



Vehicle Fires

Explaining the Rise in Vehicle Arson





Office of the
Deputy Prime Minister

Creating sustainable communities

Vehicle Fires

Explaining the Rise in Vehicle Arson

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February 2005

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Ministerial Foreword

Vehicle theft and arson is a huge problem. Nearly 300,000 vehicles were recorded as being abandoned in England in 2002/03. About 37,300 of these had previously been reported as stolen and were then set on fire by the thieves or others. Another 17,300 derelict vehicles were burnt out in our streets and public spaces.

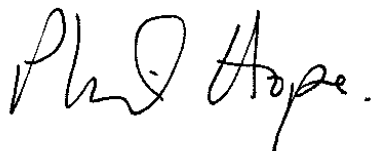
This report based on data from 1998-2002 explores the relationship between vehicle theft, vehicle abandonment and deliberate vehicle fires and provides valuable insights on the motivation of offenders. It establishes that the link between car theft and arson is much closer than previously thought with over half of all deliberate vehicle fires occurring in vehicles previously reported as stolen. It also shows that the cost of disposal and weak enforcement of licensing and registration are important factors in vehicle arson.

The Government introduced new regulations with effect from 1st April 2002 enabling vehicles of no value, which comprise the majority of abandoned vehicles, to be removed by local councils after 24 hours. Other new powers enable local authorities to clamp and remove unlicensed vehicles and tighten vehicle registration procedures so that those who dump cars can be tracked down and prosecuted.

Since 2001 the Arson Control Forum has sponsored local arson reduction projects focusing on the removal of abandoned cars and better cooperation between the police, fire and rescue service and local authorities. Evaluation of the first group of local projects has shown that where these were run, arson was around 30% below the level in control areas, and that for every £1 provided by the Forum, partners contributed another £4. Sixty-six local projects are currently being supported, including 29 Car Clear schemes and 24 Arson Task Forces, many of which include an element dealing with abandoned vehicles.

I am delighted to say that as a result, many local authorities now have good measures in place to tackle abandoned vehicles, and the number of deliberate vehicle fires attended by the Fire and Rescue Service in England in the year ending March 2004 fell by 13% (down to 58,500). Recent rises in scrap metal prices have helped by giving owners a greater incentive to dispose of their vehicles in a more responsible manner. The Nuisance Vehicle Strategy launched on 22nd November 2004 sets out further action to reduce the number of abandoned cars by 25% by 2008 from a 2002-03 baseline.

The main message of this report – the strong link between vehicle theft and arson – is still of the greatest importance. I hope that all those involved in crime prevention and arson reduction at local and national level will be encouraged to work closely together, building on shared data and good practice, to tackle this blight on our communities.

A handwritten signature in black ink, reading "Phil Hope." The signature is written in a cursive, flowing style.

Phil Hope
Parliamentary Under Secretary of State
Office of the Deputy Prime Minister

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Explaining the Rise in Vehicle Arson: Exploring the Relationship between Deliberate Vehicle Fires, Vehicle Abandonment and Other Vehicle Crime

EXECUTIVE SUMMARY

Between 1998 and 2002 deliberate fires rose by over 40%, due almost entirely to a 70% increase in the number of deliberate primary fires in vehicles. This research, conducted by the Universities of Liverpool and Huddersfield, explores in more detail the relationship between vehicle fires, abandoned vehicles and vehicle theft. The research commenced in February 2002 with a final report received in late 2004.

The research was conducted across seven fire and rescue services, five police forces and numerous local authorities. Interviews were also conducted with young offenders convicted of vehicle-related crimes.

Key Findings

- The research suggests a stronger link between vehicle arson and vehicle theft than previously thought. The data analysis estimates that just over 50% of deliberate primary vehicle fires occur in vehicles that have been previously reported stolen.
- Interviews with offenders confirmed that the primary motivation for arson in stolen vehicles is the destruction of forensic evidence, particularly DNA.
- Of those vehicles that have not been reported stolen, the research suggests that in the majority of cases, fires will have been set as a means of disposing of the vehicle, rather than it having been abandoned and then set on fire by a third party. Such vehicles tend to be unlicensed and/or untaxed, suggesting that the motivation for the fire is again the destruction of identifying evidence.
- A combination of falling steel prices and the introduction of more stringent, environmentally friendly vehicle dismantling procedures meant that from around 1998 individuals began to be charged to dispose of end of life vehicles rather than, as previously, receive a small sum of money. Furthermore, older vehicles are disproportionately owned by those on lowest incomes.
- These changes in the market conditions for older vehicles occurred against a background of a historically weak vehicle licensing and registration system in the United Kingdom, making it easier for individuals to dispose of vehicles illegally without being traced. Combined with the rising cost of vehicle disposal, this created an incentive to dispose of vehicles illegally.
- Recent policy developments to tackle vehicle arson include: vehicle removal schemes, the introduction of continuous registration for vehicle licensing¹, where the vehicle owner has responsibility for licensing a vehicle until the DVLA has been informed of its destruction. This means that enforcement action can be taken without having to prove a vehicle has been used or kept on a public highway. In 2002 new powers were introduced to reduce the time to remove unwanted vehicles from the road to 24 hours instead of 7 days, a power used by many vehicle removal schemes.

¹ Road Vehicle (Registration and Licensing) (Amendment) (No 3) Regulations 2003

- From 2002 deliberate vehicle fires have fallen for the first time in five years, a reduction that can be attributed to the impact of numerous policy and legislative changes, and also to a recent rise in the price of scrap metal which has increased the value of end of life vehicles.
- In terms of future policy, the link with vehicle theft clearly demonstrates the importance of close co-operation between the police and fire services.

Introduction

1. The total number of deliberate vehicle fires attended by Fire and Rescue Services (FRS's) in England and Wales increased dramatically in the late 1990s.
2. In 1998 Fire and Rescue Services in England and Wales attended 47,500 deliberately vehicle fires, including 3,600 (8%) in derelict vehicles². By the end of 2002 the number had risen by over 90% to 90,600, of which around a fifth (17,300) occurred in derelict vehicles.
3. The rise in vehicle fires has coincided with a huge increase in the number of abandoned and unwanted vehicles being dumped on the streets and on wastelands across the country.
4. Data on these abandoned vehicles come from a variety of sources: the Defra abandoned vehicles survey (Defra, 2003) had shown that the number of abandoned vehicles collected by English local authorities rose from 223,500 in 2000/01 to 298,900 by 2002/3, an increase of 34%. The trend for previous years can be estimated by analysing Driver Vehicle Licensing Agency (DVLA) V28 'disposal of abandoned vehicle' forms (Jill Dando Institute, 2002) – the available data show at least a nine-fold increase in the number of abandoned vehicles destroyed between 1998 and 2002.
5. Despite the increases in deliberate vehicle fires and abandoned vehicles, the number of vehicles stolen has continued to the downward trend apparent since the early 1990s.
6. The recent trends in vehicle crime and disorder are shown in table 1, below.

Table 1 Trends in vehicle related crime and disorder, 1998-2002

England and Wales	1998	2002	% change
Primary deliberate vehicle fires	43,900 (92%)	73,200 (81%)	67%
Derelict vehicle fires ¹	3,600 (8%)	17,300 (19%)	382%
ALL deliberate vehicle fires	47,500 (100%)	90,600 (100%) ²	91%
DVLA V28 'disposal of abandoned vehicles'	1,683	15,752	836%
Theft and unauthorised taking of a motor vehicle	390,891	317,184	-19%

¹ This assumes that all fires in 'derelict' vehicles are deliberate fires.

² Due to rounding columns do not add to 100%.

7. Although it is likely that the different elements of vehicle crime and disorder are related in some way, research was needed to shed light on the exact nature of the relationship. For example, even though fewer cars are stolen than in previous years, a greater proportion could now be subject to arson. Another explanation could be that the vehicles being abandoned in greater numbers by their owners are being vandalised and burnt out as part of general anti-social behaviour. The appropriate policy responses depend on why vehicle arsons have risen.

² ODPM fire statistics are collected via the FDR ('Fire Damage Report') forms – the FDR1 form records primary fires, generally fires involving property (in this case roadworthy vehicles); the FDR3 form records fires not involving property (in this case derelict vehicles).

8. To answer these questions, the Arson Control Forum, the government-led body responsible for implementing and co-ordinating arson reduction strategy, commissioned the University of Liverpool and the University of Huddersfield to carry out research to explore further the issues.
9. The research was conducted over a period of two years and involved seven fire and rescue services, five police forces and numerous local authority districts. The work undertaken used data across a period from 1999 to December 2002, accessing individual fire, police and local authority records on vehicle abandonment, arson and crime. In addition to the incident data a series of interviews were conducted with groups of vehicle crime offenders.
10. This bulletin summarises the main findings from the research and is in five parts:
 - The characteristics of vehicle crime
 - The role of market forces and vehicle licensing/registration
 - Recent policy developments
 - Barriers to effective partnership working
 - Future trends and recommendations

PART ONE: THE CHARACTERISTICS OF VEHICLE CRIME

11. This section draws upon a mixture of data collected from the pilot areas, national data, and also on the interviews conducted with a sample [30] offenders convicted of car crime.

Social deprivation

12. Before discussing the characteristics of specific vehicle crimes it is worth noting that the risk of suffering vehicle crime is not equal across all communities. This research showed a close relationship between social deprivation, as measured by the Index of Deprivation 2000, and the number of vehicle arsons³.
13. A technique known as 'geodemographic typology – superprofiles' was used to illustrate the characteristics of typical vehicle crime victims. Two distinct groups of enumeration districts (ED⁴) were at particular risk of vehicle crime and disorder, abandonment and arson: those classified as '*urban venturer*' and '*most deprived*'. The former are typically "*cosmopolitan, multiracial areas of cosmopolitan, multiracial areas of major cities undergoing gentrification but retain a significant proportion of poorer quality housing. Residents tend to be young adults living in terraced houses or flats, with high level of disposable income*". The 'Most deprived' areas are those "*with high proportions of single parent families, and unemployment two and a half times the average and low levels of educational qualifications*" (Brown and Batey, 1994).

³ Data from one pilot area, the West Midlands, showed that the distribution of vehicle arson was found to be highly correlated with the Index of Multiple Deprivation (0.73, significant at the 0.01 level).

⁴ Until the 2001 Census, Enumeration Districts were the base unit of census output for England & Wales and contained about 200 households. Since 2001 they have been replaced by the Census Output Areas.

14. In one urban Fire & Rescue Service (West Midlands) EDs described as ‘most deprived’ and ‘urban venturers’ accounted for 24% and 22% of all primary vehicle arsons, whereas on the basis of population one would have expected these wards to account for only 17% and 19% respectively.
15. A recent report on fire and social exclusion published by the Arson Control Forum found that indices of deprivation, in particular educational deprivation, were associated with higher levels of deliberate vehicle fires (ODPM, 2004).

Analysis of local data

16. The most comprehensive data available from the pilot came from two areas, Merseyside and Mid & West Wales, who have set up specific vehicle arson reduction units with excellent links between the Fire & Rescue Service, the Police, Local Authorities and the DVLA. The data are summarised in table 2, below.

Table 2 Mid & West Wales 2002 & 2003, and Merseyside 2003 combined:				
Status of recovered vehicle	MW Wales 2002	MW Wales 2003	Merseyside 2003	All data – combined
(1) Recovered following ‘arson’	1,448 (54%)	1,284 (52%)	3,426 (40%)	6,158 (45%)
<i>of which, reported stolen</i>	766 (53%)	757 (59%)	1,654 (48%)	3,177 (52%)
<i>Not reported stolen</i>	682 (47%)	527 (41%)	1,772 (52%)	2,981 (48%)
(2) Recovered following abandonment (no FDR1 arson)	1,227 (46%)	1,193 (48%)	5,040 (60%)	7,460 (55%)
Total vehicles recovered	2,675 (100%)	2,477 (100%)	8,466 (100%)	13,618 (100%)
Source: data supplied for Mid and West Wales supplied by Ferry Bridge Ltd; data for Merseyside supplied by Merseyside Arson Reduction Team. The numbers of vehicles recovered following ‘arson’ closely match the number of deliberate fires recorded by ODPM in the respective years.				

17. Vehicles recovered following an arson incident – the top row of data in the above table – represent the local Fire & Rescue Service workload in terms of deliberate primary vehicle fires. Across the two areas just over half, 52%, of such arsons occurred in vehicles that had previously been reported stolen (3,177 out of the combined total of 6,158).
18. As shown in table 3, below, if the results for Mid & West Wales were replicated across all non-metropolitan fire and rescue services and the results for Merseyside were replicated in metropolitan fire and rescue services, then 37,300 (51%) of all primary deliberate vehicle fires in England and Wales would have occurred in stolen vehicles.

Table 3 Estimated number of theft related primary vehicle arsons:		
England and Wales, 2002/3		
Total deliberate vehicle fires in:		Number reported stolen
Non-metropolitan English and Welsh Fire and Rescue Services	40,870	19,600 (48% ¹)
Metropolitan English Fire and Rescue Service	31,570	17,700 (56% ²)
Total	72,440	37,300 (51%)
¹ derived from the Merseyside 2003 data		
² derived from the weighted average of the 2002 and 2003 Mid and West Wales data		

19. In terms of resources, it costs on average £900 for the fire and rescue service to attend a vehicle fire (ODPM, 2003). Therefore, in 2002/3 attending fires in stolen vehicles cost the fire and rescue service around £33 million, from a total for all vehicle arson of £64 million.
20. In 2002/3 there were 317,184 stolen vehicles reported to the police in England and Wales (Home Office, 2003). Therefore, around 12% of these (the 37,300 derived) will end up as 'arsons' and require fire and rescue service resources.
21. One should be cautious when interpreting findings based on two areas that, combined, only accounted for 7% of all deliberate vehicle fires in England and Wales in 2002/3. Nevertheless, the fact that two Fire & Rescue Service areas with different socio-demographic profiles recorded broadly similar proportions of stolen vehicles within their fire data would suggest that the results are reasonably robust and can be applied to other FRSS⁵.
22. Furthermore, neither Mid & West Wales nor Merseyside are atypical in having launched vehicle arson reduction initiatives. Many areas have or are running such schemes, often with Arson Control Forum funding (ODPM, 2003a).
23. The pilot data and interviews shed light on the characteristics of the various forms of vehicle crime and disorder.

Vehicle stolen and subject to arson

24. These vehicles have registered current keepers and have been reported as stolen to the Police and subsequently found after being subject to an act of arson.
25. Interviews with offenders showed that the primary motivation for arson following vehicle theft was the destruction of potential forensic evidence, in particular the perceived **risk of detection from DNA evidence**. The forensic evidence destruction motive was cited for both the cars stolen for specific recreational or crime related purposes and also for those vehicles that remained unregistered and were used in the longer term for general transport and crime related purposes.
26. Vehicle theft is a relatively localised crime, with most vehicles recovered close to where they were reported stolen – over 70% of vehicles subject to arson were recovered within 3 kilometres of the theft location. Older vehicles are more likely to be victimised, with the majority of vehicles subject to arson being registered prior to 1995, with 1988-1992 the most at risk year.
27. In terms of **prevention**, the offender interviews shed light on the impact of target hardening such as improved engine immobiliser technology, mandatory in all vehicles manufactured after 1998, may have on vehicle theft. The interviews reveal the extent of '*key crime*' and '*planned opportunism*', presumably as a response to target hardening. The former relates to crimes committed specifically to get hold of car keys, such as residential burglaries, theft from the person and, most seriously, ('*car jacking*'). Planned opportunism relates to the practise of selecting a location at which it is likely that a suitable target will present itself to the offender, such as theft from a garage forecourt.

⁵ There is some variation between fire and rescue services in the recording of FDR1 & FDR3 fires. On average, about 20% of 'deliberately burnt out vehicles' are FDR3's, however Merseyside and Mid & West Wales record lower proportions, around 11% and 12% respectively in 2002. For other services the proportion of vehicle thefts recorded as FDR1 may be lower simply because recorded as FDR3 fires instead. Nonetheless, these still represent a drain on resources to the fire and rescue services.

28. More evidence on the extent of key theft is shown in a recent Home Office study (Levesley et al, 2004) of vehicle theft in Greater Manchester and Northumbria, which showed an increase in key crime, particularly through burglary and, in a small but increasing number of cases, robbery. The authors suggest that the risks involved with stealing keys would suggested in the involvement of more organized criminals rather than those involved in other anti-social behaviour related to vehicles.
29. Nonetheless, the net effect of target hardening on car theft has been positive. The number of cars stolen following 'key theft' has not, numerically, replaced the number of cars stolen through more 'traditional' techniques such as forcing the ignition. The 2003 Home Office Car Theft Index (CTI) showed that a car registered in 2001 – after the introduction of immobilisers – had a theft rate of 5 per 1,000, compared with rates of 7 and 10 per 1,000 for cars registered in 1995 and 1993 respectively.

Vehicle abandonment and vehicle disposal

30. Table 2 estimated that just over half of all unwanted vehicles collected by local agencies in Mid and West Wales and Merseyside had also been classified as a primary deliberate fire. Of these, just over half were **not** reported stolen. This section discusses recent trends in and characteristics of abandoned/unwanted vehicles, whether burnt out or not, and also possible motivations for the offence.

Table 4 Numbers of abandoned vehicles, 2000/01 – 2002/03:

Region	2000/01	2001/02	2002/03	% change 01-02 to 02-03	% Authorities with surrender vehicle/take- back schemes
	Abn. Veh (000s)	Abn. Veh (000s)	Abn. Veh (000s)		
North East	3.1	3.2	5.8	81%	22%
North West	10.1	10.6	13.3	25%	13%
Y'shire & Humber	7.9	12.7	15.7	24%	31%
East Midlands	12.3	16.9	21.2	25%	20%
West Midlands	13.9	13.1	20.4	51%	16%
East	30.6	42.2	44.2	5%	50%
London	83.9	104.5	94.5	-10%	94%
South East	43.9	57.5	54.9	-5%	46%
South West	17.9	23.7	29.0	22%	30%
England totals	223.5	284.4	298.9	5%	37%

Source: Defra Waste Management Survey

31. Between 2000/01 and 2001/02 the number of abandoned vehicles collected by Local Authorities increased by 27% to 284,000 but in the following year the increase slowed to only 5%, thanks principally to a decrease of 10% in London, which in 2001/02 accounted for over a third of all abandoned vehicles.
32. There is a noticeable regional trend – for three regions, North East, North West and the West Midlands, the rate of increases in the most recent year was actually greater than that recorded between 2000-01 and 2001-2.
33. This research divides the vehicle fires in non-stolen vehicles – which account for nearly half the vehicle arsons in Table 2 – into two sections: **vehicle-abandonment-arson** and **arson-disposal**. The former describes the situation where an unwanted vehicle is illegally dumped

and then, over time, falls victim to vandalism and ultimately arson. '**Arson disposal**' is where the act of abandonment and arson take as a single event; i.e. arson is the means of destroying an unwanted vehicle. This may occur in vehicle that have been stolen but not reported to the police (e.g. if unregistered, uninsured or untaxed), or where the last owner is complicit in the act of destruction.

34. Attributing precise proportion for these two categories is problematic due to limitations of the data, but this research suggests that arson-disposal represents the greater proportion of non-theft vehicle arsons than arson following abandonment and vandalism.
35. Firstly, as shown by Mid and West Wales and Merseyside, where efficient schemes are up and running, the timeframe required for an abandoned vehicle to become vandalised/ burnt-out is rarely available, which suggests that most non-stolen arsons are committed by those responsible for dumping the vehicles.
36. Furthermore, the proportion of vehicles reported abandoned to Local Authorities that could also be match FDR1 data was less than 10%. Even taking into consideration the limitations of the data, the low level of matching suggest that the Fire & Rescue Service was generally called out to incidents before they were reported to the Local Authorities, which would suggest a greater prevalence of arson-disposal within the non-theft arson category.
37. In terms of the main characteristics and motivations for this vehicle crime and disorder, the available evidence shows that different offenders are involved in non-theft vehicle arson. The peak time of day for this type of arson is between 4pm and 10pm, compared to 7pm to 1am for vehicle theft related arson. For vehicle-abandonment arson, this would point to a younger age group being responsible, with the act of firesetting being an act of criminal damage/vandalism by young offender rather than following car theft by older offenders.
38. The interviews with offenders showed that more experienced offenders are less likely to go near abandoned vehicles since these are more likely break down, increasing the chances of apprehension by the police. The previous history of an abandoned vehicle was also a concern for offenders, fearful that a vehicle may be implicated in previous crimes for which the offender may be blamed. Offenders were fearful that an abandoned vehicle might be a police 'sting' car that is under surveillance. Offenders interviewed considered a vehicle to be abandoned if any or all of the following were apparent: the general condition was poor, the vehicle was untaxed, there was less than a month or no road tax, the vehicle was unlocked, badly parked (an indication that a vehicle was abandoned in haste, possible due to a previous crime), the vehicle has been vandalised or in situ for some time
39. Almost all interviewees stated that abandoned vehicles provided them with their earliest opportunities to commit car crime and therefore develop patterns of criminal behaviour relating to arson. Early identification of such vehicles and removal not only reduces the access to easier targets for opportunist arson, but also removes the criminal career development aids that these vehicles can provide to potential young offenders.
40. For **arson disposal**, the motivation for the use of fire is likely, it can be reasonably assumed, to be similar to that for the destruction of stolen cars by car thieves: the destruction of incriminating evidence.

41. There was also evidence of **arson for insurance fraud purposes**. Over half of the offenders said that they had been approached to commit vehicle arson on behalf of a third party, with just under half saying that they had actually committed vehicle arson on behalf of the vehicles current keeper for payment of between £50 and £100.
42. Other more minor motivations highlighted in the offender interviews include: arson at the request of the keeper, to avoid legitimate disposal costs; to avoid insurance costs, at owner request; and to avoid excess mileage charges in the case of leased vehicles.
43. In terms of intervention strategies, the modus operandi of arson disposal does not provide any practical point of intervention for the local authority as the act of abandonment is subsumed within the act of arson disposal. It can only be tackled by discouraging abandonment for example through continuous registration, discussed in parts 2 and 3, below.
44. A recent report by the Jill Dando Institute (2004) studied trends in abandoned vehicles in Thanet, Kent, a county with a significant abandoned vehicle problem⁶.
45. The study found that abandoned vehicles were on average 14 years old when abandoned and were unlikely to be taxed (92%) and over three quarters of the vehicles were dumped within a year of the vehicle excise license expiring. The vehicles included in the study were not subject to arson attacks⁷; however this profile of low levels of taxation and legal registration is likely to be similar for burnt out vehicles.

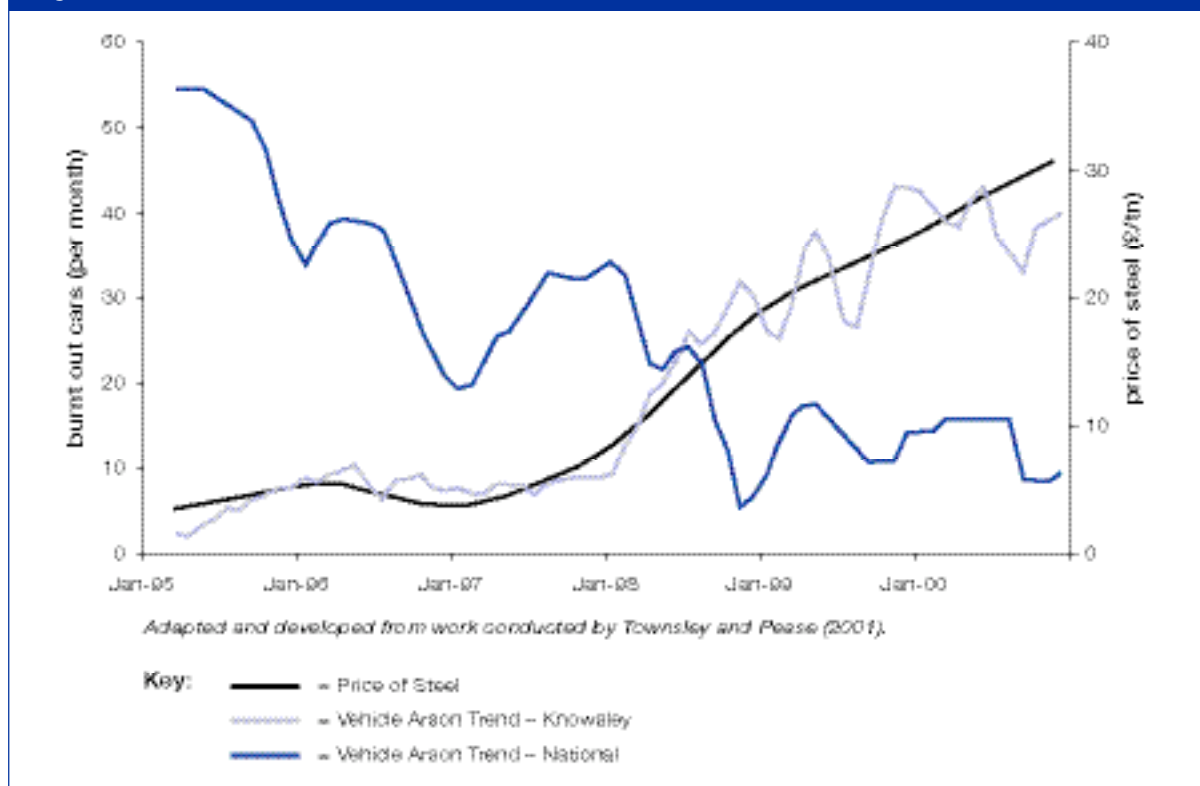
PART 2: CONTEXT: THE ROLE OF MARKET FORCES AND VEHICLE LICENSING/REGISTRATION

46. The recent trends in vehicle crime and disorder can be connected to economic changes that have affected the value of end of life vehicles.
47. From 1995 the worldwide price of steel fell, affecting both the scrap value of end of life vehicles, and the retail value of second hand vehicles. The trend in steel prices has led to a corresponding fall in the value of scrap metal prices. Developing earlier work by Pease and Townsley, the graph below explores the relationship between steel prices and the rise in burnt out vehicles in the Knowsley area of Merseyside and nationally.

⁶ Kent was one of the first counties to introduce 'Operation Cubit' a multi-agency project involving the DVLA. For further detail see the evaluation by Jacobson et al, 2002.

⁷ The information system used (KAVES) had the capacity to record the status of vehicle but did not seem to be used for this purpose.

Figure 1 **Numbers of abandoned vehicles, 2000/01 – 2002/03:**



48. The decrease in scrap metal prices impacts on the profit margins of scrap metal dismantlers. From 2003 this may be exacerbated by an increase in dismantlers operating costs due to more stringent environment standards following the adoption of the European End of Life vehicle directive (Directive 2000/53/EC)⁸.
49. The significant decrease in revenue from scrap metal has meant that individuals are often charged to legally dispose of end of life vehicles, whereas previously people might expect to receive a £40-50⁹ when disposing of a vehicle.
50. Table 5 shows that it is those on lowest incomes are more likely to own such vehicles than those on greater incomes. A third of all vehicles owned by the poorest fifth of the population are more than ten years old compared with 14% of the richest fifth and a national average of 19%.

⁸ The directive places a number of stipulations on member nations to minimise waste from vehicles in a manner sensitive to the environment, for example engine oil and various pollutants in cars like lead, cadmium and mercury must be recycled or made safe.

⁹ Guardian newspaper, 2/2/2002

¹⁰ Disposable income statistics from Social Trends 34 (National Statistics) compiled from data provided by the

Table 5 Percentage of cars by age and household income

Age of cars	Household income level (quintile)					All
	Lowest	Second	Third	Fourth	Highest	
Up to 3 years	12	16	19	25	35	25
Over 3 to 10 years	55	57	60	57	51	56
Over 10 to 13 years	21	17	14	11	8	12
Over 13 years	12	10	7	6	6	7

Source: Ferguson, M., Skinner, I., (2003)

51. An average cost of disposal £50 per car would represent around a third of the weekly disposable income¹⁰ of the poorest tenth (£159 per week) of the population and nearly a quarter of the poorest quarter (£215 per week).
52. In short, falling steel price prices has produced the environment where the legal disposal of a vehicle has become increasingly expensive, disproportionately so for those on lowest incomes who are most likely to own vehicles approaching the end of their 'lives'.

Vehicle licensing/registration

53. That there was a financial disincentive to dispose of vehicles legally does not of course mean that the rise in abandoned vehicles and vehicle arson was inevitable. Weaknesses in the vehicle licensing and registration regime have, until recently, made it easier for individuals to dispose of vehicles illegally (JDI, 2002 & 2003).
54. A key weakness of the British licensing system was the lack of '*continuous registration*' – vehicles owners could claim to no longer be the registered ownership of a vehicle if it was found abandoned or burnt out. Although the legal position was that a vehicle *should* be licensed, exactly *who* was responsible for the licensing was not specified. This made enforcement of vehicle licensing difficult.

PART 3: RECENT POLICY DEVELOPMENTS

55. The substantial rise in some aspects of vehicle crime and disorder has not gone unnoticed by local or central government. This section summarises recent developments in terms of legislation, enforcement and the development of local arson reduction initiatives focussing on vehicle arson.

Legislation and enforcement

56. As noted above, legislative and procedural weaknesses in the control of record keeping relating to changes in vehicle ownership have contributed to large numbers of unregistered vehicles, representing a significant contribution to the rise in abandoned vehicles and the use of arson-disposal.
57. Under the new regulations that came into force on 30th November 2003 the registered keeper of a vehicle has statutory responsibility for licensing it and retains that responsibility until the DVLA has been properly notified of the vehicle's disposal. This means that enforcement action can be taken without having to prove that a vehicle has been used or kept on a public road.

58. In 2003 the vehicle register administered by the DVLA was estimated to be about 92% accurate in terms of being able to trace the keeper of a vehicle spotted on the road. The residual 8% were made up of those whose details have changed recently but the DVLA has yet to be informed; and those who are evading their responsibilities: Continuous registration is designed to put onus on the disposing keeper to notify changes of ownership more quickly, and therefore target both categories.
59. Furthermore, in 2002 new measures were announced to reduce the time it takes to remove derelict and unwanted vehicles, including powers to remove vehicles abandoned on the street after 24 hours, instead of seven days; and powers for more rapid disposal of unlicensed vehicles under DLVA powers, from seven days rather than thirty-five¹¹.

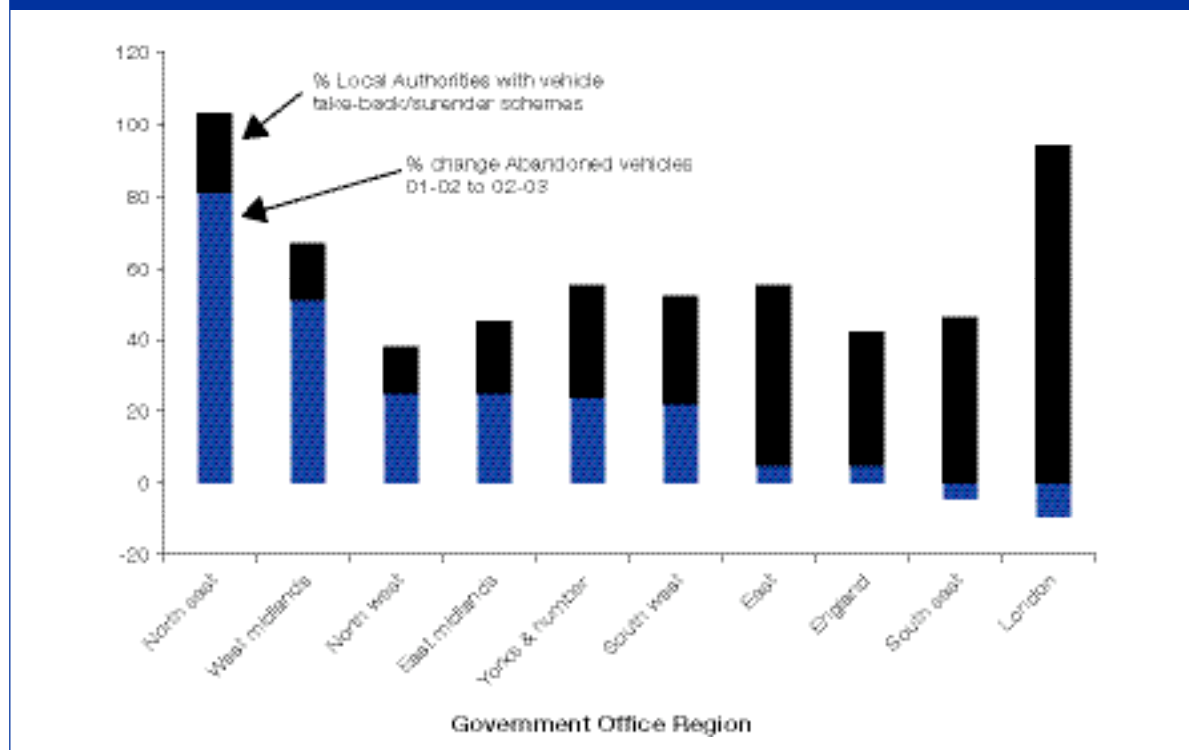
Local enforcement initiatives

60. The new vehicle removal powers have been utilised by the numerous local arson reduction initiatives funded by the Arson Control Forum.
61. Since 2001 the Arson Control Forum has invested in schemes which use many of the above powers to target vehicle arson. Under the New Projects Initiative (NPI), the Forum has invested in 7 projects specifically aimed at reducing vehicle arson through the swift removal of untaxed, unroadworthy and abandoned vehicle and/or through offering amnesty schemes for end of life vehicles. A further 22 Arson Task Forces focus, upon other things, on vehicle arson. An evaluation has shown that where projects were run overall deliberate fires fell by about 2% whereas over the same period in similar areas fires increased by 27%. Vehicle fire projects were particularly successful (Brown et al, 2004). With additional ACF funding further projects are being funded from 2003-4 onwards (ACF, 2003).
62. There are 3 basic types of vehicle removal scheme:
- Projects that aim to prevent vehicles becoming abandoned (e.g. end of life collections, vehicle amnesties)
 - Projects that remove abandoned vehicles
 - Projects that remove burnt out vehicles (For a full discussion see ODPM, 2004a)

¹¹ Canter & Almond: The Burning Issue: research and strategies for reducing arson. Office of the Deputy Prime Minister: London: 2002. Product Code 02FDP00404.

63. The success of local initiatives is also shown by the Defra abandoned vehicles survey discussed previously. The survey result – shown in the graph below – suggest that Regions operating vehicle surrender/take-back schemes recorded the lowest increases in reported abandoned vehicles¹². Nearly 40% of Local Authorities in England have some form of vehicle surrender/take back scheme.

Figure 2 Relationship between vehicle amnesty/take back schemes, and % change in abandoned vehicles, 01/02–02/03, Govt Office Region



PART 4: BARRIERS TO EFFECTIVE PARTNERSHIP WORKING

64. The process of conducting this research has shed light on limitations with how data are held and shared by agencies that, unless rectified, will interfere with effective partnership working.

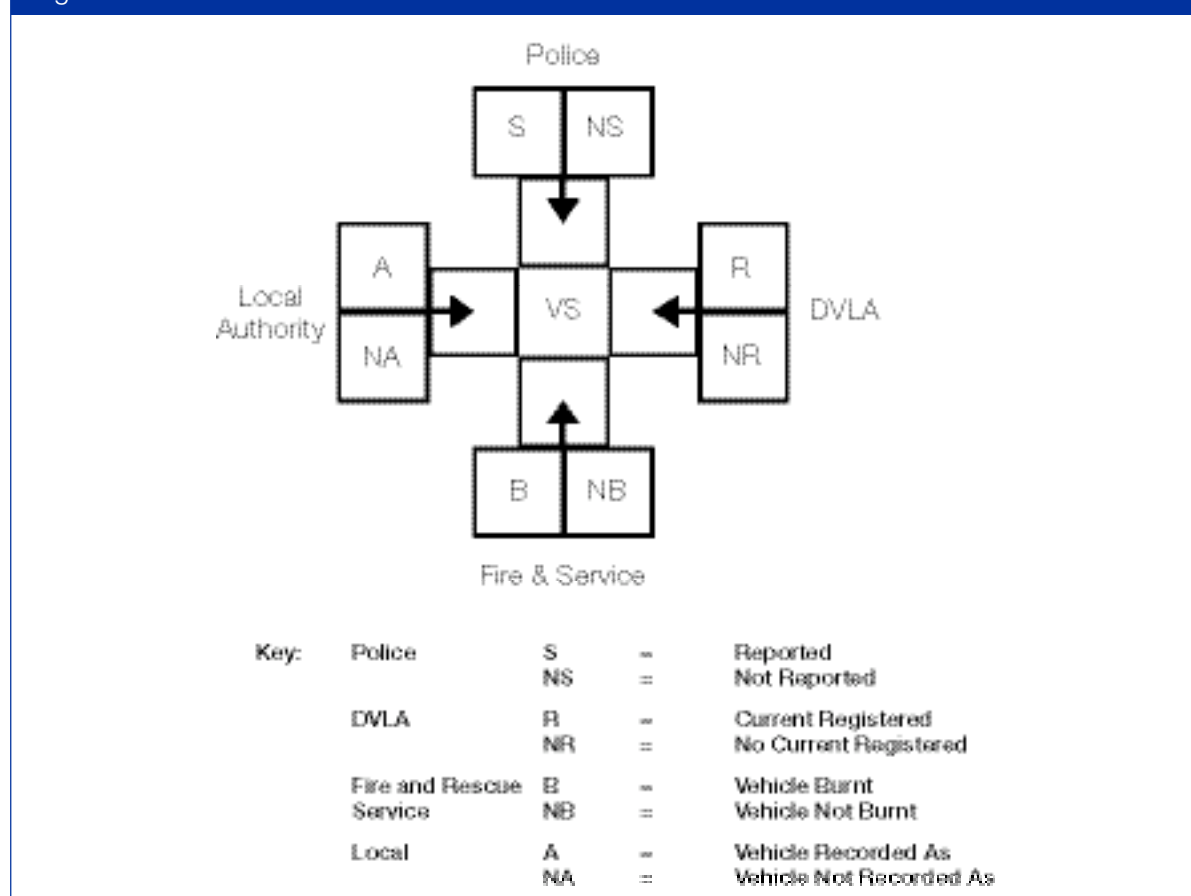
65. The development and implementation of effective strategies to tackle vehicle arson requires four agencies to record and share data:

- Police
- Fire and Rescue Service
- Local Authorities
- Driver Vehicle Licensing Agency

¹² Relationship between increases in abandoned vehicles and per cent schemes has a correlation coeff. -0.7.

66. The vehicle **status matrix**, below, identifies the four key organisations and the essential primary descriptors that identify current 'vehicle status' (vs) of any given vehicle.

Figure 3 **Vehicle Status Matrix**



67. The status of a vehicle determines the appropriate course of action within current legislation and the lead organisation, with the Fire and Rescue Service's workload in relation to vehicle arson being directly linked to the legislative responsibilities of the three key partner organisations.
68. Data are the key building blocks upon which improved multi-agency operational intelligence on the problems of vehicle arson, abandonment and crime are dependent. In order to assess the current capabilities of the key organisations to generate and utilise robust data sets across a range of contributing factors, the research examined current data holdings, processes and systems used within the organisations.
69. The research process identified a number of problems and failings across the data sets that severely impair the potential utility of the data for both analytical and partnership working purposes:
- **Geographic referencing of fire, police and local authority data was generally of a low standard**, with a lack of consistency and structure in how data on location is captured (e.g. address fields, postcodes and grid references). Many data sets geographical components were found to be based upon historical system configurations and precedent, rather than current needs and capabilities, and therefore often fail to provide the means to fully utilise the valuable information captured. Local authority data often did not contain any geo-referencing

data. There should be minimum standards for geo-coding in terms of accuracy and precision of grid referencing and address field structure.

- **There is a similar lack of consistency regarding vehicle identification information.** In particular, failure to capture a vehicle registration and/or VIN plate number was found to be common across the fire service and local authority data sets. Such data are essential if the data sets of the key partners are to be cross-referenced and their utility fully maximised.
70. The research suggests that local strategic partnerships should develop clear and agreed lines of responsibility for dealing with end of life vehicles.

PART FIVE: FUTURE TRENDS

71. Since 2001/2 the number of FDR1 deliberate vehicle arsons have fallen for the first time since 1998, with 9% reduction in England and Wales in 2003 compared with 2002. Although this welcome reduction was not expected when this research was commissioned, the findings of this study do give some indications as to why this reduction may have occurred.
72. From around the end of 2002 the price of scrap metal has begun to increase, from around £28 per tonne to £44 by the end of 2003, and has since risen further to £66 by the middle of 2004¹³. If the relationship between scrap metal prices and vehicle burn outs in Figure 1 still holds then we would expect the current decreases in deliberate vehicle fires to continue.
73. The latest data on abandoned vehicles shows that the increase in recent years is continuing but at a slower rate of increase.
74. Despite the encouraging trends in the most recent year, it is too early to judge the likely impact of the European End of Life vehicle directive – which is likely to increase dismantlers' operating costs by imposing more stringent requirements on recycling and disposal. This directive came into force in England and Wales towards the end of 2003 and could lead to increases in the costs to consumers of vehicle disposal, particularly if scrap metal prices begin to fall over time. However, from 2007 the cost of vehicle disposal will be borne by vehicle manufacturers, which should have the effect of reducing abandonment.

PART SIX: CONCLUSIONS AND RECOMMENDATIONS

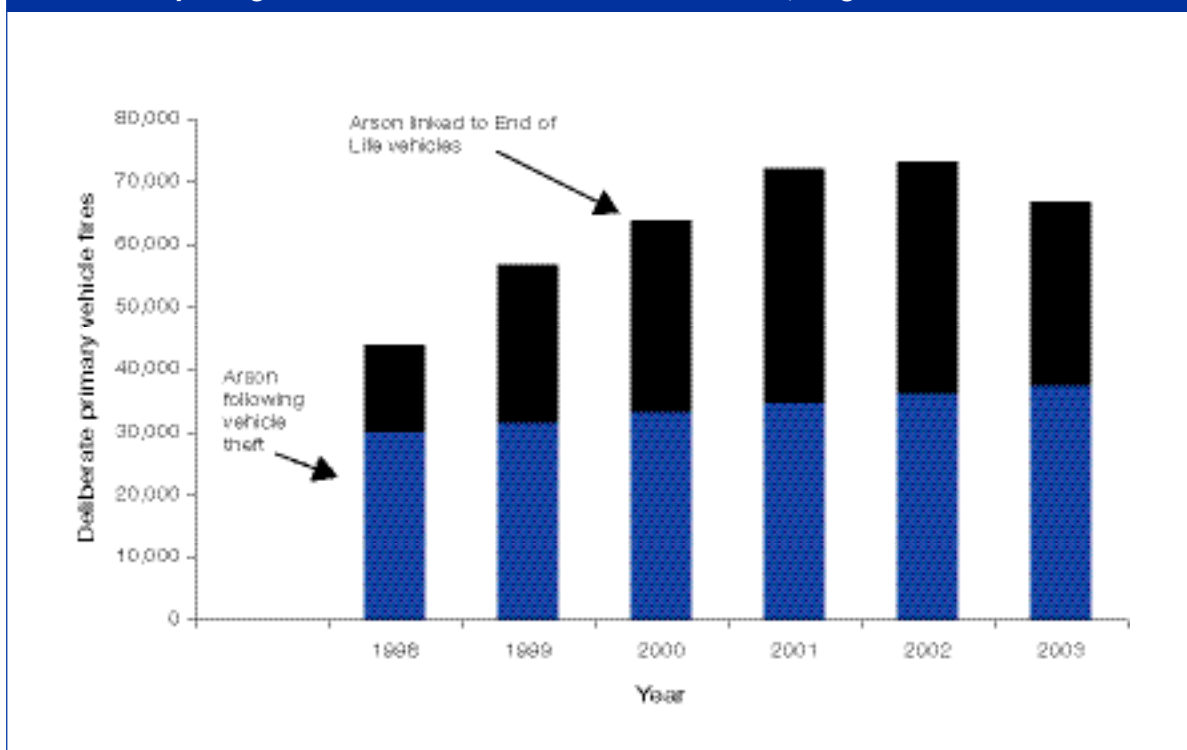
Conclusions

75. This research has shown the vehicle arson problem to be comprised of two elements, each of which accounted for around half of all deliberate primary vehicle fires in 2002:
- Fires in stolen vehicles, usually to destroy forensic evidence,
 - Fires in unwanted vehicles, either destroyed by their last (often unregistered) owners to avoid legitimate disposal costs, or abandoned for this reason and subsequently burnt out through vandalism.

¹³ Data derived from: average quarterly steel prices www.letsrecycle.com, no.1 old steel scrap prices.

76. But which of these factors most likely explains the rise in vehicle arson between 1998 and 2002?
77. Figure 4, below, presents a possible interpretation of recent trends in vehicle fires, based on the findings of this research. It suggests that the increase in vehicle fires since 1998 is most likely due to an increase in the number of fires linked to the rising costs of vehicle disposal. Although we do not have any data on the prevalence of stolen vehicles burnt out in the years before 2002¹⁴, it is unlikely that the number has increased to the extent necessary to explain the recent vehicle arson trends; whereas changes in vehicle disposal arson logically follow trends in scrap metal prices for the reasons explained in paragraphs 46-50, which would suggest 1998 as the 'take-off' point.

Figure 4 Hypothetical trends in vehicle arson following theft & arson as a means of disposing of and end of life vehicle. 1998 to 2003, England and Wales



78. In terms of future trends, if the reductions in fires linked arson disposal /arson abandonment continue (due to the combination of high scrap metal prices, better enforcement and swifter vehicle removal) we will still be left with a substantial number of vehicle arsons linked to vehicle theft. Even though the number of vehicles stolen each year is falling, improvements in forensic science could mean an increase in the use of fire to destroy forensic evidence.

¹⁴ The Police do not routinely record whether a recovered stolen vehicle was burnt out; and the fire and rescue service do not record whether a burnt out vehicle was stolen.

Recommendations

79. The results of this research lead to the following recommendations:

- The closer co-operation between the police, the fire and rescue service and local authorities fostered by local arson reduction initiatives must be continued and extended. For example, Fire and Rescue Services' data may detect an increase in burnt-out vehicles – especially if not reported stolen – in particular areas before the police and can pass on this information to the police. Many fire and rescue services and police forces now have data sharing protocols in place setting out how data must be shared. Statutory local crime and disorder reduction partnerships (CDRPs) set up by the Crime and Disorder Act 1998 are the obvious forums to agree and implement required initiatives. The Police Reform Act 2002 made Fire and Rescue Services statutory partners in CDRPs.
- The report highlighted specific weaknesses with data collection, in particular geographical referencing and vehicle identification information. Local community safety fora and guidance from central government are the appropriate means of ensuring common standards.
- Key weaknesses in vehicle registration and licensing that have contributed to the rise in vehicle related crime and disorder have been rectified by recent legislative changes. Nonetheless it will be important to continue to monitor the effectiveness of vehicle licensing and registration regime, particularly given probable increases in vehicle disposal due to the End of Life Vehicle Directive from the end of 2003, and the possibility that over time scrap metal prices could fall once more. The Directive also provides for free disposal at the manufacturers' expense from 2007. This will encourage owners to dispose of their unwanted vehicles in a more responsible manner but as this research has shown, it will not affect that significant number of vehicles that are stolen and subsequently burnt-out to destroy DNA evidence and other evidence of criminal activity.

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