

A STRATEGY FOR ARSON

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THE CHALLENGE OF ARSON

In the UK it is estimated that the direct financial costs of arson are well over £1.3 billion a year. If the value of investigation time, uninsured losses and total social costs were included then the real cost is considerably higher (Home Office 1999). Arson fires often devastate whole families. Injuries can leave the victims with a lifetime of pain as well as permanent physical and mental scars. The outcome of widespread arson in a community can create degeneration within an area, provoking a loss of business and unemployment.

Reducing arson, both as it relates to crime and as it relates to death, injury and damage is therefore an important component of the stated Government aim of creating safer communities. But in order for effective government strategies to be developed for dealing with arson its nature and extent need to be fully understood. Yet although dictionaries make clear that Arson is the intentional or reckless setting fire to property for some improper reason, in practice it can take on many different meanings and the estimates of its occurrence can vary enormously.

These variations are highlighted when the number of malicious fires recorded by the fire service is compared with those recorded by the police. In 1999 the fire service recorded 102,900 malicious fires and the police 53,800. This 100 percent difference is due to different definitions, recording processes and record keeping practices.

It is therefore clear that arson is of considerable importance but that its nature and extent needs to be carefully reviewed in order to lay the groundwork for future government policy. The following report therefore sets out to identify:

- a) The types of arson that occur,
- b) Estimates of the proportions of each of these types
- c) The nature of the difficulties inherent in tackling arson,
- d) Proposals of forms of intervention for the different types identified,
- e) Future directions for projects that will help to reduce arson further.

Arson and Arsonists: An Approach to the study of malicious fires

In the examination of arson with a view to developing interventions for its reduction an important but complicating factor needs to be recognised. Arson can be dealt with both by interventions with people who intend to or do commit arson and it can be dealt with by protecting, or 'hardening', the potential target of arson. This distinction between the person who causes the arson and the target that suffers it has wide ranging policy implications because, in general, different agencies are concerned and able to deal with the arsonists to those that deal with the targets. This is illustrated most directly in the fact that in the past the police concern with arson was to identify and prosecute the perpetrator whilst the mission of the fire service focused on the possible and actual consequences of arson, dealing with the targets attacked. Therefore for any strategies for dealing with arson to be effective they must incorporate both aspects of arson, perpetrators and targets, into a coherent framework on which interventions may be built.

Classification as a Starting Point

The first stage in developing a coherent strategy for dealing with arson is to identify the various forms of arson and arsonists. There are a variety of ways in which individuals and their actions can be classified. Psychologists have debated for over a century the most appropriate ways to carry out such classifications. In general it is recognised that assigning individuals to one of a few 'types' is likely to be very crude and that any such classification process can only be approximate. Not every individual can be clearly assigned to just one type. However, in order to develop a strategy for dealing with arson some attempt must be made to identify the different forms it can take in order to facilitate the targeting of appropriate policies and interventions at the different forms.

The practical significance of any classification scheme therefore needs to be borne in mind when it is developed. A broadly based classification scheme that takes account of the possibilities for intervention as a basis for Government policy may be built upon existing frameworks, but it will be most valuable if it integrates current information on both the arsonists involved and the targets of their activities.

Existing classifications of arsonists have been developed for their own specific contexts, typically either for clinical purposes or crime investigations. They are usually derived from the opportunity samples available. Many of these schemes also suffer from a focus on 'motives' or 'motivation'. It is often assumed that many crimes, including arson, can be best understood by considering the differing motives of the perpetrators. However, the concepts of 'motive' and 'motivation' have been shown over 100 years of psychological study to be extremely complex and often very ambiguous. They can mean, *inter alia*, objective, reason, explanation, or cause and they can imply aspects of the crime that the offender is aware of as well as aspects that the offender has no direct knowledge of. Motivation and human intentions are usually mixed and multiple and there are dangers in assigning any individual or act into a particular subset based on motivation as this may change over time, place and situation. This all leads some classification schemes to be rather confusing and unclear. In the following consideration of classifications of arsonists an attempt is therefore made to avoid reference to 'motives' unless that can be clarified.

There are many possible reasons why someone may start a fire (Lewis & Yarnell (1951), Prins (1994), Kidd (1996), Wood (2000)). Depending on the researcher, the number of categories ranges from 3 to 200 sub categories. Yet most of these classification schemes tend to be derived from inferences about human intention. Since the writings of Durkheim (1897) the weakness inherent in surmise about such an intimate and private a process has been highlighted. Such weaknesses are especially important if the categories are taken as a basis for policy. Prins (1994) emphasised these difficulties when he concluded that a number of different typologies of arson, confuse the motivations and the characteristics of the arsonists, often producing overlapping categories. It is therefore important to develop a framework that will reduce these ambiguities and provide a way of distinguishing between the acts of arson that takes account of both the characteristics of the arsonist and of the property that is set alight.

The Home Office Arson Scoping Study 1999 proposed four broad categories for the purposes of policy formulation and planning interventions; youth disorder, malicious, psychological and criminal. These categories were drawn from the existing literature but formulated so as to relate in general to the different types of individuals involved in setting fires. This enables the relevant agencies that have responsibility for these different sorts of people to be identified. That fourfold classification therefore provides the most fruitful starting point for developing a strategy for dealing with arson.

These four categories are summarised in Table 1.

Table 1. Classification scheme proposed by the Home Office Arson scoping study 1999.

Category of Arson	Motivation
Youth disorder and nuisance	Vandalism and boredom
Malicious	Revenge Racism Clashes of beliefs/rivalries) Personal animosities
Psychological	Mental illness Suicide
Criminal	Financial gain Concealment of crime (theft, murder etc)

Since the Scoping document there have been some further studies of arson but they do not provide any results that would indicate a fundamental change to the classification system proposed in the Scoping study. The only small change for clarity would be to label the third category, 'emotional expression' rather than 'psychological', indicating the focus to the psychological problems the arsonists in this sub-group have.

Seven studies provide enough detail to act as a basis for developing the Scoping study fourfold classification further. They are presented in Table 2 with an indication of the category labels of the various authors in relation to the four Scoping categories. This shows that there is little difficulty in accommodating the various perspectives into the overall framework. These studies do cover a range of different sources of information. Marsh (2000) for example used questionnaires attached to the formal pro forma that the Fire Service completes, whereas Kidd (1996) studied 645 cases of arson derived from newspaper reports. Rix (1994) studied 153 arsonists referred for pre-trial psychiatric reports. Canter and Fritzon (1998) worked with the reports available from arson investigators. Any one source of information is undoubtedly biased in important ways, most significantly it will omit certain subsets of arson that do not happen to be captured by that particular data collection procedure. A mixture of sources is therefore essential.

Table 2 Current classifications of arson incorporated into the proposed framework.

Articles	Youth disorder & nuisance	Malicious	Emotional expression	Criminal
Canter & Fritzon 1998.	Instrumental object	Instrumental person	Expressive person Expressive object	
Day 2001	Vandalism	Anger/revenge	Attention seeking. Excitement.	Concurrent with other offence.
Fritzon 1998/2001	Damage	Destroy	Despair Display	
Kidd 1996		Revenge Terrorist/extremist	Mental problems Heroism Excitement	Conceal crime Financial gain
Marsh 2000	Vandalism Fireplay	Revenge Racial	Excitement Mental illness	Conceal crime Profit
Rix 1994	Vandalism	Revenge Manipulative Political	Excitement Cry for help Suicide Psychotic Heroism Antidepressant	Re-housing Financial Cover up Proxy
Wood 2000	Vandalism	Revenge	Excitement Mental illness Despondency	Conceal crime profit

Drawing on these and related studies the four forms of arson will now be considered.

Youth Disorder

Within this category lie two different types of firesetters. One involves young children playing with fire as a form of curiosity without malicious intent. The second involves young children using fire as a form of vandalism.

Children playing with fire

Those children who occasionally or accidentally start fires while unsupervised may be described as non-severe firesetters. Fire play grows out of curiosity or exploratory behaviour not usually involving the child's own property. This excludes fire setting that deliberately expresses anger and revenge.

In one of the few direct studies of fire play Kafry (1980) investigated fire behaviour and knowledge in a sample of young normal boys. A random sample of 99 boys from California were interviewed with their parents. In addition the parents were asked to complete a questionnaire. Kafry found that 45% of the boys studied played with fire. Single incidents of fire play resulted in fires for 33% of the cases while 81% of the repeater fire players caused fires. This high level of prevalence supports Lewis and

Yarnell's (1951) observation that the incidence of children who play with fire is far greater than any statistics show. The fascination that young children have with fire does appear to be very widespread and possibly universal.

Fineman (1991) states that the curiosity firesetter is usually a young boy aged between 5 and 10, reporting that 60% of fires set by children can be attributed to curiosity. Regular access to matches and lighters is also associated with fire play, 89% of parents whose child played with fire smoked (Wood 1995). Therefore not only had the child access to lighters and matches but also the visual display of a flame when lighting cigarettes may confirm acceptability and encouragement in a young child's mind. Wood 1995 found that fire play children come from a stable intact family background, have a higher than average level of curiosity hence their interest in fire play. Those who persist in setting fires are predominately male, exhibit higher levels of behavioural and psychological dysfunction. They are often part of families which are in turmoil, experiencing disruption, conflict and disharmony. He suggests that an important cause of child fire setting action is rooted in the social background in which the child is raised.

Researchers in America are currently examining the link between juvenile firesetting and Attention Deficit/Hyperactivity Disorder (ADHD). ADHD is a neurobiological disability characterised by attention skills that are developmentally inappropriate, impulsivity, and in some cases, hyperactivity. Low self esteem and other behavioural difficulties can accompany it. A non-profit, parent based organisation formed to better the lives of individuals with attention deficit disorders and those who care for them, CHADD, indicates that 3-5% of the school age population in the US have ADHD, they also estimate that as many as 50% of the children with this disability are undiagnosed.

Portland (Oregon) Fire and Rescue has collected information on children participating in the Juvenile Firesetting Intervention Programme diagnosed (through professional testing) with ADHD over a five year period 1994-1999, (Porth 2000). They carried out 579 interviews and confirmed that 19.9%, i.e. 115 participants were confirmed to have ADHD. This compares with ADHD rate in the general population of 3-5%.

ADHD children have difficulty following instructions and carry out dangerous actions without thinking of the consequences. There is currently no evidence that ADHD actually causes firesetting behaviour directly. Anecdotal information on recidivism from youth firesetting intervention programs in America postulate that it is more likely due to the way in which these children are taught which doesn't always fit with how they are. The suggestion is that these children do not learn that certain acts can be dangerous (Porth 2000).

Fire-play is dangerous and often results in severe fires. The scale of these is affected both by the child's actions and also by chance factors such as availability of combustible materials and the weather. Young children also may panic leave the room and close the door failing to inform anybody about the fire. This may result in tragic consequences. Wood (1995) states that in one brigade alone 13 deaths have been attributed to children playing with fires in the years 1990-95. Although this sub category does not amount to the criminal offence of arson, as there is no intention to

commit a crime it does indicate a severe problem that needs to be addressed by parents and other agencies.

Vandalism

Fire vandalism is an antisocial disruptive behaviour. Swaffer (1993) defined this group as delinquent, typically anti-social, individuals for whom firesetting is not the only problem behaviour exhibited. The majority may already be known to various agencies for offending behaviours ranging from theft, breaking and entering, to truancy and malicious damage (Strachan 1981). This type of firesetting activity is often committed by groups of youngsters where the choice of target is opportunistic. Criminological explanations for these acts of vandalism have shifted from psychological reasons such as aggression and frustration to more sociological reasons such as lack of employment, lack of stimulating schooling, and inadequate provisions for youngsters to express their developmental needs in legitimate ways (Home Office 1988).

Firesetting of this type is more likely to occur in areas of social deprivation. As people leave the area in search of work they leave properties empty, which then become targets for arson. The general deprivation of an area may also lead to people dumping rubbish in the streets and open spaces, providing further opportunities for arson. These areas may be used for the dumping of stolen vehicles which, if they have not already been set alight by the individuals who stole them, become targets for others. In these areas fire is used with disregard for the law and property. In severe cases areas may accept this type of arson as custom and practice because it occurs so regularly that there is a danger that parents, the community, local authorities and the police may not take the appropriate action to curb the problem.

Wood (2000) found that 89% of detected fire-vandals were aged 6-15 years, the average age being 12.13 years. Wood also distinguished between solo and partnership offenders. Solo offenders, committing 28% of fire vandalism, had an average age of 12.8 years. Partnered offenders committed 72% of the fires and had an average age of 11.9 years. Individuals in this category are less likely than other types of arsonists to be psychologically disturbed. Ninety-two percent of the attacks took place between the hours of 13.30 and 23.30. Forty-three percent, however, were between 13.30 and 17.30. The significance of the local community and urban context for these sorts of fires is also emphasized in Fritzon's (2001) study. She found that the majority of fires involving vandalism are committed in close proximity to the offenders' home, usually no more than 1 km distant.

These arsonists are most likely to target vehicles, uninhabited property, residential buildings, schools, factories and shops. This group of arsonists are also thought to be responsible for the majority of deliberately ignited secondary fires. This includes rubbish and skips etc. This type of arson is usually unplanned arising from opportunity, bravado and social peer pressure. There is a danger however that a firesetting vandal may progress towards serial arson, setting increasingly severe fires, indicating some fascination with fire itself. Such individuals would be considered

within the Emotional Expression sub-group, but there is currently no empirical evidence to indicate prevalence of such a development in offence behaviour

In areas of social deprivation firesetting may be used as a deviant display in an attempt to push against the limits of tolerance within a community. As the number of arson attacks increase in one area there is the possibility that this sort of behaviour will become tolerated, accepted and normalised. This type of antisocial behaviour if allowed to continue will spread and affect other disadvantaged areas in close proximity. Individuals who commit this offence are often not aware of the consequences of fire itself. This is coupled with the knowledge that they are unlikely to be apprehended. These personal and social factors combine to make vandalism a major source of arson in this country.

Malicious

It is often assumed that arson is a crime against property. However it does share some of the characteristics of personal or violent crimes in often being an attack against a person or group of people. Put simply, fire is sometimes chosen as a weapon.

Most studies of arson have cited revenge as one of the major explanations (Prins 1996). This includes intimidation or retaliation against a person, a group, an institution, or society as a whole. Canter & Fritzon 1998 suggested that this form of arson often occurred as a direct result of a dispute between the offender and another person, usually an ex-partner, or sometimes ex-employer. This dispute causes anger and a sense of injustice within the individual, which s/he may attempt to redress by arson. The victim of a malicious fire often has a history of interpersonal or professional conflict with the offender.

The arsonist may be a neighbour with a grudge who commits an arson attack on a neighbour's house. The attack is often unobtrusive, involving burning paper or a standard accelerant being forced through the letterbox. The seriousness of these attacks is emphasised by the fire often being set in the main, or only, escape route from the building and many of these incidents occurring at night.

Wood (2000) reports that the average age of revenge arsonists is 25.6 years. Thirty-three percent were under 18 and 15% under 11. Nurcombe (1964) discusses a 6-year-old's expression of resentment against the attention paid to his brother by setting the baby's cot on fire. Females account for 15% of apprehended arsonists for this category (Wood 1999). This supports the view that arson committed by females often has a strong emotional component and is used predominantly as a tool for expressing aggression. Previous research often cites revenge as the most common single reason for arson by females (Bourget & Bradford 1989, Stewart 1993). However Bourget and Bradford (1989) had a limited sample from a psychiatric population of 15 females charged with arson referred to the department of forensic psychiatry at the Royal Ottawa Hospital for pre-trial examinations. Stewart's (1993) sample was also likely to be biased towards a psychiatric population because it consisted of 25 female arsonists and 25 female controls admitted to Holloway Prison.

Rix (1994) also showed that this type of arson is common within samples of psychiatric arsonists. Revenge accounted for almost a third of the arsonists he studied. In most cases the property belonged to the person towards whom the arsonists felt angry. Three individuals, in Rix's sample however, wanted to take revenge against society as a whole.

A single offender working alone usually commits this type of arson. Whilst some incidents were spontaneous, usually associated with alcohol and drug intoxication, most revealed elements of planning. In 75% of cases the offender brought materials to the scene to enhance the spread of fire (Wood 1999). Revenge arsonists were found to use flammable liquid accelerants in more cases than any other type of arson.

People committing arson for revenge travel a variety of distances, with a minimum of 0.02km and a maximum 116.26km and an average distance travelled of 6.24km (Fritzon 2001). The location of the target is the main factor. Offenders will travel the required distance in order to burn the intended property.

The targeted property often varies with the sex of the offender. Female arsonists usually target something of significance to the victim, such as a vehicle or personal effects. A male arsonist may also set fire to something of personal significance, but his fire setting can become more wide-ranging and disruptive.

For revenge arsonists in general the main targets are residential property and vehicles. Malicious arsonists who seek revenge from society may choose targets with no obvious plan; others will retaliate against specific institutions such as churches, schools, public buildings or particular businesses.

Another type of arsonist contained within this category is the terrorist or social protest firesetter. These arsonists almost always work in groups and generally take credit for their actions. These fires are pre-planned therefore the methods and materials used are more sophisticated than those used in other types of arson. Such arsonists target symbolic buildings such as government facilities or animal testing laboratories. Arson attacks may also occur during times of civil unrest, such as those in Northern Ireland and more recently Oldham and Burnley. Groups of people roam the streets setting buildings and vehicles alight. Vehicles especially are vulnerable as they provide ready opportunities and can be used to form burning barricades.

Emotional Expression

Jackson, Glass and Hope (1987) identified certain individuals who lack the ability directly to communicate their frustration, pain or feelings of hostility. These individuals may use arson as a form of emotional expression, a means of communication, to express a desire, wish, or need for change. This includes cry for help or attention-seeking arson, would-be hero arson and attempted suicide.

Firesetting in this context is extremely coercive, as the weapon is so powerful. Individuals who are unable to use constructive means to have the impact they desire, or to use direct forms of physical or verbal coercion, may use firesetting as a way of achieving their goals. Such people are likely to be very angry although they may not

have any way of expressing that verbally. They externalise it by directing it at themselves in a suicide attempt or at inanimate objects. As Geller (1992) argues, arson is a good medium of expression for certain individuals because it is overtly confrontational and requires no verbal exchange or direct communication of any kind.

Pyromania

The term pyromania dates back to the nineteenth century when it was a popular topic in the scientific literature. The term is currently defined in the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association 1994) as: -

Repeated deliberate and purposeful firesetting associated with tension or affective arousal before the act, followed by intense pleasure or relief when setting the fires or witnessing/participating in the aftermath.

Pyromania is the diagnosis least frequently used for firesetters. They are more likely to be diagnosed by mental health practitioners as suffering either from an antisocial personality disorder, schizophrenia, mental retardation or organic psychosis (Barnett & Spitzer 1994). The definition is so extremely rare that clinicians in this country have come to doubt the usefulness of the classification.

Some researchers use the term excitement motivated arsonists. The fires are set because the arsonist craves the excitement that it generates. Douglas et al (1997) reviewed arson research literature and actual arson cases, they also carried out interviews with incarcerated arsonists across the USA. They proposed that these arsonists were seeking thrill or attention or wanted recognition, or may in a minority of cases, gain sexual satisfaction from fire setting. Residential properties and public buildings are common targets. The individual may select a target that offers a good vantage point from which to safely observe the fire and the fire brigade. Serial offending is common with this type of offender and they are likely to have pre-convictions for arson and a history of police contact for nuisance offences.

Some individuals derive excitement and satisfaction from not just the involvement in fire raising but also attending and/or busying themselves at the scene and calling out the fire brigade. This has been found to be a significant problem in the United States where firemen are often volunteers. Huff (1994) collected data concerning 16 solo offenders and 9 cases involving multiple offenders, in all 75 offenders responsible for 182 fires. Huff indicated that in 89% of cases the predominant explanation was the excitement the fire setter obtained from the fire. The incidence of this type of arson is so far unstudied in the UK.

Individuals may also set fires as a means of relieving frustrations or to enhance themselves in the eyes of their employers. In these cases there is sometimes evidence of a number of small fires being set prior to a serious fire. These fires may coincide with the appointment of the individual. The offender pretends to discover and deal with the fire situation, thereby showing willingness, efficiency and loyalty. Arsonists who commit this type of arson may often be male security guards, inexperienced police officers and retained fire fighters between 25 and 35 years old (Wood 1999). A well-known example is the case of Fleur Lombard the first female fire fighter to die

on peacetime duty. Ms Lombard died in a Bristol supermarket fire in 1996. A security guard was later jailed for manslaughter and arson.

Research carried out at Rampton, a high security hospital, collected detailed information concerning 60 participants who had either an index offence of arson; or there was documented and corroborative evidence of firesetting. The main objective of the study was to identify empirical measures which help to establish core clinical needs of the individual arsonist; and to evaluate his/her respective risk of re-offending (Haggett 2001). The study reports on a group of individuals they called 'chaotic arsonists', who use fire as a means of coping with negative feelings such as sadness, loneliness, anger and rage associated with their abusive family backgrounds, (Haggett 2001). Individuals in this group habitually use arson as a method of handling difficulties and problems. They have often been in care before the age of sixteen and have extensive social services involvement. With no specific trigger, fires are used as a way of communicating a general discontent with society.

For some individuals arson becomes another form of self-harm. Many have engaged in numerous episodes of self-injury and attention seeking behaviours such as wasting police time or making hoax calls, (Stewart 1993). Although these individuals do not generally set fires as a deliberate attempt to kill, their impulsiveness often leads to endangerment of lives.

Criminal

This category involves two forms of arson; that used to cover up evidence of another crime and that for financial gain.

Cover up another crime

These offenders are not interested in the fire itself. It is only used to destroy potential incriminating evidence. The target is therefore dependent on the nature of the concealment; it may be a business, a residence or a vehicle. In murder concealment, arson is used to destroy forensic evidence, and/or conceal the victim's identity.

In Wood's (1999) study slightly less than two-thirds of criminal offenders were aged between 17-22 years. Therefore identifying older adolescents as the main perpetrators of crime concealment arson. His analysis found that 94% of cases involved theft and 100% involved forcible entry. Cars were found to be the primary target followed by residential property.

In the majority of arson to conceal another crime cars are involved either through 'joy riding' or cars used for other crimes. Often multiple offenders are involved. The individuals are likely to be young adult males who live within the surrounding area and are likely to have a history of contact with the police. Alcohol and recreational drug use is also common with this type of offender (Douglas et al 1997).

Financial gain

Wood (1999) identified four types of individuals who commit arson for financial gain

- Semi-professional or professional paid offenders
- Paid individuals with little or no fire experience
- Economically restricted business or property owners.
- Individuals covering inventory losses.

Fires of this sort are often more sophisticated in planning and execution than other types of arson, presumably because a so-called 'hired torch' may instigate this type of fire. As the complete destruction of the target is intended there may be evidence of excessive use of accelerant and multiple seats of fire. Items of value are often removed, especially if a residence is the target. While it may be clear that the owner of a property stands to gain from the consequences of a fire it can be very hard to prove direct involvement due to the possible involvement of a third party. While the insured or owner may be closely examined as to his whereabouts at the time of the fire if using a 'hired torch' the individual will usually have a strong alibi. Hired torches are likely to be mature adults working alone with pre-convictions for burglary and possibly even arson.

Research conducted in Britain identified 71 cases of actual or suspected arson in businesses over the period 1990-1995, with an overall value of £38.5m (Clarke 1996). Clarke carried out interviews with loss adjusters and ascertained that Fraudulent arson in Britain does not show a pattern of significant involvement by organised crime. Regionally there was an increase of cases in the London area. All the businesses were small or medium sized, whether this was due to large companies expertly undertaking arson frauds therefore remaining undetected was not clear. There were a number of identifiable financial motives however the financial records of the business may not necessarily reveal a financial motive it may be a case of simple financial gain rather than financial distress.

Two individuals in Wood's (1999) sample set fire in order to be re-housed and one individual was a fraudulent insurance claim. All three cases involved the offenders setting fire to their own residence. These cases did not however involve hired torches. The use of fire in order to be re-housed is a new phenomenon in arson research. Rix (1994) did report such incidences. All of the subjects set fires in the hope that the council would rehouse them.

An innovative study carried out in Knowsley, Liverpool shows the relationship between the number of cars burnt out in the area and the price of scrap metal. The research carried out by Michael Townsley for the Department of Civic Design within the University of Liverpool showed quite clearly that as the price of scrap metal severely decreased the number of cars found burnt out dramatically increased. This suggests that owners of cars unlikely to gain any money from scrapping their old car have their vehicle burnt and may then claim on the insurance. This is likely to be the case around the UK and be responsible for a large proportion of the rising number of vehicles being set alight.

The Home Office has recently commissioned a pilot project in Knowsley an area in Merseyside. The project aims to help police by using evidence based policing and problem-solving techniques. One of the crimes examined is the problem of burnt out vehicles in the area. Merseyside police estimate that an average burnt out car costs local authorities and other relevant agencies £1250.

In the Knowsley area there are three reasons why cars are burnt out.

- 1) By joyriders
- 2) In order to claim fraudulently on the insurance.
- 3) By vandals targeting abandoned vehicles

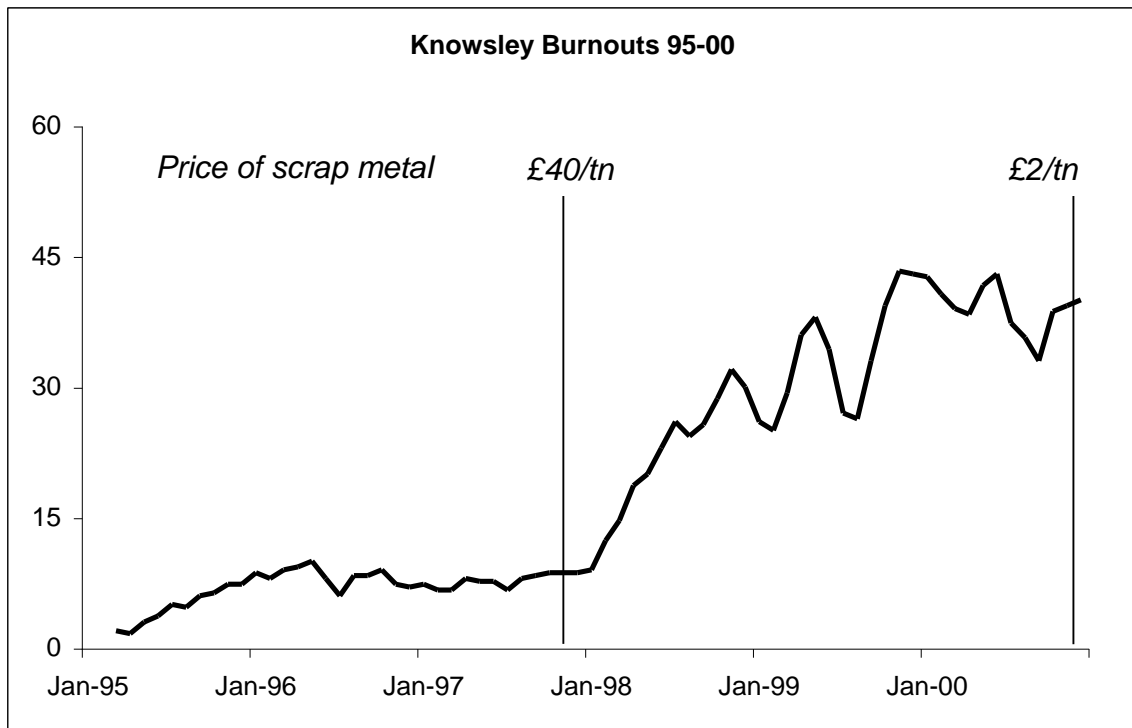


Figure Graph presented by Pease & Townsley at Environmental criminology and crime analysis seminar June 2001 held in Liverpool.

The authors argue that before 1998 the majority of burnt out vehicles were the result of joyriders setting fire to stolen vehicles. They also argue that the increase in the number of burnt out vehicles is due to increases in the number of individuals abandoning their vehicles and also increase in number of individuals setting fire to their own vehicle in order to claim insurance.

Pease and Townsley give three explanations for this dramatic increase.

- 1) As the graph shows the cost of scrap metal has decreased from £40 per ton to just £2 per ton. Therefore an individual wishing to scrap their vehicle would receive significantly less money after 1998 than before.
- 2) Environmental legislation, The Waste Disposal Act states that scrap metal dealers must carry out a number of procedures, when scraping vehicles, such as removal of tyres and engine fluids. These procedures cost the scrap dealer money which he passes on to the customer.
- 3) Due to the large number of vehicles being stolen the police do not have the funds or time to scrutinise claims that an individuals vehicle has been stolen.

These 3 explanations combine to lead individuals either to abandon their vehicle or to ignite them themselves and claim on the insurance.

Very little is known about the scale of fraudulent arson, as no one knows the number of fires wrongly attributed to accidents, or to arson but the owner not suspected. Attempts to quantify the impact of fraud involving arson is fraught with difficulty particularly when it is being carried out by experienced and organised criminals, offenders who will be very hard to detect. Another difficulty is the usually circumstantial nature of the evidence. However if fires are being organised in a repetitive basis by criminal entrepreneurs then it may be possible to identify patterns and in due course target individuals.

Summary of Arson Classification

Four broad forms of arson have been identified. In general these can be ordered from five and six year olds playing with matches and setting light to materials opportunistically available, through adolescent vandalism of empty property and abandoned cars, and on to people who are typically a little older who use fire setting as a way of seeking revenge. A different group are people who set fires for emotionally disturbed reasons or to gain some personal benefit from the excitement. They will tend to be older than the adolescent or malicious groups and will target property that has some particular significance to themselves. A further and very large group set fires for criminal reason, either to hide a crime or for direct financial gain.

It must be emphasised that many acts of arson will draw from a mix of these different categories, but just as most colours are a mix of their primary elements, it is useful to identify the primary forms of arson in order to guide policy making. Broadly the sorts of people who commit the different forms of arson can be distinguished from each other and their targets will be different so that the agencies that can contribute to the reducing each form of arson can be distinguished. These agencies require some idea of the scale of the different forms of arson. That will now be considered.

THE MAGNITUDE AND DISTRIBUTION OF FORMS OF ARSON IN THE UK

The Magnitude of Arson in the UK

Arson is currently the largest single cause of fire in UK currently standing at 46% of all fires. It is estimated that deliberate fires have doubled over the last decade resulting in an average week of 3,500 deliberately started fires, 50 injuries and 2 deaths (Home Office 1999). Establishing the exact figures for arson is problematic for many reasons. One is that both the fire service and the police record the number of deliberately started fires in different ways, resulting in rather different figures. National Fire Statistics are compiled from the fire report forms (FDR) completed by each fire brigade. The Home Office then take a sample of 1 out of every 5 forms returned, unless the fire resulted in a casualty in which case it is definitely entered, and use this sample to calculate their figures.

The FDR forms require fire officers to indicate if they think the cause of the fire was malicious. On the basis of these reports it estimated that there has been a continued long-term increase in the number of deliberate fires attended by the fire service. The number of malicious fires recorded by the fire service in 1999 was 102,900 this is a

rise of 19% over previous figures. The main reason for this increase was a 30% rise in road vehicle fires up 30% to 63,200. Malicious fires in road vehicles have more than trebled over the last ten years. Of the 31,800 malicious fires in buildings more than half (56%) occurred in building other than dwellings. There is no national measure of the number of malicious secondary fires (outdoor fires involving grassland and refuse and derelict buildings) however of the 207,800 secondary fires reported in 1997, around a half are thought to be of malicious ignition. Analysis by fire brigade area shows that malicious fires are highly concentrated, with almost half occurring within the seven metropolitan areas.

The police record malicious fires as arson as defined by the Criminal Damage Act 1971 (sections 1-3). In 1999 the number or arson offences recorded by the police was 53,800 and the number cleared up was 4,800 (Home Office 1999). The number of prosecutions and cautions has fallen over the past ten years despite the significant increase in the number of deliberate fires.

As indicated above, there do seem to be some important differences in the forms of arson for which property is the target and the form for which vehicles are the target. It is therefore helpful to consider the different frequencies of arson against these different targets. The national statistics produced by the Home Office give some indication of the numbers and types of arsonists involved in relation to different forms of target using figures taken from the FDR-1 forms for the year 1999. These are shown in Table 3.

Table 3. Number of deliberate fires for property and other buildings by age of offender taken from the FDR-1 forms for 1999.

	Total number deliberate fires	Adult Over 18	Youth 10-18	Child under 10	Unspecified
Total property	31,771	13,121	9,805	3,376	5,469
Dwellings	13,842	6,315	3,628	1,825	2,075
Other building	17,927	6,807	6,178	1,552	3,392
Vehicle	63,175	32,446	15,919	336	14,474

It is clear that vehicle arson is virtually double that for all property combined. What is also worth noting is the significant number of unspecified in this category reflecting the difficulty fire officers have in attributing vehicle fires to an age category. Furthermore, there is also a rather different pattern across the age groups that accords with the earlier consideration of the different forms of arson. In considering the proportions of different forms of arson it will therefore be appropriate to examine property and vehicle arson separately.

Deliberate vehicle fires has risen 30% in 1999 from 48,800 in 1998 to 63,175. The number of deliberately set fires in vehicles has more than trebled in the last ten years (National Fire Statistics 1999). This increase can partially be explained by vehicle fires often being recorded by the police as stolen despite the fact that it was also burnt

out. However this problem is now being addressed and the police are changing their recording system.

Proportions of the Different Forms of Arson

No national figures exist that allow an estimate of the number of each different form of arson. However, a number of different studies do provide details of the numbers of each form of arson in the samples they studied. Some estimate can therefore be made from these studies of the *proportion* of each form of arson in each sample. By making some allowances for the obvious biases in the samples it is therefore possible to provide an overall estimate of the proportion of arsons nationally that can be assigned to each of the four major forms that have been discussed above. Table 4 summarises the proportions from those studies that allow a reasonable estimate to be drawn.

Table 4. Proportions of Arsonists in each of the four main subgroups indicated in seven different samples.

Study	Youth disorder & nuisance	Malicious	Emotional expression	Criminal
Day 2001	Vandalism 10%	Anger/revenge 50%	Attention seeking. 15% Excitement 10%	Concurrent with other offence 15%
Fritzon 1998	Damage 26.5%	Destroy 20%	Despair 18.5% Display 10%	
Fritzon 2001	Damage 27%	Destroy 26%	Despair 38% Display 6%	
Kidd 1998		Revenge 24% Terrorist 2%	Mental problems 20% Heroism 1% Excitement 5%	Conceal crime 7% Financial gain 6%
Marsh 2000	Vandalism 73% Fireplay 8%	Revenge 3% Racial 2%	Excitement 7% Mental illness 3%	Conceal crime 2% Profit 2%
Rix 1994	Vandalism 9%	Revenge 31% Manipulative 4% Political 1%	Excitement 11% Cry for help 7% Suicide 7% Psychotic 5% Heroism 4% Antidepressant 2%	Re-housing 7% Financial 5% Cover up 5% Proxy 2%
Wood 2000	Vandalism 56%	Revenge 23%	Excitement 7% Mental illness 8% Despondency 5%	Conceal crime 13% Profit 2%

Property

Youth Disorder and Nuisance

The proportion of deliberate property fires attributed to this category is **35%**. The values for this category range from 9% right up to 81%. However the mean value is

around 35%. It is interesting to note that samples taken from prison and psychiatric populations report very low frequencies i.e. 9 and 10%. These two samples contain adult arsonists that other studies have shown are less likely to commit arson for vandalism. The very high frequency of 81% was from a study carried out in Newcastle's West End (Marsh 2000), a location that was suffering at the time from very high levels of this type of arson. Youths and children in the area were responsible for 71.5% of deliberate property fires.

This figure of 35% is also supported by the national statistics that show that youth and children set approximately 13,181 deliberate fires which equates to 41% of deliberate property fires. This is above the stated proportion of 35%. However some children, and juveniles especially, may belong in another category; the stated proportion therefore should be under 41%.

Malicious

The proportion of deliberate property fires attributed to this category is **26%**. The values for this category range from 5% to 50%. However the mean value is approximately 26%. It is interesting to note that samples taken from prison and psychiatric populations are very high i.e. 36% and 50%. Reflecting the research which indicates that adults commonly commit arson for malicious reasons, and studies that demonstrate that a significant number of arsonists who are mentally ill commit arson for malicious reasons.

The research carried out in Newcastle's West End however only attributed 5% of fires to malicious reasons. In Marsh's (2000) study, information was collected using an FDR-1 additional questionnaire, the attending fire officer therefore inferred reason the why a fire was deliberately set. The category malicious may be more difficult to infer than other categories such as youth disorder. Which may explain the low frequency in relation to other studies, which obtained information from the arsonists themselves.

Emotional Expression

The proportion of deliberate property fires attributed to this category is **24%**. The values for this category range from 10% to 44%. However the mean value is approximately 24%. It is not surprising that the samples taken from a psychiatric population contained one of the highest frequencies. Interestingly the sample taken from a prison population shows a high proportion in this category.

This figure is higher than indicated by the Arson Prevention Bureau, which states that 17% of those being prosecuted for arson offences are mentally ill. This figure of 17% however is based on those arsonists that have been prosecuted and this is of course a small proportion of the arsonists that do not get caught. The studies show that more people are using fire as a means of expressing their emotions than is currently thought. However this is for deliberate property fires only.

Criminal

The proportion of deliberate property fires attributed to this category is **15%**. The values range from 4% to 17%. However the median value is 15%. The study carried out in Newcastle is the only outlier of the frequencies with only 4% being attributed to this criminal category. This may be due to the method of data collection mentioned previously, or the fact that arsons in the area being committed by adult arsonists were

not as common as those committed by youths. Research shows that it is mainly adults who commit deliberate property fires for criminal reasons.

Vehicle

Unfortunately very few studies have attempted to quantify the proportion of deliberate vehicle fires attributable to different categories of offenders. One that does is Marsh (2000).

Youth Disorder and Nuisance

The proportion of deliberate vehicle fires attributed to this category is **39%**. National fire statistics show that 26% of vehicle fires can be attributed to youths or children. This is less than the figure proposed of 39%, however many of the unspecified individuals will be youths and children. Of those fires attributed to one of the age categories, youth and children commit 50% of the fires. This figure is higher than the 39% proposed but many youths will belong to another category such as criminal. The figure of 39% is also approximately the mean value between the two values of 26 and 50 and also the proportion attributed by Marsh (2000). The proportion of property and vehicle fires attributed to this category are both very high therefore reflecting the large number of arsonists in this category who target both property and vehicles.

Malicious

The proportion of deliberate vehicle fires attributed to this category is **3%**. This category of arsonist therefore specifically targets property as opposed to vehicles.

Emotional Expression

The proportion of deliberate vehicle fires attributed to this category is **13%**. This figure is supported when the proportion of property and vehicle fires attributed to this category are joined together. The proportion of all fires attributed to this category is 18.5%, which is very similar to the figure of 17% given by the Arson Prevention Bureau.

Criminal

The proportion of deliberate vehicle fires attributed to this category is **45%**. While the proportion of deliberate fires for property is the lowest of all the categories, individuals are obviously targeting vehicles more frequently either to cover up other criminal activity or to make fraudulent insurance claims.

Summary of Proportions of Various Forms of Arson

The estimates given above are summarised in Table 5, where the total figures for property and vehicle arson in 1999 are given. This table draws attention to two clear processes. One is the significance of youth disorder for both property and vehicle crime. Policies that address youth disorder directly are likely therefore to have a major impact on arson as a whole. Given the likelihood that many of these acts of arson are committed by individuals local to the fire, in a social context that may go some way to facilitate the action, leads to the perspective that community related strategies may be particularly effective.

The second process to emerge strongly from Table 5 is the amount of criminal activity that now occurs around setting fire to vehicles. Given the very high proportion of arson that is vehicle related this suggests that successful strategies to tackle criminal arson of vehicles could have a very significant impact. This must overlap with vandalism of vehicles and thus indicates that a combined strategy of reducing the activities of the arsonist and the possibilities of the targets being set alight will have considerable benefits.

Malicious fires and those that are a product of emotional expression do seem to be a dominant focus on property. They are likely to be more diffuse in a community than vandalism and criminal arson. They will therefore require rather different strategies to tackle them.

Table 5 Estimated Proportions of Each Type of Arson

	Property	Vehicle
<i>Youth Disorder</i>	35%	39%
<i>Malicious</i>	26%	3%
<i>Emotional Expression</i>	24%	13%
<i>Criminal</i>	15%	45%
Total number in 1999	31,771	63,175

STRATEGIES FOR ARSON

Problems of Dealing with Arson

The Home Office report on the Arson Scoping Study 1999 recognised that arson was not being dealt with nationally because of a number of different factors.

- Confusion over data and measurement involving different agencies.
- Confusion over arson related terminology
- A reluctance to share information
- Uncoordinated approach that masks the scale of arson as a problem
- No clear lead agency for arson.
- Agencies working in isolation oblivious to the work being carried out by other agencies.
- Inconsistent approach to fire investigation: and
- The police and insurance industry appearing less interested.

Agencies Involved

There are many agencies and organisations who come into contact with the arson problem or upon whom it has an impact.

The responsibility for investigating arson falls to a number of different agencies.

The fire brigade developed as reactive fire-fighting teams. Their primary concern is controlling and extinguishing fires. They also have responsibility for fire prevention and give detailed advice on fire safety. However only five brigades out of fifty in England and Wales have full time fire investigation teams (though others have part-time ones). We must bear in mind however that there is no legal requirement upon the fire service to establish the cause of a fire. Fire brigades are encouraged to complete a Fire Data Report 1 (FDR-1) form for each property fire attended. Completion is not a statutory obligation or a mandatory undertaking in law. There is not therefore a statutory requirement or obligation for fire brigades to train personnel in investigation techniques. The level of experience and expertise therefore varies widely within the fire service.

The police have a legal responsibility to investigate arson. However the majority of fires recorded by the fire brigades as “deliberate” are not recorded by the police as arson. Arson as a crime is relatively easy to commit yet difficult to investigate and prove. To undertake a criminal investigation requires a higher level of proof that arson has been committed than is required for a brigade to attribute a fire was deliberately started. Clear up rates for arson average at only 9% leading to less than 1% of deliberate fires recorded by the fire brigade resulting in a conviction. Arson is also not one of the key performance indicators for the police. Investigation tends to be seen as a low priority and if there is no immediate suspect, investigations will be vulnerable to being shelved as other cases take priority. The police have competing demands placed upon their time and resources with most officers receiving only limited training in fire investigation.

The Home Office Forensic Science Service has moved towards agency status and now charges police and fire brigades for their services. In recent years there has been a decline in the number of arson cases submitted to the laboratory for examination. It is unclear how much of this decline is due to rising cost of the service.

The insurers and loss adjusters have an important role to play and although the insurance sector has been proactive in recent years supporting or sponsoring a range of arson control initiatives, for example. Resources they are donating are only a

fraction of the cost of arson to the insurance industry. The police and fire service suggest that insurers need to adopt a more active role in preventing arson and need to demonstrate that they are not content to bear the current level of arson and fraudulent claims. (Home Office 1999)

There are a significant number of agencies that hold information in relation to arsonists.

Insurance Industry: information held relating to claims, customer profile, property, premises and costs that may be associated with arson.

Police: details held of criminals and criminal investigations.

Criminal Justice System: information held relating to prosecution and punishment of arsonists.

Probation Service: information held relating to prosecution, punishment, release and whereabouts of arsonists.

Fire Service: information held about fire trends, activities and patterns of arson as well as the types of property affected.

At present, sharing of information between agencies is rare and in many cases data protection concerns are used as an excuse (Home office 1999).

SOURCE AND TARGET AS BASES FOR INTERVENTION

A Framework for Inter-Agency Collaboration

The mix of agencies for which arson is relevant requires that a coherent set of strategies for reducing arson be developed. It is essential to obtain some understanding of why people start fires deliberately if the policies then put into place are to have any significant impact on the problem.

There is currently no structured co-ordinated approach based on comprehensive understanding of the deliberate fire problem or the offenders who carry out the deliberate fire attacks.

From our considerations of the current understanding of arson and the various forms of policy strategy available it is proposed that a coherent policy-oriented framework for reducing arson will best result out of an understanding of two primary constituents:

- a) The different psychological processes within arsonists that give rise to the acts of arson. This will be based on the categories of arson proposed by the Home Office Scoping Study 1999, which are solely for the purposes of policy intervention. Youth Disorder and nuisance, Malicious, Psychological and Criminal. Different agencies have responsibility for dealing with arsonists from each of these four categories.

The different targets of arson will also be examined in order to elaborate the ways in which different psychological processes tend to lead to setting fires to different targets. This is especially important because the agencies that can reduce the vulnerability of targets are often different from those that deal with the fire setters themselves. Therefore a focus on targets of arson will carry different policy implications from a focus on perpetrators.

Only the Government can provide the framework for a truly effective arson reduction programme. If arson is to be controlled it is essential for there to be a co-ordinated strategy which involves short and long term planning backed by Government commitment and resources.

Proactive initiatives and actions by a partnership of agencies offer the way ahead. New funding is needed for preventive work. In this age of preventative thinking it is incredible that fire services are still funded according to the number of fires they put out (Muckley 1999).

In April 2000, the Arson Control Forum was created and given responsibility for providing the strategic direction to the arson prevention/investigation programme. The forum headed by HM Chief Inspector of Fire Services, Graham Meldrum has several detailed terms of reference, in broad terms these are likely to be: -

- To work towards a reduction of deliberate fires and related deaths, injuries and damage.
- To maintain a strategic overview of all general arson prevention matters.
- To develop, monitor and support initiatives aimed at improving standards of arson prevention and public awareness of arson prevention issues.
- To promote partnerships and co-ordination of effort in order to allow all stakeholders to contribute to the development of arson prevention policy.
- To monitor, and contribute to, arson prevention work conducted in European and International bodies.

Due to the nature of arson, the work of the forum will liaise with other Home Office-led crime reduction initiatives such as the Property Crime Reduction Action Team (PCRAT) and the Vehicle Crime Reduction Action Team (VCRAT).

Given the complex nature of arson with its multiplicity of motives and preventative measures the Forum has four topic based sub groups: -

1. *Intervention* this group addresses issues relating to the prevention and investigation of arson.
2. *Legislation* this group assesses what legislative changes are required to address the arson issue. It contains three working groups. Criminal aspects, Civil aspects and Procedural aspects.
3. *Research and Data Collection* this group will research issues surrounding arson including the collection and dissemination of data and will assist to identify the most effective tactics to reduce the incidence of arson.
4. *New Projects* this group will consider local arson prevention initiatives, providing a degree of financial support where necessary and will roll out best practice.

The Forum is in its infancy yet has already been allocated £3.8 million to be invest, however this figure is minute when compared to the financial cost of arson which is estimated at least £25 million per week.

The work of the Arson Control Forum will be supported by the first ever Joint Thematic Review of police and fire services which is to be conducted by HM Inspectorate of Constabulary and HM Inspectorate of Fire Services. The review team will visit 6 brigades, Leicestershire, Lancashire, Bedfordshire, Mid and West Wales, Tyne and Wear and London, to examine the following areas: -

- The training of officers engaged in arson investigation.
- The joint arrangements for investigating arson.

- Current practices associated with the statistical recording of arson.
- Arrangements for co-operation with other agencies
- Juvenile Firesetter Intervention schemes and
- Arson Prevention Initiatives.

The findings of the Thematic review should be available late 2001 early 2002.

The National Community Fire Safety Centre aims to provide a centre of excellence for community fire safety, developing high quality materials, recording best practice, undertaking mass media campaigns and co-ordinating the local plans implemented by individual brigades to ensure that they complement national objectives. It is essential, however, that they recognise the need to encourage local flexibility as nothing will demotivate brigade personnel, particularly those based at fire stations, more rapidly than seeing a pressing local problem ignored because it does not accord with the preconceptions of the national objectives.

The Arson Prevention Bureau was established in 1991 by the Home Office and the Association of British Insurers. Its aims are to spearhead and co-ordinate a national effort to reduce, prevent and detect arson. The APB is now solely administered by the ABI. The objectives of the APB are to: -

- Monitoring the incidence of arson in the UK
- Seek to improve the statistical base
- Draw together information on arson from all UK sources, in particular on arson initiatives taken by Government departments, local authorities, fire brigades and the police.
- Disseminate information on the incidence of arson and on appropriate remedial measures.
- Organise and advise on publicity and education to combat arson.
- Suggest areas requiring research, initiating such research or commissioning research projects
- Monitor the arson situation in other countries.

The scoping study recognised the importance of the Arson prevention bureau and anticipated that it will have a continuing role in support of the Arson Control Forum in its operational areas. The report of the arson working party part of the property crime reduction action team (2000) recommended that the APB should have a continuing role outside of the Home Office but in support of the Arson Control Forum. They see the APB as being important as a vehicle to share and co-ordinate action for note out of local level. The report also recognised that in order to avoid confusion, the role and functions of the ACF and the APB need careful presentation as currently there is some degree of overlap. The resources and staffing of the Bureau are, however, very limited. The Crime and Disorder Act 1998 recognises that many of the problems affecting society, one of which being arson, cannot be addressed by one single agency on its own. The Act places a requirement on community safety partnerships to develop and implement strategies to address crime and disorder in their area. The fire service however were not included until the 3rd amendment of the Act. The Act provides an ideal opportunity for the police, fire services, other agencies and local authorities to develop local initiatives and programmes in relation to the investigation and prevention of deliberate fires.

Reducing the number of fires set by arsonists can be approached in a number of different ways.

1. Identify the people committing arson.
2. Catch the arsonists quickly
3. Deal with the arsonist in the most appropriate way

Reducing the number of fires in the high-risk properties can also be achieved in a number of different ways.

1. Design the properties to reduce the potential for arson.
2. Identify those properties most likely to be targeted
3. Target those properties with advice and support.

As of June 2001 the Fire Service is longer part of the Home Office rather it is covered by the newly created Department of Transport, Local Government and Regions. How this will affect the fire service in general as well as research and initiatives to combat arson are not yet known only time will tell.

Youth Disorder

Over recent year's fire brigades have been increasing their efforts and directing extra resources to the issue of firesetting by juveniles. Currently more than three quarters of brigades are running some form of firesetting intervention/education programmes to address the significant problem of juvenile setting deliberate fires. However these programmes come in many forms and to varying degrees of complexity.

At present schemes in the UK fall into four categories.

1. Schemes that follow the Merseyside, Fire Awareness Child Education (FACE) used by around 16% of fire brigades. Focus on education
2. Scheme advocated by Muckley used by around 33% of fire brigades. Focus is on counselling.
3. In-house schemes developed internally within a brigade. Key elements of the scheme vary between each brigade.
4. Combination schemes. Elements of FACE programme and Muckley scheme with some in-house adaptations the mix varies from scheme to scheme.

FACE was established in 1988, this approach aims to educate children who play with fire. The FACE pack is aimed at children aged 4-12 years and involves the family unit. It aims to change a child's attitude towards fire. Preliminary advice is given to the parent or carer by phone on fire safety precautions. A home visit is carried out by a "fire friend" who talks with the child about the frightening power of fire. The child is then given projects to complete which have been designed to promote awareness of fire safety issues. This scheme stresses the importance of developing a multi-agency network to deal with this problem. Therefore built into the FACE programme is a network system, which consists of other professional bodies. If children persist in their firesetting behaviour they may be referred to more appropriate agencies such as social services or mental health services. The fire brigades themselves can not tackle the problem on their own, but can provide an effective education programme in conjunction with other organisations (Braodhurst1999).

Andrew Muckley an education psychologist designed a resource and training manual in 1997 for fire brigades wanting to set up firesetter programmes. Training courses are provided for staff, involved in the scheme, to be used in conjunction with the manual. The scheme encourages the brigades to determine the type of firesetter being referred before deciding which intervention response should occur. The manual provides a descriptive typology of firesetters including behavioural characteristics, behavioural problems as well as which intervention response is most appropriate for each of the different types of firesetter. Intervention varies therefore on the classification of the child.

Kent and Medway fire brigade, have had a designated fire setters team since April 1999. They have produced a *Firesetters Resource Ladder*, which combines the type of referral with the type of intervention deemed appropriate.

Picture of ladder goes here

Following the introduction of the Crime and Disorder Act 1998 agencies are required to ensure that appropriate youth justice services are available for children and young people aged 10-17 years who offend or are accused of offending.

As part of the Governments youth justice reforms the Sunderland youth offending service established a multi-stranded strategy that would reduce offending by young people with a history of firesetting. The project includes fire safety education programmes, structured work experience courses for young offenders aged 15-16 and a Princes Trust Franchise targeting unemployed and employed young people aged 17-25. As well as diversionary initiatives intended to divert young people away from firesetting by providing them with various incentives.

The FACE UP, arson programme for young offenders was established in 1991 by Merseyside fire service and Liverpool's youth justice department, when it was realised that there were no community alternatives to offer the courts in cases involving arson by juveniles. The course aims to confront, challenge and change the offenders misguided negative attitudes that motivate the acts of arson. The programme is intensive and is designed as an alternative to custody for juveniles aged 10-17 years. Participants are expected to attend 2 hr sessions each week for 13 weeks as well as completing home study exercises, non compliance could end in custodial sentence. The course combines hard-hitting videos about the results of arson with fire safety education in an effort to make arsonists realise the full consequences of their actions. A social worker or probation officer is present at each of the sessions. The scheme is being formally evaluated using the crimogenic scale, which measures the offenders' attitude to the offence. To date none of the arsonists that have completed the course have re-offended. This relies however on court officers informing the programme that an individual has re-offended.

This alternative to custody is not only much cheaper but is a real investment in the young people concerned. This course gives the juveniles greater self-esteem, sense of pride, purpose, sense of achievement and not only gives them respect for themselves, but also for other people in their community (Broadhurst 1999).

The development of all these schemes has proceeded without any central guidance from either the Home Office or HM Inspectorate of Fire Services resulting in the choice of scheme to be applied by a brigade based on limited information, decisions tending to reflect experiences of the fire officers involved. Graham Meldrum, Chief Inspector of the Fire Service, at a conference given in June 2001 acknowledged that some schemes are too complicated, too psychological in approach and outside the normal duties of a fire officer.

As these programmes are working with potentially vulnerable juveniles it is vital that selection, screening and training of the staff involved be rigorous. Follow up data on the juveniles should also be maintained in order to evaluate the relative success of these schemes. Currently although many brigades claim very high levels of success there is at present very little empirical evidence in their support.

The Home Office in collaboration with the Arson Control Forum is currently developing a module of the National Community Fire Safety Toolbox that will provide detailed guidance for brigades on all issues relating to juvenile firesetter intervention. This module will provide information on the models currently being used by the fire service, giving examples of good practice. It will stress the importance of close liaison and partnership working with other agencies. The module will also assist brigades to develop criteria for staff selection, training and identify the relevant child protection issues. It will also give information about data collection and evaluation methodologies. It is hoped that the module will be available to fire brigades early in 2002, (Arson Prevention Bureau 2001).

Malicious

Despite the fact that malicious fires represent a significant proportion of deliberate fires. There are currently very few treatment programmes for arsonists within the prison system.

In 1998 HMP Liverpool was the venue for the first ever arson programme run within a prison. FACE UP a safety education programme was not aimed specifically at convicted arsonists but also hoped to reduce the risk of fire within the prison as a whole. Deliberate fires within prisons can cause a great deal of disruption as well as endangering the lives of both inmates and staff. The programme was devised and run by Steve Broadhurst, Merseyside Fire Service, and was adapted from the FACE programme and the Arson Programme run for young offenders. The format was similar to that used with young offenders but used stronger more adult material as well as relying more on group sessions. The group attends a two-hour session every week over a period of 13 weeks. By monitoring re-offences over the next few years it may be possible to evaluate the programme. StnO Broadhurst hopes to produce formal documentation to support the programme so that the schemes can be extended and adopted nationally by the prison service.

HMP Liverpool provide a voluntary pre-release course a fire safety awareness module is an integral part of the two week course. The aims of the module enable each participant to: -

- Understanding the positive and negative aspects of fire.
 - View video material demonstrating the tragic loss of life in fires.
 - The components of an fire action plan
 - The dangers of children being allowed access to cigarette lighters and matches
 - The aftermath of fire and effects upon immediate family. Damage to property, communities, business and commerce.
 - Prisoners moral response for their personal safety, that of other inmates and prison staff.
 - Promote to prisoners who reside within Merseyside that they can take advantage of Merseyside Fire Service home fire safety check and smoke alarm campaigns for their families.
 - Prisoners are advised of the facility of the FACE programme for possible referral
- There has been a reduction of 25% of incidents related to fire within the prison. The individual upon release will also hopefully have a change of attitude towards fire and fire safety.

Recently in HMP Liverpool the Prison Service has introduced a Drug Support & Resettlement programme. This programme is conducted over a period of twenty weeks. It is designed to improve the prisoners' educational and social skills, to enable them to adapt and function in a normal society. The fire safety module described above has been introduced as a component of this programme.

Operation Lomond, an innovative partnership between Merseyside fire service and Merseyside police was established within an area of Liverpool after problems with a suspected arsonist. 12 incidents of fire, which had been deliberately started, were evidentially, albeit tenuously in most instances, to one individual. The issue of securing a successful prosecution was considered however it was realised that due to the lack of any form of tangible evidence, another approach would have to be formulated.

A multi-agency approach was required to address this issue. A meeting was therefore arranged with the following agencies: social services, probation services and housing associations. The purpose of the meeting was to tackle the problem of the suspected arsonist as well as informing the agencies of the general implications for all concerned in a positive solution was not found.

The background of the individual was discussed and the catalyst for his offending behaviour was established. A problem-solving theme was adopted and all agencies offered tangible solutions. To date no more malicious incidents of fire have occurred within the individuals immediate vicinity.

This initiative is a path-finding piece of joint agency work with commitment from all interested parties to find workable innovative solutions to the problem of this specific individual.

Station Officer and Detective Sergeant Forrest feel that this initiative has demonstrated best practice and should form the template for future partnership working for all relevant agencies and authorities, in particular the police and fire service.

This template may also be utilised for suspected/known arsonists from the other categories

The fact that many malicious arsonists are choosing to use arson as a weapon of retaliation indicates that they may lack normal coping skills. The following models may be therefore be of use when dealing with malicious arsonists.

Jackson, Glass & Hope (1987) Social Integration model can be used to enable the individual to develop more appropriate and successful methods of controlling and influencing their environment. This often includes development of the skills necessary for social integration. Individuals may be encouraged to engage in social, academic and vocational activities. This hopefully will increase the arsonists self esteem and in turn can lead to the individual establishing satisfactory and rewarding relationships. Training involves the use of appropriate assertive aggressive behaviour in order to promote successful conflict resolution.

Stewart (1993) recommends the use of the Relapse Prevention model. This enables individuals to comprehend their offence cycle, developing an understanding of the emotional, cognitive and situational antecedents to their offence. Treatment can then target coping behaviour, such as avoidance of high-risk situations, relaxation, assertiveness and cognitive restructuring.

Emotional Expression

Very little has been written about the treatment of firesetting despite re-offending rates for this type of offender being high. This type of arsonist require a psychiatric assessment. On the basis of this thorough assessment, an attempt can be made to determine the extent to which firesetting is driven by a mental disorder. If the firesetter is mentally ill, then in patient hospital treatment may be necessary. Depending on the degree of risk posed by the arsonist, treatment may be in a maximum security, medium security or an open psychiatric unit. Treatment should consist of the appropriate anti-psychotic or mood stabilising medication, together with psychological and social interventions as relevant.

The social integration model and the relapse prevention model mentioned as being relevant for malicious arsonists are also relevant for this type of arsonist.

The Aquarius project for the rehabilitation of child arsonists who are categorised as being emotionally and behaviourally disturbed has a encouragingly high success rate for children in this category. **MORE HERE**

There are a number of problems in accommodating arsonists within the community for understandable reasons. Glen Davies speaking at a conference given by the arson prevention bureau in October 1999, suggested there were three steps towards successfully accommodating potentially dangerous people,

- Thorough assessment of the person's accommodation and support needs
- Knowledge of, and assessment of, the accommodation availability;
- A fall back place for when it all goes wrong.

Mentally disordered firesetters often feel rejected by and alienated from mental health and social services this coupled with their general feelings of social isolation means that they require long term commitment provided by adequate psychiatric services.

Assessment of the individual should include an attempt to understand the emotional, cognitive and situational antecedents to the firesetting. Treatment should then include developing coping strategies.

Northgate Hospital Firesetters Programme

Commenced on a pilot basis, with both male and female arsonists in January 2000. Sessions were delivered by psychology and nursing staff, following a structured 92-page treatment manual compiled by the psychology department. 51 patients were identified, among the Northgate forensic population, as having arson as an index offence, a pre conviction for arson or firesetting was an area of clinical concern. The programme is divided into seven modules, delivered over an estimated 43 sessions. The group based treatment programme is based upon Jackson, Glass & Hope 1987 One Viable Option Theory, in which arson is viewed as a maladaptive and short term approach to problem solving allowing the individual to attain control over their environment, which they deem to be unobtainable by more conventional means.

The broad aims of the programme are for group members to:

1. improve self-esteem and personal effectiveness
2. consider the functions served by their fire-setting
3. explore attitudes to fire-setting and potential victims
4. receive education regarding the potential effects of fires
5. learn alternative coping strategies to avoid re-offending.

Patients are assessed on a range of measures and clinical interviews at both the pre and post programme scales. Initial results from 10 patients appear encouraging however this is of course a small sample. Further information from evaluative data will be disseminated in due course. In the longer term Northgate hospital are currently discussing plans to obtain follow-up assessment data-thereby enabling some indication of the robustness of any treatment gains.

A total of 10 patients have recently completed separate male (n=4) and female (n=6) groups.

Rampton Hospital a high security mental hospital has also developed a treatment programme for adult pathological fire setters. The programme has been developed also been developed from Jackson, Glass & Hope 1987 model for adult recidivistic arsonists. The programme is also influenced by the dynamic-behavioural model of firesetting, Fineman 1995. Each core therapy group contains a maximum of 10 patients which meets weekly for 16 months. This is underpinned by regular one to one sessions. The groups mixed gender and mixed diagnoses. The programme goals are to: -

- Analyse the functional qualities of firesetting episodes
- Identify the clinical needs of the firesetter
- Deliver appropriate treatment initiatives
- Promote robust and appropriate coping strategies
- Develop appropriate relapse prevention strategies
- Evaluate potential risk of relapse

Rampton Hospital carry out a number of psychometric tests the results of which are entered onto a database which includes information such as family circumstances, psychiatric history, offence history and fire profile as well as each individuals current status. As this database expands it will become an invaluable source of information and data which can highlight any patterns and also improve the therapy.

The description and systematic evaluation of treatment programmes appears to be lacking. Indeed the absence of suitable treatment and accommodation for this type of arsonist has meant that they currently might often be placed in restrictive custody which offer these vulnerable individuals little opportunity for personal development, as well as bringing them into contact with threatening and aggressive others. Individuals are then released from prison untreated, resulting in a high likelihood of recidivism.

What is needed

- Psychometrically reliable and valid measures of behaviours related to firesetting need to be improved.
- Group and individual methods of treatment need to be devised and evaluated, with information disseminated.
- Sufficient accommodation made available in general hospitals and secure hospitals to avoid the need for such people to be imprisoned.
- More specialist help made available for the treatment of arsonists released into the community.

Criminal

There are only a few dedicated fire investigation teams, West Yorkshire, West Midlands, Strathclyde, London and Merseyside. Elsewhere there is sometimes confusion over who carries out the investigation as the fire service do not have a statutory duty to investigate fires. With increasing demands on already stretched budgets has led in some brigades to reduce non-statutory work such as fire investigation. Failure to investigate all fires in detail gives a clear signal to arsonists that this crime is easy to get away with as does the failure to prosecute and secure convictions when the evidence is strong. It is an unfortunate fact that the detection and conviction rates for arson are low in comparison with many other crimes. There must be a move towards better fire investigation training, leading to greater expertise and ultimately, accreditation for the investigator, (Munday 2000). This will increase the likelihood of detection and punishment this alone will have the needed deterrent effect upon arsonists in general but especially this type of arsonists.

In the West End of Newcastle, where the first arson task force was set up, every FDR-1 fire which has been classified as malicious by the fire crew attending is followed up and investigated by the arson task force. Investigations are carried out jointly by the police and fire service using high profile marked vehicles. As part of each investigation neighbours will be visited and questioned. The detective will then follow up any information given by local people or acquired at the fire scene. Where arrests have been made and prosecutions brought, these have been made as high profile as possible using the local media. This has enabled the task force to attract widespread and comprehensive media coverage and publicity for its work. Twenty prosecutions have taken place in the first six months. The actual number of fires has been reduced by 20% and the number of fires in derelict buildings has been reduced by 50%. This approach is an important turning point for the fire service. Task forces are now being set up around the country.

Various fire brigades within the UK use the services of a hydrocarbon detector dog team. There now is a national certification course run by the fire services college. This

certification is renewed annually, and ensures a consistent standard of competence for fire service dog teams. These dogs are an invaluable tool in speeding up fire investigations as the dogs are able to pinpoint exactly where the accelerant is to be found.

Insurance companies can exert influence over the type of arsonist in this category who commit arson for profit. Some steps have been taken to reduce arson fraud, databases have been set up and the Association of British Insurers is giving guidance to insurers. The insurance companies can be effective firstly at the underwriting stage of a new policy proposal and then at the investigation phase of a suspicious claim. A proper risk assessment should be carried out into the customer to establish whether that person has made a previous claim and what is their business history. In order to identify the fraud a detailed investigation into the circumstances and movements of the insured and their associates is necessary.

The arson prevention bureau has encouraged a more proactive role resulting in many insurers taking a more robust line and training staff in the relevant issues. Consideration might also be given to the addition of a policy clause specifying the insurers right to reduce or refuse a claim where indications of a link between arson and the insured exist and cannot be explained by the insured, Clarke 1996. A common database should make it possible to obtain reliable claims history identifying previous claims. This would be an important weapon in detecting and investigating arson, it would also contribute to identifying the extent of fraud and highlight when there are local epidemics of frauds. As levels of information are crucial to evaluating and resisting a claim progress could be made by designating fire and fraud liaison officers to act as sources of information for insurers.

Interventions involving the target of arson

A senior consultant of the Fire Protection Association, Mr. Lewis, at a conference given in Manchester 1999, drew attention to several precautions, which could be taken to avoid arson (Lynch 1999).

- Step one- “identifying the vulnerability of a building and the internal and external security measures.”
- Step two- “identifying hazards and the sources of ignition available”
- Step three- “identifying potential firesetters”
- Step four- “Reducing risk by eliminating and avoiding arson”
- Step five- “Considering whether security systems are adequate”

Government

Fire Precautions (workplace) Regulations, 1997 came into force on the 1st December 1997. The regulations are based upon self-compliance, with emphasis being placed on the employer’s own assessment risk. The fire authority is the enforcing authority. These Regulations apply to all employers and place a duty upon them to assess the risks of fire and the effect it would have on staff.

Recent changes to Building Regulations Approved Document B concern the provision of sprinklers in large single storey unpartitioned buildings, with the requirement for sprinklers to be placed in certain buildings with a floor area of 2000 square metres or over. (London Fire & Emergency Planning Authority 2000)

The Government can produce regulations that improve the way buildings are built and protected.

Local Education Authorities

Schools seemed to have one of the highest risks of arson of any type of property in the UK. Results have showed that nearly one in eight schools experience arson or suspected arson in one year (Burrows et al 1996). There is also a strong relationship between victimisation through arson and victimisation through damage and burglary. The implications are that schools, which suffer from damage or from burglary, should also think seriously about their precautions against arson.

Some Local Education Authorities, especially those in high-risk areas, have tried to develop special school designs to prevent arson. Innovations have included the following features.

- A plan form that avoids re-entrant angles, thus denying offenders areas in which they may loiter unnoticed.
- Metal shutters to secure windows out of school hours, the shutters being locked from the inside.
- Metal shutters over doors, which are also protected with anti-ram-raid style railings
- Enclosed rainwater down pipes thus eliminating climbing aids to roof level.
- Security lighting incorporated into wide eaves
- External walls which are easily cleanable and do not invite graffiti.
- Non-climable perimeter fences

However design solutions need to be functional for educational purposes and take into account educational objectives of openness and community involvement (Burrows et al 1996).

The prevention of arson attacks fall into a logical process, (APB, 1998): -

1. Deter unauthorised entry onto the site.

- By the use of signs and by using fences and hedges.
- Good lighting is recommended as most vandalism and arson attacks occur outside school hours and often at night.
- Patrols made by either commercial or local authority security teams can be effective in deterring would be arsonists.

2. Prevent unauthorised entry into the building.

- The number of doors and windows out of view from the public should be kept to a minimum.
- All external doors should be fitted with approved locks.
- Doorframe construction should be of good quality to resist forcing.
- Intruder alarms should be fitted and if possible connected to a call-monitoring centre.
- Schools should foster relationships with neighbours who are able to observe out-of-hour's activity on the premises.
- The installation of CCTV should be considered despite their high cost as they have a high deterrent effect.

3. Reduce the opportunity for an offender to start a fire

If an arsonist intent on causing damage is unable to enter the premises then the opportunity to light a fire outside the building is often exploited. It is important that the opportunity to ignite combustible material is eliminated.

- Refuse containers should ideally be placed in a secure compound or secured to a post no less than 8 meters from the building to prevent them being moved against the building.
- Recycling bins should be located at least 8 metres from the building in secure compounds and collections should be made regularly to avoid a build up.
- Sheds and storage facilities should be sited at least 8 metres away from the main building. This will avoid fire spread from such buildings involving the whole school.

4. **Reduce the scope for potential fire damage**

Should a fire be started, either deliberately or accidentally, it is important that its effect is minimised by containing the fire to a limited area, or ensuring high value contents are protected.

- Equipment of high value should ideally be located in a secure separate room where it will be out of sight and better protected in a fire.
- Early warning of the outbreak of fire can significantly reduce the losses if early firefighting can be initiated. An automatic fire detection system can mean the difference between containing the fire to the compartment of origin and the loss of the whole building and contents. To be effective the alarm must give warning off-site.
- Sprinkler systems are rare in existing schools but increasingly being fitted in new schools. Sprinkler systems are best regarded as a combined detection and extinguishing system. There is currently a national campaign promoting the use of sprinklers in school buildings. This is important in existing schools that are recognised as high risk.

5. **Reduce subsequent losses and disruption resulting from a fire.**

- Recognition should be given to the provision of the most appropriate form of extinguishing medium.
- Members of staff should be adequately trained in fire procedures, including how to summon the fire service, building evacuation and the use of fire extinguishers.
- A service recovery plan should be formulated in advance with the assistance of the LEA's Risk Management Group where this exists, or with the Local Education Authority.

These measures can help reduce crime within schools as well as combat arson. These measures may also be utilised in other types of buildings.

Given the apparent involvement of pupils and local youths in school arson attacks, many attacks being an extension of vandalism and general anti-social behaviour. Then training and preventative education in schools about the risk of fire ought to be given high priority.

At present there are problems with the costs and benefits of crime and fire prevention in schools. There is split financial responsibility between local Education Authorities and school governors. The authority is responsible for the building and major repairs, the governors are responsible for minor repairs, decoration and contents. Governors may be more worried about burglary than arson, because the former is more likely and its costs fall more directly on them. School principals, moreover, typically say that they can't afford to spend large sums on crime prevention (Burrows et al 1996).

Local Authorities

Schools, unoccupied buildings, community centres and communal areas are especially vulnerable to arson attacks. Local authorities need to realise that if basic housekeeping rules such as collecting litter are not followed, the next demonstration

will be graffiti. If litter is left there is a good chance that graffiti will not be dealt with. A pattern starts to emerge; in the next phase the area starts to be used for unauthorised purposes. If the progression continues the next event will be burglary of the premises. The more that burglary occurs the higher the chances of minor fires. If this sequence escalates almost inevitably the premises become a frequent target for arsonists. If this “slide to ashes” pattern can be identified early on there is the possibility of intervention action, which can be taken to prevent further escalation of the problem.

Several protocols have been established between the local authorities, fire services and police that appear to have had a significant impact on arson reduction. These include: -

- Removal of refuse
- Securing of void properties
- Rapid recovery of abandoned vehicles

There is no reason why these protocols cannot be utilised in other areas of the UK, which have similar arson problems. This is an issue, which the Local Government Association should consider.

The Zero-tolerance campaign and removal of refuse

The City of Newcastle designed a campaign to address the problem of household refuse in the streets and back lanes of the West End. This initiative was primarily aimed at improving the areas appearance however it was soon realised that removing rubbish from the streets had a beneficial effect on the rate of arson, especially on the number of secondary fires. The zero tolerance campaign encouraged people to put their rubbish out only on designated days, rather than letting it accumulate throughout the week in the street and back lanes. Council officers carry out frequent random trawls of the area and any individuals who continue to dump rubbish in the area are prosecuted. These prosecutions and fines are given as much press coverage as possible. The successful liaison between the arson task force and the refuse department now means that the refuse department will remove straight away any bulky refuse which the task force considers to be a fire risk to life or property.

Securing of void properties

The number of arson fires taking place within empty, unsecured properties is a significant problem in areas throughout the UK. Not only do they represent a significant financial burden on Local Authorities who must eventually either refurbish or demolish the building, they also present great risk of death or injury to the arsonists, members of the public and the firefighters who attend the fire.

An excellent scheme was established between the arson task force and Newcastle City Council Environmental Health Department. In order to prevent void properties being targets for arson attacks the scheme aims to get properties secured quickly and effectively. A system was set up whereby unsecured properties were reported to the arson task force who then arranges for Environmental Health to have the property boarded up. This is done regardless of whether the property is council or privately owned. The cost of boarding the house if privately owned is recouped from the owners, via the courts if necessary. In addition any property in which a fire has taken place is immediately secured. Void properties are therefore secure and access made difficult for all but the most determined firesetters.

The Void properties represent a further danger in that services such as gas and electricity may still be connected. The arson task force in Newcastle has been able to

liaise effectively with Transco and with Northern Electric in order to have gas and electricity supplies to vacant premises to be cut off before they can present a danger to the public (Marsh 2000)

Abandoned Vehicles

A number of schemes operate nationally to ensure the rapid removal of found stolen and abandoned vehicles. This action is to prevent the vehicles becoming targets for vandalism and arson attacks. As it is recognised that while about some vehicles are burnt by their original thieves, a large amount are being abandoned by the original thieves and burned out later by vandals. The Local Government Association are currently developing a “Good Practice Guide” to help authorities reduce the number of abandoned vehicles in their area.

One problem with dealing with abandoned vehicles is that the registered keeper must be tracked down via the DVLA and notified. There is a 28-day waiting period required before a vehicle may be removed from the street, once the notice is served by way of sticking a removal notice to the vehicle. However Local Authorities have the power to remove vehicles in seven days, and in some cases 24 hours, if deemed a danger to life and property, and are on council land. The results of this are that vehicles are removed before the vandals are able to set them alight, reducing the number of arson attacks on vehicles. The cost of removing vehicles and impounding them however is very significant therefore adequate funding arrangements are required.

Kent County Council, Kent County Constabulary, Medway Council, Kent Fire Brigade and DVLA established a pilot scheme in January 2001 to remove and destroy abandoned/untaxed vehicles. Operation Cubit, as it is entitled, utilises the DVLA powers to remove untaxed vehicles in an effort to reduce the number of abandoned and apparently abandoned vehicles that may become targets for offenders.

Building design

Architects have the earliest contribution to make, by incorporating measures at the design stage of new buildings or in renewal of existing ones, which in themselves can play a vital part in eliminating the opportunities for arson.

Secured by design is an UK police initiative supporting the principles of designing out crime. It has a number of key features.

- Secured by design is the corporate title for a family of national police projects involving the design for new homes, refurbished homes, commercial premises and car parks.
- It is primarily an initiative to encourage the building industry to adopt crime prevention measures to assist in reducing the opportunity for crime, creating a safer and more secure environment.
- Secured by design is supported and managed by the Association of Chief Police Officers (ACPO) and has the backing of the Home Office. It has been drawn up in consultation with the Department for Transport, Local Government as Regions as well as trade, industry and standards organisations.
- Secured by design does not guarantee that a particular area will be crime proof. But it indicates that the site has been subject to a design process and improved level of security, which in the experience of the police service and other agencies have shown to significantly reduce the risk of crime, including arson.

Individual Companies and Organisations

Owners of businesses can manage and reduce the likelihood of arson in a number of ways. Woodward and Kidd (1992) provide a useful overview.

- proper risk assessment
- good physical security measures against external arsonists
- proper screening of personnel to prevent internal arson
- good internal controls including housekeeping and proper investigation of all fires
- physical design of buildings to minimise risk and impact of arson
- good levels of physical fire safety-detection, sprinklers and staff training.

The Arson Prevention Bureau published a leaflet, Prevention and control of arson in Industrial commercial premises in September 2000, in which they advise that companies should have a management plan to combat arson which includes: -

1. The arson risk assessment
2. Security measures
3. Passive and active fire protection measures
4. Fire safety management procedures.

An arson risk assessment should be carried out as part of the Fire Precautions (Workplace) Regulations 1997, as amended in 1999. There are many ways to carry out a arson risk assessment. The assessment should involve considering the features related to the occurrence or arson in a logical and structured manner.

Effective security measures make a positive contribution to reducing the threat of arson these include

- Perimeter protection-priority should be given to keeping intruders out
- Access control-to detect intruders
- Security Lighting and automatic fire detection system.
- CCTV systems which has a high deterrent effect.
- Training of staff enabling them to be alert of possibility of arson and what to do if an arson attack should occur.

Measures can also be taken to reduce the effects of deliberately started fire. Passive fire protection is based on the principle of containment. Therefore if a fire should occur it will be restricted to one area of the building. Active fire protection involves installing systems that either detect and/or extinguish the fire.

Fire safety management factors need to be considered separately for each organisation as it depends on the premises they occupy and the nature of their business. These factors tend to be hinge around staff relations and an effective fire safety training regime.

Occupiers of Dwellings

Can take a number of steps to deal with the threat of arson.

- ensure their home is secure with adequate locks on doors and windows
- ensure common areas have satisfactory security and are well lit.
- minimise the amount of combustible materials left in and around the building
- occupiers should consider setting up a neighbourhood watch scheme
- ensure home safety measures such as the fitting of smoke alarms and having an escape plan in the event of fire are in place.

Merseyside Fire service has introduced a 5-year strategy plan. One of the aims of this plan is to reduce the number of dwelling fires by a third in 5 years. They are currently carrying out 6,000, Merseyside fire service home fire safety check and smoke alarm installations, a month.

Owners of Vehicles

Protecting your vehicle from arsonists is very closely linked to securing the vehicle against theft. One in 12 vehicles that are reported stolen are set alight (FPA 1999). The Arson Prevention Bureau has produced a leaflet, *Car fires; the growing problem and how to help extinguish it*. It provides the following advice to motorists to help them reduce the risk of their car being stolen and subsequently being set alight: -

- Where to leave your car
- Remove the ignition key
- Close all the windows
- Fit and use an anti-theft device
- Always lock the door and boot
- Hide property
- Report abandoned cars to the police.

AREAS FOR FUTURE RESEARCH

Police counting rules for offences

Statistics held by the police and fire services will also differ due to the way in which the police record offences under their Counting Rules, for example,

e.g. (i) Burnt out vehicles/vehicle theft

Up until April 1998, deliberate car fires would most likely have been recorded as car thefts or TWOC (taken without owners consent) rather than an offence of arson (if the vehicle was reported stolen prior to it being found burnt out). Under the new Police Counting Rules such incidents should now be recorded as two separate offences rather than just the one offence of theft/TWOC. However, the recent report by Her Majesty's Inspectorate of Constabulary "On the Record" recommended that the counting rules for vehicles burnt out should be changed back, to recording just the one offence of theft rather than recording the arson offence as well (unless there is evidence that the arsonist and vehicle thief are two different sets of offender).

e.g. (ii) Violent crimes

Under the principal offence rule – incidents such as people being injured in an arson attack would be recorded as "Serious wounding" rather than arson. Under Police Counting Rules, violent offences (apart from summary offences such as common assault) such as "serious wounding" should take precedence over non-violent ones, regardless of which one attracts the maximum sentence.

Definitions and terminology

Most "deliberate" activity as dealt with by the fire service does not feature in the police recorded crime figures. The fire service record those fires of non-accidental origin as either: "malicious"; "deliberate" or "doubtful". The Arson Scoping Study recommended that this terminology should be reviewed to overcome the problems encountered by the fire service with the use of the terms "malicious" and "doubtful".

This surrounds the increasing use of the Fire Damage Report Form (FDR1), the form using by all fire brigades to record key information on every fire attended, as evidence in court cases, although at the time of the hearing more detailed information (such as a Fire Investigation report) is usually available. The Fire Service are becoming more and more reluctant to use the term “malicious” as a means of describing the cause of the fire, as this suggests that the fire officer made a judgement about the intent of the individual involved. Fire officers are not considered as expert witnesses (unlike Forensic Scientists) and any statements or decisions must be based on fact, not opinion. The term “doubtful” is often interpreted as “don’t know/unsure” when in fact, in fire service terminology means that deliberate ignition was suspected

The police record malicious fires as arson as defined by the Criminal Damage Act 1971 (sections 1-3). The Criminal Damage Act has a higher level of proof that arson has been committed than is required for a brigade to attribute a fire as deliberately started. The wording of the Criminal Damage Act states that “intent” or “recklessness” and the involvement of “property” have to be established by the police before an offence of arson can be recorded. The definition used by the fire service is based on “reasonable doubt” which requires a lower level of evidence than the police.

Samples and forms of analysis

- *There is a dark figure of arson, as the clear up rate by the police is only 16%.*
- Biased sample of institutionalised firesetters.
- Research has tended to focus on children who are resident in care homes or those who have been referred for other mental health problems.
- Research has tended to small samples
- Investigating many different variables to find a predictive cause of firesetting rather than understand normal fireplay in children.
- Research suggests that an interest in fire is normal and universal at about four years of age but little research has investigated this normal fascination with fire by children (APB).
- Literature on arsonists largely focuses on those in special hospitals and on adults.
- Lack of adequate research being carried out in the area.
- Small and homogenous samples very few studies have involved non-clinical populations.
- Limited access to the population as only 16% of arsonists are caught. Arsonists are only identified if they are convicted, or brought to the attention of fire service or mental health professionals.

Problems with the estimates

- Only 72% of arson attacks are reported to the police (British Crime Survey 2000)
- Existing risk estimates based on incidents reported to fire brigades almost certainly underestimate the true level of deliberate fires.
- The National Statistics rely on fire officers inferring the arsonists age.
- Their may be huge regional variations which are lost due to the use of National Statistics.
- Only 50% of arson attacks attended by fire service are crimed by the police.

- Of those crimed only 16% result in a conviction.
- Results of current research are specific to the samples studies and some cases location specific.

RECOMMENDATIONS

Statistics

- Introduction of common terminology for describing fires should be introduced nationally to avoid any complications in future research.
- Information contained on local databases should be shared between organisations where practical
- National statistics related to arson need to be improved and consideration should be given to updating the FDR-1 form.
- A common, national database should be established relating to arson activity in all of its forms, in order to carry out analyses and identify trends these can then be made available to all agencies. This would be a national co-ordination of data on both offenders and incidents. The content and structure of the database should allow information to be retrieved quickly. Therefore when any juvenile or adult is referred to one of the agencies an immediate search can be made in order to determine whether this individual has previously committed an arson offence. Until there is a centrally co-ordinated system it will be impossible to assess the true levels of recidivism. This system would allow the identification of individuals who have a history of firesetting allowing these people to have continuing supervision with help being provided were necessary.

Research

- A huge research project should be set up to determine the real extent of the arson problem and the people who commit it.
- Research should specifically look at the extent and nature of fraudulent arson.
- Research should be carried out to determine whether the effectiveness of collaboration between the insurance industry, the police and fire service could be improved in the case of fraudulent arson.
- Studies have mainly concentrated on children in care or those with mental health problems. What is needed is research about children from all different backgrounds in order to investigate how common or “normal” a phenomenon firesetting is in the general population during childhood and adolescence.
- Research should investigate the most effective method of risk factors or predictive factors to be utilised, enabling young people who could be considered to be potential arsonists to be identified.
- Local health authorities should review the facilities they provide for the assessment and treatment of arsonists.
- A comprehensive research programme should examine arsonists in hospitals, and investigate matters such as the effects of closing large mental health institutions and the existing problems arising from community care.

- The reasons why an individual chose fire, as their weapon of choice needs to be addressed in a systematic manner.
- Research should be carried out into developing for general application a system of assessing the arson risk for a property.

Interventions

- A central information database containing information about current arson reduction initiatives should be established.
- National research should be carried out into devising and implementing suitable fire safety educational awareness programmes.
- Analysis, evaluation and validation of existing initiatives should be carried out by an independent outside organisation in order to examine their effectiveness.
- Effective treatment programmes for arsonists should be established in prisons and mental hospitals.

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