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Detecting and Convicting the Arsonist: Lessons from the United States

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The views expressed in this paper are those of the author and do not necessarily reflect Arson Prevention Bureau policy. Please address enquiries directly to the author.

Abstract

This paper discusses the poor record in the United Kingdom for investigating and prosecuting arson offences. It compares the UK record with that of the United States where there is a higher rate of detection. The paper explores the reasons why this might be so. It looks at current investigation and prosecution practices in the UK and US, the role of the public services and the Government, and suggests how the UK might change its practices to improve both its detection and prosecution rates.

Summary

Arson offences, per head of population, are far lower in the US than the UK. In addition, detection rates in the US are far superior to those in the UK. Whilst the current level of success in prosecuting arson in the US is no greater than that achieved in the UK, the US is making great efforts to improve both its detection and prosecution rates. To achieve this it has put in place and resourced an impressive training programme for both Fire Investigators and prosecutors. This investment looks likely to result in an increase in both the detection and prosecution rates in the US, which in turn will act as a strong deterrent to both arsonists and to those who might consider making a fraudulent insurance claim.

Arson results in around 100 deaths per year in England and Wales. It also represents a substantial loss to the UK economy: more than £2 billion a year.

The UK Government, the Fire and Police services, the insurance industry and the legal profession have much to learn from these US initiatives. If such lessons are not learnt and given adequate support in terms of legislation and funding from the Government, arson will continue to cost vast amounts of money to the UK economy. And it will continue to take lives.

Introduction

Ask a firefighter or an insurer how many arson offences were committed last year and you will receive a totally different, and far higher, number than if you were to ask the same question of the Police. The total number of fires in England and Wales in 2001 (the most up to date figures available) was 214,700. Of these, it is estimated 113,700 were malicious fires. These figures are based on information collected by the Fire Service and published by the Office of the Deputy Prime Minister (ODPM).

Table 1: Total Fires in the United Kingdom, thousands

	1997		1998		1999		2000		2001	
	Total Fires	No. Malicious	Total Fires	No. Malicious	Total Fires	No. Malicious	Total Fires	No. Malicious	Total Fires	No. Malicious
Dwellings	72.5	13.8	71.1	13.4	72.2	13.9	70.9	14.2	69.0	14.8
Buildings	44.4	18.9	41.8	17.1	43.7	17.9	41.7	18.0	43.6	19.7
Vehicles	71.4	42.2	75.9	48.7	90.1	63.0	94.8	70.7	102.1	79.1
Totals	188.3	74.9	188.8	79.2	206.0	94.8	207.4	102.9	214.7	112.9

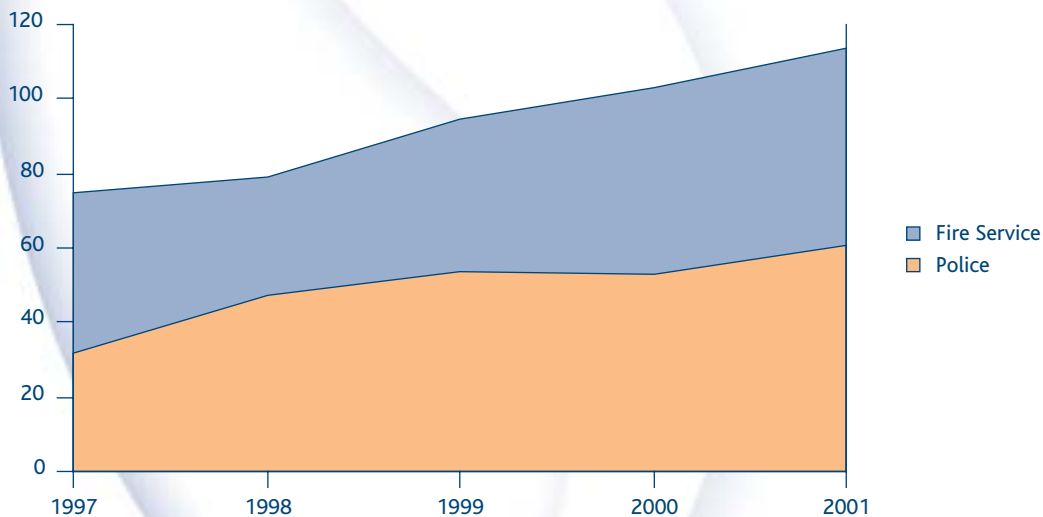
Yet arson offences as recorded by the Police in England and Wales during roughly the same period were around about 53,000. The most up to date Police statistics (2001/02) record the number as 60,472.

Table 2: Arson Offences Recorded by the Police, England and Wales

	1997	1998/99	1999/00	2000/01	2001/02
Number of Arson Offences	31,516	47,273	53,794	52,818	60,472
Of Which: Detected	5,004	4,758	4,755	4,395	4,817
Percentage of total	16%	10%	9%	8%	8%

What both parties do seem to agree on is that the trend is upward, the detection and conviction rates are poor and getting worse, and that every year over 100 people die as a result of arson.

Figure 1: Comparison of Fire Service and Police statistics (thousands)



Note: statistical years do not compare exactly

Explaining the discrepancy

The Fire Service, Police, and insurers each use different definitions, classifications, time scales and counting methods. There are arson offences, malicious fires and primary fires. Some statistics are reported by calendar year and others from April to March. However, the major discrepancy in the figures arises because only a proportion of the malicious fires attended by the Fire Brigade are classified by the Police as arson offences. The Criminal Damage Act 1971 stipulates that the Police have to prove that persons behaved 'recklessly' or 'intended to damage property' to record an incident as arson; whereas the Fire Brigades merely have to suspect that ignition is deliberate to record the incident as arson.

For the purposes of simplicity, this paper takes just one set of statistics – that recorded by the Police i.e. figures that are significantly lower than those recorded by the Fire Service.

The cost of arson

Whatever the numbers involved, what is indisputable is that arson is hurting the UK economy, insurers and policyholders badly.

Recent research into the motives of arsonists suggests that youth disorder, malicious and emotional motivations are major factors leading to the majority of property, and around half of vehicle, arson fires. Criminal motivation accounts for around 13% of property, and 45% of vehicle, arson cases. Not all criminal arson cases are fraudulent, to the extent that they are started by the insured in order to secure false benefit under a policy of insurance. However, from the insurance industry perspective, fires set in order to obtain wrongful financial gain under a policy of insurance are a significant problem. The Association of British Insurers estimates that arson costs insurers £1 million a day. This figure rises to over £2 billion a year once the hidden costs of managements time, public service resources and uninsured losses are taken into consideration.

On average, half of all fires are arson, with certain sectors, such as schools, or social groups, such as the socially deprived, suffering much higher rates of arson. Since low income households are often uninsured, insurance losses understate the true impact on this section of society.

These crimes, which threaten life as well as property, largely go unpunished and the offending behaviour untreated.

Current detection and conviction rates

Against this background the UK has a poor record in detecting arson cases and an abysmal rate of successful prosecutions. Turning around this poor performance in the criminal justice system is essential if the growing rate of arson and its associated economic and social costs are to be addressed.

a) The United Kingdom

The number of arson cases in the UK is increasing at a startling rate. Referring only to the figures provided by the Police: in 1997 the number of arson offences stood at 31,516 but by 2001/02 the number had grown to 60,472. What is equally worrying is that as the number of arson offences reported has increased, the number of arson offences detected has dropped. An arson offence is said to have been 'detected' when an individual is charged, summoned or cautioned. In the last five years fewer than one in ten of the arson incidents were detected. By 2001/02 the detection rate had dropped to 8%, which compares unfavourably to the detection rate achieved for criminal damage (13%) and all other crimes (23%).

Of the 4,817 arson crimes that were detected in 2001/02, proceedings began against 2,475 individuals. These proceedings were either discontinued or charges were withdrawn or dismissed in 31% of these cases. Of the remainder that did proceed to trial, 788 (32%) were found guilty at a Magistrates court and 926 (37%) were committed for trial at a Crown court. Here, the success rate was higher with just 21% of cases either not tried or acquitted and 712 (79%) found guilty. In 2001/02 the number of convictions was just 1500. Measured against the number of arson offences reported, this figure represents a conviction rate of just 2.5%. Not only is this low but it is lower than the conviction rate of all other crimes, which admittedly is only 6.5%.

Figure 2: UK Arson Offences, 1999/2000

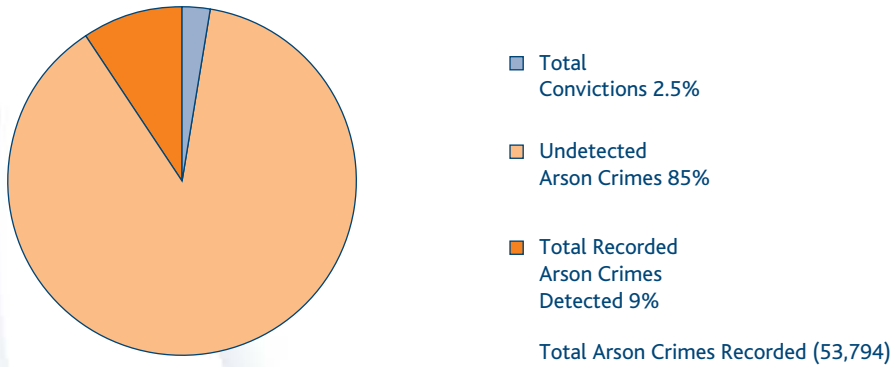
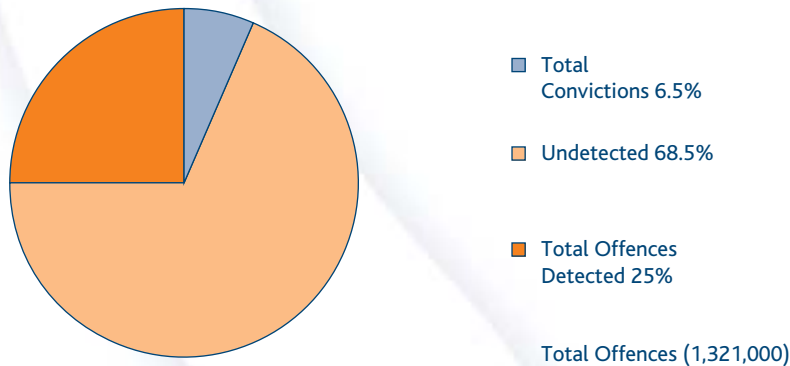


Figure 3: UK Total Offences, 1999/2000



b) The United States

In the US, arson and suspected arson constitute the largest single cause of property damage due to fire. In 1999 there were 72,000 incendiary/suspicious structure fires. When one compares the size of the US population with that of the UK, the 60,472 figure recorded in the UK looks disturbingly high, even taking into account the differences in definitions, classifications and reporting methods in each country.

Unlike the UK, the US is certainly moving in the right direction. The National Fire Protection Agency (NFPA) has reported the number of incendiary and suspicious structure fires since 1977 and in 17 of the last 22 years, the number has either fallen or stayed the same, representing a cumulative drop of 57%. The 72,000 incendiary and suspicious fires recorded in 1999 was a record low and down 5% from the previous year, when 76,000 fires were recorded.

It gets worse. Of the 72,000 incidents recorded in the US, approximately 10,000 resulted in an arrest, which equates to a detection rate of 17%; virtually double that of the United Kingdom. However, the US doesn't do so well when it comes to conviction rates. Of the total number of arson incidents only 2% resulted in a conviction – even lower than that currently achieved in the UK. Direct financial losses over the same period once adjusted for inflation have dropped by 54%.

The above figures would suggest that there are some lessons to be learnt from the United States.

Current investigation practices

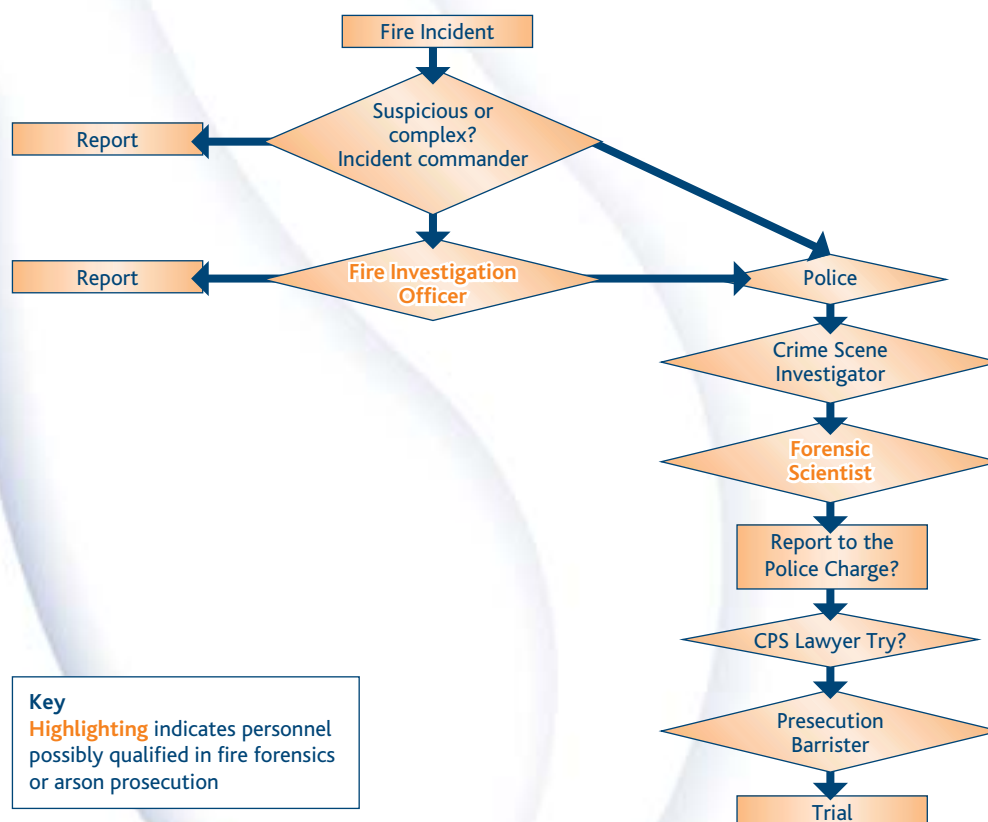
a) In the UK

In the UK, a suspected arson or serious fire is usually referred to a fire investigation officer within the Fire Brigade. Whilst the UK fire brigade has a number of highly skilled Fire Investigation Officers, it has to be acknowledged that there are not enough. Many Brigades have only a handful of trained full time investigators to cover their entire Brigade area. It is common for these full time Fire Investigation Officers to be unavailable to attend major loss scenes owing to shift patterns, holidays or sickness, or the fact that they may be engaged in other duties. When this happens, the next person on the rota is called to attend the fire scene. And whilst this person should have undertaken basic fire investigation training, they may well not have investigated a fire scene for some months or maybe longer.

Should the Fire Investigation Officer consider the cause of the fire to be one of arson, it is most likely that they will hand the matter over to the Police, who will then investigate the possible crime. The Police officers, investigating what is then a crime scene, is unlikely to have even basic fire science knowledge; and whilst they will no doubt undertake as thorough an investigation as possible from their perspective, it is unlikely that this will prove sufficient. It has to be hoped that nothing is done at this stage to adversely affect key forensic evidence. In order to secure the forensic evidence at the scene, the assistance of a crime scene investigator will be summoned, who in turn may call for the assistance of the forensic science service.

Once the Police officer conducting the investigation determines that there is sufficient evidence, so far as the Police are concerned, to charge an individual, the matter will then pass to the Crown Prosecution Service (CPS). The CPS will decide whether or not to prosecute. (In the near future the sole decision as to whether to charge an individual will pass to the CPS under changes being introduced).

Figure 4: UK Investigation and Prosecution Practices



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Once the decision to prosecute has been made a CPS lawyer is allocated the case. And again, it is probable that the CPS lawyer in question will not have any specialist fire science skills or experience. If the matter then proceeds to trial, the initial CPS lawyer will almost certainly refer the prosecution to a barrister whose experience in prosecuting fire cases is unlikely to be substantial.

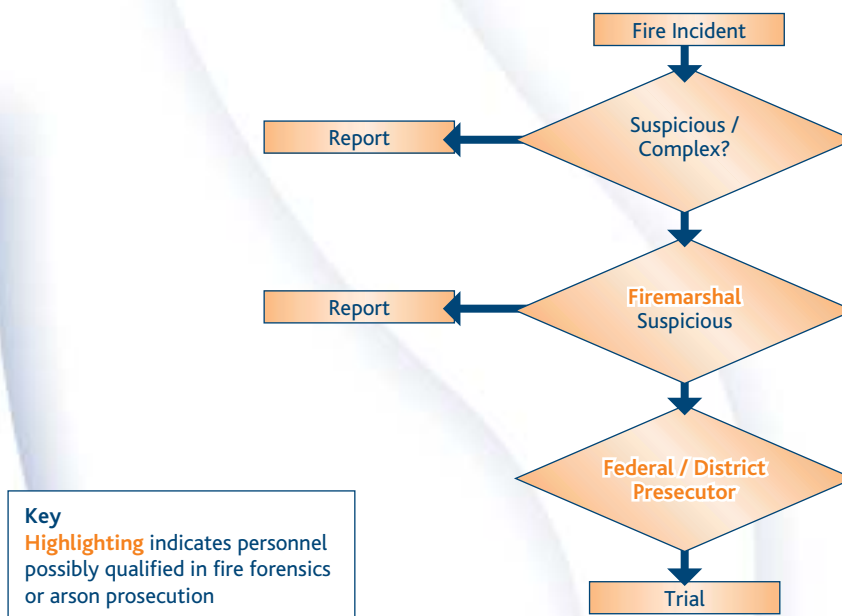
The problem is that, aside from the Fire Investigation Officer or the rare occasion in which the forensic science service is involved, none of the people responsible for the investigation and ultimate prosecution of an arson case in the UK has any, or sufficient, expertise in fire science. If fires are investigated by untrained people, how can we rely upon the validity of their findings or expect successful detections and convictions? And even if there is an expert who can give evidence, they are not likely to be experienced in court room techniques. Even more likely is the possibility that the prosecutor is not good enough, or simply does not have sufficient time to get to grips with the complex fire science evidence. Either way, the expert evidence is unlikely to be properly presented and the prospect of a successful prosecution is low.

Clearly improvements are needed in the way arson cases are investigated and brought to trial in the UK.

b) In the United States

In the US a systematic approach to fire investigation is adopted, whereby uniform detailed modus operandi manuals are used such as the NFPA 921 Guide for Fire and Explosion Investigations. NFPA codes, standards, recommended practices and guides are developed through a consensual development process approved by the American National Standards Institute. The process brings together volunteer experts representing varied viewpoints from the private and public sector in order to achieve consensus on fire investigation and fire safety issues.

Figure 5: US Investigation and Prosecution Practices



The manual compiled by the NFPA covers areas such as the basic methodology of fire investigation, fire science, cause and origin determination, and the management of major investigations. The manual is heavily relied upon in the public sector to such an extent that if a fire investigation has not been conducted in accordance with it, the credibility of any evidence, and ultimately the prospect of success at trial, is severely, if not fatally, damaged.

The role of the fire marshal

A key difference between the US and the UK is that the US at local, state and federal level regularly deploys fire marshals. There has been much debate here in the UK as to whether the Fire Brigade should have the power, or indeed the obligation, to investigate the cause and origin of fires. It has received a mixed reception. In the US, the Fire Marshals are not only trained fire fighters but they have what is termed "the power of the badge". This gives them the authority and obligations of Police officers. As a result once they believe a fire has been started deliberately they are charged with the responsibility of trying to identify the guilty party and of putting together a prosecution before handing it over to the appropriate district or federal prosecuting authorities. The case is then often handed to just one person, be it the District or Federal Prosecutor, or an assistant, and this person actually prosecutes the case at trial. It is therefore quite possible that only two people may be involved from the time the crime is committed, through its detection and prosecution.

By comparing our UK practices with those of the US, it is easy to see why our investigations do not prove as fruitful as those of our American counterparts. We can learn a considerable amount from this streamlined, systematic approach to investigating arson.

The US approach to improving its prosecution rate

But the US is far from complacent. It realises that it needs to improve the way its cases are prosecuted and to this end it utilises the resources of the Federal Law Enforcement Training Centre (FLETC). Located in Glynco, Georgia, FLETC serves as an inter-agency law enforcement-training academy for more than 70 federal agencies throughout the US.

The training academy provides services to local, state, federal and international law enforcement agencies and covers an enormous amount of land in rural Georgia. The site is the size of a small town occupying some 1500 acres, measuring over 2 miles across. It even has its own internal Police force who are there to ensure compliance with strict road traffic requirements: speed limits and rules of priority. The site has around three racetracks where various agencies put their people through high-speed pursuit and defensive vehicle training. It has at least ten indoor firing ranges, each of which has around a dozen lanes for shooting practice, as well as numerous external shooting ranges. It has countless courtrooms for putting agents through their paces in court room techniques; and it has an entire area dedicated to explosives training and bomb disposal. For obvious security reasons, the academy is located in the middle of nowhere and is subject to very tight security arrangements.

FLETC provides a training course for lawyers in the public sector in the US; it aims to strengthen co-operation between Fire Investigators and lawyers so that the prospect of achieving a successful prosecution of an arson case is maximised. The theory behind the course, and other similar courses, is that they want arson cases to be both investigated and prosecuted by trained individuals.

The course, 'Arson for Prosecutors', is designed for both state and federal prosecutors. It runs in parallel with the second and final week of an advanced training programme for public service Fire Investigators which looks at cause and origin and court room techniques.

To start with, both the lawyers and the Fire Investigators are shown various live burn demonstrations. Essentially, these highlight burn patterns and the effect of accelerants and enable the participants to observe fire spread. After flash over, the fires are extinguished and immediately the fire scene is preserved so that pristine physical evidence can be witnessed.

The lawyers then spend three days learning the theory of fire science and how to best present evidence in court. In the meantime, each Fire Investigation Officer is allocated one of ten burn cells, all of which have been fired a few days before their arrival. With no knowledge of the circumstances that led to the ignitions, each has to undertake their own cause and origin investigation. Each lawyer is then allocated to one of the cells and the Fire Investigation Officer has to walk his respective lawyer around the site and explain his preliminary findings and observations. The lawyers can then question the Fire Investigation Officer's initial views and suggest areas of further investigation to be undertaken away from the fire scene.

On the fifth day of the course the two classes join up and each lawyer is presented with a forensic scientist report from his Fire Investigation Officer. This is presented as evidence in court and the lawyers take their own Fire Investigation Officer through his report under mock trial conditions. This exercise is done in a manner that enables both the lawyer and the Fire Investigation Officer to see how they can assist each other, both at the outset of the investigation and at its conclusion. Each Fire Investigation Officer is then subject to cross-examination either by one of the lawyers or by one of the visiting attorneys lecturing on the course.

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The opposing lawyer only has a couple of hours to review the forensic reports and is therefore required to undertake cross examination relatively 'blind'. This reflects real life as it is common practice in the criminal legal system in the US, just as it is in the UK, for prosecutors not to see substantive technical evidence much before they have to go into court and cross examine a key forensic science witness.

Lessons learnt

The de-brief sessions indicate that the lawyers attending these courses believe that they benefit substantially from the intensive cause and origin training. All feel that the training enables them to prosecute an arson case with a greater depth of knowledge than they have previously held.

Prosecuting lawyers in the UK are not in day to day contact with the Fire Service and have little exposure to the expertise of forensic science experts or other knowledgeable parties. This puts them at a significant disadvantage. This lack of exposure must change; it is the sharing of knowledge and experience that will lead to greater success in the detection and prosecution of arson cases in the UK.

There are certain specialist insurance lawyers, particularly those well-versed in handling fraud and arson cases, who are required to have a basic knowledge of fire science and who serve on fire and other insurance related committees. Other lawyers, particularly those handling criminal prosecutions, are not so fortunate. It seems perfectly clear that if arson were investigated and then prosecuted in the criminal courts in the UK by people with more (or indeed any) specialist skill and knowledge, there would be a far greater possibility of arson offences being detected and successfully prosecuted. If offenders felt that there was a strong possibility that any arson offence would be detected, they might think twice. This would impact not only on the incidence of arson, but also on those fraudulent arson cases where policyholders seek to defraud their insurance companies and hence the honest policyholders whose premia fund the claims.

Conclusion and Recommendations

The Government's original target was to stabilise the incidence of arson by 2004 and reduce the number of offences by 30% by 2009. This target has now been redefined as a 10% reduction in arson cases by 31st March 2010, from the 2001/02 baseline. Impressive words. The setting up of the Arson Control Forum in April 2001 is of course to be welcomed. To date the Forum has invested just over £2.25 million in local arson reduction initiatives since its formation and a total of just £13.3 million has been committed to be invested by the end of 2006. It is simply not enough.

The systematic approach to fire investigation followed by the US has much to recommend it. So too does its specialist, integrated training. The UK needs similar training resources. Policy makers and practitioners in the UK should draw on US investigation methods and training practices in order to make the steep change which is necessary if legal sanctions are to be a real disincentive to potential offenders.

The UK already has fire research laboratories, such as BRE Certification Ltd, which carry out research into the safety, regulation and performance of buildings on behalf of the UK Government. However, far more facilities and training need to be provided. In particular the Fire Service, the Police, insurance investigators and the Crown Prosecution Service need to work closer together when investigating arson cases, so that each can draw on the other's knowledge and experience. As highlighted in this paper, too many people, each with a varying degree of specialist knowledge, are involved in the investigation of arson cases in the UK. This needs to change.

These sentiments are echoed by Detective Constable Graham Thompson of the Cleveland Police Force, a member of the first joint Police and Fire Brigade Arson Investigation Unit, set up within the Cleveland Police Force. He believes that instead of the Police tackling fire investigations as part of their day-to-day duties, the UK should have specialist departments within the Police force and Fire Brigades staffed by Fire Investigators to investigate suspicious fires. 'They [the US] specialise more – and that is the way forward.' He has attended a fire investigation course at FLETC and sees merit in the way arson is investigated in the US. To this end, he has been running four day courses based on what he has learnt in the US. These courses have been attended by CID, scenes of crime officers and Fire Brigade Officers with the aim of fostering better working partnerships and sharing knowledge.

In 2001/02 Cleveland had the lowest detection rate of all the Police force areas in England and Wales: just 3%. It will be interesting to see if the number of arson offences in the area decreases and if the detection rate increases when the figures for 2003 are published.

Prosecuting lawyers also need such training

The training courses such as those being run by DC Thompson and the attitude in general of the Cleveland Police Force demonstrate what can be done. Their lead should be followed by those in the legal profession charged with the responsibility of delivering effective (and successful) criminal investigations and prosecutions. Courses could be tailored to enable the CPS and the criminal prosecution bar to work and train alongside UK Fire Investigators.

Other recent developments have seen Sir Keith Povey, HM Chief Inspector of Constabulary, saying that he embraces the granting of certain powers of investigation to non Police officers and empowering Fire Investigation Officers. This would be a welcome move and a step towards US-style Fire Marshals. As referred to earlier, the Police are to lose the right to charge suspected arsonists without first being instructed to do so by the CPS. This will hopefully lead to the CPS making an objective assessment as to the likelihood of a successful prosecution and therefore save time and money.

However, both initiatives will be hampered if the CPS and others charged with investigative duties are not adequately trained in fire science and investigation.

The problem of different counting methods and definitions needs to be addressed if we are to be able to measure the effect of any initiatives on the numbers of arson offences and their detection and conviction rates. It is hoped that the introduction of the National Crime Recording system will serve to reduce this disparity.

If just 10% of the resources deployed in the US to improve fire detection and prosecution were available in the UK public sector this would go further to eradicate arson (and insurance motivated fraudulent arson) than any other steps undertaken to date, or planned in the future. If the Government continues to treat arson as a lower status crime, to see it as not worthy of increased investment, and to commit few resources to its detection and prosecution, the human toll and fiscal cost to the economy will continue.

In 2002 the author attended the 'Arson for Prosecutors' training course courtesy of joint sponsorship from the Arson Prevention Bureau in the UK, and the Bureau of Alcohol, Tobacco and Firearms in the United States.

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