frequently than they would be if open-ended questions were asked. This explains, for example, the different answer normally given if people are asked open-ended questions about the juvenile crime "problem". If this answer is presented as an option, more than half of the respondents normally cite it as a problem. But if people are asked about the "most serious problems in the district", it comes at the bottom of the list or under "others" and accounts for at most 5 to 10 per cent of the examples cited.

17. Home Office (2001), Antisocial behaviour and disorder: findings from the 2000 British Crime Survey, Research, Development and Statistics Directorate, Findings 145, London, Table 3. www.homeoffice.gov.uk/rds/bcs1.html

18. *Op. cit.*, Table 5, p. 5.

19. *Op. cit.*, p. 6.

20. Sampson, Robert J. and Stephen W. Raudenbush, *Disorder in Urban Neighborhoods – Does it lead to crime?*
http://www.ojp.usdoj.gov/nij/pubs.htm. The original http://www.ojp.usdoj.gov/nij "Broken Windows" article by James Q. Wilson, which is thought to have prompted the New York Zero Tolerance Project, is available in the original 1982 version in the journal *The Atlantic* http://www.theatlantic.com/politics/crime/windows.htm . In the same journal, "Thinking about crime" by the same author was published in September 1983. http://www.theatlantic.com/politics/crime/wilson.htm

21. Sourcebook of Criminal Justice Statistics online, Table 2.0015; www.albany.edu/sourcebook/1995/pdf/t20015.pdf

22. *Sourcebook of Criminal Justice Statistics,* 1999, p. 119; *The Gallup Monthly*, No. 397, October 1998, p. 51.

23. Sourcebook of Criminal Justice Statistics online, Table 2.41, www.albany.edu/sourcebook/1995/pdf/t241.pdf

24. Reuband, *op. cit.*, p. 114.

25. Lisbach/Spiess, Ms., soon to be published; see also Hermann, D. and G. Bubenitschek (1999), Kommunale Kriminalprävention. Probleme bei der Implementation von Lösungsvarianten, *Kriminalistik* (8), 546-552.

26. Reuband, *op. cit.*, p. 115.

27. Cf. Reisner, R. (1971), *Graffiti – Two Thousand Years of Wall Writing*, New York.

28. http://www.solidarnosc.org.pl/english.htm

29. Arzt, Ullrich (2001), Graffiti – Ursachen und Motive. Diplomarbeit Hochschule für Polizei Villingen-Schwenningen.

30. Bettelheim, B. (1962), *Symbolic Wounds,* New York.

31. Cf. Abel, E.L. and B.E. Buckley (1997*), The Handwriting on the Wall. Toward a Sociology and Psychology of Graffiti*, Westport/London.

32. *Graffiti Art 13*: Deutschland: Züge – Trains – Yards. Die Geschichte der deutschen Graffitis auf Zügen. Berlin 2001; B. van Treeck (1996), *Wholecars – Graffiti auf Zügen*, Berlin.

33. Austin, J. (2001), *Taking the Train: How Graffiti became an Urban Crisis in New York City*, Columbia University Press.

34. Cooper, M. and H. Chalfant (1989), *Subway Art*.

35. LKA Sachsen, KPK-Arbeitsgebiet Graffiti, Sachstandbericht 2000, Dresden.

36. Ley, D. and R. Cybriwsky (: Stadt-Graffiti als Territorialmarkierung. In: S. Müller (Ed.) (1985), *Graffiti.* Tätowierte Wände, Bielefeld (original article published in the Annals of the American Geographers, 64, p. 491 ff.

37. Cf., for example, the seminar report "Youth Cultures and the Modernisation: a world in the making?", part of the European Council project "The Europe of cultural cooperation". http://culture.coe.fr/../postsummit/citizenship/documents/eseminar981208refdoc.htm

38. Cf., for example, Crime and Urban Insecurity in Europe: The role of local authorities. CLRAE recommendation, at www.cm.coe.int/dec/2001/745/126.htm

39. Letters were sent to the following countries and cities: Belgium: Brussels; Germany: Bochum, Chemnitz, Munich, Cologne, Berlin, Frankfurt, Hamburg; Denmark: Copenhagen; England: London; Finland: Helsinki; France: Paris, Marseilles; Ireland: Dublin; Italy: Rome, Milan; Netherlands: Amsterdam, Rotterdam; Norway: Oslo; Austria: Vienna; Poland: Warsaw; Portugal: Lisbon; Russia: St. Petersburg, Moscow; Scotland: Glasgow; Sweden: Stockholm; Spain: Madrid; Czech Republic: Prague; Hungary: Budapest..

40. Information on this was made available by the head of the transport company, Herr Christoph Stucki (stucki.c@tpg.ch), to whom I would like to take this opportunity to express my sincere thanks..

41. No responses were forthcoming from Amsterdam, Glasgow, Cologne, Copenhagen, Lisbon, Madrid, Milan, Marseilles, Moscow, Oslo, Rome, St. Petersburg, Warsaw. The other responses were mainly given by the local transport operator, for Prague by Prof. Dr. Jan Musil of the Police College and for Budapest by Mr. Endre Balogh (also from the Police College), each with the agreement of the local transport operator. I would like to take this opportunity to express my sincere thanks to these colleagues and to the city authorities, who helped with the survey.

42. *Drucksache* 16/6378, 10.7.01.

43. Reported crimes include threatening behaviour, coercion, criminal damage, obstruction as well as more serious offences.

44. Abgeordnetenhaus von Berlin, *Drucksache* 13/4172, p. 4.

45. Between 1996 and 1998; *op. cit.* p. 7.

46. Cf. Schmitt, A. and M. Irion (2001), *Graffiti. Problem oder Kultur. Modelle zur Verständigung.* München, p. 139 ff; Samland, U. (2001/2002), Der Täter-Opfer-Ausgleich im Zusammenhang mit Graffiti. Diplomarbeit, Hochschule für Polizei Villingen-Schwenningen.

47. Unfortunately, no comparable reports or schemes were presented by other non-German cities.

48. Társaságunk Grafiti Elleni Védelme, Budapesti Közlekedési Részvénytársaság, 1998.

49. See: http://www.tpg.ch/environnement/objectifs/objectifs.en.html

50. BOGESTRA ZeRP, Ordnungspartnerschaft ZeRP, Statusbericht und Auswertung, 2000.

51. A German press report claimed that a terrorist attack on the local public transport system of a major German city was planned in the aftermath to the attacks of 11 September. This was denied in December 2001 by the Ministry of the Interior, who at the same time pointed out that such warnings were irresponsible.

ANNEX

See Website:

www.thomasfeltes.de/htm/Vandalism_appendix.htm

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THE EXPERIENCE OF THE RATP

SUMMARY

Paris, January 2002

1. VANDALISM AND SECURITY IN PUBLIC TRANSPORT: THE RATP AT THE HEART OF THE PROBLEM

The term "vandalism", originally used to describe the wilful destruction of works of art by a race of Germanic invaders, the Vandals, is today used in a much broader sense to mean the defacement or destruction of private or public property. This is also how it is construed in French law.

Vandalism is a specific type of delinquent behaviour that is gratuitous, not acquisitive, in character. Acts of vandalism can be motivated by a number of factors -- sociological, psychological, ethnographic, etc. -- and fall into the category of provocative and aggressive behaviour, the search for an identity or social exclusion.

The RATP and other European transport operators use the term to refer to a range of different types of damage to property. Initial studies carried out for a European project on security on selected transport networks identified three main types of vandalism:

– Graffiti and tags, scratches on windows, experienced by nearly all operators;
– Missile throwing at moving rolling stock, reported by French operators and some UK operators;
– Other damage (equipment breakage other than by missiles, slashing, fires).

The immediate impact of vandalism is its direct financial impact: in the short term, it requires spending money on protecting, repairing and maintaining assets or on guards and surveillance.

However, vandalism also has a major impact in terms of safety.

It has an impact on the actual physical safety of both passengers and staff and affects how safe or unsafe they feel.

Passengers' feelings of insecurity have an impact on most operators -- a short-term impact on factors that affect commercial revenues (patronage and traffic) and a long-term impact on requirements for the development of public transport. A network in decline can neither claim to be providing a quality service nor purport to be attractive to customers and therefore cannot hope to position itself on the market as an alternative mode of travel.

The impact on actual safety, as well as on the feeling of being safe, also has an impact on the transport operator's personnel. On the one hand, the deterioration of their working environment can be a blow to morale and to their confidence in their firm. On the other, such attacks on the tools of their trade and even on their person, can pose a risk to society by undermining the concept of service continuity.

As part of the urban environment, the transport operator is a prime target but is not the sole target.

Since as long ago as 1989, the railways have been the ideal venue for grafittists, presenting them with a constant challenge with the added incentive that, because they are in the business of transporting people, they provide an excellent vehicle for communication. Transport operators have also been the favourite targets for missile throwing, which first became a "popular" pastime in the period 1996-97, because they are seen as "state" institutions and the State has failed to live up to the expectations of the population of some suburban areas.

This being the case, transport operators are by no means the only target. Acts of vandalism are also carried out against other urban actors, both private and institutional.

In practice, most solutions are beyond the control of transport operators simply because the problems are caused by external factors.

1.1. Vandalism on the RATP's networks: mode-specific characteristics

Transport operators need to know precisely what incidents are being reported on their networks. They generally use statistical tools to survey and pinpoint incidents in time and space.

The RATP has an analysis and operations advisory office (*Bureau d'Analyses et de Conseil Opérationnel*) whose job it is to focus on criminal offences involving property or people.

A transport operator can legitimately monitor, process and analyse data on offences relating to its own property. This enables the operator to develop strategies and plans for conducting in-house operations and to communicate with other partners. Observatories of this kind facilitate the monitoring of offences both for performance purposes and to see whether there has been any switch in incidents to other times, areas, targets, etc.

For the purposes of this report, the RATP has elected to exclude incidents involving arson and seat slashing, for example, as these are more to do with individual behaviour (with psychotic overtones) and their impact is more confined. Similarly, defacement and damage following sporting events have also been excluded as they fall under the remit of public safety.

The report concentrates mainly on two forms of vandalism: firstly, tags, graffiti and scratching and, secondly, missile throwing.

The statistics for the year 2000 alone show that each form targets a specific mode: the underground rail network (metro and RER) are the target for 97 per cent of defacement by tags, graffiti and scratches, while the above-ground networks (bus and tram) are the target of 92 per cent of missile throwing.

Historically, *tags and graffiti* were the earliest form of large-scale vandalism. However, the increase in this phenomenon has not been linear. It started with the first wave of defacement by tags and graffiti in 1986, reaching a visually intolerable peak in 1989. In imitation of the "New York model", the metro then became a symbolic location. Studies conducted at the time show that the metro and RER were prime targets that lent themselves perfectly to the graffitists' philosophy of defiance and communication (social recognition, peer recognition). The movement can thus be seen both as a cultural movement related to the emergence of rap and as the expression of an identity crisis.

After the first policies were put in place, the phenomenon appeared to have been brought under control until 1994-95. A comparative analysis of quantitative trends in both forms of vandalism shows an increase in tagging and graffiti from 1996 onwards and in missile throwing from 1997 onwards.

In the year 2000, the number of incidents of defacement reported was four times as high as in 1995, an exponential increase (over 20 per cent from 1999 to 2000). An average of four such incidents are reported daily (not counting scratches on glass).

A detailed analysis of the incident reports can pinpoint trends and any switch in them.

Effective cleaning procedures for spray-paint graffiti in stations and on trains prompted taggers to change surfaces: from 1998 they began scratching window glass (more than 80 per cent of the fleet has now been defaced), coach side panels, stair nosing or the floors of trains.

Taggers have also come up with a new chemical method for scratching train windows using phosphoric acid to "etch" a tag.

Similarly, the number of tags and graffiti appearing in stations as opposed to on trains is changing. The number of incidents at stations is on the increase: over 40 per cent in 2000 as opposed to 35 per cent in 1999, which would tend to suggest a further switch in targets following the stepping up of protection in stabling yards aimed at limiting vandalism during overhaul periods.

Missile throwing at vehicles running on the above-ground network was a much later phenomenon. The number of incidents increased by a factor of 2.5 from 1996 to 2000. The average is also around four incidents a day.

Apart from similar trends in the number of incidents, which are alarming enough for the operator, there are other similarities between the two forms of vandalism.

1.2. Tags, graffiti, scratches and missile throwing: all part of the wider pattern of "urban violence"?

An analysis that considers acts of vandalism in isolation from the overall paradigm of delinquency in urban public passenger transport may well be somewhat contrived. The definition of the term "delinquency" actually warrants broadening it to include more than simply those offences that are punishable by law.

Transport networks, in France at least, have been experiencing a resurgence of minor disturbances, disorderly behaviour and the like, which -- to borrow Sebastien Roche's term -- are often lumped under the broad category of "incivilities" and which contribute to the feeling of insecurity experienced by passengers and staff alike.

This approach is now the one taken by law enforcement agencies in studies on urban violence. *Commissaire* Lucienne Bui Trong drew up a scale of severity that includes minor instances of public disorder when the City and Suburbs ("*Ville et Banlieues*") Unit was first set up.

From a sociological standpoint, acts of vandalism are seen as a process of violence spawned *by the refusal to recognise the legitimate authority* of the State or the institutions that represent it. This refusal to recognise that authority gives young people an excuse that absolves them for their behaviour. The transport operator does not consider them as customers or does not make allowances

for their specific needs as regards mobility, accessibility, fares, transport services, etc., or "dares" to inspect them. In the transport sector, as Lucienne Bui Trong points out, those who pay for their ticket are considered "fools" and young people consider inspections as a slight to their honour by an authority that they do not recognise, and see a uniform not as a sign of legitimate authority but as the "colours" of a rival gang…".

The group behaviour aspect of the modus operandi is characteristic of this rebellion against and defiance of society and the institutions that represent it. Missile throwing, regardless of the reasons behind it (playing, provocation, reprisals for inspections) is generally carried out by gangs or groups (organised or not). Tagging, graffiti and scratching or etching (alone or by a group) also conform to the group mentality, since their goal is recognition by the community of taggers.

Moreover, the perpetrators share some similarities: highly impulsive, irresponsible and with a conception of time that cannot see beyond the immediate present.

The age group of perpetrators is also similar for both types of vandalism. The vast majority of tagging, graffiti and scratching and missile throwing is done by young perpetrators, although there can be some age variation. Missile throwers, for instance, are more likely to be young children (8 to 13 years old, approximately) while taggers can be any age. This type of juvenile delinquency (for which the age bracket stabilizes around 25) poses more serious difficulties for transport operators for a variety of reasons:

- Firstly, it automatically involves -- acutely so for France -- the whole issue of the response of the justice system to minors;

- Secondly, any such response cannot be based solely on repressive measures, which could quite simply be delegated to the police and the courts. As a matter of course, transport operators have to think about, adopt a stance towards and get involved with prevention, either through a commercial approach (such as fare-setting) or through awareness, educational and inclusion approaches.

"Marking their turf" is another behaviour that features both types of acts of vandalism to which "suburban culture" has given rise. Missile throwing occurs in an area that perpetrators have already taken over. These areas can be identified on the map and are associated with a particular urban environment: close to disadvantaged housing estates, schools, etc. From there, tags, graffiti and scratching are "exported" to the rest of the urban area, signifying the conquest by the perpetrators of territory beyond their direct sphere of influence.

A tag is a quickly scribbled "logo" standing for a nickname. It aims at perfection in its illegibility and its repetition *ad infinitum*. Like graffiti, it marks a break with the established order, but unlike graffiti it also breaks off any communication with society, to communicate only with the community of taggers. Huge numbers of people pass through the underground transport system, making it an ideal medium, affording maximum visibility, with its rolling stock providing the vehicles of communication.

Escalation and one-upmanship, identified as typifying the dynamic of urban violence, are what drives these acts of vandalism.

Missile throwing can, in fact, degenerate into more serious delinquency such as verbal abuse and physical assaults on operating staff. Maps of incidents of delinquency on above-ground networks

show an overlap between sections of line where missile throwing has occurred and sections on which assaults, insults and threats to drivers have been reported.

For taggers, this type of escalation, in which acts of vandalism are just one of the first stages, is motivated by bravado since they have to venture onto territory that is not already theirs in order to provoke. The element of bravado, which is part of the taggers' code of behaviour, explains how this type of delinquency can escalate. The metro is a controlled environment "patrolled by cops", which increases the element of risk. A clampdown by authority is a justification for aggression.

Taken as a whole, these characteristics -- over and above the specific aspects identified -- have led the RATP to consider these acts as part of the process of urban violence and to deal with them as part of an integral approach to handling security. As Lucienne Bui Trong has pointed out, over and above the strict definition of damage to property, vandalism is an "indirect symbolic attack on people". She explains that the costs of vandalism are extremely high in terms of the feeling of insecurity experienced by both passengers, as their environment deteriorates, and by the personnel of institutions. The psychological impact is also lasting: *"while traces remain, the impact of vandalism persists and can even become worse because disorder is interpreted as a sign that the owners of the premises do not care about the environment…"*.

2. AN INTEGRATED APPROACH TO TRANSPORT ENVIRONMENT CONTROL BY CO-PARTNERING SECURITY PROVISION

Security provision, other than through a carefully balanced mix of the transport undertaking's own structures and partnership structures (state, local authority and community), would be impossible, particularly since the legal framework restricts the powers devolved to transport operators and their employees and since public safety remains the responsibility of the State.

▲ *Security role of transport operators in the Ile-de-France clarified*

Government clarification of the responsibilities of transport operators with regard to security has led to changes in this field.

− *Clearer transport security goals*

- − Following the Villepinte Symposium in 1997, a ministerial circular set up transport security contracts at local and *département* level. The twin purpose of these contracts is to prevent malicious damage on the transport networks in the Ile-de-France (run by the RATP, the SNCF and numerous private transport operators) and to improve security and the perception of security for both passengers and staff, primarily in order to meet goals for the development of public transport. These contracts are the ideal framework for building partnerships of various kinds at local level.

- − The Round Table on security on public transport of 9 December 1997, chaired by Jean-Claude Gayssot, Minister of Transport, followed up on the Villepinte Symposium and detailed broad measures aimed at the transport field.

– *The link between security and transport development clarified*

– The State/Region Planning Contract for 2000-2006 gives higher priority to the development of public transport infrastructure. Of a total of FF 60 billion overall, public transport was allocated a budget of FF 26 billion. Development will be mainly in the densely-populated inner suburbs, where demand for suburb-to-suburb travel is rising sharply.

– In addition, the Urban Travel Plan states that security on public transport is high on the priority list of residents of the Ile-de-France and that improving security is a key factor for the development of public transport. These recommendations form the framework for a security improvement policy that is based on prevention, deterrence through an increasing human presence, sanctions and continued investment in safety.

– The Government's commitment to promoting the large-scale development of public transport will mean high commercial stakes for transport operators as security and the feeling of security will be key factors in assessing the performance of the services they provide to customers.

▲ *Changes in RATP security policy*

In 1989, the RATP made security a priority of its public service mission and the Department of Environment and Safety, set up in 1999, was given responsibility for the security of passengers, staff and property and for improving the environment (concentrating initially on cleanliness and graffiti prevention and later on the wider environmental dimension). As a result, the RATP launched its first prevention operations.

Security is now ensured within a framework of diversified partnerships at all stages of the process of implementing government policies at local level. It is an across-the-board, integrated approach to prevention and security that underpins local security provision by the police. Its aim is to establish control of the transport environment through partnerships between the different agencies, each working in their own areas of competence.

The RATP's security policy is guided by *the subsidiarity principle*. In other words, every problem must be dealt with at the appropriate level of responsibility. The first such level is operating staff, whose mission is to improve mobility and provide an increased human presence; the second is the transport undertaking's own security services; the third is the authorities in charge of public security -- the police and *gendarmerie* -- who are the sole guardians of law and order.

By the end of June 2001, a total of 24 850 people were serving the public on the RATP's networks, including: 14 100 drivers, 5 350 stationary ticket sales and after-sales staff and mobile teams of 5 400 giving directions to passengers, carrying out inspections and ensuring security.

Of these, 23 425 were RATP staff, 825 were on youth employment contracts and 600 were law enforcement officers (in Paris alone).

In order to address factors which contribute either to security or to the feeling of insecurity the RATP is promoting several approaches:

– Developing preventive action in order to change the behaviour of potential perpetrators as part of an urban crime prevention policy that is firmly rooted in urban policy;

– Improving security and passengers' and employees' perceptions of security by a greater human presence and by strengthening institutional partnerships;

– Achieving technical control of the transport environment in order to protect targets and reduce incident response times, thereby contributing to a feeling of security;

– Working in partnership in the highly specific context of the renewed terrorist threat since 11 September 2001.

2.1. Area and partnership-based urban crime prevention in the context of urban policy

Faced with having to carry out its public service obligation in the deteriorating conditions brought about by changes in society that have made urban living tougher over the last ten or so years (incivility, delinquency, violence, etc.), the RATP has embarked on an urban crime prevention policy and has implemented a number of measures.

The goal of this policy is to influence the urban transport environment in order to reduce incivilities, assaults on staff and passengers and their feeling of insecurity, thereby facilitating the operation and routine development of a quality service.

A second goal of this policy is to work alongside government and local authorities *to provide solutions to social issues that no single actor can resolve by itself in order to maintain social cohesion.*

The RATP, one of the city's stakeholders, sees itself as part of a network of urban partners working closely with local and regional authorities.

An area-based urban crime prevention policy means that action can be taken at local level, a prerequisite for intensive work with local stakeholders so that any factors specific to the particular area can be taken into account.

As the RATP has organised itself into area development agencies at département level, and urban crime prevention is part of this approach, it plays its part in implementing urban policy alongside other public sector stakeholders.

As well as its core activities as a transport operator, the RATP is an urban stakeholder, an integral part of the life of the city as a partner in urban events, urban management and in sustainable urban development. Implementing an urban crime prevention project thus strengthens the social links that are imperative for developing the initiatives implemented.

It was in this spirit that, on 30 May 2000, the RATP signed an agreement on the implementation of city contracts for 2000/2006 and the local agreements made under them, with the Deputy Minister for the City and the Prefect of the Ile-de-France region.

The RATP is building partnerships at two levels:

– *At central government level, chiefly with state departments within the various ministries*

- Ministry of the City -- Interministerial Delegation for the City;
- Ministry of Justice;
- Ministry of Employment and Solidarity;
- Ministry of National Education.

– *At regional and local government level with:*

- The Ile-de-France region;
- *Département*s via the General Councils;
- *Communes* and groups of *communes.*

It is also taking part in special groups set up for the purpose by all of the partners, i.e. various public interest groups (employment, local development, etc.).

The role of urban crime prevention is to consolidate all of the initiatives designed and implemented through these partnerships built at local level.

– Recruitment over the next three years of 6 000 people will be a major opportunity to *diversify recruitment methods, facilitating access to employment for all young residents of the Ile-de-France.*
 In partnership with local missions, townhalls, national employment agencies and public interest groupings as close as possible to grass roots level, the RATP has established direct contacts at area level, to which it has added appropriate professionalisation procedures: pre-training, employment-training contracts, employment solidarity contracts (CES).

– *New fare mechanisms to be put in place to respond appropriately to the needs of different users and their economic circumstances. Around 600 000 young people are using the Imagine R travel card, a real response to fraud prevention.*
 Additional initiatives include the *Transition* pass for young people who are taking part in the *Trajet-Accès-Emploi* (TRACE) assisted travel programme, the *Mobilité* cheque for the jobless, the *Equité* pass for those receiving health benefits under the universal health cover system (*Couverture Maladie Universelle*, CMU).

– *The RATP's prevention/solidarity initiative centres on three crucial missions:*

- Its outreach teams (*Recueil Social* and *RATP Assistance*) offer to provide transport to the most appropriate facilities for the social reintegration of anyone sleeping rough on their networks;
- Through a partnership between the RATP/State/City of Paris, the RATP invested in thirteen integration and solidarity centres (*Espaces Solidarité Insertion* ESI);
- Through a partnership between the RATP/DASS/City of Paris, the ATLAS plan targeted people at risk: the aim was to direct and transport people to a bed for the night. The plan includes the provision of year-round assistance to the SAMU *Social*, which provides aid and transport for the homeless.

- *The RATP is involved in justice and law centres* (*Maisons de Justice et du Droit*). These are local centres open to anyone for fast, straightforward legal advice or dispute resolution. They bring the legal system into the community with the help of various agencies: magistrates, police, elected representatives, voluntary associations as well as the DASS. They provide an appropriate response to:

  - petty crime through prevention schemes, particularly for young people, providing alternatives to criminal proceedings: cautions, reparation orders (community service in a bus centre), mediation reparation via the integration/rehabilitation of offenders;
  - minor civil proceedings (non-payment of fare evasion fines) by putting in place fast, amicable and satisfactory solutions.

- *The RATP wants to involve as many of its employees as possible in participatory approaches in the Ile-de-France* in order to initiate a dialogue with residents and their representatives at a few experimental sites. This community-wide dialogue ensures that all the participants (RATP employees, residents, passengers, municipal employees) have a better understanding of each other's needs, limitations and expectations, clearing up misunderstandings and leading to practical projects for improving life, particularly on the bus service concerned.

- *Together with primary and lower and upper secondary schools, the RATP is running various initiatives aimed at teaching pupils about the city and about good citizenship and at improving relations between young people and staff going about their business in the same neighbourhood.*

  - *Mon Territoire, C'est Ma Ville*, a tool shared by the RATP and the national education system, was developed as a teaching aid for these initiatives;
  - Another example is the *Ligne Fictive* operation, support for sports tournaments and debates between young people and staff.

The RATP has recently subscribed to the "Respect" campaign launched by the Ministry for National Education and is constantly on the look-out for new tools and aids for teaching good citizenship and "respect", and for preventing anti-social behaviour and particularly fraud.

- The RATP, in partnership with the *Ligue Française de l'Enseignement*, *is helping to reduce the digital divide*. It is providing a cyberbus (buses fitted out with 10 to 12 multimedia computers) in every district for people from disadvantaged areas.

- The urban crime prevention policy implemented *by the RATP also involves seeking partnerships with associations* that design educational and good citizenship projects. Among them are:

  - the *Sport dans les Transports* operation, providing support for sporting events with the emphasis on observing the rules and the ritual of payment;
  - production of a video by schoolchildren on incivility and bad behaviour on buses and trains;
  - the *Eté banlieue* operation, aimed at giving those young people not going away on vacation, days out in leisure centres in the Ile-de-France.

- In order to round out and further extend this policy, the *RATP Enterprise Foundation for Citizenship* was set up under the chairmanship of the company president. The Foundation

gives the RATP an image that is increasingly, strongly and consistently identified with the social domain.

The Foundation sets up and supports community projects promoting good citizenship, the prevention of exclusion, good relations between the generations, education and health. It supports citizenship and educational initiatives through cultural and sports projects, learning by doing and social integration projects.

The RATP's prevention staff run these projects in the field and act as representatives of the Foundation.

2.2. Increasing human presence and security in partnership

Staff whose job it is to deal with the public help to provide a reassuring human presence and ensure security on the RATP transport network. However, the RATP, like the SNCF, has a special unit dedicated to protecting and ensuring security on transport networks, whose powers and duties have recently been clarified by the Law of 15 November 2001 on internal security.

▲ This unit is the *Groupe de Protection et de Sécurisation des Réseaux (GPSR).* The GPSR has its own specific organisational structure.

– Its staff have been *geographically decentralised*, with five detachments in Paris and in the northern, southern, eastern and western suburbs of the city, since 1994. Its responsibilities are twofold: to manage security at community level as close as possible to the incidence of suburban crime and to reassure staff affected by the increase in violence.

The decentralised structure was first reinforced in 1993 by the addition of units on the above-ground transport network and this new arrangement was adopted on a wider scale in 2000, as required by a partnership approach to local and regional security at community level. The 23 bus depots in the Ile-de-France now have special units -- security contact points whose teams are made up half of security officers and half of security assistants.

By the end of 2001, the RATP was employing over 1 000 GPSR security staff: around 874 as security officers and 200 as security assistants under the programme to recruit 200 young people to work for the company.

2.2.1. Visibility and easy recognition to reassure passengers and staff

All employees wear a readily identifiable uniform, so that they will not be confused with police patrols, and work in teams of no larger than three to four. The aim, as much as to prevent crime and incivility, is to give passengers a feeling of safety by providing a responsive service.

2.2.2. Missions

As set out in the Law of 15 November 2001, their prevention mission is to "ensure the safety of people and goods, protect the company's employees and property, and ensure smooth operation of the service".

Special efforts are made on above-ground networks through operational prevention, which involves assisting and reassuring drivers so that they are able to ensure service continuity.

Security officers are permitted to carry firearms and other weapons as well as security gear such as handcuffs and incapacitating sprays, to be used only if they encounter resistance. Security assistants carry a Tonfa baton (defensive weapon).

The RATP's GPSR staff receive special training: 15 weeks of training for security officers and nine weeks for security assistants, covering the legal framework applicable to their work.

Two recent pieces of legislation have extended the requirements for training and communication between the company and the national police force. The implementing decree of 26 November 2000 of the Law of 15 April 1999 requires the operators of public surface transport to apply for accreditation for staff who take identification particulars from passengers who do not have tickets. Under the decree, such staff must receive training and the content and duration of training must be accredited by the *Préfet de Police*. The same training requirement appears in the implementing decree of 26 November 2000 of the Law of 12 July 1983, which authorises RATP and SNCF staff to carry firearms and other defensive weapons.

▲ *Operational co-ordination with police forces is being stepped up, in line with transport contracts with départements and reforms instituting a local police presence.*

These contracts are especially important in building synergies between transport operators and local police forces. They set out an area-based approach to security, based on complementary jurisdiction. Operational co-ordination has been stepped up between the various police units in the *départements* as well as between transport operators and the various transport police units.

In order to improve police surveillance, as recommended by Jean Claude Gayssot's 1997 Round Table on transport security, the number of dedicated staff on the RATP's networks has been increased as part of the initiative to establish local policing.

In Paris, one of the main reforms concerned the RATP directly. This was the merger of the former *Service de Protection et de Surveillance du Métropolitain* (SPSM) and the Paris Railways Commissariat (criminal investigation department). The new *Service de Protection et de Surveillance des Réseaux Ferrés Parisiens* consists of some 530 police officers and its missions are: to provide a visible presence in the RATP's metro and regional express (RER) networks, proactive crime prevention and conducting investigations relating to its public transport brief.

In some *départements* of the inner suburbs of Paris, transport security contracts have been signed which require the establishment of special public transport security units, particularly for surface networks. These units are assigned to routes which an audit has identified as "problem routes".

The next step was the circular issued by the Ministry of the Interior on 24 February 1998, setting up *operational co-ordination* between police services responsible for security on RATP rail networks, under the authority of the *Préfet de Police* for Paris, the *Préfet* for civil defence in the Paris area. Based on the Contract Plan for 2000, the circular aimed at improving information flow in order to speed up response by the relevant police services and improve the quality of transport from the security standpoint for both passengers and staff. However, these provisions were only for rail transport.

A further stage will involve setting up regional safety co-ordination in public transport throughout the Ile-de-France, under the authority of the *Préfet de Police* for Paris. Four guidelines have been established:

- Operational clarification and legislation to extend the co-ordination mechanism to all partners;
- Clarification of the division of responsibilities of the various actors;
- Putting close regional co-operation on a permanent basis;
- Making modern communications and surveillance technologies the foundation of the human element of the system.

▲ ***Security contracts with the départements are giving a new lease of life to relations with the Prosecution Service***

The commitments of the Public Prosecution Service relate essentially to:

- *improving communication*, chiefly through information and awareness meetings with transport operators or working to simplify procedures in order to provide a better response;

- *greater use of mediation*, which has been developing in conjunction with real-time processing, rather than taking no action on cases, as appearing before the Public Prosecutor for first offences can be a useful deterrent;

- *working in closer partnership* with transport operators on community service. Exact descriptions of the work proposed by transport operators and feedback on these measures would enable public prosecutors to better tailor sentences, without in any way prejudging sentencing.

In the two years that this partnership has been operating, the RATP has been taking on more of those sentenced to community service under agreements with the integration and probation services in the *départements*, provided that the offences were not committed against RATP staff or property. Likewise, under reparation and mediation measures, the RATP also opens its doors to young people in its bus depots and some RER workshops.

The interaction of the human resources working in this co-ordination and support system is dependent on having a technical network capable of ensuring prevention and a swift response by all the security actors concerned.

2.3. Deploying surveillance and communications technology to control the transport environment and respond swiftly to incidents

Selecting the technical options requires attention to consistency in order to ensure that the human and hardware structures are fully compatible.

▲ ***Spatial control of the transport environment*** covers all of those operations of which the main goal is surveillance and intelligence.

These operations are based, partially or totally, on the principles of situational crime prevention. One of the challenges is to reduce the opportunity for crime through the efficient interaction of

security staff and a security equipment network. Apart from the primary aim of reducing crime, situational prevention is aimed at making both passengers and staff feel safer. A statistical analysis tool that can give local or overall data is also needed, to determine the usefulness of the choices made and to refine the human and technical processes involved.

Control of the transport environment therefore requires the installation of equipment that serves to protect both people and property.

▲ ***Protecting property and preventing vandalism*** keeps facilities in good condition and protects assets. It also makes passengers feel safer. The response may be either preventive or corrective.

The preventive response covers a range of operations aimed at protecting likely targets. There are three principles for securing sites: deterring and delaying intrusion, detection and prevention using electronic surveillance and confirmation and evaluation of the severity of the alarm via remote surveillance. Protection of metro and RER stabling sidings and bus depots began in 1990 and will be completed in 2006 at a total cost of € 15.24 million. Surveillance is also provided by guard-dog patrols by security companies.

Several substantial operations have been conducted to protect rolling stock and fixed equipment: starting in 1990, stations, depots and trains were renovated and protected with a laminate coating that enables graffiti to be removed in under 24 hours. This produced results, but also had an adverse effect inasmuch as taggers then switched their tactics to scratching windows, side panels, etc. In response, another operation to cover windows on rolling stock and in stations with protective film started in 1999 and is more than 90 per cent complete.

Despite the improved removal methods, the results are still not satisfactory and the RATP is looking into other procedures.

Again with a view to protecting people and property, the response to missiles thrown at buses has been to install protective film on drivers' side-windows on all 4 000 buses in the RATP fleet.

Remedial responses are aimed at facilitating property maintenance procedures to ensure customer satisfaction. They include cleaning off graffiti and tags, restoring and repairing glass or windshields, repairing seats, station furniture, relaminating, etc.

▲ *Protecting people by providing a secure transport environment*

The security of the transport environment is ensured by monitoring, deterrence and response. The general principle is based on a three-tier structure.

The first tier consists of 2 000 cameras and callpoints in metro, train and bus stations connected to tiers 2 and 3, handled by the operator for areas within the operator's competence.

The second tier is information filtering, with a filtering system optimised by telesurveillance equipment. It includes 29 liaison centres for the metro (five already optimised), six RER surveillance centres (three already optimised) and one bus centre. It receives any requests not handled at operating level. If these require a response by the security forces -- GPSR and police -- they are relayed to the command post -- PC 2000 -- comprising one RATP room and one police room. The PC 2000 command post is the third tier.

The ongoing telesurveillance operations are aimed at fine-tuning the existing systems to the risks identified and at improving incident response.

Likewise, following the 1995 and 1996 bomb attacks, it was decided to introduce videosurveillance on platforms in 17 RER stations, a practical application of situational prevention that combines prevention, deterrent and investigative objectives. CCTV systems film all passenger access ways to the platforms of 17 busy stations. The monitoring and replay systems are housed in the RATP Command Post.

On the bus network, the rapid increase in incivilities and delinquency prompted the RATP to supplement existing systems (anti-assault cabs, alarm pedals, etc.) with on-board CCTV to improve passenger and driver security on buses.

The recording system, which can be triggered by the driver, enables the identification of anyone abusing the driver, passengers or equipment. One thousand buses have already been fitted with the equipment on the most vulnerable routes, which are to be part of the backbone network under the Urban Travel Plan. Further phases are being planned.

A strategic project to optimise and extend CCTV monitoring on the three RATP networks is underway and will be put in place over five years.

Investment in all of these systems will be subsidised by the *Syndicat des Transports d'Ile-de-France*, the regional transport authority.

All of these surveillance systems help to provide a reassuring atmosphere for passengers and to streamline the intervention of all staff dealing with the public -- operating staff, security staff and police -- providing better information on security-related incidents and enabling each player to respond to incidents within their own scope of responsibility in keeping with the subsidiarity principle.

▲ *Managing response times*

Immediate response to an incident reassures passengers and staff and deters offenders. The immediacy of the response is a result of increasing the human presence on the networks through the deployment of more staff dealing with the public. An efficient human presence requires real-time response by all of the security players on the RATP network in order to reduce response times when an incident occurs.

To facilitate real-time response, information and communications systems must be shared so as to ensure the deployment of whatever human resources are most appropriate as the incident develops. Current arrangements extend those already implemented, such as PC 2000. This command post enables real-time handling of incidents affecting the security of passengers, staff and goods and optimum use of RATP and police operational teams, using the AIGLE system (*Aide à l'Intervention Globale sur les Lignes en Exploitation*).

The latest operations to extend existing systems have been undertaken in order to meet these challenges.

The radiopositioning systems for security foot patrols in the RER's airport terminals has just been completed, bringing this operation to a close.

The bus radiopositioning system was also completed in the course of 2001. If a driver triggers an alarm, the exact position of the bus in distress is displayed on a detailed map, thus substantially reducing response time by security teams. The aim of the system is partly to make drivers more secure, thus ensuring continuity of service to problem areas and night services, partly to reassure passengers and give them a greater feeling of security.

The provision of local security in the underground network means that policing staff have a greater need for communications equipment that meets compatibility requirements.

A large-scale operation is in progress: it involves extending the ACROPOL (*Automatisation des Communications Radiotéléphoniques Opérationnelles de la Police Nationale*) **radio network** to underground RATP locations.

The extension of ACROPOL to the underground network will ensure the continuity of communications to local police, thus providing a technical link that is essential for co-ordinating above-ground and underground missions. In addition, from the technical angle, the digital cellular network ensures that police communications remain confidential. This operation -- scheduled for completion in 2003 -- is essential for establishing overall security co-ordination for public transport in the Ile-de-France.

2.4. A specific security issue: the transport operator and the terrorist threat

All of these prevention and personal security measures become particularly important in the event of a terrorist threat because they provide transport operators and their partners with a responsive human and technical structure that reduces some of the additional measures that would otherwise have to be implemented in a crisis situation.

While a political analysis of the terrorist threat is the sole responsibility of government, transport companies cannot pretend that this risk does not concern them. Past and recent incidents show that they are a prime target for terrorist organisations, primarily because of the media interest that such incidents attract.

The two attacks on 26 July 1995 at Saint Michel and 3 December at Port Royal were timed for 18.00 so that they would make the television news headlines.

Since public security was made part of its public service mission in 1989, the RATP has considered the risk of terrorism in its policy discussions and procedures.

The Sarin gas attack on the Tokyo metro in 1995 introduced a new dimension, as the release of chemicals can do damage over a wider area and for a longer period of time than an explosion. This prompted the RATP to consider the wider issue of incident response in a contaminated environment.

As a result, special training exercises were designed for staff. For example, regular training exercises organised by the Paris Fire Brigade are conducted on RATP networks -- around ten or so exercises are organised each year under simulated disaster conditions: explosion, fire, crashes, with evacuation of casualties.

Special training exercises were also arranged for a team of staff equipped for incident response in contaminated zones. This team is also qualified to operate all technical facilities in the field under the command of the Emergency Operations Commander.

The RATP also has specific response procedures for chemical gas attacks, with instructions on a set of emergency response cards.

Since the 11 September attacks in the United States, procedures have been implemented to protect the transport operator from security threats.

2.4.1.   *Threefold approach to security measures*

- *Staff.* Staff training and education is aimed at avoiding an ineffective response, or a response that would make the situation worse, particularly in the case of a chemical or bacteriological attack.

- *Passengers.* The first approach is to convince passengers that the public authorities take their security seriously, which means providing a physical presence as well as a number of technical measures but which in no case should be taken to guarantee safety.
  The second is communication (visual and audio) aimed at securing the full co-operation of passengers in watching out for everyone's safety, including their own.

- *Partners.* Providing for more responsive incident co-ordination by the partners concerned -- faster response by the police in setting up a safety cordon, by the fire brigade or by the police laboratories.

At any rate, emergency management measures and organisational structures are in place for catastrophes of any type (natural, accidental, terrorist, etc.). The RATP has made every effort to put in place standard procedural rules for all types of emergency.

In addition to the preventive and corrective measures used to ensure the day-to-day security of people and goods (transmission, CCTV and ventilation control, etc.) special procedures are also in place:

- The Government's *Plan Vigipirate*, operational in all buildings open to the public, has a direct impact on the RATP and SNCF network, since it requires extra security staffing by the police, *gendarmerie* and army;

- In this situation, the police can carry out random baggage checks. RATP security staff can also check luggage, but only with the consent of passengers;

- Special procedures are in place for dealing with *suspicious packages* and there are written orders for establishing security cordons and calling the appropriate authorities (police bomb disposal squad, forensic laboratory, etc.);

- On the practical front, the RATP has sealed all waste disposal bins on its networks.

These are, of course, the readily visible precautions; other preventive measures must remain confidential.

- *As regards communications*: since the Port Royal attack, the "*Attentifs ensemble*" campaign has been maintained, encouraging the public to be alert and using wording that reflects positive values for everyone.

2.4.2. *Emergency management procedures in the event of an attack call for:*

– An immediate meeting of the pre-designated emergency unit, comprising the chairman, general management and managers of the departments concerned, as well as the communications manager for the purposes of taking important decisions and press relations management;

– In the field, all of the procedures are pre-planned As soon as information is received by the central command posts (security, operations, etc.), the fire brigade and police headquarters are informed. The *Plan Rouge* is set in motion by the fire brigade and the *Plan Blanc* by the ambulance service;

– The RATP activates additional emergency procedures for casualties or their families: a free-phone number and reception centres for victims and families are set up immediately in conjunction with INAVEM. The RATP, together with other partners, also set up the *Institut d'Accompagnement Psychologique Post-Traumatique, de Prévention et de Recherche,* whose primary aim is to provide psychological support for disaster victims.

For the transport operator, as one link in the chain of co-partners committed to ensuring security, the management of this type of risk requires a heavy investment in terms of human resources.

It should also be said that managing emergency periods has major implications for operation in terms of traffic and disruptions to services while traffic is suspended for investigation by the police and for forensic analysis of "suspicious packages".

To give some examples:

– From 26 July 1995 to the end of 1995: 657 bomb scares, as a result of suspicious packages or telephone calls, accounted for 156 hours of suspended services;

– In 1996: there were 351 bomb scares, accounting for a total of 64 hours and 20 minutes of suspended services on various lines;

– From 11 September to 10 October 2001: 120 scares, as a result of suspicious packages or telephone calls, resulted in services being suspended for almost forty hours.

3. COSTS AND EXPECTATIONS OF THE RATP

3.1. What are the costs to the RATP of preventing vandalism, terrorism and implementing a security policy?

The direct costs of vandalism in terms of repairs and preventive security amount to approximately €30.5 million per year.

The indirect costs of vandalism on the feeling of insecurity are low and estimated at a 1 per cent loss in traffic, or the equivalent of €15.24 million in direct revenue. In actual fact, fluctuations in traffic seem to be much more directly related to the economic environment.

Investment covers both crime prevention and incident response. So far, €0.17 billion have already been invested, and the same amount will be required to complete all of the operations planned.

In evaluating the vandalism prevention and security policies implemented, one question has to be asked: which indicators should we use to measure what?

To assess the effectiveness of the vandalism prevention and security policy currently being implemented, it becomes apparent that the range of different indicators needed reflect the range of different objectives and the multidisciplinary responses to them. The transport operator is continually confronted with a management paradox: reconciling the objectives of a public service provider with profitability objectives.

Of necessity, its responses will be an interactive mix: targeted responses to incidents of vandalism and broader responses aimed at overall prevention, making the network safe and controlling the transport environment. The measures implemented use a combination of human presence and technology. The mix includes targeted commercial responses (fares for the young, etc.) and broader responses in an urban policy context. These responses may have either a direct or an indirect impact and may be in-house or partnership initiatives.

Evaluating the effectiveness of a given measure or policy is therefore a complex exercise, since the type of indicator and the balance between quantitative and qualitative indicators have to take several parameters into account: the results, which have to include both objective and subjective impacts relating to security and the feeling of security, the position of the operator in the urban environment and its responsibility in successfully meeting the challenge of developing public transport.

As well as this, security is a joint sphere, involving both in-house and external partners, which further complicates the interpretation of results that depend on integrated, across-the-board, multipartnership security.

Moreover, the *contractual arrangement* between the RATP and the *Syndicat des Transports d'Ile-de-France* reflects this paradoxical position with regard to security, since part of the funding is provided under the contract while part is covered in a separate supplement. The contractual elements mainly relate to supply, defined in terms of both quantity and quality of service. In this respect, the transport operator takes the risks.

For example, the service quality commitment is based on regularity indicators, but also on customer care and cleanliness -- the standard of which can affect the bonus/penalty system. The cleanliness indicator is partly relevant to the topic here since vandalism, especially graffiti, tags and scratches on windows, is likely to be seriously penalising. For this reason, the final indicator stipulated in the contract was the number of graffiti per passenger journey, which takes the customer's perspective into account to a certain extent.

This type of evaluation has commercial overtones, as is only natural given the transport operator's commitment to satisfy customers' expectations of a quality transport service and to make that service as attractive as necessary in order to win market share. In the same way, expenditure on security engineering (including equipment to prevent vandalism and personal protection) and on the environment are included in the contract.

Conversely, the areas of security that the RATP has taken over at the request of the Government, through a form of delegation of some of its sovereign powers (specially trained dedicated staff for personal security, in-house and external youth employment in areas relating to prevention and security), are covered in a supplement. Related expenditure is refundable. Any increase in the numbers employed at the government's request will open the relevant additional clause to negotiation.

Does this then mean that the transport operator should look for indicators that reflect the results of security control measures or should it look to establish the part played by security in improving overall indicators for its transport activities, such as increased traffic or market share?

▲ *What indicators should be used to gauge the measures taken to protect passengers, staff and equipment?:*

- Evaluating the scale of the measures to be taken to ensure the continuity of supply of services to sensitive areas and neighbourhoods?

- Asking what effort needs to be made to ensure the same services to different urban areas, given the specific characteristics of each of them?

3.2. Expectations with respect to local and national policy

Urban public transport is a field where major social changes are playing out.

Firstly, the dynamics of urbanisation, following on economic and cultural changes, are revolutionising urban mobility policies and giving rise to new travel needs to which public transport must adapt.

Secondly, the series of crises that have hit cities -- unemployment, poverty and exclusion -- have culminated in some areas and at some periods in the violence and vandalism that are directly undermining public services.

Conversely, to reverse the process of segregation, public transport seems to be a decisive factor in social cohesion and the quality of urban living.

▲ *At stake is the chance this gives public transport to play a multi-faceted social role*: in social accessibility, mobility, land-use planning, urban policy, economic and technical development and lifestyle.

When urban society is in trouble, so is public transport. When a city is running well, the transport network is running well.

The fact that the RATP has signed over 100 local security contracts and seven transport contracts with *départements* is evidence of its involvement as a partner in plans for co-partnering security at local or national level. Its expectations are founded on these official partnerships and centre around several issues.

▲ *For instance, the question of co-ordinating all preventive and educational measures.* Today, between the National Education Service, teachers, various child protection agencies, transport operators, voluntary organisations, etc., upwards of twelve representatives of different agencies can be involved with a young person in difficulty, either at the same time or one after the other, without any overall co-ordination. The young person knows the weak points of this piecemeal system and takes advantage of them, cancelling out much of the desired impact.

Furthermore, recent research on juvenile delinquency shows that there are certain links that have not been addressed: many studies have established a link between truancy and juvenile delinquency -- from vandalism to more serious cases -- but no structure is specifically responsible for following up on truant children or teenagers.

▲ Another issue is *the recognition of urban quality facilitation as a profession in its own right,* necessary to the proper function of urban space: if they are to survive, these new urban jobs must be recognised as providing a public service within the framework of a caring economy combining public and private approaches.

▲ *From the deterrence standpoint, the issue of immunity from prosecution for minors is being raised in France and at European level.* This goes beyond just vandalism and has a major impact on personal security on transport networks, particularly as concerns pickpocketing, but also given the overwhelming numbers of minors committing certain offences.

The most sensitive issue is still the response that should be made to crimes committed by minors. The Order of 2 February 1994, the reference for legislation on minors, propounds the principle of the primacy of educational measures over criminal sanctions. Juvenile courts scrupulously apply this principle.

The provisions on criminal proceedings are moreover very restrictive since custody is possible only as of the age of 13 and detention on remand from the age of 16, under certain conditions. Minors also benefit from more lenient sentences and custodial sentences can only be passed as a last resort.

Furthermore, there may be a long time between commission of the offence and sentencing.

Recently, the introduction of community service has given minors over 16 years of age other alternatives. Mediation and reparation procedures, on the initiative of a public prosecutor, have also been encouraged.

Commendable as the motives for recent measures declaring the principle of primacy of educational measures may be, it has to be said that they are increasingly out of touch with the change in attitudes of the sectors of the population concerned and with new forms of delinquency. Those responsible for theft and vandalism in particular, for whom educational measures prove ineffective most of the time, see themselves as immune from punishment, which encourages them to keep on offending. The security forces on transport networks often have no alternative but to escort them above ground.

This was the conclusion of the Interministerial Mission on preventing and dealing with juvenile delinquency in April 1998, which proposed 135 corrective measures, some of which directly concern the types of delinquency with which the RATP is confronted.

Among the measures, some of those which directly concern the types of delinquency with which the RATP is confronted are as follows:

- Sanctions for inciting or aiding and abetting a minor to commit offences;
- Fining parents who fail to respond to summonses;
- Requiring all parents to take out family civil liability insurance;
- Prosecution of parents suspected of receiving stolen goods;
- Education and training for police personnel;
- Suspended sentences to replace discontinuance of proceedings;
- Response to all delinquency offences reported to the public prosecutor.

However, most of the recommendations of the Interministerial Mission have remained a dead letter and the resources available to the administrations concerned fall very far short of what they need. The measures taken have proved to be not enough and the initial conclusion is largely still valid today.

The fact remains that, for a transport undertaking, for which service quality is a major issue, keen to ensure its passengers' security and responsible for its development, the situation is still alarming given the increasing scale of such phenomena.

Despite the efforts expended on a human and technical level and despite the RATP's involvement in partnerships, the feeling is that these phenomena are out of control, which is demoralising for staff and makes passengers feel unsafe. This is difficult to live with:

- for the security forces who encounter the same delinquents they just stopped the day before;
- for transport security staff who feel powerless when faced with the cockiness of juveniles who know they can offend with impunity;
- and for passengers who blame the transport operator for the dereliction they see.

The issue is how to strike a balance between personal liberties and security. Offending with impunity is a problem in Europe and delinquency is on the increase worldwide. How can we prevent delinquency and provide adequate resources?

If punishment becomes the exception, the chain is missing a link and we need to rethink the issue and find solutions that do not infringe liberties but restore real exemplary sanctions.

▲   *The issue of balancing public service and economic imperatives*

For public authorities, transport networks are of strategic importance. Along with land-use planning, they enable governments to play a structuring role and are clearly seen as providing a service to the public.

The role given to transport at European level in the law itself (French Law of June 1999 on sustainable regional development) faithfully reflects the new relevance of these imperatives for public transport development: a new public service accessibility dimension, catering for the growing need for suburb-to-suburb travel, ensuring the integrated development of regions and residential areas. It must also respond to the demands of residents in the Ile-de-France and businesses in terms of services and not just facilities.

Transport undertakings tasked with a public service obligation are faced both with running a traditional transport business while doing the utmost to meet the needs of the public in a given sector.

Now, those needs are also expressed in terms of quality, security and a feeling of safety. Meeting them will determine whether the operators' market shares will increase.

Thus, the transport authority has two alternatives in selecting the requirements to impose on transport operators:

−   Either the transport operator operates on a strictly commercial basis and the contractual service obligation is confined solely to improving service quality. The measures taken will be satisfactory network coverage by operating and commercial staff along with technical measures geared to cleanliness and surveillance. The security dimension is considered as strictly the government's responsibility.

−   Alternatively, the transport operator is required to provide a public service involving a participatory and partnership dimension. In this case, the commercial and security dimensions become inseparable and integral to the success of accessible public transport. The transport undertaking then addresses security in all senses of the word: i.e. not only tackling feelings of insecurity, but also security itself, by employing a group of staffing and technology measures designed to eliminate or limit crime.

At this point, the question of the division of funding again arises: what should be financed by the undertaking and what by public funding?

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SUMMARY

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1. INTRODUCTION

Security in public transport, alongside "traditional" parameters, such as punctuality, frequency, efficiency, etc., is increasingly becoming a central issue in the public debate on transport.

It is a crucial issue for service provision because it involves all of the stakeholders. On the one hand, security concerns transport operators (their staff, vehicles and infrastructure), on the other, it affects public transport users. Thus the issue directly and indirectly concerns the whole community and, by its very nature, has to be considered as both a technical and social issue.

As security is quite a complex issue, it is necessary to take a "systems approach" to it, using all the available instruments (operative, technical, technological, managerial) to analyse and reduce the "weak links" in the mobility chain.

1.1. Purpose of the paper

The purpose of this paper is to describe the current situation, emerging problems (ranging from urban graffiti to terrorist attack) and measures to be adopted, with particular attention to the safety of passengers and personnel at every stage of the journey. Thus, this paper is intended as a starting point for more in-depth discussion on ways of increasing safety and security in public transport as a crucial factor in increasing public transport patronage and in improving service quality.

Gaps and bottlenecks as well as solutions adopted in Rome will be presented as a starting point for a more structured approach to this urgent and pressing problem.

1.2. Structure of the paper

Chapter 1 has been mostly devoted to a brief introduction to the subject and to the paper, while Chapter 2 focuses more on specific aspects such as vandalism and security. Chapter 3 establishes and suggests a methodology for dealing with system security as applicable to public transport.

The state-of-the-art in security and handling processes is addressed in Chapter 4, with a further collection of statistics on vandalism and security in public transport in Chapter 5. The situation after 11th September called for a special chapter (Chapter 6) describing the current situation and both preventive and emergency measures.

Rome's experience and some intermediate findings are presented in Chapter 7. Conclusions are drawn in Chapter 8. A bibliography and annexes complete this paper.

2. VANDALISM AND SECURITY IN PUBLIC PASSENGER TRANSPORT

Security and safety in public transport can be viewed from several standpoints.

They can be considered either from the standpoint of the physical safety of passengers and personnel during the trip (i.e. accidents), of employee safety during maintenance operations (safety at the work place) or even from the standpoint of protecting passengers from robberies and assault (during the journey, on public transport premises).

This paper takes a wider, more comprehensive approach to security, viewing it as part of the public transport "production cycle".

Vandalism is a serious phenomenon which, in terms of cost, is still underestimated in our society. It causes damage to public and private property, for no apparent reason and at unpredictable times. It affects the safety and mobility of people at different places, times and on different transport modes. It is beyond the scope of this paper to investigate the social causes of vandalism.

In Italy, public property is often a target for vandalism, for example, telephone boxes, public transport infrastructure and vehicles (graffiti on the inside and outside of vehicles, seat slashing, shelters, etc.).

Although it does not affect people directly, the vandalisation of public transport property cannot be underestimated, since it creates the opportunity for a further increase in criminality and keeps some people (e.g. those with low mobility, the elderly, women, etc.) from using public transport.

Vandalism and security are issues that public transport operators have to take seriously, since they have an impact on the effectiveness and efficiency of the transport service, increasing or decreasing the market share of public transport.

A survey launched by ASSTRA (the Italian Public Transport Operators' Association) points out that in Rome and Milan almost € 13 million have been spent directly on security. Furthermore, if we consider indirect costs too (for example, the reduction in the use of public transport), the total will be much higher, resulting in greater losses of profit for public transport operators.

Table 1. **Costs of damage to public transport vehicles (1998)**

Italian city	Costs in €
Rome	7.5 million
Milan	5.2 million
Naples	0.4 million
Genoa	400 000
Florence	400 000
Palermo	300 000
Catania	300 000

3. SYSTEM SECURITY APPROACH TO PUBLIC PASSENGER TRANSPORT

With the large number of passengers relying on urban transport and the need for easily accessible personal mobility, security is a fundamental responsibility of a public transport service.

As security is now becoming one of the public's key expectations and one that affects the whole production cycle, it is important to apply a "systems approach" to the provision of passenger and employee security.

System security can be defined as "*the application of operating, technical and management techniques and principles to the security aspects of a system throughout its life to reduce threats and vulnerabilities to the most practical level through the most effective use of available resources*[1]."

System security management is a form of risk management that identifies, evaluates and controls security threats and vulnerabilities (throughout the entire cycle). The basic elements of protection involve prevention or deterrence of acts or conditions threatening the safety or welfare of persons or resources, and corrective or remedial actions to limit the effects when such acts occur.

The first step is to analyse the role of and interrelationship between all the elements of the system:

- − passengers and employees;
- − equipment and facilities;
- − procedures;
- − environment.

The second step is to analyse the types of crime and the actual level of crime, considering the type and purpose of the trip as well as geographical factors. It is worthwhile pointing out that analysing the types of crime committed will require an improved data collection process in order to

understand and monitor the actual situation, to forecast future trends and to have quantitative feedback on the measures adopted. A systematic approach is still lacking, but this alone is not enough to solve the problem.

It is also worthwhile pointing out that the analysis should focus on one more critical point: *passengers' perception of security*. It has been demonstrated that there is no clear correlation between the perception of security and crime rates. Perceived security is based mainly on a subjective evaluation, generally of the surrounding environment. However, there is a clear correlation with public transport demand, especially at off-peak times and at night, when the public is freer to choose between public or private transport. This is the weak point by which public transport loses market share to private transport, which can guarantee -- if not actual security -- at least the perception of security.

So, if transport operators are market oriented, they have to address customers' perception of security by adopting specific policy measures.

This is particularly true in Italy, where the ageing of the population and consequently the increasing average age of public transport customers gives passenger perception of security a fundamental role in security policy and in transport policy overall.

Following the system security approach, Table 2 lists and categorises four main strategies and sixteen techniques of situational crime prevention.

Table 2. **Situational crime prevention**

Sixteen opportunity-reducing techniques			
Increasing perceived effort	**Increasing perceived risk**	**Reducing anticipated rewards**	**Inducing guilt or shame**
1. Target hardening	5. Entry/exit screening	9. Target removal	13. Rule setting
2. Access control	6. Formal surveillance	10. Identifying property	14. Stimulating conscience
3. Deflecting offenders	7. Employee surveillance	11. Reducing temptation	15. Controlling disinhibitors
4. Controlling facilitators	8. Natural surveillance	12. Denying benefits	16. Facilitating compliance

Source: Clarke, R.V. (1996), *Situational Crime Prevention: Successful Case Studies*, New York, Criminal Justice Press, p. 18.

Finally, the system security approach should help public transport operators to define a detailed plan, including at least:

- transit system description;
- management of System Security Plan -- roles and responsibilities;
- threat and vulnerability identification, assessment and resolution;
- security goals and objectives;
- implementation, evaluation and modification of the plan.

The joint adoption of such an approach by all public transport operators running a service in a specific area, will result in a greater perception of safety and security in the whole public transport network by current (and prospective) users.

4. THE STATE OF THE ART

The causes of crime and incivilities are complex and there are a variety of prevention methods[2]. The modern state first of all seeks protection from crime principally through the operation of the law enforcement and criminal justice systems. Governments have tried to improve the effectiveness of those systems by such means as strengthening the police force, streamlining the judicial process, diverting less serious offenders, etc. The link between public transport operators and this system is police surveillance and the procedures implemented after a crime has been committed. Complementing the formal system of control is what criminologists refer to as society's "informal" social controls. These include a wide range of measures taken by interested bodies (e.g. parents, schools and religious associations).

More recently, faced with escalating costs, governments -- as well as transport operators -- have recognised the limitations of the formal system in controlling crime. Both have begun to explore more direct ways of improving controls alongside the existing informal social controls. This activity is called "crime prevention". Crime prevention covers a very wide range of possible actions.

4.1. Crime reduction: benefits of different approaches

Before proceeding with our analysis, we will briefly describe different approaches and their possible benefits. An evaluation of specific programmes shows the benefits of the three approaches outlined above: law enforcement, society's informal controls and crime prevention[3]. Promoting accountability can reduce crime by 45-63 per cent by getting potential offenders to repair any damage done and seek help. Crime has also been reduced by controlling firearms, providing treatment for drug addicts and coaching to prevent sports hooliganism (law enforcement), improving society's informal control. Young children will grow up to offend 50-80 per cent less if pre-school programmes and home visits by nurses for children at risk are provided, along with co-ordinated efforts to reduce bullying. Young disadvantaged persons are 33-71 per cent less likely to be arrested if they are given incentives to complete school, structured training for jobs or skills development (social prevention).

Residential burglary can be reduced by 35-75 per cent by improved surveillance, such as neighbourhood watch schemes, or by improving the physical design of buildings. Delinquency in public areas, assaults, vandalism and fare dodging can be reduced by 17-68 per cent through improved social control by civilian guards -- recruited from the unemployed -- and the introduction of closed circuit television (situational crime prevention).

4.2. The costs of crime reduction

As stated above, law enforcement, informal social controls and crime prevention are all helpful in reducing crime. However, their cost-effectiveness differs widely. The cost to each family yearly in additional taxes would be € 228 for extended sentences for offenders (law enforcement), € 118 for probation (law enforcement) and € 48 or € 32 for improving informal social controls (social prevention). These data do not compare situational crime prevention measures. However, a Dutch study, using a model with four scenarios aimed at reducing crime by 10 per cent, showed that investing in social prevention was more effective than situational prevention (an additional 1 000 policemen and the *status quo*).

Crime prevention, again, can take many different forms and seems a relatively cost-effective means of improving security in public transport. "Quick wins" deriving from the situational crime prevention framework -- such as improved cleaning, quickly replacing or repairing demolished property and improved lighting -- are relatively easy and operators can implement them on their own.

Law enforcement or improving informal social controls, more often than situational crime prevention, involves groups of stakeholders, each with different agendas and goals and a different sense of urgency. Therefore these approaches, although with their own advantages, cost a lot more extra effort than just a financial commitment. There may even be some question as to how useful it is for (smaller) operators to become involved in projects for improving informal social controls. Improving these controls seems much more the responsibility of society as a whole, of governmental organisations, schools, religious associations, etc.

However, in the end, investment in and commitment to reducing crime pays dividends (i.e. rail operators who place the most management emphasis on security have the most successful security programmes)[4]. These programmes come at a certain cost. For example, five transport operators involved in the PRISMATICA[5] project pay € 16.7 million per year (on average) to implement such programmes. However, costs differ widely for each operator, ranging from € 250 000 to € 50 million.

4.3. Current prevention measures in public transport

Transport operators in Europe currently adopt a range of measures to prevent security incidents occurring on their networks. These include educational programmes to deter potential young offenders, designing buildings to reduce opportunities for undetected crime, the deployment of CCTV cameras to monitor or record incidents and staff training to improve communications skills. Even the effective and efficient handling of incidents in progress can act as a deterrent. This points to the powerful interrelationship between the prevention, detection and effective management of security events.

Additionally, many of the measures to deter crime in public transport are not undertaken in isolation by single transport operators, but rather in close collaboration with other relevant bodies. For example: collaboration with the legislature is critical to ensure effective legal frameworks; soliciting a police presence works to deter criminals; schools and educational authorities help to support public transport awareness programmes; and so forth.

Within this approach to the problem, it is important to make a clear distinction between security and safety.

♦ *The level of safety has to do with the number of accidents and incidents that occur in the transport system per period of time, distance travelled, number of passengers and staff.*

Accidents and incidents are defined as follows:

–   An accident is an unplanned event which causes injury and/or damage to people and/or property and/or equipment (i.e. people falling down stairs, derailments and suicides);

–   An incident is an unplanned event which has the potential to cause injury and or damage to people and/or property and/or equipment – and may do so if the event occurs again.

Legislation also defines near-incidents and near-accidents on transport networks (e.g. air transport).

♦ *The level of security has to do with the number of actual and potential offences and incivilities committed.*

An important characteristic that distinguishes offences from accidents and incidents is that offences are committed by motivated offenders. In other words, they "intend" to commit an offence (i.e. murder, rape, robbery, theft, burglary, vandalism, sex offences and fare evasion).

The distinction between safety and security can sometimes be confusing because certain safety and security procedures are comparable for operators. For example, in the short term, it does not matter how a fire is lit in a metro tunnel. The first priority is to extinguish the fire whether it is an accident or arson.

♦ *Terrorist attacks are a matter for national security.*

Operators on their own cannot carry the full burden of responsibility for managing terrorist threats. These forms of violence (e.g. bombs and chemical agents), differ greatly from other offences because of the scale of impact, kind of offender and the purpose of the attack. The impact is not only meant for the intended target but also to produce a psychological impact on citizens and politicians for political or social objectives.

The reasons that prompt operators to introduce a security policy are stated in Figure 1.

The reasons most often given are vandalism and assaults on staff and passengers. Other reasons mentioned are the cost of fraud, legal obligations and drug dealing. The security issues that are most important today do not differ very much from the factors that first prompted operators to introduce such a policy. Vandalism, assaults and the cost of fraud are still major factors. An interesting difference seems to be that the security of staff and passengers (physical assaults) seems to be becoming more important than vandalism (damage to property).

Discussing security in public transport is confusing without explaining and defining all these terms. Therefore, an outline of the interrelationships between all these facets of security and public transport is presented in accordance with the preliminary findings of the PRISMATICA project.

Figure 1. **The key factors that encouraged the operators to introduce an explicit security policy and the issues that are important today** (n=10)
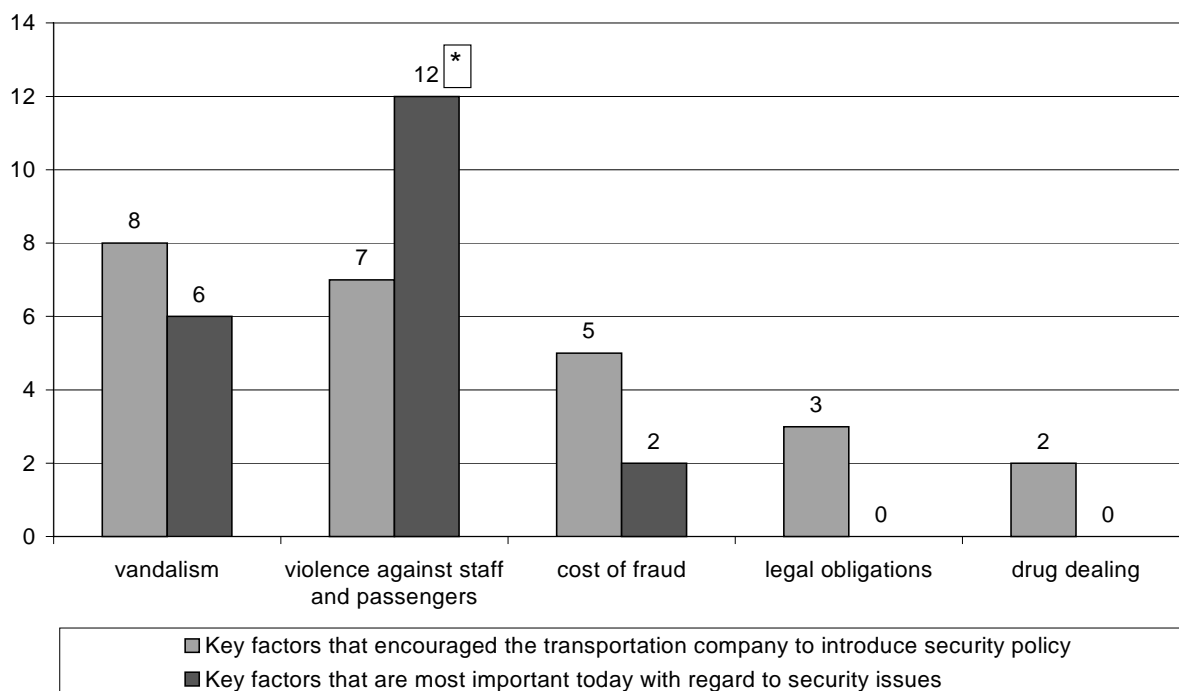
*   2 is an aggregate of three factors which were difficult to distinguish between: security of people in general and/or staff and/or passengers.

Source: PRISMATICA, 2001.

Before an offence or incivility occurs, users and staff of a public transport system already have an idea about how secure the system is. Factors that will influence customers' perceptions are: time of day (light or dark), the location of a station, the design of the public transport building and structures, the (visible) security measures taken, the number and type of people around, the level of maintenance of the premises, the level of information supplied by the transport operator and previous experiences in the system. Staff are probably influenced by a mix of the factors affecting passengers' perception of security and by hearsay information from other members of staff, information about actual security measures taken and information about the current security situation (statistics).

After an offence occurs, a whole procedure is set in motion. The interruption that takes place has to be taken care of. Passengers and staff involved in the offence have to be helped and incident forms filled in. These forms provide operators with statistics on the "actual" security situation. The "actual" security of the network is the number of recorded offences occurring on it. Although not all offences are always reported, recorded crime figures are as close as we can get to the number of offences that occur in reality. Actual security is distinct from perceived security, which is the feeling of security of staff and passengers while entering, waiting, travelling on and leaving the public transport system. The perception of security of someone who is the victim of an incident will probably change significantly. However, the overall perception of security in the "before" situation will not be radically changed by the commission of a single offence.

♦ *A major effort by public transport operators to improve security is aimed at preventing offences and incivilities from happening, e.g. by providing more lighting, installing cameras and hiring security personnel.*

The police, in contrast, are concerned with crime control and also have a role in prevention by means of surveillance. In the event of a more serious offence, the police are usually brought in to investigate the offence committed and take action upon it.

4.4. Actual and perceived security

As far as customers' behaviour is concerned, it is important to distinguish between actual security and perceived security:

The level of *actual security* in public transport is related to the number and types of offences and incivilities recorded within the domain of the public transport operator. There is, however, a difference between the number of offences committed and the number of offences recorded. A good example of this is pick-pocketing. A person who is pick-pocketed usually notices this afterwards, perhaps when he is already at work or at home, therefore it will be difficult for him to be certain where the offence occurred. It could have been in the metro, on the way to the metro or in a shop. He may also simply have lost the missing property. The difference between recorded and actual offences in public transport systems is not as yet known on an EU-wide basis and may also differ from one operator or country to another. Therefore, the only way to analyse the phenomenon is to use recorded information.

Perceived security in public transport is understood as the extent to which customers and staff feel safe from personal assault. Important factors in improving the feeling of security are: the presence of staff, CCTV, the availability of help in times of crisis and the elimination of dark, shadowy and threatening areas, deserted stations and routes and poorly maintained areas. Trains and stations must be well lit. The above are general factors; the weight of each of them will be influenced by different circumstances depending on the particular characteristics of the person (role, gender, age, etc.), the specific location (platform, bus stop, train carriage, etc.) and the time of day (darkness increases feelings of isolation).

As explained before, perceived security is the degree to which passengers and staff feel that they are safe, while actual security (in this paper) is related to the number of offences recorded. While the feeling of insecurity and actual security are not always directly linked, there is some correlation between them. Tolerance of petty disorder does not merely result in an increase in minor inconvenience like litter or graffiti; it also produces the impression that a place is not under control, that no one is in charge, that no one cares. This is recognised by local residents, who start to feel less secure as a result. Offenders recognise it as well. In a place where no-one is taking obvious action against minor disorder it does not seem likely that anyone will take action against major disorder or crime either. As a result, the number of serious crimes also increases[6].

An unfriendly, dark, run-down area that is badly maintained and lacking overview not only gives passengers and staff a feeling of insecurity, especially when there are not many "ordinary" people and/or staff around, it also provides an inviting playground for potential offenders. Not only will it be relatively easy for them to enter the network, but the risk of being caught will be relatively low and there will be plenty of opportunity (e.g. dark corners) to increase the perceived anticipated rewards.

Several organisations recommend comparable global measures and policy principles, which, if taken into consideration, will improve actual security as well as passenger and staff perceptions of security. Examples are given in Table 3 below. This table shows that the FTA, CEN and public transport operators advocate the same measures, such as a well-lit, open layout (to prevent crowding or feelings of isolation) and attendance by staff (physical presence or CCTV surveillance or responding to calls for help)[7].

Table 3 also lists the most important factors for improving the public's perception of security and the most important factors for preventing crime, in other words, for improving actual security. The left (FTA) and middle columns (CEN, Metro Copenhagen) show the rules and levels of design necessary to improve crime prevention: factors such as lights, openness, staff presence and help-points, which improve actual security, and those which improve the feeling of security (see the column on the right with conclusions on perceived security, presence of staff, CCTV, etc.) are very similar.

Clearly, when CEN, FTA and public transport operators designed their guidelines, they listened very carefully to passengers as well as drawing on situational crime prevention theory. Passengers mention especially the presence of staff, CCTV, availability of help in times of crisis, the elimination of threatening areas and the provision of well-lit trains and platforms as crucial aspects to public transport service design.

Table 3. **Examples of global measures and policy principles
to improve actual and perceived security**

Measures improving actual security		Measures improving perceived security
A minimum level of design of public space prevents features that can contribute to crime. The minimum level is (FTA, 1997):	General rules to prevent crime from happening are (CEN[8], Metro Copenhagen[9]):	Most important factors for improving the feeling of security, according to passenger surveys in the EU and the USA:
Adequate lighting	Stations are light	Presence of staff
No barriers and corridors	Stations have an open layout	CCTV
No areas that can become crowded	Visible CCTV at stations	Availability of help at times of crisis
No areas where individuals become isolated	Identified call-points in stations and trains	Avoiding dark, shadowy and threatening imagery, deserted stations and routeways and poorly maintained areas
Well-marked areas and paths	Staff everywhere in the system	
Attended entrances		Trains and stations must be light

The above benchmarking exercise is thus valuable in identifying five critical gaps in service design:

Gap 1: between perceived security and implemented security;
Gap 2: between expected security and actual security;
Gap 3: between perceived security and actual security;
Gap 4: between actual security and implemented security;
Gap 5: between perceived and expected security.

There may be a discrepancy between the level of offences committed and the feeling of security of (certain groups) of people working on or using the public transport network. The fact that different entities are involved in security in public transport may also conceal a further disparity: due to differences in experience and information available, these organisations may have different opinions about security in public transport and therefore may have different opinions about possible actions that should be taken.

Analysing these potential disparities can help decisionmakers in the urban public transport sector to improve the performance of their services.

5. AVAILABLE STATISTICS ON VANDALISM AND SECURITY

In this chapter, a collection of available security statistics is presented. These statistics are for Europe and the United States and often combine both security and safety data. In addition to difficulties in collecting these data, the individual countries and operators also face a major challenge in further developing methods for comparing the policy impacts of travel in urban areas.

In trying to gather data from many European countries, it became apparent that only a few countries and institutions supply the relevant indicators in ready-to-use form. The research was carried out by means of both direct contact (universities, statistical institutes, public transport operators, private consultancies, associations) and Internet queries carried out by the PRISMATICA consortium. The following chapter will report on the relevant documents dealing with safety and security indicators. Available indicators often only refer to "actual" safety and security. The concept of indicators for measuring and assessing the level of perceived security is found only in CEN documents.

5.1. COLPOFER -- Collaboration of railway police and security services

The first set of statistics and indicators was supplied by COLPOFER. In its publication on railway crime statistics[10], the following definitions of offences are provided. Even though these definitions relate to the railway system, they are clearly very relevant for the purposes of this paper:

– *Security incidents*: incidents in which the security of rail traffic is endangered or a serious disruption occurs to the train service due to deliberate or negligent action

– *Incidents of assault*: assault (injuries, entrapment, threats occurring in the railway environment)

– *Theft of passengers' property:* theft of travellers' property (loss of property by both passengers and users of railway station services – caused by a third party)

– *Theft of goods:* the removal of goods belonging to third parties where those goods have been handed over for transport by rail

– *Vandalism:* vandalising railway property or goods transported by the railway

– *Fraud:* incidents where the railway company is or could be financially disadvantaged by forgery or other forms of deception

The above definitions are used to define the following indicators to present the offences in annual COLPOFER reports:

– *Crime ratio company*: Unit of measurement: (total crime statistics)/(passenger-km + tonne-km);

– *Crime ratio passengers:* Unit of measurement: (security incidents + incidents of assault + theft of passengers' property + vandalism + fraud)/(passenger-km);

– *Crime ratio goods*: Unit of measurement: (theft of goods)/(tonne-km);

– *Assault ratio*: Unit of measurement: (incidents of assault)/(passenger-km);

– *Theft ratio passengers*: Unit of measurement: (theft of passengers' property)/(passenger-km);

– *Security ratio*: Unit of measurement: (security incidents + bomb alerts)/(train-km for passenger transport + train-km for freight transport).

European Railway Crime Statistics also gives some crime figures (see Table A in annex), most of the railway systems belonging to the Association. Vandalism and theft of passengers' property are the most frequent incidents in the railway structures analysed. Security incidents are also highly evidenced, followed by assault, fraud and theft of goods[11]. It emerged that a higher rate of safety/security warnings is recorded in the United Kingdom, Germany and France compared with Switzerland, Belgium, the Czech Republic and Slovenia. Trend figures from 1995-99 (not presented here) show that the total number of assaults and thefts of passengers' property seems to have diminished. The number of thefts has been falling since 1996 and the number of assaults since 1997.

However, these absolute numbers do not tell us a lot about how safe it is for the individual passenger using public transport in one of these countries. Germany is a bigger country with many more train and public transport services than, for example, Belgium. Therefore, these absolute data have to be integrated with other data, such as length of track, number of passenger transport vehicles, etc. (Table B).

For a meaningful comparison, Table C provides a tabular overview illustrating a cross-comparison of the various ratios for Member countries. By using the ratios and absolute

COLPOFER values (e.g. length of line, number of passenger transport vehicles/goods transport wagons, goods/passengers transported) it is possible to derive comparable security data.

5.2. FTA -- Federal Transit Administration

The 1998 SAMIS (Safety Management Information Statistics) Annual Report is a compilation and analysis of transit accident, casualty and crime statistics, reported to the FTA National Transit Database[12].

Transit security data are collected for separate offences, based on definitions used by the Federal Bureau of Investigation (Part II offences are less serious than Part I offences)[13]. The advantage of using this handbook is that format, definitions and statistics are comparable for the whole country. All cities, transport suppliers and states use the same handbook. The categories are presented in annex (Table D).

5.3. CEN/CENELEC European Committee for Standardisation

An important factor affecting people's readiness to use public transport is the personal feeling of security -- one's assessment of how safe one will be from assault when travelling by bus or while waiting at a rail terminal. Recent DETR[14] research has shown that over 10 per cent more public transport trips, most of them off-peak, could be generated if people felt more secure.

To date, we have found one report which outlines some measurable indicators for perceived security. That report, "Public Passenger Transport -- CEN/TC 320/WG5[15]", states that the overall quality of public passenger transport is dependent on a great many criteria. These criteria represent the customer's view of the service provided, and in this standard they have been divided into eight categories: availability; accessibility; information; time; customer care; comfort; security; and environmental impact. The main purpose of the standard is to promote a quality approach to public transport operations and focus attention on customers' needs and expectations. Under the common CEN/CENELEC rules, most European countries[16] are committed to implementing European standards.

♦ *Security is defined as: "the sense of personal safety experienced by customers, derived from the actual measures implemented and from activity designed to ensure that customers are aware of those measures."*

Criteria (and not indicators) are listed according to the sense of security felt by passengers and staff. Travellers may not feel at ease during a trip for one of two reasons, both caused by external factors which they are not able to control: an offence or an accident. This lack of control generates a feeling of fear. According to the CEN/CENELEC standard, the first five measures increase the feeling of safety from crime (or external attack) and the last three measures increase the level of safety from accidents.

The transit environment is often unfamiliar, even uncomfortable for many passengers, producing feelings of confinement, vulnerability and intimidation. It is clear that most transit agencies struggle daily with the problem of trying to provide a valuable service, which must be marketed to and supported by the public.

To bridge the existing gap between actual and perceived security, it is necessary to effectively measure the extent to which clients feel comfortable while using public transport (or just while waiting at a bus stop). As a consequence, purely quantitative data about the number of offences will not succeed in this task. Subjective perceptions need to be analysed by means of qualitative surveys, enabling decisionmakers to understand which are the optimal measures to be adopted in order to make public transport safer and more attractive. Social segmentation is one of the prerequisites for successfully analysing the client's needs. Once crime and passenger fear levels have been established, the system security approach requires security to be addressed during the design, modification and renovation of public transport system facilities.

5.4. BTS – Bureau of Transportation Statistics

A BTS document, "Priorities for the Future[17]", explains how a list of important attributes of the transport system has been produced in order to develop key statistical indicators, for use by both the public and policymakers. Indicators are stored in a database called Data for Decision, split into the categories: supply; demand; performance; and impact[18]. The following indicators for safety and personal security and their respective units of measurement were identified:

- (total number of accidents, deaths, injuries) / (by market);
- (number of accidents, deaths, injuries per mile) / (by market);
- (percentage of accidents) / (by severity level) / (by market);
- (number and type of security incidents) / (by service population).

The document concludes: "*There is clearly much to be done to develop consistent and useful indicators in transportation safety, as well as other areas. BTS will need to work closely with statistical and analyses units in the other modal administrations, with states and metropolitan planning organisations and with the transportation community at large[19].*"

5.5. American Passenger Transit Association

A bus task force set up by the American Passenger Transit Association (APTA), conducted a survey to measure bus system performance (October 1999). The survey selected the following safety indicators:

- *Bus incidents*: Unit of measurement = (number of incidents per 100 000 bus miles)/(annual bus miles);
- *Casualties*: Unit of measurement = (number of personal casualties per 100 000 bus miles)/ (annual bus miles).

5.6. MAESTRO Project

The EU-funded MAESTRO project[20] (Monitoring Assessment and Evaluation Scheme for Transport Policy Options in Europe) aims to provide guidelines for transport in the 21st century. Within this set of practical guidelines, the topic of safety/security in public transport is also addressed. Table 7 in Appendix F lists all of the safety/security indicators used in the MAESTRO project. These are divided into three main categories, based on impact level.

The data attribute column gives the unit of measurement for the indicator and states whether it is based on quantitative and/or qualitative assessment. Quantitative indicators are derived by measurement and qualitative indicators from surveys and observations.

5.7. EQUIP Project

The European co-funded project Equip (Extending the Quality of Public Transport) is aimed at strengthening the role of local public transport operators in improving the quality of transport. It is developing a self-assessment handbook for benchmarking quality[21]. In the second part of the handbook, the collected indicators are grouped into twelve "clusters". The last cluster listed is safety, which provides the following two indicators:

- *Incidents*: (number of accidents)/(number of vehicles per km);

- *Health and safety*: (number of injuries)/(number of vehicles-per-km trips).

5.8. SESAME Project

SESAME is a research project carried out for DG VII as part of the 4th Research and Development Framework Programme[22]. The aim of the project has been to provide planners with the indicators needed for analysis: a database with essential elements, recommendations about survey methods and definitions for suitable indicators. The most important indicators needed to obtain basic insight into the functioning of urban transport systems have been labelled "key indicators". One of these relates to safety in transport:

- *Safety*: (number of people suffering personal injuries or being killed in traffic accidents)/ (per mode).

6. THE CURRENT EMERGENCY: TERRORIST ATTACK

The past several years have seen growing concern over the security of transport facilities, although the incidence of terrorism has fluctuated greatly.

Transport-related attacks, including the release of Sarin gas in the Tokyo subway system (1998), have occurred in some countries.

However, everything changed after 11th September 2001, with everyone feeling a great sense of insecurity after the terrible terrorist attack against the World Trade Center in New York.

The intrinsic characteristics of transport systems make them attractive targets for terrorists. They carry large numbers of people within concentrated predictable areas and time-frames. They are accessible by definition (since they provide easy user accessibility). Finally, their target-rich infrastructure frequently renders effective countermeasures impractical.

6.1. Current situation

The present security situation with regard to terrorist emergencies is evolving with the changing international scenario.

Since the multiple terrorist attacks of the seventies, the most serious international terrorist incident was an attack by Palestinian terrorists in Rome Airport in 1985. A relatively calm period followed in which the level of vigilance against this kind of attack declined.

After 11th September 2001, the threat of international terrorism re-emerged in all of its seriousness.

Terrorism remains a matter of national security which has to be countered at the foreign policy level or by the security services.

However, all of the potential targets of an attack (such as transport networks), are required to take this kind of threat into consideration and adopt all of the measures they possibly can.

6.2. Preventive measures

Security plans must analyse the targets most vulnerable to terrorist threat and provide for co-ordination with the Public Safety Authorities.

Preparedness for terrorist emergencies will be enhanced by:

- developing an emergency plan;
- integrating emergency policies and procedures into existing operating and emergency response procedures;
- identifying and training with emergency equipment;
- designing emergency features in system and vehicle design;
- training employees and emergency response organisations.

Among the most important preventive measures for public transport operators is continuous co-operation with the Public Safety Authorities, in accordance with standardized procedures, so as to have immediate information on potential dangers.

6.3. Emergency measures

Efficient and effective emergency management requires clear and fast decisions to be taken in a chaotic and emotionally-charged environment. Successful implementation of an emergency plan can only be achieved if the plan has been rationally designed, the responsibilities are clearly defined and full training has been provided.

A key goal of an emergency plan is to establish a common headquarters that allows all agencies with geographical, legal or functional responsibility to establish priorities and a common set of objectives and to improve information flow. Each agency will also be fully aware of the plans and constraints of all others.

The following list[23] provides key incident objectives for managing response to terrorist incidents on transport systems:

- Secure perimeters;
- Control and identify the threat ;
- Rescue and transport affected persons;
- Move crowds to safe zones;
- Stabilize incident (prevent escalation);
- Protect rescuers;
- Secure evidence and crime scene;
- Protect against secondary attack.

The contribution to crisis management of a well-designed transport system emergency plan may well be crucial to the successful handling of a terrorist incident.

7. ROME'S EXPERIENCE AND ITS FINDINGS

7.1. Rome: background data

Rome's situation is a complex one from many standpoints: geographic, demographic, political, historical and cultural.

As the capital city, Rome is host to national governmental bodies as well as other institutions and representatives, which substantially increases the number of people living and travelling in the city.

From a geographical perspective, Rome is Italy's biggest conurbation. It is divided into nineteen boroughs (*municipi*), although five areas can be identified from a functional perspective in accordance with the Mobility Master Plan: four inside the Great Ring Road, while the fifth is external and extends to the city outskirts (Table 4).

The historical centre, including the Restricted Traffic Zone (RTZ), has the highest concentration of business activities: less than 1 per cent of municipal territory hosts 13 per cent of the total active population and only 2 per cent of residents.

The central area, from the historical centre to the orbital railway, has a high population and business density. The mid-central area, externally bounded by the ring road, is characterised by medium business density and the highest population density. Population and business densities are lower in the outer ring.

Table 4. **Rome: Main figures**

Area	Area (km^2)	Population (habitants)	Pop. density (hab./km^2)	Employment (workers)	Empl. density (workers/km^2)
Historical centre	6	52 848	9 272	120 950	21 219
Central area	34	333 359	9 747	300 490	8 786
Mid-central area	114	1 212 514	10 617	308 909	2 705
Peripheral area	190	578 111	3 041	131 032	689
Suburban area	941	574 146	291	92 401	98
Whole city	285	2 750 978	2 141	953 782	742

Source: Population CEU 1999, Employment ISTAT 1991.

At present, one of the most pressing problems in Rome is the gap between mobility demand and public transport supply, with the result that personal transport (i.e. car or motorbike) is the prevailing mode. The car ownership rate grew in the past 35 years from 0.2 to 0.7, while the distance travelled tripled (+650 per cent) due to the larger number of vehicles. Average trip length also increased. This growth has not been matched by a comparable increase in public transport supply, which increased only slightly (+90 per cent) by comparison.

In 1964, public transport was used for 56 per cent of trips, while today the percentage is down to 25 per cent. At the same time, even walking has considerably decreased. The main impact of such changes is heavy, chaotic traffic accompanied by a substantial deterioration in quality of life and environmental conditions.

7.2. Sustainable municipal transport policies

The City Administration has developed sustainable policies aimed at improving mobility, encouraging a modal shift towards public transport, increasing traffic safety, decreasing air pollution and noise nuisance, regenerating urban spaces, rationalising the use of public space, safeguarding the health of citizens and preserving the city's historical and architectural heritage.

The general implementation strategy is leading to an increase in radial roads, serving as trunk routes to which new radial lines, served by tramways and electric buses, will be added. Strengthening and redesigning the radial railway system will satisfy greater shares of transport demand.

The past few years have also seen major changes in Rome's transport market. The old monopoly operator has been split up. Network property and management has been separated from service management. ATAC SpA. -- the Rome Mobility Agency -- manages service contracts and calls for tender. Service performance is the main responsibility of Trambus SpA., the surface transport provider, Met.Ro. SpA. (underground and light railway) and Cotral SpA. for regional bus services all over the Lazio region. For the past two years, new private transport operators have been providing services on specific lines.

The following figures show the scale of public transport in Rome: more than 2 500 buses and 140 trams; 7 000 bus stops in the urban area; 12 depots in the urban area; 930 million passengers/year by surface transport and 220 million passengers/year by two underground lines.

These figures and the specific features of Rome explain why security is a major objective in managing Rome's public transport and is one of its citizens' main expectations.

One way in which public transport operators have sought to improve security is by deploying a CCTV (Closed Circuit TV) system. CCTV is currently used for surveillance on Rome's underground transport system and is to be installed in all ATAC properties over the coming months.

To improve efficiency, optimise infrastructure use and reduce security costs, an automated system, capable of "understanding" video information, can be developed.

Under the EU-funded MIRACLES project, ATAC will implement and test such a system for passenger surveillance on its underground network, using existing infrastructure (CCTV and Control Room). This system, alongside human operators, could provide support for the on-line detection of incidents (i.e. incidents that require an immediate response by passenger assistance staff, a police alert, etc.). The system (named IPS-ATAC) may even support off-line analyses, relating to level of service (occupancy of space, queuing, effects of signage/retailing on normal flow), usually carried out by expensive field surveys, which are subject to human bias in manual counts.

By the end of next year, video surveillance will also be deployed to enhance infrastructure security in all twelve urban depots, to reduce thefts and vandalism.

Video surveillance is also an effective tool for improving passengers' and operators' perceptions of security, but it should be integrated into a broader-based security policy, designed to tackle all kinds of offences.

Table 5 below shows a first breakdown of categories of offences in public transport which are equally applicable to Rome's situation.

Table 5. **Categories of offences**

Property offences:	**Offences against passengers/staff:**	**Incivilities:**
1. Property theft	1. Pick-pocketing	1. Begging
2. Property crimes	2. Robbery	2. Smoking
3. Fare offences	3. Verbal abuse	3. etc.
4. Burglary/trespassing	4. Physical assault	
5. Drug offences	5. Sexual assault	
6. Debris on track	6. Murder	

Source: PRISMATICA, 2001.

With its large geographical area and high population density, Rome experiences almost all of these offences. Focusing on vandalism, a further breakdown could be as follows:

- − Graffiti;
- − Tags;
- − Window scratching;
- − Seat slashing;
- − Arson;
- − Property damage;
- − Missile throwing.

Source: PRISMATICA, 2001.

7.3. Current measures to increase public transport security

Graffiti have become quite a common sight in the underground system as well as at stations and bus stops. To tackle this kind of problem, which leads to a feeling of abandonment and thus insecurity in passengers, ATAC has developed a viable and effective solution: a special type of microfilm. This microfilm can be applied to buses, carriages and walls so that graffiti and all paints can be washed off with water, making cleaning procedures easier, quicker and cheaper (see pictures in annex).

Day-to-day vandalism of all kinds is exacerbated by the problem of violent football supporters, who sometimes start street-fights when there are matches. During risky and crowded matches, ATAC, in co-ordination with the police, develops special plans to improve mobility around the stadium area (but it is only a widespread police presence that discourages disruptive acts of vandalism).

To give a figure that illustrates the gravity of vandalism, in 2001 the few peripheral lines managed by private transport companies have seen 200 to 238 buses hit by acts of vandalism, at a direct cost of € 51 000, excluding lost trips. Even if the figure is not proportionally representative for the whole transport system, it shows that vandalism should not be underestimated.

Vandalism is important as it affects not only property and infrastructure but also passengers' perception of security. Nor should we forget direct threats to the security of passengers and staff, such as verbal, physical and sexual assaults.

Data on offences against passengers are not available, as injured passengers file complaints with the police, not with public transport operators.

Figures for offences committed against staff during the first nine months of 2001 show that ATAC and TRAMBUS SpA experienced more than **120** offences, with **200** working days lost. The costs are much higher if we consider lost trips and lost passengers.

As already mentioned, passengers' and operators' perceived feeling of insecurity has been greatly affected worldwide by the events of 11th September. To tackle the renewed terrorist threat, in October 2001, ATAC established a Crisis Unit, with the aim of increasing infrastructure, station and passenger security resources.

The Crisis Unit co-ordinates all public transport operators running a service in Rome, security companies and police forces. The Crisis Unit represents ATAC's operational arm in the "integrated operations room" run by the local police.

The Crisis Unit also develops and updates integrated emergency plans along with local key actors (e.g. municipality, police, etc.).

To reinforce these actions, ATAC is developing effective communications programmes to support sustainable mobility policy under the EU-funded TAPESTRY programme. There is also a scheme to involve potential public transport users at an early stage (primary and secondary school age), which is aimed at changing attitudes towards public transport and discouraging vandalism and damage to public property.

8. CONCLUSION

Security and safety in Italy has long been regarded as a minor aspect of the transport service, whereas public transport users in fact consider security as a fundamental factor in choosing a means of transport.

Security was not a priority for the local transport system, because it operated as a monopoly until 2000 and thus could not be forced to achieve system and service excellence. In a monopolistic market, what is important is to provide the best service at low cost, not necessarily to maximise profits.

A campaign carried out by ASSTRA in late 1999 showed that public transport operators paid very little attention to security and safety.

The restructuring of public transport operators, following the implementation of EU Directives, the high costs that they are now facing because of security problems (i.e. vandalism, graffiti, assault, theft), declining patronage and, above all, serious terrorist attacks, have now placed the issue of emergencies high on the agenda for public transport.

In order to develop a comprehensive approach to security (one that considers security as part of the transport system's "production cycle"), it is essential to define a common approach to security issues and to collect data, define indicators and develop methods for comparing the impact of security on transport.

Although more work is now being done on security aspects, a standardized, global approach and specific data on the phenomenon are still lacking. Passengers' perception of security must also be specifically addressed.

A market-oriented manager of a transport system has to consider these aspects very carefully and also has to note that, in the urban public transport sector, there is no such person as the "average user". The urban transport market is made up of individual users, with specific expectations, characteristics and needs. This said, the "mobility product" is, by definition, a mass transport service, not a customised service. Nevertheless, some degree of product differentiation is possible, in order to make

services more attractive to specific segments of the market. This can be achieved by attending to the following aspects of the service: network design, customer information, promotion, sales and ticketing systems, interconnection between modes and the design and provision of peripheral service features.

The security aspect of service provision may prove to be a key element when it comes to market segmentation. It is probably much more of a determinant in passengers' choice of transport than price. Therefore, the level of security expected by passengers is much less dependent on the price of the ticket than, for example, comfort and travel time savings. Transport has to be safe first and foremost! The same is true for staff.

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ANNEX

Table A. **European Railways Crime Statistics**

	(UK)	(CZ)	(P)	(D)	(I)	(HU)	(NL)	(A)	(E)	(CH)	(B)	(F)	(SI)	Total
Security incidents	17058	76	378	6 034	3 033	1 970	1 385	89	3 018	366	492	17 390	91	51 380
Assault	9 540	241	18	8 283	179	441	2 144	38	429	632	153	5 971	67	28 136
Theft of passenger property	24 662	474	13	24 159	14 652	1 954	8 689	1 512	488	387	312	6 181	158	83 641
Theft of goods	198	189	46	965	471	1 607	~	3 910	1 031	~	~	482	79	8 978
Vandalism	6 763	417	4 941	46 190	3 091	1 671	1 080	1 254	7 651	2 261	1 327	7 013	124	86 874
Fraud	2 767	33	~	14 142	128	46	222	910	680	804	42	~	8	19 782
TOTAL	60 898	1 430	5 396	99 773	21 554	7 689	16 520	7 713	13 297	4 450	2 326	36 983	527	279 241

Source: COLPOFER (1999).

Table B. **General rail statistics**

	(UK)	(P)	(D)	(I)	(NL)	(A)	(E)	(B)	(F)
Passenger-km	38 000	4 329	72 800	41 000	15 000	7 997	18 144	7 770	66 590
Tonne-km	17 900	2 562	71 500	24 400	0,025	15 556	11 486	7 602	52 110
Train-km passenger transport	~	0,032	0,730	0,249	0,120	0,092	0,600	2 202	0,363
Train-km freight transport	~	0,008	0,220	0,058	~	0,048	0,373	0,182	0,155

Source: COLPOFER (1999).

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Table C. **Detailed crime ratio**

	Crime ratio company		**Crime ratio passengers**		**Crime ratio goods**
NL	1 100	NL	1 101	NL	NA
P	783	P	1 236	P	18
UK	1 089	UK	1 597	UK	11
A	327	A	476	A	251
B	151	B	353	B	NA
E	449	E	676	E	90
D	691	D	1 357	D	13
I	330	I	514	I	19
F	312	F	549	F	8

	Assault ratio		**Theft ratio passengers**		**Security ratio**
NL	143	NL	579	NL	12 150
P	4	P	3	P	9 450
UK	249	UK	649	UK	NA
A	5	A	189	A	743
B	20	B	40	B	223
E	24	E	27	E	3 178
D	114	D	332	D	6 598
I	4	I	357	I	10 313
F	90	F	93	F	33 902

Table D. **Part I and Part II offences as stated in the *FBI Uniform Crime Reporting Handbook***

Part I Offences	Part II Offences
Homicide	Other assaults
Forcible rape	Vandalism
Robbery	Sex offences
Aggravated assault	Drug abuse violations
Burglary	Driving under influence
Larceny theft	Drunkenness
Motor vehicle theft	Disorderly conduct
Arson	Trespassing
	Fare evasion
	Curfew/loitering

Source: FBI, 1984.

Table E. **Breakdown of security and prevention measures, according to CEN**

Security	**Freedom from crime**	1. Preventative design 2. Lighting 3. Visible monitoring 4. Staff/police presence 5. Identified help points
	Freedom from accident	1. Presence/visibility of support 2. Avoidance/visibility of hazards 3. Active safeguarding by staff

Table F. **MAESTRO safety and security indicators**

Impacts	Indicator	Description	Data attributes
OVERALL TRANSPORT SAFETY	Accidents	General transport accidents within the city	No./year, quantitative, collected, measurement
	Deaths	Number of transport-related deaths within the city	No./year, quantitative, collected, measurement
	Accident weighting index	Overall accident assessment using weighting for different categories and severity accidents	Index, qualitative, derived, measurement
	Safety rating	Perception of transport safety by survey	Index, qualitative, collected, measurement
	Safety index	Safety index	No./vkm* (or pkm**), quantitative, derived, measurement
SAFETY AT SPECIFIC SITES	Accidents	Number of general transport accidents within the city	No./year, quantitative, collected, measurement
	Deaths	Number of transport-related deaths within the city	No./year, quantitative, collected, measurement
	Safety rating	Perception of parameters of transport safety by survey	Index, qualitative, collected, survey
SECURITY	Safety rating	Attitude toward feeling of parameters	Index, qualitative, collected, survey
	Incident levels	Compile statistics on the number of attacks when using transport options	No./year, quantitative, collected, measurement

*   *Vkm = Vehicles per km.*
** *Pkm = Passengers per km.*

Source: MAESTRO.

Graffiti protective film

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SUMMARY

Bristol, December 2001

ABOUT CRIME CONCERN

Crime Concern is a non-profitmaking organisation which aims to help create safe, socially inclusive communities across the United Kingdom by working with local and national partners to reduce crime and offending. We currently employ approximately 330 staff, including over eighty crime reduction specialists, and we work with six hundred volunteers.

Our role involves identifying good practice through our own and others' research, and promoting its adoption by practitioners. We also have a major involvement in the delivery of crime reduction activity.

1. INTRODUCTION

In 2000, Crime Concern was commissioned by the Department of Transport, Local Government and the Regions to explore the reasons for and solutions to the problems of graffiti, vandalism and environmental nuisance on public transport.

The work was conducted in three stages:

1. A literature review, drawing together information on:

    - the scale of these problems;
    - key issues, including peak times and offender groups;
    - reasons for different aspects of graffiti and vandalism; and
    - existing practices – both nationally and internationally – to prevent and tackle these problems;

2. A series of case studies in the UK and abroad, to explore in more detail initiatives which appeared to be effective in reducing graffiti and vandalism on public transport;

3. Three pilot projects to test out good practice (as identified in 1 and 2) in the UK.

This paper reports on the key findings of stages 1 and 2. The pilot projects are not sufficiently advanced to enable us to report on their findings.

2. VANDALISM AND ITS IMPACT ON PERCEPTIONS OF SECURITY

There is evidence that public perceptions of insecurity and fear of crime are strongly influenced by the impression of public spaces which are unmanaged and appear "out of control" because of vandalism, litter and other negative features.

The 1994 British Crime Survey data was used to conduct an analysis of factors contributing to anxiety about crime (Hough, 1996). It identified a direct link between perceptions of disorder and concern about crime, and this effect was independent of other factors, such as the actual level of crime. The analysis identified *"seeing signs of crime in the neighbourhood, such as vandalism and litter"* as one of the factors that increased anxiety about crime and fear of victimisation. Similar conclusions have been drawn from the analysis of the 2000 British Crime Survey (BCS).   In this survey, respondents who perceived higher levels of disorder in their area (including vandalism) were found to be more concerned about crime and their own safety (Kershaw *et al.*, 2000).

The DTLR Survey of English Housing 1999-2000 (DTLR, 2001) identified that respondents living in the most deprived local authority areas and wards were more likely to perceive vandalism, graffiti, litter and rubbish and crime as serious problems in their neighbourhood compared to people elsewhere. The figures below show the percentages of those considering each category as a serious problem in their own deprived areas compared to those living elsewhere:

- Vandalism   19% compared to 6%
- Graffiti   10% compared to 3%
- Crime   28% compared to 10%

The above surveys refer to the perceptions of adults. In surveys undertaken for a DTLR study, Crime Concern explored the attitudes of young people towards graffiti in particular (Crime Concern, 1999). In contrast to adults' perceptions, this study identified that the presence of graffiti did not appear to make most young people feel unsafe. Those engaged in graffiti often perceive their contribution to the urban environment as positive and making the city a brighter place. Most would neither accept that it is threatening to the public nor that this has been proved from research with the public.

Some criminologists suggest that it is not only fear of crime that is increased by the presence and prevalence of incivilities and anti-social behaviour. It is also suggested that there may be a link between increases in incivilities and actual increases in more serious crime.

The "broken windows" theory, developed in the United States, has identified a possible link between disorder, fear of crime and more serious crime. This theory proposes that if a broken window is left and not repaired, the other windows will soon be broken in response to the message that "no one cares".

It is argued that the presence of more broken windows or greater vandalism will influence residents' perception of crime more generally in the area and it will be assumed that other crime,

including violent crime, is also on the increase. As a consequence, residents will feel more insecure and fearful and, in response, will use the streets and public places less. With fewer people using public spaces, there is an erosion of informal social controls, and the area will *in fact* become more vulnerable to and at risk from crime.

An anti-graffiti campaign in Malmo, Sweden applies the "broken windows" theory specifically to this kind of criminal damage, with the conclusion that:

> *Illegal graffiti is the visual impression of an uncaring and indifferent society, where small crimes can lead to bigger crimes. Without exception, failure to identify the whole problem accurately and take a proactive approach in the early stages encourages illegal graffiti to continue to escalate until resources or the cost of effective control is beyond the means of many administrations.*

The Design Council's publication, *Designing for Secure Travel*, commented that graffiti and vandalism are "*among a series of environmental clues that are evidence of law breaking, causing damage and disreputable behaviour* (Atkins, 1989)." Graffiti and vandalism were said to contribute to the threatening nature of the environment and the passenger always had the suspicion that if it could "*be produced without disruption or interruption, then other undesirable events could also take place without attracting attention.*"

3. THE SCALE AND IMPACT OF THE PROBLEM

There is little evidence, however, which specifically *quantifies* the impact of vandalism, graffiti, litter and other environmental nuisance on the perceptions of passengers and public transport staff. Factors such as reliability, frequency and cost of the service are known to be of paramount importance with passengers. Surveys often show that other considerations, such as the degree of cleanliness and the presence of vandalism and graffiti, are of comparatively less importance, although they are still known to have an impact on the propensity to travel, especially at off-peak times and when there is a choice of alternative modes.

Qualitative research has been much more informative in identifying the impact of vandalism, graffiti and litter on the perceptions of passengers and their sense of security. Research for London Underground (London Underground Ltd, 1993) identified the role that the quality of the environment plays in developing attitudes to security. Stations that are clean and bright enhance feelings of security, whilst those subjected to extensive graffiti and vandalism develop or enhance feelings of insecurity. Dereliction of the trackside, including empty buildings that had been vandalised, was also noted to contribute to passenger perceptions that this was not a controlled or well-managed environment.

Research on perceptions of safety from crime on public transport (Crime Concern and Transport & Travel Research, 1997) identified dingy and uncared for environments as contributing to a fear of crime and sense of insecurity when waiting for or using the bus or train. In the discussion groups conducted for that research, the impact of a lack of cleanliness and maintenance on people's anxieties was evident:

"...the stairs are smelly, dirty with lots of litter -- it's all very grubby and dingy -- that tells you, no one is looking after this area -- so no one is going to look after you."

In the New York subway system, the number of people using the subway fell in part due to the significant increases in the volume of graffiti. Between 1981 and 1983, when the problem was at its height and there was graffiti on nearly every train and subway, the number of passengers fell by 12 per cent (Whitford, 1993). In 1985, there was a comprehensive programme of cleaning, policing and community education and passengers returned to the subway, with patronage increasing by over 30 per cent in the late 80s.

There are no reliable estimates of the true scale of these problems. Whether in public transport or in the wider arena, many incidents of vandalism, graffiti and environmental nuisance go unreported to the police or other appropriate authority. Even where the type of incivility is an illegal offence, differences in the definition, measurement and recording of incidents makes it difficult to draw together data at a national level and even between agencies at the local level (Bland and Read, 2000).

Criminal damage or vandalism is defined in UK law as *"intentionally or recklessly destroying or damaging any property belonging to another without lawful excuse"* (Criminal Damage Act, 1971). Vandalism can range from scribbling on a wall, the daubing of political slogans or the destruction of graves in a cemetery to endangering life with a concrete post deliberately placed in the path of a train, smashing the glass of bus shelter windows or the burning of a school through an arson attack.

From the latest England and Wales police statistics, there were 960 087 criminal damage offences recorded for the year ending March 2001, a rise of 1.5 per cent on the previous year (Home Office, 2001). Excluding offences of arson, 40 per cent of these crimes were to a vehicle (mainly private cars), a further 25 per cent to a dwelling, about 14 per cent to other buildings and 10 per cent were to other targets, including bus shelters and phone boxes.

The 2000 BCS revealed that only 31 per cent of criminal damage incidents are reported to the police (Kershaw *et al.,* 2000). However, on a positive note, the proportion of offences reported to the police has been gradually increasing over the years and has risen from 22 per cent in 1981.

The scale of vandalism targeted at public and commercial property is difficult to assess with any degree of accuracy because of the differences in definition, measurement and recording between agencies and because of significant levels of under-reporting.

The Home Office has recently published a report estimating the economic and social costs of different types of crime (Brand and Price, 2000). The costs of crime refer to the full range of impacts of crime. It includes the costs incurred in anticipation of, or to prevent crime as well as costs that are the consequence of those crimes. The latter includes expenditure on the criminal justice system and estimates in financial terms of the emotional and social impact of incidents.

This study estimates the average cost of an incident of criminal damage *against individuals and households* to be €830 in 1999-2000 and the total cost of all such crimes in England and Wales to be €2.5 billion. The average cost of incidents of criminal damage targeted *against the commercial and public sector* is estimated at €1 500 and the total annual cost of all such incidents at €4.3 billion. Thus, taking all incidents in total, the annual cost of all incidents of criminal damage in England and Wales was estimated at €6.7 billion in 1999-2000, resulting from six million incidents. For comparison, the total annual cost of all crime was estimated at €100 billion.

A commentary on the estimates for criminal damage costs reveals that nearly half the costs per incident for vandalism targeted at the commercial and public sectors resulted from the cost of the property damaged or destroyed. The other half of the average cost resulted from expenditure on security measures to prevent or deter criminal damage.

There are a number of ways in which vandalism impacts on the public transport network:

−   The costs of cleaning, repair and replacement, including to freight as well as passenger infrastructure and rolling stock;

−   The costs through design and security measures to prevent or deter such activities, including, for example, those of CCTV surveillance, security staff and security fencing;

−   The dangers it can cause to the travelling public and staff and the delays to services resulting from acts of vandalism;

−   The contribution which vandalism makes to fears for personal security can deter potential travellers and reduce patronage;

−   Acts leading to the withdrawal of services to areas or at times when the threat of vandalism is greatest; and

−   The dangers to the perpetrators through track trespass or unsafe use of buses or trams.

A briefing paper published by Railtrack (Crime Concern and Railtrack, 1998), summarised the following national statistics about the incidence and cost of vandalism on the rail network:

−   83 per cent of incidents of damage to drivers' windscreens were caused by missiles thrown at the train, affecting 514 drivers;

−   59 per cent of the 1,864 train accidents in 1997-98 were caused by acts of vandalism, a rise of 10 per cent on the previous year;

−   Delays caused by vandalism are estimated at over 11 500 hours a year;

−   The number of train fires started by arsonists continues to rise, with an increase to 206 incidents in 1997-98;

−   The annual *cost of repair* following vandalism of the rail infrastructure is estimated at €21 million or €400 000 a week.

The total costs of trespass and vandalism are estimated to cost the rail industry about €425 million every year.

In June 2000, the Health and Safety Executive drew public attention to the problems in a press release that targeted the increasing problems of track trespass and its dangers, often associated with vandalism:

−   Between April 1999 and March 2000, there were over 8 500 reported trespass incidents nationwide and over 9 600 reported incidents of vandalism by people of all ages;

−   In that same year, 120 people were killed and around 150 people suffered severe injuries, such as burns or loss of a limb, as a result of trespass on railways;

−   Six children were killed trespassing on the railway track.

In the latest railway safety statistics for the year to March 2001, there were ten fatalities involving child trespassers. In England, there were 715 incidents of trains running into obstructions on the track and 613 incidents of missile damage to windows (Health and Safety Executive, 2001).

Nexus, the Passenger Transport Executive in Tyne and Wear, has experienced a significant rise in graffiti and vandalism over the last two years. The cost of removing graffiti on the Metro network, with 46 stations, is estimated at more than €650 000 a year.

On the London Underground, about 2 000 people every year - many of them young children - risk injury and death by trespassing on the track. Many of these trespassers also commit acts of vandalism that endanger the lives of passengers and staff and cause major delays. Windows on underground trains are regularly vandalised through glass etching known as "Dutch graffiti". The cost of replacing one window is about €325 and the price of replacing all the windows in a carriage can be as high as €8 000.

Vandalism to buses usually consists of broken windows, damaged seats and interior graffiti. On all buses, damage is usually greatest in those parts of the vehicle with low supervision and surveillance, especially the upper decks and back seats (Sturman in Mayhew and Clarke, 1980). Other research confirms these general observations, including a survey which concluded that mini-buses are the least likely and double-deckers the most likely to be vandalised (Cahm, Harper and Abbis, 1992).

On behalf of the DTLR and with the assistance of the Confederation of Passenger Transport, Oscar Faber analyse annual data on vandalism on buses. A questionnaire is sent out to bus operators outside Greater London, and Transport for London-Buses provides a commentary on vandalism within the capital, but no quantifiable data is made available for London.

The same survey measures the perceived levels of different types of vandalism on a five-point scale from "very rare" to "common". The operators responding to the survey perceived that all types of vehicle vandalism have increased, with 20 per cent of operators identifying vehicle damage as "very common" in 1999 compared to only 15 per cent in 1998. The most common form of vandalism is broken windows, followed closely by interior graffiti and seat damage.

Transport for London-Buses identified interior graffiti as the most common form of vandalism on buses within Greater London, especially on the upper deck. The etching of window glass, "Dutch graffiti", has also become a common form of vandalism. The number of incidents of missiles thrown at buses was higher in 1999 compared to the previous year, with the majority of these resulting in broken windows. Other forms of vandalism on London Buses included windows being pushed out and seats being ripped and thrown from windows. These acts have resulted in bus staff and passengers being intimidated and some have been injured. The incidence of small fires being lit on buses in London appears to have decreased from previous years.

As an example of the problems faced by individual operators, one London bus company revealed that vandalism to their vehicles is costing an average of €11 500 a week for repairs to buses maintained at their Bexleyheath garage (*The Clipper*, September 2000). This cost does not include the lost revenue and mileage through having vandalised vehicles off the road. In the twenty weeks from

February to June 2000, there were 98 separate incidents of vandalism involving Bexleyheath buses. There were forty incidents of damaged seats, including cushions being thrown out of windows, and thirteen of smashed windows, several caused by bricks dropped from overhead gantries.

4. PATTERNS OF OFFENDING

Young people are associated with a great many incidents of vandalism and graffiti.

The British Transport Police estimate that young people are responsible for 90 per cent of vandalism offences on the railways, the peak age being 17 years and the peak time for vandalism between 16:00 and 19:00 hours. Examples include obstructions on the railway line, dropping objects over bridges, stone throwing and cable cutting, as well as damage to the station infrastructure and rolling stock. In 1995, Nexus and the Metro Police Unit estimated that a small number of offenders aged eight years and above were responsible for €950 000 of damage to metro rolling stock and property in North Tyneside alone (North Tyneside Council and Nexus, 1997).

Commissioned by Railtrack, a survey conducted by MORI with a large sample of 11 to 16-year-olds included questions on vandalism and the track trespass often risked by young people to commit acts of criminal damage. The survey findings revealed that a quarter of 11 to 16-year-olds admitted at least one offence of vandalism (Railtrack Trespass and Vandalism Research and Strategy Study, 1998). A third of all respondents and 42 per cent of boys admitted to at least one incident of trespass on railway property. Older young people are more likely to trespass than those of 11 to 13 years of age. Those attending schools closest to the tracks are the most likely to trespass and vandalise railway property and the critical distance at which the number of offences begins to fall significantly is about two miles.

In research conducted for the Youth Justice Board, nearly 70 per cent of young people excluded from school admitted committing incidents of vandalism (Home Office, 2000). In a recent survey of youth lifestyles, 12 per cent of males and 7 per cent of females aged 14 to 15 years admitted one or more offences of vandalism during the last twelve months (Campbell and Harrington, 2000). This same survey revealed that self-reported incidents of vandalism for both young men and women fell sharply in the older age groups.

The national study for the DTLR on young people and crime on public transport identified a low awareness amongst children and young people about the impact of graffiti on other passengers. In fact, since some young people feel aggrieved by the perceived negative attitudes of older people and transport staff towards them, the thought that their actions might be upsetting or make these people fearful may not act as a deterrent. Awareness is also low among young people about the cost of cleaning graffiti or repairing criminal damage.

There is a strong seasonal peak in trespass and vandalism on the railway line during the spring and summer months (related to the school holiday periods) and a moderate increase at weekends (Crime Concern and Railtrack, 1998). Incidents increase steadily during the day, most occurring between 15:00 and 20:00 hours.

A bus operator in a major UK city identified that the main perpetrators of vandalism are young males between 12 and 16 years of age. Interestingly, in that city, the summer is a comparatively quiet time for incidents, although some still do occur. It is when the schools start back after the summer holidays and with the darker evenings that the problems begin in earnest. Thus, September is when this company expects the scale of incidents to increase significantly. In contrast, on the national railways, vandalism peaks during the Easter holiday and rises again during the summer holiday period.

Most transport operators identify different patterns during the course of the day, with little happening in the mornings, even on dedicated school buses. On the journey home from school, however, more young people will be causing damage and breaking windows. From 16.30 onwards, especially when the evenings are dark, this is when missiles are more likely to be targeted at bus windows.

5. THE CAUSES OF GRAFFITI AND VANDALISM

Among criminologists there are conflicting and contrasting views on the causes of vandalism. Some argue that it shows a lack of respect for society's values, whilst for others it is associated with youthful high spirits or "*an unconscious attempt on the part of children to exercise control over their environment by leaving some sign of their presence* (Barker and Bridgeman, 1994)." Evidence has been presented that suggests a great deal of vandalism is "unwilful" and caused during the course of unsupervised play, with design having made an object vulnerable to damage during normal use (Mayhew and Clarke, 1982).

In order to better understand the causes of vandalism and hence inform measures to tackle criminal damage, different types of vandalism have been identified on the basis of their motive (Cohen, 1973). This typology of vandalism was adapted and reproduced in the Home Office study, *Preventing Vandalism, What Works?* (Barker and Bridgeman) as follows:

Cohen's Typology of Vandalism:

- *Acquisitive:* to acquire money or property, e.g. breaking open telephone boxes;
- *Tactical:* damage as a conscious tactic, for example, to break a window to get arrested and be accommodated overnight in a police cell;
- *Ideological:* similar to tactical vandalism but carried out for an explicit cause or to deliver a protest message;
- *Vindictive:* damage to obtain revenge;
- *Play:* damage in the context of a game, who can break the most windows;
- *Malicious:* an expression of rage or frustration against a symbolic item of property. For example, vandalism to a bus shelter when the perpetrator is angered at having missed the last bus or at the length of the wait.

This typology is important because it reminds us that not all vandalism is the same and not all vandalism is necessarily associated with young people. For example, young people are usually associated with vandalism whose motive is "play", "malicious" or "acquisitive", but will not usually be responsible for incidents that are "tactical" or "ideological".

Negative attitudes towards public transport can also be a source of anti-social and criminal behaviour by adults as well as young people. Research conducted by Crime Concern for transport operators has revealed, from observation and consultations with staff, incidents of criminal damage associated with angry responses to service delays, to the cost of travel or ticket checks. Alcohol misuse also has a role in many incidents of vandalism on public transport.

Many examples of graffiti, especially the scribbling of names and messages and the more simple "tags", are known to come from the activities of children and young people. The views expressed by young people in Crime Concern's national study revealed consistent views about why this activity took place. It is partly a response to boredom and partly a dare or a challenge to authority and older people.

More commonly, its presence is associated with children's keenness to mark out their territory *"so other people know me"* or *"know that I'm here".* Such graffiti can take on a more sinister form when street gangs use it to stake out a claim to an area and intimidate the local community and potential rivals.

Research conducted for a study of personal security issues and the use of public transport by ethnic minority communities revealed the extent to which racist graffiti at the station or on walls along a transport route can be particularly threatening (Crime Concern, 2000). A participant in one of the discussion groups for that study commented:

> *"...when I got off at the main station here in Plymouth, there's graffiti from the British Movement at the station, that made me feel threatened...I complained to the station manager but I was told that it had been here for years... Any black person would see it as a veiled threat..."*

As another example, along some train routes through East London, there is graffiti marking out the presence of the National Front or British National Party.

Using graffiti to register a protest against a regime or authority has a long history, extending over centuries, and its history is sometimes used today to justify all graffiti as an act of free expression.

What is sometimes called "repetitive graffiti"[1] had its beginnings in New York in the 1970s. A young man who worked as a messenger across New York City began to write his name everywhere on his travels, including on the subway system. In 1971, an article about him was published in the New York Times and other young people, impressed with the publicity that the young man had received, began to copy his activities. Thousands of young people began to "tag" buildings, stations and subway trains across New York State. At the same time, the availability of permanent markers and spray paints greatly aided these activities. "Getting your name up there" became a vocation (Cooper and Chalfont, 1994).

From these origins, "repetitive graffiti" spread internationally.

Not all of those engaged in the graffiti subculture are young people. For others, the excitement and the strength of the international network still remain an attraction. Many are persistent offenders, with a minority responsible for many hundreds or even thousands of tags and pieces. One perpetrator of graffiti, interviewed in a Stockholm magazine, admitted to having vandalised one hundred of the capital's underground stations, including thirty in one week and to having done over five hundred train pieces.

From the start, public transport was a popular target for this form of graffiti. Initially, the key attraction was that graffiti on a train or on the trackside will be seen by a much larger audience. Subsequently, the perpetrator's exposure to the risks of working in a dangerous environment has become increasingly important in raising his (or her) status with his peers.

The New York subway was said to have advantages that could not be rivalled by any other potential canvas because of its "*high visibility, the huge potential audience and the link with other like-minded kids throughout the city* (Chalfant and Prigoff, 1987)."

There is evidence that rapid removal does have an impact. This impact may be reducing, however, with the increasing role of the Internet and its many graffiti Websites providing a platform for viewing pieces, and the growth of digital photography and videos.

Despite the arguments of some of those engaged in graffiti that the provision of "permitted sites" would resolve or ease the problem, most of the evidence would not appear to support this view. Even when those engaged in graffiti are given a free hand to paint whatever they like, they are likely to still engage in graffiti on other sites and spray paint when going to and from the "permitted site". There is also a strong ethos within the graffiti sub-culture that working on a "permitted site" is not being "true to the game" or its anarchist roots.

Private companies use graffiti as an art form to "sell its products" and this is presented as evidence of the conflicting attitudes that people have towards it. The coverage of graffiti by the media can help to publicise and encourage its proliferation. Often the media will publish photographs of finished pieces and this will help to provide those responsible with the publicity and fame that they crave. As one perpetrator is quoted as saying *"getting in the newspapers is like winning the Oscar".*

Very little research has been conducted into the criminal careers or otherwise of those engaged in graffiti, and the extent to which they are at risk, or more at risk, of committing other kinds of offending behaviour than the rest of the population.

This is a fiercely contested issue. On the one hand, many perpetrators of graffiti argue that those engaged in these activities rarely participate in other crimes. They object to any suggestion that involvement in graffiti is a stepping stone to a criminal career or engagement in other offences, such as robbery. On the other hand, those responsible for detection and law enforcement argue that there is evidence of young people engaged in graffiti who are also involved in drug and alcohol misuse, theft, robbery and violence. Persistent involvement in graffiti is identified as the gateway to other crimes and to engagement with those involved in other kinds of criminal behaviour.

6. REDUCING VANDALISM AND GRAFFITI ON PUBLIC TRANSPORT

This section draws on examples of the kind of approaches that have been adopted to tackle these problems. It is not intended to be exhaustive.

The framework for presenting these examples of the measures in place adopts the three main elements of crime reduction:

1) Law enforcement -- the use of the police and the criminal justice system to apprehend offenders and deter potential offenders;

2) Situational crime prevention -- measures that make it more difficult to commit crime, reduce the reward for committing a crime or make it more likely that the offender will be caught;

3) Criminality prevention -- measures that reduce the "risk factors" associated with offending, or increase the "protective factors" that make it less likely that a person will offend.

6.1. Law enforcement

Those engaged in vandalism and graffiti can be deterred by the risks of being apprehended or of injury or loss of life through trespass. However, those who are seriously involved in graffiti usually act with little regard to the consequences. It is even suggested by some advocates of the graffiti subculture that, without enforcement, there would be less and not more graffiti with "*less restraint yielding less motivation to resist*" (Covan, 1995).

− *Nexus* and *Merseytravel* are examples of an increasing number of passenger transport authorities in the UK that have taken action against persistent perpetrators of nuisance and criminal damage by banning them from their bus stations. Some transport operators have also taken action by banning persistent perpetrators of nuisance from using their vehicles. Such action is usually taken only after repeated warnings.

− Q-Trains is a partnership initiative by *the British Transport Police, the train operators* and *Railtrack* to tackle trespass and vandalism on the railway. The British Transport Police patrol known hotspots for trespass and vandalism to apprehend perpetrators and gather evidence for conviction.

− A number of *passenger transport authorities* in the UK, including *Centro*, have been proactive in holding meetings with magistrates to raise their awareness of the seriousness of offences on the public transport network.

− The *Greater Manchester Police Metro Unit* in the UK is one of a number that have been proactive in identifying the perpetrators of graffiti. Examples of graffiti with tags are photographed and contact is made with local schools to identify the perpetrators. Another way in which they have attempted to identify the perpetrators is through tracing back the sale of the spray paints. However, many graffiti writers will either remove the labels and barcodes to prevent the police identifying their source of supply or steal their paints.

− The work of the *British Transport Police Graffiti Unit,* based within London Underground, is founded on the premise that recognition and good intelligence are keys to apprehending offenders. Using computer software, the Graffiti Unit registers all tags and pieces on their database. The data is analysed to identify persistent offenders and hotspots. On the basis of this intelligence, the Unit targets locations and perpetrators.

− The *HALT programme* in the Netherlands is an expeditive arrangement for dealing with those aged between 12 and 18 years who come into contact with the police for the first or second time. It is intended primarily for offences such as vandalism, graffiti, shoplifting and the illegal use of fireworks. The HALT Bureau arranges the punishments, which can include, for example, repair of the damage or removal of the graffiti.

6.2. Situational crime prevention

The rapid removal or repair of vandalism and graffiti appears to be one of the most effective elements of situational crime prevention. As one graffiti writer commented:

"to do graffiti on trains is the most difficult here (in Sweden) - it doesn't work anymore, most train companies clean off the graffiti immediately. Nowadays graffiti writers just paint trains for the excitement and the challenge and to get cool pictures for your black book (album of pieces)".

Another significant element for reducing opportunities for criminal damage and other nuisance on the public transport network appears to be by controlling access to the system. Where ticket barriers and/or regular ticket checks have been introduced there is some evidence from operators that misuse can be reduced.

– There are a number of examples in the UK where controlled access to public transport has been introduced or enhanced. For example, the use of electronic gates by *London Underground* and *South West Trains*, and the introduction of more frequent ticket checks on the *Tyne and Wear metro*.

– Most of those responsible for infrastructure or rolling stock now use design and materials that are more robust and less vulnerable to criminal damage. For example, *Merseytravel* carries out audits on all new infrastructure to assess the effectiveness in practice of design and management in enhancing passenger safety and preventing vandalism and other misuse.

– Trains, buses and trams can be especially vulnerable when laid-up overnight in yards or depots. Audits can identify the risks. The *Manchester Police Metro Unit* carried out an assessment of the risks overnight for the metro trams and, in response, security fencing, CCTV surveillance and good lighting were installed.

– Also in the UK, the *Metropolitan Police Air Support Unit* has developed a project to patrol a target area for vandalism on the District line between Upton Park and Upminster. The helicopter takes photographs of the vandals in action and these photographs are relayed within seconds to police control centres.

– The approach taken by *New York City Transit* in 1984 was to check all vehicles at the end of each journey, and all stations on a daily basis. Any new graffiti "hit" is cleaned off, or if this is not possible, painted over. The system was cleaned line by line, until the whole system was free of graffiti by 1989. The success of the initiative is attributed in large part to political will and the determination of senior management, and is said to have repaid the investment by an increase in ridership.

– Passengers on *Paris' suburban trains* now travel in the first two cars at night for their security and to prevent vandalism. An experiment began in January 2001 with sixty trains using an automatic mechanism that, from 21:00 hours each day, bars entry into the last six carriages. This was introduced in response to a rise in nuisance behaviour and a 20 per cent increase in incidents of vandalism.

– In response to an increasing perception of crime on public transport in the late 1980s, *Victoria Public Transport Corporation* in Australia included a "travel safe" programme, with all new graffiti being removed on discovery. This led to significant reductions in vandalism and graffiti, with window breakages declining from 700 to 120 per week.

6.3. Criminality prevention

There are many examples of Passenger Transport Authorities, public transport operators and the police/British Transport Police working with children and young people to develop more responsible and safe behaviour on the network and to change attitudes. The use of art, drama and videos has been especially popular. Most of these initiatives are not only to prevent young people's involvement in graffiti and vandalism but also to divert them from other forms of nuisance or dangerous behaviour.

A particular initiative relevant to this study is the provision of legal walls or zones for graffiti. Often such facilities are not especially targeted at young people but for graffiti writers in general. There are mixed views on the value of graffiti walls and very little measurement of their impact or effectiveness. There is some evidence that graffiti walls bring their own problems to an area, as the graffiti tends to spread out to surrounding walls. An example in the United States was said to have led to a 300 per cent increase in graffiti in the surrounding area. Those using the graffiti walls are also unlikely to stop their illegal activities. It is suggested that, to avoid detection, they will use different designs and tags on legal walls and continue with the illegal activities elsewhere.

Public art features and community murals have been suggested as an important way of preventing criminal damage and enhancing local ownership of the environment. There has been little measurement of the impact and effectiveness of the use of public art for the public transport network, although anecdotally it is generally acknowledged to reduce further misuse.

− In the UK, *Railtrack's Track Off campaign* has more than 5 000 schools linked to the health and safety and citizenship elements of the National Curriculum and includes an extensive school partnership pack, freely available to all schools. It was launched in April 2000. The major aim of the initial phase is to highlight the dangers of trespass and vandalism to offenders and potential offenders. It makes the point starkly that railways are dangerous places for those who encroach on them without regard for their personal safety or the safety of others.

− *Railtrack* and a number of *passenger transport authorities,* including *Centro* and *Nexus* in the UK, have used public art features to enhance their infrastructure and deter future misuse.

− *Merseytravel* has in place a "Youth on the Move" programme which includes detached youth workers on the public transport network and extensive use of drama, art and video to encourage responsible use of public transport and deter misuse. There are a number of examples of videos being produced with young people to raise awareness of the dangers of their actions and deter misuse and vandalism.

− *Lugna Gathan* (Calm Streets) is a Swedish initiative funded by *Storstockholms Lokaltrafik*, with unemployed young people recruited to patrol the network. About sixty young people patrol the network in pairs. They are there to assist passengers and enhance feelings of safety, but not to apprehend troublemakers. They also talk to young people using the system, gain their trust and attempt to engage them in constructive activities. Such interventions are said to prevent offending behaviour in the wider community, including on the metro.

In our research, we looked in more detail at some of these initiatives, both in the UK and abroad. The case studies selected were:

1. New York City: City Transit Subway Company and the Anti-Graffiti Task Force;

2. London Underground Graffiti Unit: dedicated force for detection and law enforcement;

3. Dutch Railways: Netherlands Rail Company, package of measures;

4. The Halt Bureaux, Netherlands: a quasi-judicial early intervention with young people;

5. Utrecht, Netherlands: graffiti "legal wall";

6. Stockholm Transport: Stockholm public transport, package of measures;

7. Centro and CAN, West Midlands: public art at Lea Hall Station;

8. Railtrack, Midlands Zone: preventive measures including theatre in schools, to prevent track trespass and vandalism;

9. Youth Awareness programme London: public art developed by young people at Heathrow;

10. "Get The Message": Alternative graffiti projects for young people.

7. FEATURES OF EFFECTIVE PRACTICE

The case studies covered a range and variety of initiatives and conflicting philosophies. However, the research revealed a number of issues or concerns for *effectively* tackling vandalism and graffiti.

♦ Investment to prevent and tackle graffiti and vandalism has to be long-term, sustained and targeted. The case studies revealed a number of examples of financial cutbacks in law enforcement and situational crime prevention measures at a time when graffiti and vandalism were thought to be reducing significantly. Such cutbacks were followed by a significant upsurge in the problems of graffiti and vandalism on transport networks.

♦ Rapid removal of graffiti is still considered to be the most effective means of preventing its growth, both on the transport system and in the wider arena. However, the greater use of Internet sites for the display of photographed pieces and tags does mean that the perpetrators may be less concerned when the original is rapidly removed. Increasingly, recognition is gained from photographic records on the Internet. The Internet is not seen by those responsible for graffiti as a substitute "canvas" for their activities, but informs and complements their activities on public transport and the street.

♦ Early intervention with young people is needed to divert them from further involvement in graffiti and vandalism. A young person needs to be made aware that acts of graffiti and vandalism are unacceptable and are taken seriously.

♦ Many of those engaged with young people do not accept that measures only involving law enforcement and situational crime prevention are sufficient. They point to the need to channel young people's talents positively by providing activities and sites where they can create murals or pieces safely and legally.

♦ There are sharply contrasting views on providing "legal" or "permitted" walls. Those responsible for law enforcement and the public transport providers argue strongly that providing these sites encourages graffiti and misuse elsewhere. Those working with young people identify the provision of "legal" sites as a constructive diversionary activity, contributing to the quality of the urban landscape.

♦ Public art features, often designed with the active participation of local communities, can both provide robust surfaces to resist graffiti and vandalism and generate a sense of local ownership.

♦ Legislation to restrict the open sale of spray paints is identified as a priority. Although some attempts at voluntary agreement with traders have been successful, legal restriction on its sale is seen as the only effective solution.

♦ Extending the power to stop and search for spray paints and other materials used for graffiti were identified by the police, both in the UK and continental Europe, as an important tool in apprehending those engaged in these activities.

♦ The criminal justice system needs to better acknowledge the seriousness and cost of vandalism and graffiti. Magistrates and prosecutors need to be informed on the scale of the problem for public transport and that an individual perpetrator will often be responsible for many incidents.

♦ A partnership approach, involving both the transport provider and those with responsibility for the neighbourhood, is often required to avoid the displacement of graffiti.

♦ Those engaged in law enforcement identified that those responsible for graffiti and vandalism are often engaged in other crimes. The case studies from continental Europe in particular identified a growing trend of violence within the subculture and its increasing links with wider protest movements. Those engaged in work with young people do not agree that involvement in graffiti and its subculture leads to other criminal activity. We need to know more about the prevalence of offending behaviour at the different stages of a young person's involvement with graffiti.

♦ The use of language is important. It is important to avoid the use of emotive language, e.g. describing measures to tackle vandalism and graffiti as "a war". This is said to be how the perpetrators would like it to be described.

♦ It is important not to send "mixed messages" through publicity and advertising that some graffiti are artistic and acceptable, while others are not.

♦ A good working relationship with the media can avoid the publicity that gives the fame and recognition that those perpetrating graffiti seek. It can also be used proactively to inform parents and others of the dangers involved in track trespass and other risks to those engaged in graffiti and vandalism on public transport.

♦ A better exchange of information is needed between enforcement and prevention agencies, both nationally and internationally.

NOTE

1.   Repetitive tagging being a feature of much of modern day graffiti.

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OTHER CONTRIBUTION

During the Round Table, a written contribution was submitted by a participant. This contribution is reproduced below as complementary information.

UNITED KINGDOM

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"PRUDENT PESSIMISM"

THE MANAGEMENT OF TERRORIST THREATS AGAINST THE RAILWAYS IN ENGLAND, SCOTLAND AND WALES

ABSTRACT

This paper examines the impact of terrorist incidents against the railways of England, Scotland and Wales, the management of which is the responsibility of the British Transport Police. The subject is examined from the perspective of the IRA campaign of the 1991-97 period and the ongoing attacks of the *Real*-IRA. The paper also addresses a number of issues associated with *mass terrorism;* specifically, the heightened concern relating to an attack incorporating a chemical or biological material.

INTRODUCTION

In a report to the Health and Safety Executive (HSE) in 1992, Brian Appleton noted:

It is an unfortunate reflection of the times in which we live that explosive devices, designed at the very least to cause considerable disruption to members of the public and in some cases death and serious injuries, are no longer unknown on the mainland UK's public transport systems.

Appleton was writing at the start of what can now be identified as a resurgence in Irish Republican terrorism against railway targets. Since 1991, the railways have sustained almost fifty terrorist attacks and been threatened on over seven thousand occasions. Three people have been killed and almost two hundred injured. However, Appleton was wrong to imply that similar attacks were *unknown* prior to this period. *Fenians* (an early term adopted by Irish Republicans) had conducted spasmodic attacks against the railways since the late 1800s. Most notably, periods of increased activity occurred at the beginning of the Second World War and then as part of the mainland

campaign of the 1970s. It would also be wrong to assume that all such attacks were the sole preserve of Irish Republican Terrorist (IRT) groups, although it is a statement of fact that no other group or individual has operated on the same scale.

What makes the period since 1991 particularly noteworthy (as the HSE's interest in commissioning a report indicates) is the sustained nature of the attacks. The bombing was a systematic process and appeared central to the IRT's twin-track strategy of "ballot box and *Armalite*". The strategic intention was to further a range of political aspirations in Northern Ireland and Eire, allied to which was the desire to bring the Republican cause to the attention of the British public, in a forceful and publicity-attracting way. In essence, IRT groups hoped that by disrupting rail services (in some cases by murdering passengers), they would be able to exert additional "political" pressure on the British Government. In pressing home their campaign, many different tactics were deployed, against which it was necessary to develop a range of dynamic countermeasures.

LIMITATIONS

It is inappropriate in a public forum to discuss some of the more sensitive issues relating to the security and policing of the railways. Therefore, this paper addresses the major counter-terrorist challenges addressed by the British Transport Police in partnership with the railway industry. It examines the police response to the bombing of stations, trains and other infrastructure targets, as well as concerns relating to unattended items and telephone bomb threats. However, issues relating to the investigation of specific terrorist crimes are not considered. The responsibility for co-ordinating all terrorist investigations rests with the Anti-Terrorist Branch of the Metropolitan Police Service.

THE BEGINNING

On 18 February 1991, a bomb exploded at Paddington Station. It was the first railway-specific attack for almost ten years and was not preceded by a warning of any kind. The device, a relatively small charge of approximately 500 g of Semtex, had been placed in building-works and detonated shortly after 04:00 hours; a time when the station was virtually deserted. In the hours that followed, and as news of the explosion and the suspected cause spread, bomb threats began to be received. The text of the threats was broadly similar in each of the messages: bombs had been placed at all mainline stations in London, and the IRA (the Irish Republican Army) was responsible. At face value, and particularly given the difficulty in defining what "in London" meant, the terrorists appeared to be threatening several hundred stations simultaneously.

In consultation with other relevant agencies (the Anti-Terrorist Branch and the security services, for example) and in light of recent non-railway experiences, it was assessed that the explosion at Paddington was a terrorist attack but that the subsequent threats were "hoaxes", designed to maximise disruption. The vague nature of the threats did not identify any other named stations and, in any case,

none of the calls contained an *authenticated* codeword (about which more will be discussed later). The decision was, therefore, to advise officers and railway staff of the threats, to check public space within stations and to maintain services other than those into Paddington. It is important to understand that, in relation to bomb threats, the role of the British Transport Police is to advise the railway industry rather than to instruct.

Approximately three hours after the first explosion a second device detonated, this time on the concourse at Victoria Station. In contrast to the Paddington scenario, Victoria was packed with morning rush-hour commuters. In the aftermath of the explosion, one person died and the London Ambulance Service conveyed 54 people to hospital. The bomb had been concealed amongst rubbish in a litterbin. All available evidence suggests it was placed after the Paddington explosion, approximately one hour before it functioned.

The immediate reaction to the Paddington and Victoria incidents was to devise a process of target hardening, initially at locations considered particularly vulnerable. Measures included the removal of all litterbins; the instruction to this effect was issued by British Railways within thirty minutes of the Victoria explosion. Additionally, a station-checking regime was devised and hourly reports were co-ordinated centrally by the British Transport Police. To assist with this process (and any subsequent "bomb" searches), voids and other areas that would prove difficult to check were made more secure. In the longer term, greater use was made of additional lighting and an extensive system of CCTV cameras. The purpose of these and similar complementary measures was to engender in the mind of the potential bomber a series of doubts: firstly, that they could operate unseen; secondly, that they could place a device where it would remain undiscovered by railway staff or police officers; thirdly, that the attack would succeed in causing major disruption.

While it is difficult to *prove* to what extent IRT bombers and planners were influenced by such measures, it is possible to identify changes in the type of targets selected. As the counter-measures were introduced at the major London locations, so the bombers were displaced to locations that were less *critical*. Within months, attacks against the London termini (such as Paddington, Victoria and London Bridge, for example) were superseded by attacks against less central locations (such as Silverstreet, White Hart Lane and South Kensington). In turn, these gave way to bombs at stations in the Home Counties (including attacks at Reading and Basingstoke) and, eventually, by 1994, attacks were focused primarily against lines of route (Sevenoaks and Stevenage, for instance).

TWO CEASE-FIRES AND A CONTINUATION

Aside from marking the move away from central London stations, 1994 was also significant in becoming the year of the IRA's fourth ceasefire since the 1960s. The cessation of mainland attacks extended to almost eighteen months. The breakdown, when it came, was in the form of a large vehicle bomb adjacent to the Docklands Light Railway Station at South Quay. Two people died in the attack and over a hundred needed hospital treatment. In a trend that has been carried over into recent attacks, the threat message identified the *station* as the target; but the bomb was actually placed some distance away. At South Quay, this distance was approximately a hundred metres away, parked under a

railway bridge. Other attacks were to follow, including explosions on railway lines outside Wilmslow and Leeds, but by mid-1997 the IRA's ceasefire was reinstated; thus giving rise to the dissident Republican group now known as the *Real*-IRA (RIRA).

The emergence of RIRA caused initial concerns that the measures devised to counter their predecessors might no longer prove effective. Would this new group issue a threat prior to an attack (the phenomenon referred to by the media as a bomb warning)? Would they use the same type of bombs? Would they attack the same kind of targets? The answers to these questions, in relation to railway attacks, was generally yes, yes and yes. *Real*-IRA bombers appeared as reluctant to take *unnecessary* risks as did those without the newly acquired "Real" prefix.

LESSONS LEARNED

Given the sustained nature of attacks against the railways and the notable changes in terrorist tactics as countermeasures were introduced, it is a reasonable hypothesis that the policing of the railways did (and still does) affect terrorist behaviour. Clearly, without the co-operation of the perpetrators, the precise effect is difficult to quantify. However, it is possible to identify a number of developments, the consequences of which lend weight to the contention. These include pro-active target hardening; the management of unattended items; and the analysis of anonymous bomb threats.

Target hardening involves reducing the often all-too-easy options open to terrorists. The use of CCTV and improved levels of lighting have already been mentioned; and both have served to limit a potential bomber's freedom of movement. It is also noticeable that the removal of litterbins and the regular checking of public spaces (including lavatories) effectively ended the bombing of railway termini in London (the last attack being in February 1992). In relation to the use of incendiary devices placed on trains, this mode of attack was frustrated by a three-phase response. This involved: (a) the immediate action of briefing staff and the checking of train seats during cleaning; (b) the fitting of tamper-evident seals after the seats had been checked; and (c) the redesign of seats on new rolling stock to prevent items being secreted within. This last issue, in particular, highlights the necessity of a long-term approach if counter-terrorist measures are to be truly effective.

In terms of unattended items (that is, items for which an owner cannot be identified, but which are not overtly suspicious), the response has been more problematic. Unattended items, despite the best efforts of the railway companies, are commonplace. Figures from lost property offices suggest that each year approximately a quarter of a million items are lost by passengers. Whether such items cause sufficient concern to initiate a police response appears to depend upon a number of variables; one of which being the public's perception of the terrorist threat. Not surprisingly, when terrorism is in the news, items that would have been treated previously as lost property often cause concern. Since 1991, approximately forty thousand items have been reported to the British Transport Police, of which twelve thousand required some form of evacuation.

The majority of unattended bag incidents are reported in London, typically at stations and on trains operated by London Underground Limited. Because of the relatively high volume of calls from within a small geographic area (and because of the significance of the central London area), a specialised British Transport Police response vehicle is on permanent patrol. On average, officers

from this unit are able to confirm the status of unattended items and re-open stations within twelve minutes of being called. It is reassuring to note that, despite the high volume of requests for assistance, no *unattended item* (as defined previously) has ever proved to be a viable explosive device. This would suggest that terrorists are deterred, but that there is clearly more work to be done in the field of risk communication.

Whether an unattended bag incident escalates into a station evacuation will depend upon "risk judgements by people on the spot" and clearly, these frontline staff need the best advice possible. In 1992, the Appleton Inquiry Report highlighted staff/police training as lacking co-ordination. Through absolute necessity, this issue was tackled as a matter of priority as soon as the report was published. Analysing unattended bag incidents and then contrasting pertinent factors with the characteristics associated with real attacks, enabled the British Transport Police to develop an operational protocol known as *HOT*. This encourages the finder of an unattended item to consider three key characteristics (Is it **H**idden? Is it **O**bviously suspicious? Is it **T**ypical of the environment?) *before* they declare it suspicious.

The *HOT* protocol is used throughout the railway industry and, prior to the Sydney Olympics in 2000, was adopted by City Rail in Australia. The protocol has even been utilised by the Government's Transport Security Executive, *Transec*, with whom the BTP work closely. Transec has the statutory responsibility for setting minimum standards for security across the industry. The *National Railways Security Programme* (NRSP), was first published in 2000 and has served to formalize many of the best practices developed by the British Transport Police and the railway industry. The standards are enforced by specially trained Transec inspectors, through the medium of announced and unannounced visits and inspections.

One indication of the effectiveness of this co-ordinated approach may be measured by examining the number of station evacuations recorded over the last ten years. In 1992, the aggregated figure (published in the Appleton Inquiry Report) indicated that approximately 20 per cent of incidents resulted in a full evacuation. Today, the figure is less than 1 per cent.

Anonymous bomb threats are rarely associated with impending terrorist attack. However, as guidance issued by The Home Office notes, "*calls constitute a threat…and they must always be treated seriously*". Following the explosion at Victoria Station, the British Transport Police pioneered the use of a computerized database to assist with the process of categorisation. The details of every threat are recorded along with the eventual outcome; new threats are then compared against established threat profiles. As an example of the minutiae analysed, many people are surprised to hear that no threat containing even the most obscure and, in some cases, physically impossible obscenity has ever been associated with a positive terrorist event.

In using the database as both a quantitative and qualitative tool to support the process of categorisation, the success of the system can be summarised by examining the following analysis. During more than ten years of terrorist activity, over seven thousand threats, relating to over ten thousand locations, have been categorised by the British Transport Police. Of these, approximately 1 per cent was assessed as credible -- and led to an evacuation of the location threatened. Of those seventy incidents, approximately 50 per cent resulted in an explosion or the discovery of a terrorist bomb. In terms both of the reduced number of station closures (15 per cent in 1992; less than 1 per cent in 2001) and the appropriateness of the advice given (no viable threats have been missed threats), a significant improvement can be discerned. Nevertheless, given the nebulous provenance of most threats, the possibility of "getting it wrong" is an ever-present spectre. As Appleton himself notes, "*If the day does come when a decision proves to be faulty, we should all be slow to criticise.*"

NEW CHALLENGES

The history of terrorism on the railways is inextricably linked to Irish Republican violence. However, this is not the only quarter from which new threats have arisen. One of the most serious developments to affect the Force's perception of the terrorist threat, and challenge its proven ability to respond appropriately, was occasioned not by domestic terrorism, but by events in Tokyo in 1995.

The possibility of a change in the tactics and weaponry of terrorism was acknowledged before Tokyo, and consideration had already been given to a variety of scenarios incorporating what are sometimes called "weapons of mass destruction". However, historical precedent was rooted firmly in the use of hand-placed or vehicle-borne explosive time bombs, used almost exclusively by people who did not want to be apprehended. The successful deployment of nerve gas against passengers on an underground railway by members of an apocalyptic cult, challenged many of the traditional views as to what terrorists would and would not be prepared to do. If, as is widely accepted, Tokyo was the beginning of this new form of terrorism rather than its end, it could be argued that the run-up to the next attack -- what Turner describes as the *incubation* period -- is already underway.

It is in relation to the concept of incubation that a range of measures designed to minimise the effects of what may be described as *conventional* terrorism was expanded. Those that have been made public include specialist training for police officers and the regular use of chemical agent monitors (CAMs). Monitoring equipment, in addition to its use at a suspected incident, is deployed on a regular basis as a means of establishing station profiles. This involves the overt use of CAMs to determine the normal range of readings to be expected when an environment is known to be uncontaminated. The database is then available as an additional resource when responding to a specific event or warning. Following the series of Anthrax incidents in America, similar measures are in place to assist the police response to "white powder" incidents.

"White powder" appears to have caught the imagination of hoaxers in a way that Sarin did not. Fear of anthrax attack has precipitated numerous false alarms but, to date, no positive incidents. It is yet another indication of how the social amplification of risk impacts upon the railways -- passengers, staff and police officers alike. What events of the kind witnessed in America and Tokyo serve to illustrate is that, as the terrorist threat evolves, the possibility of any one agency managing the consequences is diminished. Now, more than ever, there is a clear and urgent need for integrated, multi-agency planning in anticipation of future attacks on the scale of 11 September. In this context, multi-agency means exactly that: emergency services, government and local authorities, the military and community representatives devising plans together, in the knowledge that some scenarios may have consequences far in excess of anything experienced previously.

CONCLUSION

Since its inception, rail travel has been vulnerable to terrorist attack -- whether from the loner with the home-made bomb or the sub-state actor with access to weapons of mass destruction. The open nature of the operating environment and high passenger volumes continue to present significant challenges, both in terms of security and policing. However, contrary to the views held by some terrorists that the only effective countermeasure is *luck* (expressed in the IRA statement *"We only have to be lucky once. You have to be lucky always"*), the British Transport Police, in partnership with the rail industry, adopt a more pragmatic stance. As Appleton noted ten years ago:

> *It is perhaps inevitable that there will continue to be security alerts and delays arising from them. However, my study gave me cause for optimism that the co-ordinated, professional and committed approach by those involved will maintain and indeed improve the safety of travellers while sensibly minimising delays and consequent risks.*

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SUMMARY OF DISCUSSIONS

SUMMARY

1. MISTAKEN PERCEPTION OF THE DEGREE OF RISK

Subjective perceptions of the security risks involved in using public transport are high in all European countries. However, comparison of the number of robberies or assaults committed in public transport environments with those committed within the urban area as a whole shows that, while genuine, such fears are nevertheless exaggerated. There is a far greater risk of being attacked, robbed or sexually assaulted within an urban area as a whole than within a public transport environment. Indeed, three-quarters of all assaults take place within the home. Despite these figures, however, surveys show that a majority of public transport users do not feel safe when they use public transport services at night.

People feel threatened in a public transport environment and railway and underground train stations are focal points for their anxieties. While objective reasons for this fear exist, for example, poor station lighting or long corridors which create a feeling of claustrophobia, such factors are exacerbated by the presence of certain types of individual such as youths or foreigners who are perceived as potential sources of aggression.

Objective factors are therefore compounded by subjective factors, and this combination can make people fearful. A group of youths talking loudly in a station whose walls are covered with graffiti can be particularly intimidating. Graffiti are interpreted by underground users or train passengers as a sign that the public transport operator has no control over the public spaces he manages. This is a direct consequence of the fact that people do not have a high opinion of public transport in general, an attitude that is reinforced by any shortcomings in the latter. It is the association of different perceptions that creates a feeling of unease. A chestnut vendor plying his trade against a backdrop of graffiti-covered walls, for example, is not perceived as a threat in the same way that members of an ethnic minority might be under the same circumstances.

Graffiti or station premises that are not impeccably clean are external manifestations of incivilities which create a sense of insecurity. Familiarity with a given location or space can be reassuring. The presence of large numbers of police in full public view will not necessarily reduce the anxiety that public transport users may feel; on the contrary, they may be seen as evidence that a danger actually exists and therefore may not necessarily help to calm users' fears. The presence of the transport operator's staff, on the other hand, does reduce the degree of anxiety felt by some users. Perceptions are therefore extremely important and women, due to their vulnerability, are the first to feel this sense of insecurity, however, the victims of assaults usually tend to be young men. In general, surveys of public transport users reveal that a sense of insecurity is prevalent among older members of the population, as would only seem logical, but it is also widely felt among young people. The latter do not feel safe on their trips to and from school or in the places they use for recreation. This is a worrying situation in that it may encourage them to use a car instead of public transport once they become financially independent.

The media also contribute to this situation in drawing attention to certain news items that help to create a sense of insecurity. Fears therefore arise outside the transport environment but strike a chord within that environment. This is particularly true in the case of public transport, where the risks to

users receive far more attention than the risks of being involved in a potentially serious accident as a result of travelling by car.

Security is a central issue in the social debate and concerns the whole of society. Insecurity has a direct cost, namely, that of the measures taken to increase security; it also has an indirect cost, which in the case of transport can be measured in terms of the number of people who prefer not to use public transport because they are afraid to do so, resulting in loss of revenue and reduced use of more sustainable means of transport.

2. MAJOR SOURCES OF ANXIETY

The Round Table considered a number of factors that play a major role in creating a sense of insecurity.

2.1. Graffiti

The perpetrators of graffiti are clearly seeking fame and notoriety. This is explained by the fact that there is an entire culture, including a commercial infrastructure, that has grown up around graffiti. Information about the equipment required can easily be obtained from the Internet and paint manufacturers have pages on their Websites where people can chat and ask questions. Graffiti artists also wear their own distinctive type of clothing and rap music is a rallying cry for taggers. The people engaged in graffiti are mainly young -- although a few are not exactly young any more, which shows the longevity of this phenomenon -- and crave fame. The fact that some media have portrayed graffiti as works of art has clearly had a considerable impact, as shown by the exposure given to certain perpetrators in the printed press. The context in which these acts are carried out therefore needs to be examined.

In an attempt at sociological analysis, some public transport networks have drawn a distinction between different categories of graffiti artists. Firstly, there are, so to speak, the professional artists. Aged between 20 and 30 and with a talent for the graphic arts, they seek notoriety. Others attempt to emulate their elders. Possessing little talent, they simply mimic the first category. They are aged between 12 and 18 and identify with rap culture. Another category consists in dilettantes who occasionally engage in graffiti and who simply seek excitement, even though they are socially well-adjusted. Lastly, there are the genuinely anti-social elements, marginalised individuals who have no real concept of what is lawful and who do not necessarily include representatives of ethnic minorities.

Graffiti are not a new phenomenon and can also be found in Eastern Europe. Often associated with a political message (*Solidarnosc* is one example that springs to mind), graffiti are not a purely Western phenomenon. In Paris, the number of graffiti has increased five-fold over the past seven years. Swift action by transport operators to remove graffiti from the sight of passengers can ensure that there is no perception among users that the phenomenon has spread. This rapid response deprives taggers of the publicity they seek by ensuring that their markings and pieces are not lasting. Rather than works of art, graffiti are first and foremost damage to property and damage that can sometimes

involve high levels of risk-taking when perpetrators cross railway lines without due attention. Those engaging in graffiti sometimes carry weapons, particularly at night in order to escape from guards, which also represents a very high level of risk.

Graffiti clearly degrade the environment for public transport users; they give the impression that public spaces are unmanaged and that transport operators have no control over their premises. The direct economic cost of graffiti is high, particularly if the operator pursues a policy of systematic removal and clean-up. Another problem is "scoring", which is the practice of etching glass windows in buses and trains with a message or a name. It is a particular problem because it cannot be effaced and the only real solution is to replace the glass, which is costly. The cost of providing security guards for plant and infrastructure is also extremely high.

2.2. Acts of vandalism such as theft or assault

Acts of vandalism other than graffiti marking cover a wide range of offences ranging from stealing money from vending machines to throwing missiles, dropping objects onto public transport lines or damaging windows in buses or carriages. While it is not only young people who are responsible for these acts, the average age of offenders is often below the legal age of majority. Statistics on the nature and number of acts of vandalism vary substantially from one country to another in Europe, and it is therefore difficult to obtain a clear picture of the situation. The scale of vandalism is clearly underestimated in modern societies, however, since only a small number of incidents are reported. For example, the verbal abuse of women is a form of incivility that always has an impact but is virtually never reported. Statistics on theft, on the other hand, are far more consistent in that victims file complaints with the police. The number of thefts reported does not appear to be rising in all European countries.

In some European countries, the perpetrators of thefts are often children from non-EU countries working under the instructions of adults. In view of their young age, they cannot be restrained through prosecution and this type of offence is growing at a worryingly fast rate. In addition to such offenders, there are also adults who are extremely adept at robbing individuals in underground or railway stations. They can acquire very large sums of money in this way and in 90 per cent of cases they are criminals with prior convictions. The statistics available for Paris show that 20 per cent of these offenders had over 30 prior convictions, which casts doubt on the effectiveness of the penal system. The worst thing is to take such incidents for granted. The impression of public transport, that both the victims of such offences and those who simply hear about such robberies from others have, cannot fail to be poor.

Another form of vandalism consists in assaults on public transport employees during ticket inspections. The number of such incidents is increasing in most networks, although they are not systematically reported. Other victims of assault are passengers in underground networks and drivers in the case of rail networks. These are acts of violence directed against institutions and can take a variety of forms. Mainly committed by young people who bear a grudge against society, and who are therefore liable to act aggressively towards its representatives, these acts of aggression are sometimes directed towards passengers who appear to belong to another social category or towards the representative of the transport operator present at the scene. These acts increase the sense of insecurity that public transport users feel when they are either the victims or witnesses of such violence, and result in the network being brought to a standstill until the problem is resolved or a strike being called by the operator in response to the incident. Hearing about such incidents also adds to the negative image of public transport.

The experts at the Round Table stressed that acts of vandalism committed in public transport networks were often a stepping stone to more serious offences. It would therefore be advisable to learn more about offenders in terms of where they come from, their past history and their motives. A sociological study in this area would undoubtedly be useful.

2.3. Basic qualitative factors such as lack of information

During discussion of the causes of anxiety among public transport users, the Round Table drew particular attention to not only actual acts of vandalism but also more qualitative factors such as the feeling of isolation felt by users when no information is provided. The frequent failure to inform public transport users of incidents, delays or unexpected changes adds to their sense of insecurity. It makes passengers feel that they have been more or less abandoned and left to their own devices. Even though public transport operators operate mass transit systems, they need to give the impression that their supply and their communications are addressed to the individual. There is no such thing as an "average user" for service suppliers who must accommodate rush hour traffic flows as well as recreational trips.

Public transport networks are not a place where the individual can take care of his own needs. It is therefore clear that the user will entrust that task to somebody else. If the provision of care is inadequate, the passenger will not feel safe. The response must match the seriousness of the incident when something untoward takes place. Public transport operators must compensate for their inability to provide a rapid response to the individual needs of users by providing high-quality information, which is one area where there are many failings and omissions. The fear that prevails in the public transport sector is due to a lack of communication. The public transport environment is often an inhospitable one. People kept waiting without information quickly start to feel unsafe.

While urban public transport systems are a fundamental part of life in society, many people do not appreciate this. The outcome is that use of public transport is perceived as an imposition, almost as a necessary evil. Public transport is still not associated strongly enough with positive societal values such as protection of the environment, with the result that using public transport is not necessarily a positive experience. In turn, this simply adds to the image of social inferiority that continues to beset public transport.

This disproportionate sense of insecurity encourages people to use their car instead of public transport, which is contrary to the public interest. Hence the importance of any measures that can combat this feeling of insecurity.

3. SOLUTIONS TO PERCEIVED AND GENUINE INSECURITY

The Round Table distinguished between solutions to genuine insecurity, and the resultant perception of insecurity, at the level of the firm and at the local, national and international levels.

3.1. Solutions at the level of the firm

Ideally, there should be no lasting trace of acts of vandalism such as graffiti and, more generally, damage to property. This requires a policy of rapid removal of the visible consequences of offences. Such a policy is extremely costly to implement and also calls for preventive measures such as guarding rolling stock at night and "hardening" potential targets with resistant surfaces. However, the cost of such action is partly offset -- although it is not possible to determine by how much -- by the increased patronage resulting from users' feeling of being in a public space that is properly maintained.

Station design must give priority to creating areas that have clear lines of vision and that are open, bright and uniformly lit; there must be no places where an individual might be trapped and the landscaping of grounds must ensure that there is no place for a potential attacker to hide or areas of shade. Architects, planners and operators should meet to discuss their ideas and share good practices, which would make it possible to identify problems and remedy critical situations. The Washington DC metro provides an excellent example of designing a metro from the outset to be safe and graffiti free.

Technology is of great assistance to transport operators and the potential impact of new technologies in the transport sector is considerable, ranging from tried and tested techniques, such as graffiti-proof seats or protective films on windows, to more specific technologies such as the use of closed-circuit television cameras to monitor stations or buses and automatic incident detection software. It is striking that, on new public transport lines with dedicated routes and in stations where lighting of uniform intensity has been installed as well as CCTV surveillance and large numbers of emergency help points, vandalism is far less rife than it is on conventional lines. The feeling this engenders in passengers is that the operator has full control over public spaces, thus creating a sense of security. In some respects, improvements such as these are seen by those committing acts of vandalism as a challenge laid down to them by transport operators to find the weak points in the new systems put in place. The use of technology can nevertheless keep operators one step ahead, particularly in view of the wide range of possibilities it offers. Radio transmitters linked to GPS systems, for example, can allow security personnel to respond rapidly to attacks on bus drivers or other incidents on buses and partly reduces the need to consider increasing the number of staff in vehicles, a policy which admittedly has positive aspects but which is extremely expensive for public transport operators, constantly struggling to balance their budgets.

Another possibility afforded by technology, for example, consists in replacing tickets with a contact-less card, incorporating an emergency call system which allows the user to call for help in the event of an incident. Of course, no system is infallible; as in the case of surveillance cameras which do not necessarily improve security as much as might be thought, in that they do not guarantee the instant response by the operator that might be necessary in an emergency. Statistics show, however, that there are fewer or less serious assaults in public spaces protected by this kind of technology.

Technology also offers other possibilities, such as the ability to draw up highly detailed maps of unsafe areas and to monitor the trend over time of levels of insecurity in such areas. Different types of offence, for example, assaults and graffiti, can be cross-matched in order to concentrate resources on the most exposed areas and thereby ensure a more effective response.

Technology can only replace investment in human capital to a limited extent, however, and it is essential that operators train their staff in conflict management. Women are known to be better than men at defusing tense situations, and yet they tend not to be assigned to posts where there is a high exposure to conflicts. It is therefore preferable to form work groups in which they can make full use of their qualities. In this respect, deploying staff in larger numbers is reassuring when a different

approach is adopted towards passengers, that is to say, when staff play a role that does not consist primarily in deterrence but also in helping people. The effectiveness of such action is not always fully understood by staff, but is nonetheless real.

As noted in the section of this report dealing with the sources of passenger anxiety, one fundamental area in which public transport must make progress is that of communication with users. Failure to inform passengers of delays and operating incidents gives the impression that the transport operator is not in control of his network and/or is indifferent to the needs of passengers. Unlike a trip by car, passengers rely on the operator. It must therefore be kept clearly in mind that it is essential that public transport operators considerably improve their communications with users if they wish to avoid the latter being prone to anxiety. This is part of a strategy aimed at encouraging users to see public transport as a partner. Safety and a high standard of passenger service are essential components of an overall approach.

3.2. Solutions at the local level

3.2.1. *Prevention*

The measures that are effective at local level are those which consist in putting problems in a broader context than that of the public transport operator alone. This can be achieved by setting up partnerships at the local level, notably as part of a crime prevention effort.

The experts at the Round Table stressed that in many cases not enough effort had been put into prevention. Prevention must start at the earliest stage possible by going to schools, local associations and youth clubs to explain the role played by public transport and the essential social function it provides in the life of a city. One possibility is to hold open days, when visitors can see public transport operations from the inside and, in particular, the number of people who work to ensure the safety and security of passengers and to remove the traces of vandalism. Another possibility is to devote a few hours in the school timetable to the life of the city, during which children can be made aware of the role played by public transport. Staff from public transport companies could attend these lessons to explain to children the consequences that acts such as spraying graffiti on rolling stock or attacking public transport employees have on the company. Here, too, the role that public transport operators have to play in communicating with the public fits neatly into that of schools.

A difference of opinion emerged in the course of the Round Table between those who felt that an effort should be made to capitalise on the values expressed in graffiti by their perpetrators by channelling them in other directions and those who felt that it was totally impossible to capitalise on such values. In the view of the latter, graffiti culture was tribal in nature. It was a language containing codes and rituals used for communication between tribes and not with the general public. Other experts felt that, while admittedly there was a hard core of repeat offenders, young people should not be demonised and excluded from society. In their view, graffiti and other incivilities reflected a desire in young people to express themselves and to find a place for communication in a "system" that has nothing to offer them. It should be seen as a societal problem which, at the local level, should be addressed by increasing the number of neighbourhood projects, renovating derelict property and maintaining neighbourhood public services, that is to say, a series of initiatives that reflect a genuine urban policy at the local level. The aim would therefore be to rehabilitate rather than isolate people and to avoid dividing the world into "us" and "them". The approach required must be based on the fact that young people are a part of society. While, admittedly, it was a problem that concerned society as a whole, the Round Table felt its solution primarily required action at the local level. The policies pursued by the municipality only made sense if relevant measures were put in place at the

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local level with the help of young people, schools, associations (football clubs, mountain bike clubs, leisure centres, sports centres, etc.) and all those who informally exercised social control. Furthermore, the social reintegration of young people from poorer housing estates, by creating jobs for them in crime prevention in public transport networks, was one measure that had already proved its worth.

3.2.2.   *Partnerships*

All social actors involved with safety are in favour of the partnerships which were recommended by the Round Table and which have already been discussed in the section on crime prevention. The aim is to adopt an overall systemic approach. In determining who is responsible for ensuring safety, the discussion should be broadened to place it within the context of the city as whole, since the problem faced by public transport operators was a social one.

The partnerships proposed by the Round Table call for the creation of high-level forums in which all the experts involved would meet at regular intervals. Strategic decisions could be taken at this level and would commit all actors in the areas of crime prevention, policing and law enforcement. These actors must be represented at a high level so that the decisions taken will subsequently trickle down to all levels in a given unit. The aim is that each of the actors will ultimately assign resources and take measures in accordance with shared objectives. There, therefore, needs to a high-ranking spokesperson for the cause defended by these partnerships in each unit. Some experts suggested that all social groups should be represented in these partnerships and not simply the elite. Partnerships were designed to serve the community and were not intended to be an alliance against a threat to their community. This view was based on the premise that all people within a given community are equal in terms of the service provided by public transport.

It might be advisable in such partnerships to establish local security contracts, uniting all actors working in the area of safety in a shared commitment, under the responsibility of a mayor, for example. Only a few years ago, little interest was generally taken in transport security and to remedy this situation the aim was to introduce contracts targeting the transport sector. To this effect, the first step in the process is to establish the facts of the situation through continuous reporting of delinquency statistics. The forms that delinquency takes are evolving and the situation needs to be kept under close scrutiny. There must then be an exchange of views on the response being taken to delinquency and the new approaches adopted. The aim is to co-ordinate all the actors in pursuit of a common goal, rather than leaving them to take action individually. The purpose is also to define the level at which each institution intervenes and therefore to establish a framework for decisionmaking. In this respect, meetings must be held at regular intervals and it might be expedient to set quantified targets for reducing delinquency. This can focus efforts on the new measures introduced.

It may be difficult to set a quantitative objective in local security contracts in cases where such contracts include preventative measures, such as training classes for young people in schools, given that there is no precise way of measuring the positive effects of such actions. The Round Table clearly recognised the difficulty of estimating the impact of each individual safety measure but nevertheless did not dismiss the need to set precise objectives which could help to encourage actions and which also made it possible to measure the progress made. In addition, setting objectives was a way of communicating with the public, which was expecting to see an improvement in the situation.

Lastly, rules that are too strict help to fuel insecurity. For example, a public transport fare structure that does not provide major reductions for young people is a factor in fare-dodging offences and, as a result, assaults against the operator's staff during ticket inspections. Local public authorities

must therefore provide some form of compensation for operators who provide cheap fares for young people, and one way in which to do this is through partnerships.

3.2.3. Policing

The police must work in collaboration with the operator's own staff and transport police where there is an in-house force and organise patrols in areas most at risk in accordance with rotas that offenders are unable to predict or guess, since offenders must be caught in the act. This poses the problem of appropriate punishment. Young people must be made aware of the consequences of having a criminal record. In addition to which, the possibility of repairing the damage caused, particularly in terms of financial compensation, must be explored with the courts. There is a basic issue here, which is that of making courts aware of the cost of damage. Similarly, the banning of persistent offenders from the system, as has been done on the London Undergound, was seen to be an undue infringement of personal liberty in many European countries. There is always a danger that rising levels of delinquency may breed a form of familiarity that ultimately leads to lighter sentencing. In this respect, the experts at the Round Table felt that, at the local level, operators had to establish contacts with magistrates and the judiciary to ensure that the latter take a firm approach to offences committed within public spaces used by public transport operators. The experts thought that the judiciary was not lenient as a general rule, but did feel that there were differences from one court to another that could be eliminated if operators were to maintain regular contacts with the local judiciary. In many cases, rather than increasing the severity of penalties, the legal system, particularly in the case of young people, had to be seen to move swiftly. To increase the speed of the legal system, it might be helpful to involve the courts in local security partnerships, since the courts cannot always be counted upon to treat transport offences with the seriousness they deserve.

The idea of zero tolerance was discussed only briefly at the Round Table. First introduced in New York, such an approach does not seem suitable for Europe, in that forms of policing in which there are no exceptions can easily become too repressive and any police excesses would lead to a public outcry. The view in Europe is that, rather than treating the symptoms, it is better to look at the causes and pursue an overall strategy based on prevention.

3.2.4. Role of the media

The transport operator must also communicate with the local media whose role must not be restricted solely to reporting bad news about insecurity, but must also consist in informing the public of the policy pursued by the operator and local authorities to remedy the situation. The media must be treated as partners and operators must forge a close relationship with them so that the latter can inform the public about the costs to the operator of dealing with vandalism, the preventative measures taken and the success of the operator's actions. As a general rule, local media have a role to play in portraying public transport operators as key players in the life of society. In many cases, this message is conveyed more successfully through the local, rather than national, media.

3.3. Actions at the national level

Ministers of Transport also have a stake in the measures to be adopted, in that the price to pay for insecurity in the public transport sector is that of fewer passengers and, consequently, lower revenues. The increased car use that results from this situation also has implications for government in terms of the economic and environmental sustainability of transport. In the final analysis, the person who foots the bill for declining use of public transport, higher costs of repairing damage to property or higher external costs of ensuring mobility is the taxpayer. This aspect is exacerbated by the fact that non-use

of public transport leads to increasing car use and increased risks of accidents, all of which are of direct concern to both the community and government. Only a reliable and safe public transport system can meet the expectations of the community, and society must not be broken down according to whether or not individuals have access to a given form of transport. The issue of social equity is therefore another reason why government must not ignore these problems.

Furthermore, ensuring security is one of the sovereign duties of the State. Government must therefore take basic actions that will create synergies between initiatives at the local level. Local security contracts, agreed between local partners, could therefore be overseen by the representative of the State's authority at the local level, such as the prefect in the case of France. Government must remain firmly in control of the issue of public safety.

In terms of exchanges of experience on best practices, many of the actions that can be considered at the national level have been presented as falling within the remit of international bodies. In many respects, the actions taken by governments, particularly with regard to information, transcend national borders and increasingly take on an international dimension.

3.4. Actions at the international level

3.4.1.   Exchanges of information

The main point to emerge was the need to share information at the international level. The experts at the Round Table suggested that lists of documents of interest to transport operators be drawn up and published, either in the form of manuals or on Websites. The aim of this would be to explain the procedure for initial assessment and problem analysis, and there are clearly a number of relevant items that need to be taken into account. The first step is to identify problems, after which it would be useful to have a list of techniques that could be used to alleviate the problems encountered. Descriptions of both successful and unsuccessful measures would undoubtedly be instructive, and it would also be helpful to establish criteria for judging whether measures are relevant to local situations and the extent to which given techniques are appropriate in specific contexts. Lastly, it would be helpful to provide information on methods that can be used to assess results.

The pooling of experiences mentioned earlier consists in creating a network in which information can be exchanged. Best practices must be presented in the light of the knowledge that has been acquired about urban transport safety and the factors that help to create a sense of insecurity. This overview, as the first part of this report emphasizes, is not restricted solely to objective factors. It also takes account of unseen factors that can have a positive or negative effect, one example being the existence of a corporate culture. It is therefore important at this level that all factors are taken into account by all networks to improve the public transport travel experience and maintain and enhance ridership. Such an approach should be based on a sociological analysis of both subjective factors, that is to say, what users feel, and the assessments made of the impact of measures. With regard to the latter point, the Round Table felt that it was better to work on small models of creative measures rather than full assessments of large-scale programmes.

In conclusion, the Round Table confirmed that international bodies and organisations should give high priority to the comparison of research results. The experts asked for comparisons of programmes to be made at the international level and for access to be granted to the results of such comparisons. The dissemination of knowledge was of paramount importance and an analytical framework had to be

established in order to determine whether measures were transferable from one network to another, primarily by placing measures firmly in context. It was also necessary to establish a common vocabulary to allow data to be cross-matched.

3.4.2. *Safety in a context of liberalisation*

With regard to possible action by governments at the international level, the Round Table also addressed the question of the potential impact of the liberalisation of public transport that EU bodies have, to some extent, recommended.

It should first be noted that changes of operator, and therefore rates of staff turnover, in a fragmented industry are inevitably higher. This suggests that a record should be kept of the actions taken and the reasons for the introduction of given measures, in that a failure to keep such records forces firms to repeat the learning process and means that decisions are based on superficial analyses. A database must therefore be set up and there is clearly a general need for such a database at either national or international level. Obviously, the demands placed on an operator and his staff must remain in place during the handover of responsibilities and the transition from one regulatory regime to another. This is as true of efforts to curb vandalism as it is of the fight against terrorism.

The issue is complicated by the wide variety of actors, customers and contracts involved. Each party must have a clear idea of what to do, since the aim is not only to share the costs but also to determine which institution should intervene and at what level. It is therefore necessary to establish a coherent framework that can be used to determine both the outcomes of partnerships and the breakdown of charges and responsibilities. In the event of an incident, it is often difficult to determine who is primarily responsible.

The Round Table did not provide a clear answer to the question of whether safety should be a barrier to liberalisation. Determining who was responsible for resolving societal problems and who should intervene need not necessarily delay the opening-up of competition in service provision. The area of competence of an enterprise must be clearly specified in the transport contract. Competition between public transport undertakings would not be desirable in the area of safety, however, in that internalising the safety costs in fares would inevitably price them out of the market. The process of competition should not put expenditure on safety and the priority it is given at risk. Safety is one of the major reasons why it is not possible to auction off parts of a public transport network unless responsibility for safety is transferred to an operator outside the publicly funded network. While it is perfectly feasible to create a separate institution responsible for safety, the operator would no longer have control over all aspects of the network, even though such control is not necessarily a prerequisite.

In conclusion, the experts at the Round Table considered that safety should not determine how public transport was organised. On the other hand, if it was thought that solely a public monopoly could be given subsidies to ensure the safety of services, there is always a danger that such money might not be used properly, particularly in the light of the efficiency losses associated with public monopolies. An exchange of best practices might therefore be appropriate with regard to liberalisation.

4. TERRORISM, A FACTOR RAISING SPECIFIC ISSUES

The first reaction of the experts at the Round Table was that terrorism and vandalism in the public transport sector were separate issues. They acknowledged, however, that because the public transport sector was frequented by large numbers of people, it was often singled out as a target for terrorist attacks aiming to maim or kill. In addition there were clearly areas where terrorism and vandalism overlapped, one example being preventative measures, such as calls for public vigilance or the use of video surveillance cameras.

The distinction that can be drawn between terrorism and vandalism is that while operators could address both the causes and consequences of vandalism, through preventative measures aimed at young people, there is much less they can do on their own account to counter terrorism. To combat terrorism it is first necessary to know who the enemy is, and this is the domain of specialists who have specific knowledge that must remain confidential. This issue therefore lies outside the field of competence of public transport operators.

When not aimed at killing people, the aim of terrorists is to draw attention to their cause through their actions. The Round Table noted that while the vast majority of bomb alerts were false alarms, they could nevertheless cause severe disruption to services. Prior to 11 September 2001, the risk of being the victim of a terrorist attack was very low and the main impact of terrorism was therefore to create a loss of confidence and instil a feeling of fear in the population that is comparable in all respects to the impact of vandalism. In this respect, terrorism and vandalism are similar in that they result in a loss of confidence in public transport services and a loss of patronage that cannot easily be reversed. Since 11 September 2001, however, we know that terrorism can kill on a massive scale and that it can have a major impact on social and economic relations.

With regard to the publicity attracted by terrorists mentioned previously, it should be noted that anti-terrorist forces use procedures to distinguish between false alarms and plausible attacks in certain kinds of terrorism, such as long-running sectarian terrorist campaigns. Messages from terrorists are decoded according to established procedures and protocols. Here, too, there is a corpus of experience and knowledge that differentiates terrorism from vandalism. However, some other kinds of terrorism, often "international" in nature, rely on the element of shocking surprise and aim to kill and sometimes use suicide tactics. This kind of terrorism has been seen recently in Israel and, of course, in the infamous attacks on New York's World Trade Centre on 11 September 2001.

In view of the above, it is clear that measures must be taken to protect the potential targets of a terrorist attack. In many cases terrorist attacks are not aimed at targets perceived to be the locations most at risk. In all cases, trained personnel such as the operator's staff, firemen, police or medical personnel are needed in order to limit the damage caused by attacks. Legislation is needed to regulate the surveillance of public spaces, particularly video surveillance. Public transport users also need to be kept informed and advised in order to ensure that they remain vigilant and co-operate actively in anti-terrorism measures.

Lastly, international co-operation, based on shared development costs, would be welcome with regard to research into new technology for detecting explosives or large-scale bacteriological attacks. Here, too, the pooling of experience can prove vital.

5. CONCLUSIONS

Greater safety in the public transport sector can be assisted by greater use of public transport during off-peak hours, lower costs of repairing damage, declining levels of staff absenteeism and less disruption to services. In addition, educational measures aimed at preventing delinquency can also be of benefit to the community. Governments therefore cannot afford to disregard the problem of vandalism in public transport. Furthermore, since public transport uses spaces through which thousands of people pass every day, government must exercise some form of control.

In addressing the problem of vandalism, it is first necessary to gain insight into its causes, the places where it occurs, the main forms it takes and how it evolves. It is then possible to establish primary objectives. It is essential, for example, to respond immediately to offences, since speed of response is a factor that will be taken into account by offenders. Infrastructure and rolling stock must also be better designed in order to make them less vulnerable to acts of vandalism. The use of modern surveillance and information technologies can also help to alleviate the problem. However, the measures that need to be taken are not solely of benefit to the transport operator.

The Round Table therefore recommended the creation of local partnerships between all actors involved in crime prevention, policing and law enforcement. Working under the supervision of government authorities, they would seek to focus efforts on common high-level objectives that would be translated into specific measures to be taken by each actor.

At a more general level, providing local units with shared experiences, practical guidelines on crime prevention and infrastructure design, as well as information about the successes and failures of specific measures, would allow them to properly target their actions. One of the tasks that national and international authorities urgently need to address is, therefore, the classification of individual measures and their interrelationships.

There are two key factors that emerge from an overview of this area: firstly, the need to understand the reasons behind acts of vandalism; and secondly, the need to involve the public in efforts to combat this phenomenon. The public need to be involved because the impression that public transport belongs to nobody can only be countered by fostering a sense of civic pride, which in recent times has been significantly eroded. Over the years, tolerance thresholds for anti-social behaviour have been imperceptibly rising. All actors in civil society must therefore support the actions of government and once again make citizens responsible for their acts. Parents, for example, are directly responsible for their children, and this is one area where further analysis and reflection are essential. The causes of vandalism are to be found in changes within society and in society's ability to integrate all its members. This is a long-standing problem relating to the social policy of governments, but one that should be reconsidered in the light of developments in certain cities.

Terrorism, in view of its distinctive nature and the changes it has undergone since the attacks of 11 September 2001, must be dealt with on a much broader basis and therefore requires special treatment. Here, too, there is clearly a need for international co-operation.

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